

RTSA NSW CHAPTER NEWSLETTER

JULY 2011 EDITION



NEXT MEETING

HIGH SPEED RAIL IN ASIA PASCAL SUEESS

A REPORT ON THE RECENT RTSA STORE TO ASIA



Earlier this year RTSA ran a High Speed Rail study tour to Taiwan, Korea and Japan. These three countries use technology derived from Japan (naturally) and France, thus covering a number of differing operating and technical philosophies within a relatively small but very interesting geographic area.

Pascal will provide us with a fascinating insight into the high speed railways in these countries and the possible lessons for Australia should High Speed Rail ever take root here – given the proximity of the latest Federal East Coast HSR study, which is due for release any day, this presentation will be an important and valuable addition to the coming debate on the subject. A meeting that should not be missed.

TECHNICAL PRESENTATION

VENUE:

For this meeting only:
Sydney Mechanics
School of Arts
at 280 Pitt St, Sydney
City – between Park
and Bathurst St.

Nearest stations are
Museum and Town Hall

DATE:
Wed 3rd AUGUST 2011

TIME:
11.30 for 12.00

*LIGHT REFRESHMENTS
WILL BE PROVIDED*

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

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THE ROOM THAT MOVES

Prior to the July meeting we 'lost' our previous very convenient venue at Central Station (we must be grateful to RailCorp for as long as it lasted). This followed a rather fractured period when we went from pillar to post in a manner of speaking. Given that we lost our speaker last month as well as the room we had no alternative but to cancel the meeting.

We thought we had things sorted for a new regular venue, but the gremlins have continued to do their thing and we feel very fortunate to have secured, for this meeting only, a venue in the City – regular attendees at ARHS monthly meetings will know the

venue, while for others it is not hard to find – 280 Pitt St between Park and Bathurst Sts.

Hopefully the meeting gods will smile upon us and we will find a permanent venue in the near future and thereby return to some sense of normality.

The message for now is always to check the Newsletter prior to setting sail on the 1st Wednesday of the month so you will have the right GPS coordinates in your navigator. At least we have been giving members something of a Cooks Tour of different parts of the city this year.

ANNUAL GENERAL MEETING

As Members will be aware the next meeting will include our AGM. The major activity is election of the committee for the coming year. As with all volunteer activities work and domestic arrangements intrude (particularly the former) such that some existing committee members are unable to continue at the level of input that they have been giving, or in some cases to continue at all.

Various papers in connection with the AGM were despatched, from the EA offices in Canberra, on 8th July last. If any member feels that they could (or should for those with a conscience ☺)

contribute to running of the RTSA in NSW then they should get in touch with Alex Stoney (volunteer Returning Officer) by phone in the first instance on 02 9876 3243 or at 5 Romford Rd, Epping, NSW, 2121 by 1st August.

There are a number of current committee members who have been involved with RTSA for 10 years or more and they haven't yet gone mad or done anything that they would regret – in fact they will tell you that they have thoroughly enjoyed being part of the organisation and its development over the years. So please think about giving it a try!!

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KALAMAZOO EPIC

Members will have received a flyer early in May about an epic Kalamazoo (hand operated rail trolley) venture from Adelaide to Darwin which was due to have started around now. This 3000 km trip involves a team of 14 volunteers pumping away to raise funds for the Royal Flying Doctor Service. Sponsors include Parsons Brinckerhoff, ARTC, Genesee & Wyoming, Transfield and Great

Southern Rail, and we know that at least one of our NSW members will be there taking part.

RTSA suggests member go to the Kalamazoo Crossing 2011 web site, at www.kalamazooocrossing.org for more detail, and in particular to consider making a donation to such a worthy cause

POINT OF VIEW – MAX MICHELL

Have a look out the nearest window. There is every likelihood that somewhere in your sight there will be a eucalypt tree – the iconic Australian gum tree. Look at the tree with its sturdy trunk leading up to quite substantial branches which in turn lead through to twiglets where the leaves are to be found. In economic terms the trunk is worth something – sawn timber or as woodchips (shock horror – what a waste). The substantial branches might have some economic worth – firewood, maybe even sawn timber or woodchips. The far extremities however have very little value other than perhaps as mulch. The economic rationalist would suggest we cut away all the surfeit of small branches and leaves since they have no value, but retain the trunk and large branches. However they would soon find that they had a dead tree on their hands since the tree is a 'network' of sorts with all parts contributing to the whole.

Strangely railways also have branches which the economic rationalists see as waste material and therefore able to be discarded. But I would argue that the branches are part of the network and their continued existence helps nourish the whole, even

though they superficially cannot justify their existence individually.

Up until the 1930's railways in this country were expanding – in some cases to the point of absurdity. The extensions into barren areas fell by the wayside quite quickly (in some cases, in Victoria for instance, some of these branches never even opened for business at all) – in fact there is an argument that the newest branch lines were the least viable and fell by the wayside first. There has been continued pruning of branch lines (and some secondary main lines) ever since such that in some places there are few branch lines left at all – South Australia for instance has progressively discarded all but minimal number of branch lines such that they now have only three active such lines left.

In more recent times a combination of Government indifference and flawed privatization has resulted in significant degradation of many of the remaining regional rail lines ('regional' includes branch and secondary main lines) such that there is a significant maintenance backlog and condition deficit on these lines. Designation of these as

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'grain only' allowed many small but viable business opportunities to go begging (or more realistically to go to road) – not just on the regional line but also for the extended journey over the main lines.

The simple and easy (lazy) approach has been the close these lines, not because of any intrinsic failure of the line in economic and social terms but simply as a way of avoiding expenditure to restore them to the condition they need to be in order to be 'fit for purpose'. In government terms it represents lazy and selective policy while in private terms it is little better than asset stripping. Whether we like it or not the current position is that much of the branch line network in Australia is currently a threatened species.

One of the major issues is that there is no clear regional railway policy direction. No Government has come up with a long term approach to deal with these lines – short term knee jerk reaction, yes, a long term systematic approach, no. The arrival of a new layer of bureaucracy in the various state Rail Regulators has simply compounded the problem since these organisations are largely structured to maintain the status quo – in other words they are structured to be resistant to change.

If results are the measure of success then the regional railway part of the Rail Regulators remit has to be scored as a 'fail'. Imposition of standards and procedures that are appropriate to the big railways but little more than a mound of overburden for a regional line are a major factor in the slow sinking of the regional networks. It is quite clear, in some states at least, that the regulator works on a 'past precedent' basis in determining what can

and can't be allowed. This presupposes that 'past precedent' in fact was valid in the first place – which it demonstrably is not - and additionally is becoming more and more archaic as time goes by. Regardless of the basis for decision making the passage of time will require some change in standards and processes. But the very issue of standards and processes that are largely drawn from pre-regulator times is that that are fixed in both attitude and time. The passage of time simply makes the Regulators base line more and more irrelevant to the regional network.

There is a crying need for a properly thought through approach to regional lines that is sensitive to the need for change in past practices in relation to lines that are not and never will be busy main lines. Lines with limited speeds and small freight trains require a different approach to those with fast passenger and 1800 metre freight trains if they are to survive. There have been some limited attempts to raise interest in Regional Lines – the RTSA Regional Rail Seminar at Wagga in 2007 and the Federal NSW Grain Review are two relatively well known instances and there have been others. However to date there has been no concerted attempt to get a proper framework for regional lines in this country.

Agreement to have a single National Rail Regulator could be an opportunity to get a different approach to regional rail in the near future. However the new national regulator will not be adequate on its own – it will need industry, government and community support and guidance if anything is to happen that will ensure the continued existence of regional rail. Which of course includes all of us.

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LETTERS TO THE EDITOR

This month we have two letters on widely varied topics that will be of interest to members.

The first is from Malcolm Cluett who, having had a day off from writing up the 'Last Meeting' notes, has written an interesting letter that is largely self explanatory -

I have long been puzzled why some railway systems put the driver on the opposite side to the line side signals. Surely this would make them harder to see?

Some examples are the South African, New Zealand, Tasmanian, West Australian and Queensland rail systems. Here the trains run on the left (on double tracks) yet the driver is situated on the right.

In the UK, the railways were made up of many private companies, but two of the large ones which operated until the 1920s (*Great Western Railway* and *Great Central Railway*) also had the driver situated on the right hand side. After Nationalisation in 1948, the left-hand driving position was standardised for new British locomotives (and crews on some sections of track claimed that it made sighting signals harder). This would indicate that the lineside signals were also on the right-hand side. Maybe some old mechanical signals still are.

I have heard two slightly lame reasons for locating the driver on the right. One is that on a steam locomotive with a small cab, it was better for right-handed fireman to work from the left hand side. The other is that it allows the driver to look back for the Guard's signal at island platforms. The latter

reason might be plausible if island platforms were more common than side platforms. Both of these reasons have disappeared now, as there are few locomotive hauled passenger trains and even fewer steam trains on the system.

Surely these two justifications would be outweighed by oncoming signals being obscured by passing trains (if they were situated on the right of the running lines) or being obscured by the boiler or long-hood of the locomotive (if situated on the left hand side). There is still occasional long-hood leading loco operation in Australia.

Maybe some of our British signalling experts, or those from the other systems mentioned above, could enlighten us. The British systems certainly had intensive high-speed running, and owing to the restricted loading gauge the forward view from British steam locomotive cabs was not so good in the best of circumstances.

There is a parallel situation in the USA, but in a mirror image. The Chicago and North Western RR always ran on the left-hand side, but the driver was seated on the right hand side (as was the custom in the USA). The C&NW RR has long been absorbed into other companies, but the left hand running still persists in Chicago, and on the former trackage of that company. In its day the C&NW RR ran some of the fastest trains in the world, and good signal sighting would have been paramount.

This anomaly will presumably remain until lineside signals are dispensed with.



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The second letter is in response to the June meeting to do with rail grinding and comes from David Hanson:

Thank you for convening the recent technical presentation by Mark White of SPENO. I thoroughly enjoyed the presentation and, like many others in the room I suspect, learnt a considerable amount regarding rail inspection and switch grinding. I would like to clarify one incidental issue which arose during the questions however, as this is a recurring misconception which those of us involved in rail noise would like to dispel. This regards the role of grinding scratch marks in generating rolling noise.

Rolling noise is generated by longitudinal roughness on the surface of the rails and wheels. Rail grinding usually imparts clearly visible scratch marks into the rail head, but also a sinusoidal pattern corresponding to the once-per-revolution frequency of the individual grinding stones as the vehicle moves along the track. It is not always possible to see this longer wavelength roughness, but it is frequently evident in a “waviness” of the running band width, as shown in Figure 1.

The scratch marks are of very small wavelength – typically 1mm or less and considerably smaller than the contact patch between the rail and wheel. As such, the rails and wheels do not “see” these scratch marks in terms of noise generation and, as was highlighted during the presentation, they generally disappear after a few weeks of operation. The once-per-revolution pattern however, is typically around 40-50mm in wavelength and does not appear to diminish significantly over time on passenger lines. This longer wavelength undulation leads directly to rolling noise emissions.

An example of this shown in Figure 2 which features a relatively newly ground rail captured after several weeks of passenger revenue service. The running band is clearly visible as the region in which the grinding scratch marks, still evident on either side, have been worn away. First impressions may lead to the conclusion that this apparently smooth and shiny rail would produce little noise. Unfortunately, this is a rather noisy rail with a significant (in noise terms) 50mm wavelength roughness from the grinder which generated noise components of around 10dBA above what would be expected if the rail were truly smooth.

This also highlights one of the particularly challenging aspects of rail roughness generally – the amplitude of the roughness is extremely small. A 50mm wavelength component with amplitude of 10 micron, around the diameter of a human hair, would generate significant tonal noise emissions and pose an unacceptable noise impact on nearby receivers.

It is possible to achieve rail roughness from grinding with amplitudes significantly less than 10 microns in the wavelengths of interest to noise (10-100mm for airborne noise), and RailCorp enjoyed some success working with SPENO during the ECRL project to achieve exactly this.

In conclusion then, let us put to bed the misconception regarding grinding scratch marks and rolling noise. Of far greater concern is the roughness which is not always visible, which occurs at longer wavelengths, and is associated with the once-per-revolution frequency of the grinding stones.



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Figure 1 Typical rail head with the once-per-revolution longitudinal roughness evidenced by the thickness of the region worn by passing wheels



Figure 2 Newly ground rail after several weeks of traffic

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COMING EVENTS

ANNUAL DINNER – 2011

This year's Dinner will be held on Thursday, 11th August 2011 at Doltone House, Jones Bay Wharf, Pyrmont. The format is intended to remain the same as last year with pre-dinner drinks and a guest speaker on the night. The cost will be held at a similar low level to previous dinners. Numbers for this event will be limited to 150.

We have been fortunate to get Chris Lock, CEO of the NSW Transport Construction Authority as our guest speaker on the night. Chris will talk about the new framework for transport project delivery in NSW, which is part of the rearrangement of the Transport Department and transport authorities being undertaken by the new government.

All bookings for this event will be via online services and phone bookings and need to be completed by 1 August 2011 (places are limited so please register early). Register online via:

<https://events.engineersaustralia.org.au/ei/getdemo.ei?id=890&s=UWWOWIQRV>.

If you would like to discuss sponsorship opportunities or have any queries regarding the Annual Dinner please contact Katharina Gerstmann on nsw-chair@rtsa.com.au.



RTAA / RAILCORP ANNUAL FIELD DAY

The RTAA, in conjunction with RailCorp, will again be holding their Field Day at Clyde Yard on 26th and 27th of October. This event is the only one of its kind in Australasia and is expected to again have over 50 exhibitors.

The displays are primarily to do with track and track maintenance (which includes working displays of some quite impressive machinery) so will be of considerable interest to people who are involved in the rail industry at any level, people who are interested in rail, people who are studying engineering and anyone who is considering a career in rail.

Entry is free and includes morning tea, lunch and a 'show bag' of goodies from the exhibitors. Further information is available on the RTAA web site – www.rtaa.org.au

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AusRAILPLUS2011
CONFERENCE & EXHIBITION

2011 Theme:
Innovation and Customer Relations

22nd – 24th November 2011
Brisbane Convention & Exhibition Centre

Australian Railway Association Inc. NSW Trains IRSE ENGINEERS AUSTRALIA RTSA

HUNTER VALLEY STUDY TOUR

The saga continues – this event will now be a joint two day event with PWI up in Newcastle. The basic plan is similar to previously with a seminar on the Friday and a local inspection tour on the Saturday. However it is proposed to add a train tour (using Rail Motor Society cars) on the Sunday to run an inspection tour of some of the rail network

in the Hunter outside the immediate Newcastle area.

The date is expected to be in autumn, but designed to avoid Easter and the school holidays

More will be revealed as plans firm up.

JULY MEETING

There was, of course, no meeting in July, due to circumstances beyond our control – one of the delightful difficulties of running a common interest

organisation primarily with volunteers. There will be a meeting in August (see front cover) so this section will return to its normal self next month

WHERE AND/OR WHAT IS IT?

This month we have a picture that has a lot in it that has not changed greatly since it was taken around 35 years ago. There are all sorts of artefacts that represent the railway – ranging from the train to the signal and signal post but which are not in themselves particularly helpful in identifying the location.

However there is a lot in there that is rather more location specific – but I will, leave that to you to determine. Anyone who has even just a passing experience of the area will know where it is but the rest of you?

Where and what are we looking at?

Tony Woodland is again responsible if you are confused.

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Last month we had two mysterious places for you to identify. The first, of a tunnel mouth with double track running into gauntlet track, was the original 'tunnel' on the railway – under Railway Square toward Darling Harbour. This is now no longer a line to anywhere, being in reality only a siding track to the Powerhouse Museum – in fact it has been baulked 'out of service' for an extended period. The clue was the reference "... has taken us back in time as well as away from the Hunter Valley ..." since this scene is no longer as in the picture. There was not an overwhelming response to this one.

On the other hand the number of entries that identified Buckrabanule as the location of the elaborate signpost was quite overwhelming.

Bob Vanselow, sent a picture from the distant past of the Sea Lake / Robinvale combined diesel-electric rail motors (DERM's) departing Korong Vale for Bendigo. The Sea Lake motor would have stopped at Buckrabanule maybe 30 minutes earlier to do van goods and possibly collect a passenger or two. The DERM's were heavy ponderous machines but were quite capable of hauling a load at modest speed on relatively flat lines – in this picture there is a 'caboose' van between the motors and probably a matching trailer and another caboose trailing along behind the rear motor – a five car train with an early form of distributed power, each with a separate driver. At other times of the year when passengers and parcels were not quite so buoyant it was not unusual to find the DERM towing a bogie sheep van or similar. On the Balranald line the

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twice weekly DERM was officially a mixed since it was authorised to take up to half a dozen empty GY grain wagons from Moulamein to save running a freight train.

Operation of DERM's north of Bendigo was one of the most fascinating rail motor operations in the country yet it has been little documented. All this came to an end around 1980, while the elaborate facilities at Korong Vale (island platform, two signal boxes, refreshment room, large yard, loco depot that used to put out around 16 trains a day during a good grain harvest) have all subsequently gone, to be replaced with nothing more than a self-serve loop and a junction turnout.

The near car in the picture is 55RM – the pattern DERM imported from EMC in America to become the model for the remaining nine that were built locally at Newport. Note that the power bogie (below the driver) is a standard plate frame suburban bogie – Victoria must be one of the very few places where the same electric traction bogie was to be found under suburban electric cars, rail motors and locomotives (the early E class electrics and latter day Y class diesels)



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FUTURE MEETINGS AND EVENTS FOR 2011

Date and time	Activity	Location
Wednesday 3 August 2011 11.30 for 12.00	AGM High Speed Study Tour Report – Pascal Sueess	Sydney Mechanics School of Arts, 280 Pitt St, Sydney
11 th August 2011	Dinner Meeting with guest speaker	Doltone House Jones Bay Wharf - Pyrmont
Wednesday 7 September 2011 11.30 for 12.00	Port Botany and Freight Line Resignalling – TBC Tomas Magyla – Eddie Hawes	To Be Advised
Wednesday 5 October 2011 11.30 for 12.00	The Alternative Railway – What happens when there are possessions and shutdowns Nigel Parker - RailCorp	To Be Advised
Wednesday 2 November 2011 11.30 for 12.00	Waratah Train Signal Compatibility Dave Nolan - RailCorp	To Be Advised
Wednesday 7 December 2011 11.30 for 12.00	Heritage Topic Speaker from TrainWorks Thirlmere	To Be Advised

Members with ideas for meeting topics should contact the Secretary, John Watsford, in the first instance – contact details on the back page of this Newsletter

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CONTACT AND SOCIETY DETAILS

Katharina Gerstmann	Chair		nsw-chair@rtsa.com.au
Coen Stoltz	Deputy Chair		
John Watsford	Secretary	0418 217 105	nsw@rtsa.com.au
Max Michell	Newsletter Editor	02 4975 4310	max412@gmail.com
Andrew Mackay	Treasurer		
Bill Laidlaw	Outings Convenor		billaid@bigpond.net.au
Andrew Honan			
Malcolm Cluett			
Candice Ng			
Paul Harris			
Silvia Fedakova			
Pascal Sueess			
Sarah-Ann Brennan			
Varun Kashyap			

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The best way to submit contributions is by e-mail to the Editor at max412@gmail.com or alternatively to the address shown in the footer.

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.

