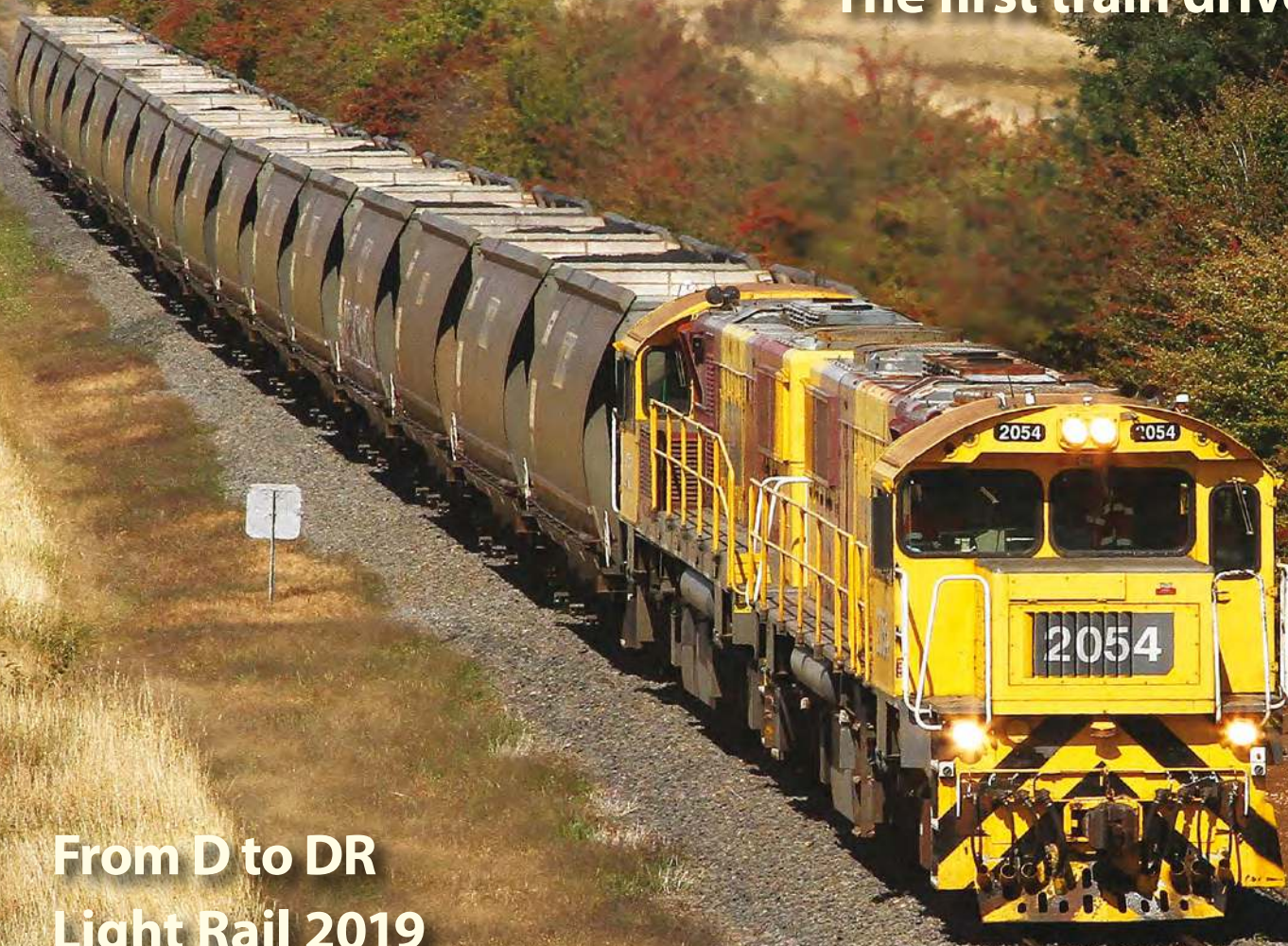


April 2019

# Railway DIGEST™

**Remember when:**  
**The first train drivers**



**From D to DR**  
**Light Rail 2019**  
**North Tassie trappings**  
**South East Queensland standard gauge**  
**The *Great South Pacific Express* goes west**  
**New loops, signalling & platform in the Central West**

Published monthly by the Australian Railway Historical Society (NSW Division)







**Editor** Bruce Belbin  
**Assistant Editor** Shane O'Neil  
**National Affairs** Lawrance Ryan  
**Editorial Assistant** Darren Tulk  
**International** Ken Date  
**General Manager** Paul Scells  
**Subscriptions:** Ph: 02 9699 4595 Fax: 02 9699 1714  
**Editorial Office:** Ph: 02 8394 9016 Fax: 02 9699 1714  
**ARHS Bookshop:** Ph: 02 9699 4595 Fax: 02 9699 1714  
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## Contact email addresses

**Editorial** editor@railwaydigest.com.au  
**Photographic contributions** photos@railwaydigest.com.au  
**Articles/submissions** articles@railwaydigest.com.au  
**Subscription enquiries/change of address** mail@arhsnsw.com.au

## Contributors

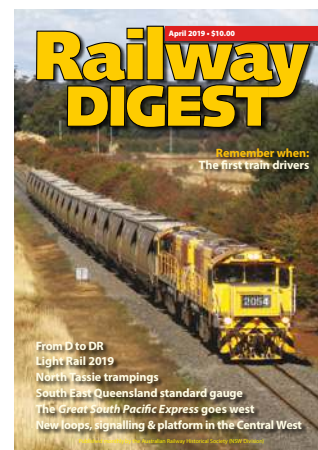
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 www.brisbanetimes.com.au , www.engineersaustralia.org.au ,  
 www.geplus.co.uk , www.graincentral.com

**Cover:** With No. 46 coal train's 16 bulging-bellied hoppers in tow, TasRail Clyde/EMD units 2054 and 2051 run parallel to the Bass Highway at Hagley en route to the regular cross and crew swap with No. 31 paper train at Deloraine, on Wednesday 20 February. Malcom Holdsworth

**Opposite:** Former NSWGR locomotives 3526 and 3265 put on a good show climbing Redbank, near Thirlmere, returning from Picton with a shuttle service during the NSW Rail Museum

**April 2019**  
 Volume 57, Number 4



## Features

### Central West NSW: New loops, signalling and platform 30

In recent years a resurgence in intrastate freight business, especially port-related container services and additional passenger services, has led to an increase in rail activity on the NSW Western Line. As John Hoyle reports, this has led to the installation of loops at Rydal and Georges Plains, and follow-on signals at Wimbledon. Another change to Central West NSW rail infrastructure is the provision of a new platform at Millthorpe, located between Blayney and Orange, and soon to benefit from an additional daily passenger service.

### From D to DR 34

Phil Melling gives us a brief, well-illustrated history of two interesting locomotives that were originally built for the Western Australian Government Railways, later rebuilt in New Zealand for use in Tasmania, then finally returned to Western Australia.

### Brisbane to the Border: SE Queensland standard gauge 38

The 111-kilometre standard-gauge line in southeast Queensland, lying between Brisbane and the Queensland/NSW border, has never been high on the list for railfans. Compared to its southern states counterparts, it carries fewer trains, has less motive power variety, fewer operators and the majority of traffic runs after dark. However, as Mike Martin explains, the last 25 years have seen a number of developments on this stretch of track that merit attention.

## Regulars

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**Thirlmere Festival of Steam on Sunday 3 March.** Vernon Fernandez

**Back cover upper:** On Saturday 2 March, a Metro Trains Melbourne *XTrapolis* set arrives at Camberwell with a terminating service.

Trains were terminating there due to weekend trackwork. John Scott  
**Back cover lower:** CFCLA UGL/GE C44 ACI units CF4412 *Black Caviar* and CF4411 *Revenue* lead Crawford's Freightlines run 2194, a loaded log train from Goulburn to Port Botany, through Leumeah on Monday 21 January. Joshua Stanbury

## LIGHT RAIL 2019

Following on from last year's successful event in Sydney, the Australasian Railway Association's Light Rail conference 'LIGHT RAIL 2019', was held at Melbourne's Crown Conference Centre, over Monday 4 and Tuesday 5 March, with a theme of 'Light Rail: Shaping a sustainable future'. The conference provided a record number of delegates with the opportunity to experience 24 presentations by a diverse range of industry professionals, with subjects ranging from 'Moving Cities: Developing the climate protection, energy efficiency and customer experience of the future' and 'The role of light rail in an integrated transport network', to 'How catenary-free technology solutions are transforming cities'.

Being in the city that features the world's largest light rail network, it was no surprise to receive two interesting presentations on the current plans to upgrade and modernise the Melbourne network; the first by Vicki Ward MP, Parliamentary Secretary for Public Transport Infrastructure, Victoria, and the second, more comprehensive, report by Nicolas Gindt, CEO, Yarra Trams, Keolis Downer.

Queensland's Gold Coast Light Rail has been a great success story, and Phil Mumford, CEO, GoldlinQ, spoke about many recent developments, from how the system moved huge numbers during the Commonwealth Games, to plans for the recently approved Stage 3A extension to Burleigh Heads.

The recently opened Newcastle Light Rail was also well covered. Andrew Fletcher, Director Corporate Affairs, Keolis Downer Hunter, looked at the big-picture issues of how the NLR is performing so far and how it fits into the city's overall public transport function, and Garry Lomas, Project Director – Newcastle Light Rail, Downer, provided some fascinating insights into what proved to be (despite a few inevitable hiccups) a very successful construction project.

The long-awaited Canberra Light Rail, due to open shortly, was not forgotten, with Emma Thomas, Director-General, TCCS, ACT, bringing us up-to-date, and discussing plans for Stage 2.

This year, for the first time, the event included a Conference Dinner. Delegates enjoyed an excellent meal at the Showtime Events Centre, South Wharf, and were entertained by a lively address given by guest speaker, Steve Sammartino, Futurist and Business Technologist.

On Day Two, as the final event of the conference, Bombardier hosted an exclusive tour for LIGHT RAIL 2019 delegates at their Dandenong Rail Vehicles Production Site. An appropriate conclusion to what proved to be two very enjoyable and illuminating days.

Bruce Belbin

**Top right:** The second of two Industry forums held on Day Two discussed 'successfully engaging with stakeholders, government and customers'. Participants (left to right) were: Facilitator, Andrew Lund, State Political Reporter, Nine News, Brian Brennan, CO, Light Rail Operations, Transdev Australia, Sandra Valeri, Case Manager – Vic & Tas, ISCA, Belinda Coleman, Qld/NT Lead, Communication & Stakeholder Engagement, Aurecon, and Emilie van de Graaf, Director, Passenger & Network Innovation, Yarra Trams.

**Above right:** Loulou Hamad (left), Head of Communications, Australia, Bombardier, chaired the conference on Day One, while Naomi Frauenfelder, Executive Director, TrackSAFE Foundation, delivered a thought-provoking address on 'educating the public on light rail safety'.

**Above far right:** In the afternoon Technical Sessions, Associate Professor Anjum Naweed, from Central Queensland University, gave an interesting and timely (given an incident in Canberra a few days later) address on 'predicting and preventing Red Signal Breach incidents on light rail systems'.

**Above right:** Always an entertaining speaker, Marg Prendergast, Coordinator General, Transport Coordination, Transport for NSW, didn't disappoint, delivering an engaging and informative address on light rail and other public transport initiatives on the go in NSW.



**Above far right:** ENGIE Services was an exhibitor at the conference, and during the morning 'Networking and refreshment break', Technical Sales Manager, Arthur Koulianos was seen chatting with Rosalea Ryan from Track & Signal magazine.

All Bruce Belbin



## Aurizon Half Year results – earnings and volumes down

Underlying earnings before interest and tax (EBIT) dropped by 16 per cent to \$406 million and total rail volumes were down five percent compared with the equivalent period last year according to Aurizon's half year results released in mid-February. However, operating costs dropped by five per cent to \$783 million compared with the corresponding period in 2018, although that figure benefitted from a termination payment from Cliffs related to the end of the Koolyanobbing (WA) iron ore traffic in June 2018. (The mine was subsequently purchased by Mineral Resources.) The company's operating ratio increased from 69.0 per cent to 72.1 per cent. Coal revenue decreased by four per cent to \$888 million and bulk revenue dropped by 16 per cent to \$260 million, largely through the cessation of the Cliffs contract.

Total above-rail tonnage moved was 130.1 million compared with 136.3 million in the same period last year. Rail volumes were affected by the cessation of the Mount Gibson iron ore contract in WA (see February 2019 *RD*, page 38) and protected industrial action and weather events slightly affected coal haulage that dropped from 107.8 million tonnes to 106.5 million tonnes. Of that figure 76.4 million tonnes was moved on the Central Queensland network, 3.8 million in southern Queensland and 26.3 million in NSW. Aurizon operated 146 locomotives and 2,498 wagons at the end of the half-year report period. Average haul length was 203 kilometres.

In Queensland Linfox took over Aurizon's intermodal operations on 31 January (as reported in last month's *RD*, page six) but it will provide hook-and-pull services for Linfox under a 10-year contract (five + five option). The Townsville – Mount Isa freight service recommenced in October 2018 operating under a contract to Glencore but Aurizon's contract with Graincorp will cease in November this year (to be replaced by Watco). Federal Court ACCC proceedings relating to Acacia Ridge terminal were adjourned until February and the terminal remains under Aurizon ownership until resolution. Aurizon lodged a Central Queensland Coal Network Access Undertaking with the Queensland Competition Authority (QCA) that conforms to the final decision released by the QCA on 6 December 2018. Aurizon Network had been engaging with stakeholders (mining companies) on an alternative access undertaking and, while discussions are ongoing, no agreement has been reached. If an agreement can be reached with industry, Aurizon Network says it has the ability to lodge a Draft Amending Access Undertaking for consideration by the QCA. An approved Amending Access Undertaking would modify the conforming Access Undertaking to reflect any agreement reached with industry.

The company says operational efficiency improvements such as precision railroading (targeted to deliver \$50 million in benefits in 2021/22), a trial of European Train Control system in Central Queensland later this year, expansion of wagon condition monitoring in the Hunter Valley during 2019 and restructuring of support areas will drive down costs. Aurizon says the fundamentals of metallurgical and thermal coal remain strong, driven by steel and energy demand growth in Asia. The report says that the International Energy Agency estimates that south-east Asia coal-fired electricity generation is expected to increase by 192 per cent between 2015 and 2040 and 16 GW of coal-fired capacity is currently under construction in the region.

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**www.pocketmags.com**



AUSTRALASIAN RAIL  
INDUSTRY AWARDS  
SYDNEY 2019

## NOMINATIONS NOW OPEN!

Nominations for the Australasian Rail Industry Awards are now open, with 13 exciting categories to choose from.

The Awards are open to any individual working in the rail industry and any organisation operating in or affiliated to rail. The Awards promote diversity, excellence and innovation for the betterment of rail - all are encouraged to get involved. Nominations will close on Friday 19 April, so avoid the last minute rush and get in early.

Which category will you apply for?

Career Achievement  
Customer Service  
Employee Engagement  
Frank Franklyn Young Rail Specialist  
Freight Rail Excellence  
Innovation and Technology  
Permanent Way Institution Young Achiever  
Rail Sustainability  
Safety  
Systems Engineering  
TrackSAFE Foundation  
Workforce Diversity  
Young Rail Professional

Visit [www.railindustryawards.com.au](http://www.railindustryawards.com.au) to find out more about each category and to purchase tickets for the Gala Dinner to be held 11 July in Sydney.

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## Technology shaping cities

Organised by CEDA (Committee for Economic Development of Australia) and sponsored by GHD and Siemens, the *Technology shaping cities* event was held at Sydney's Four Seasons Hotel on Tuesday 12 March. In company with most other CEDA functions I'd attended, it was a two-hour lunchtime event, this time featuring three speakers.

Proceedings got underway just after midday, with the 142 attendees receiving a welcome address from Lee Kelly, *State Director NSW/ACT* of CEDA. Lee then introduced Mia Barnard, *Transport Market Leader – Sydney Region* GHD, who delivered the introductory address.

The first speaker was Rodd Staples, *Secretary, Transport for NSW*, and following some introductory remarks, he moved to the obligatory government-produced promotional video. However, his address then moved to a discussion of future scenarios and possible solutions to the problems they may engender. 'Super-commuting' with a mixture of public, active and shared transport was one well-promoted option presented. 'Why travel so much?' was another.

An excellent lunch followed, and at 1.00pm Mia returned to introduce the next Speaker, Anna Chau, *Acting Chief Executive, Infrastructure Australia*. Anna pointed out that, over the next 20 years, Sydney's population is expected to grow by around 2.7 million! To cope with this, she believes that serious investment in public transport is vital, with the Metro West project, in particular, considered a high priority. In the short term, Anna pointed out that Sydney's airport and Illawarra lines are already running at capacity, and require substantial investment sooner rather than later.

Charles Page, *Head of Business Development and Strategy, Siemens Mobility*, then took to the stage. He began his address with the allegory of the giant spider in an episode of the television series *Dr Who*. He pointed out that, as the spider grew ever larger, its life support systems were unable to sustain it, and it died. The same danger faces today's rapidly growing cities, and Charles spoke of a future where



Anna Chau, Acting Chief Executive of Infrastructure Australia, speaks at the CEDA lunchtime event.

technology can assist those cities to survive and thrive – by enabling people to work from anywhere, and to move about when they need to by a combination of heavy rail, rail light, electric buses and electric autonomous vehicles. While he sees long-distance road and rail freight moving by hydrogen power.

Following his address, Charles joined Anna Chau, Rodd Staples and Mia Barnard for a moderated discussion, while the group also fielded several questions from the audience. This wrapped up around 1.55pm, when Mia stepped up to the lectern to deliver a Vote of Thanks, and at 2.00pm another very informative CEDA event came to a close. *Bruce Belbin*

## Explosion of big trucks on Australian roads: Real trains; not road trains must be Australia's freight future, says FORG Chair

Freight on Rail Group (FORG) of Australia Chair Dean Dalla Valle said at a time when Australians want safer roads, less traffic congestion during their daily commute and lower carbon emissions, federal and state government policies are largely geared to rolling out heavier and longer trucks.

"Australian roads and highways are fast becoming conveyor belts for millions of kilometres of truck movements for freight which should be transported by rail," said Mr Dalla Valle.

Based on data from Australian Bureau of Statistics, from 2008 to 2018, there was 27 per cent increase in registered articulated trucks like B-doubles, B-triples and road trains. The 2018 Motor Vehicle Census recorded more than 100,000 registered big trucks in Australia.

Mr Dalla Valle said in the past trucks provided the 'first and last mile' journey of freight from a rail head to a supermarket, distribution centre, warehouse, fuel depot or grain silo.

"Today, federal and state government policies are turbo-charging the roll-out of bigger dimension and heavier trucks with greater access to federal, state and council roads; encouraging an explosion of truck trips over a wider range of routes and distances," said Mr Dalla Valle.

As a case in point, in 2018, the National Heavy Vehicle Regulator approved the roll-out of a 105-tonne 36.5-metre B-Quad truck on select routes between Victoria and Queensland.

Mr Dalla Valle said taxpayers and ratepayers were increasingly paying a higher hidden price for government policies that fuel the roll-out of bigger and heavy trucks on our roads.

"Countless studies and reports—many commissioned by government agencies—have highlighted the growing negative impact of allowing too many trucks on too many roads.

"More trucks mean increased severity of road accidents, heightened pressure on already over-stretched maintenance budgets and a rise in vehicle emissions," said Mr Dalla Valle. "The majority of Australian's would like to see freight hauled by real trains, not road trains."

Mr Dalla Valle said a 2017 Deloitte Access Economics report found for every tonne of freight hauled a kilometre, road freight produces 14 times greater accident costs than rail freight and 16 times as much carbon pollution. "A 1,800-metre freight train hauling containers is equivalent to removing 70 B-Double trucks from our roads. These facts put rail freight firmly on the right side of every debate," he said.



## Australasian and UK rail industries' partnership deal

UK and Australasian rail trade bodies have signed a Memorandum of Understanding that will lead to greater co-operation and collaboration between the two industries. The UK Railway Industry Association (RIA) and the Australasian Railway Association (ARA) announced the partnership at a reception on Thursday 7 March, hosted by the British Consul-General in Australia, as part of a UK rail trade delegation visit.

The partnership will see the two associations work more closely together, benefiting both organisation's memberships, and helping to boost each country's export potential in rail.

The agreement will see:

- The exchanging of information linked to research and innovation (not IP protected) undertaken in either country;
- Sharing and exchanging information and approaches relating to skill needs, training and the attraction of career aspirants to the rail industry;
- Closer working arrangements in trade fairs and rail exhibitions in either Australia, the UK or in third countries, where appropriate;
- Access to meeting facilities in the offices of ARA or RIA by members of either organisation.



ARA's Bob Herbert and RIA's Neil Walker (seated L to R) sign the MOU, witnessed by Sydney Trains' CE Howard Collins and HM Consul General Michael Ward. ARA

## Railway people

### Beca appoints new transport modelling expert

Transport modelling and planning expert Paul Stanton has joined Beca as a Principal in the Transport and Infrastructure team, based in Melbourne.

Beca's transport team, including planners, modellers and digital technology experts is experiencing growing demand as Australian cities face unprecedented growth. Applying integrated transport and land use planning, advanced modelling techniques and creative design as well as new technologies, the team partners with government and private sector clients to create smarter, more liveable cities.

Paul joins Beca with 37 years of built environment experience across the public and private sectors in the UK and Middle East. Most recently, he was Head of Modelling (Middle East) at IBI Group.

Paul began his career in architecture and surveying, transitioning

to transport planning in the 1990s – initially in local government and then at several international consultancies. His work has covered policy development, business case preparation, transport master planning, strategic transport modelling, smart travel and urban design.

"I'm particularly excited about Beca's approach to shaping our cities and making them more sustainable and resilient – particularly as it sometimes challenges current thinking behind how we plan and fund city growth," he says.



Paul Stanton

### PROFILE: Steve Butcher, John Holland Rail

From sweeping platforms at train stations to introducing the Dubai Metro, John Holland's Executive General Manager – Rail, Steve Butcher has seen his love of railways take him around the world.

After joining John Holland last year, he has spearheaded its plan to expand into international markets and has just led its acquisition of signalling, mechanical and electrical experts RCR O'Donnell Griffin.

Unlike other leaders in the industry, Steve's career started in an unconventional way. "I was always really passionate about rail, and so I wanted to work on trains as early as I could. When I started, I was too young to join the train crew so I started as a cleaner, sweeping train platforms," he said. "That took me to working on train crews, then on railways around the world including Northern Rail in the UK and introducing the Dubai Metro when I worked at Serco.

"One of the key things to delivering major rail projects is vision. I remember everyone saying that no-one would ever use the Dubai Metro – and now it has 150 million passenger journeys a year. To be able to see that potential from a design on a piece of paper, to a successful operation is what drives me".

Steve sees huge opportunity in the rail industry in Australia, and internationally. "My biggest challenge at the moment will be to grow

the John Holland rail business not only here, but internationally. Rail is in our DNA here, in Australia – we've been around for 70 years, and we want to expand our footprint overseas, that is what I am passionate about" he said.

The company has recently opened its first office in Canada.

"My long-term plans are to ensure we can offer our people long-term rail careers and the chance to work on John Holland projects around the world. I am also focused on growing our operations and maintenance capabilities. We are one of the only rail businesses that can not only build you a railway but operate it too".

As a self-confessed "train nerd" Steve said he is looking forward to the continuing boom period for the rail industry. "Especially in Australia, we are seeing an unprecedented growth in railway projects both in cities and regional areas, this is an exciting time to be in the rail industry and to be a part of the major growth and change in cities such as Melbourne and Sydney".



Steve Butcher





During March an extensive program of training and testing saw continuous operation of Capital Metro light rail vehicles along the full length of the 12.8 kilometre route between the Canberra CBD and the northern suburb of Gungahlin. In the early afternoon of Saturday 9 March, CAF Urbos 3 tram number 011 negotiates the crossover at Alinga Street, the CBD terminus of Stage 1 of the national capital's light rail network, bound for Gungahlin Place. Lawrance Ryan

## Canberra light rail ready for April launch

Canberra Metro, the ACT's light rail network will take its first passengers in April, pending final approval from the territory government and independent regulators. Speaking on Friday 1 March ACT Minister for Transport Canberra and City Services Megan Fitzharris could not provide a specific date for the service's launch, but said she expected the light rail would start moving passengers on a Saturday in mid-April.

Canberrans would be offered free public transport on the start date to mark the occasion, which will be followed soon after by the launch of the city's new bus network.

Canberra Metro chief executive Glenn Stockton said the operator was in "constant communication" with the ACT government and the independent regulator, Office of the National Rail Safety Regulator, and was confident the network would get the green light in time for an April start date. Ms Fitzharris said she was assured the independent approvals would be granted.

It came as Ms Fitzharris and Mr Stockton toured the light rail network's depot and control centre in Mitchell, which is now fully operational. The network's 14 vehicles will be based at the depot, where they will receive cleaning and maintenance.

The control centre will provide 24/7 surveillance of the network, including monitoring CCTV cameras at each of the line's 13 stops. Centre staff will relay messages to passengers about any delays or incidents along the network, and coordinate emergency responses as required.

In another milestone for the project, new rules giving trams priority to road vehicles, cyclists and pedestrians at intersections along the route came into effect on Friday 1 March.

New signs and traffic signals have been installed to remind motorists and pedestrians that they are now travelling alongside a light rail service.

Friday, 1 March also marked the unveiling of Canberra Metro's re-branded customer support team, which will now be known as CMET. The team will wear distinctive red tops and grey Akubra hats, in a nod to the city's distinction as the Bush capital.

**150th**  
Celebration of the arrival  
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Goulburn Rail Heritage Centre  
Saturday, 25 May 2019 – Sunday, 26 May 2019  
10.00am – 4.00pm

Enquiries: 4822 1210 • [glrps12@optusnet.com.au](mailto:glrps12@optusnet.com.au)



## Canberra to Eden railway line study to be completed by June

A study to assess the feasibility of a Canberra to Eden railway line (see October 2018 *RD*, page 11) will be completed before the end of June, with the contract to carry out the study expected to be awarded by Tuesday 2 April.

The NSW government announced \$1 million in funding for the study in August 2018, after independent engineering consultant Edwin Michell developed a concept plan, on behalf of the Cooma and Monaro Progress Association that proposes to rebuild and extend the existing rail line between Queanbeyan and Bombala.

Under the proposal, the disused Queanbeyan to Bombala railway would be rebuilt to modern standards, and a new extension added, linking Bombala to the deep-water Port of Eden on Twofold Bay. A short northern extension is also proposed into the ACT, extending the railway to Canberra Airport. The railway is proposed to be mixed-use, with a 160km/h passenger tilt-train service operating in tandem with freight services.

Tenders for the study, commissioned by John Holland Rail Pty Ltd, on behalf of the NSW government, closed on Wednesday 27 February.

The study, which must be completed by Friday 28 June, will identify the freight and passenger demand for the route, as well as the timing, cost and engineering requirements of the proposed project.

Mr Michell, an aerospace engineer based in Bungendore near Canberra, has previously estimated construction of the project at \$2.27 billion, or \$2.95 billion including contingency funding.

During a presentation at the Engineers Australia offices in Canberra in October last year, he said construction of the Canberra to Cooma section of the route carried an estimated cost of \$386 million, with Cooma to Bombala likely to need \$261 million. The Bombala to Eden section would require an estimated \$1.06 billion, with almost three-quarters of the cost to be spent on bridges, tunnels and earthworks. Contractor and client costs, as well as contingency funding, would make up the remainder of the estimated spend.

In his presentation, Mr Michell said the line had eight potential stations – Canberra Airport, Michelago, Bredbo, Cooma, Nimmitabel, Bombala, Towamba and Boydtown in Eden.

“All ... have the potential for high-quality residential development nearby at relatively low cost,” he said.

It would take two hours and 19 minutes to travel from Canberra to Eden, under Mr Michell’s proposal, compared to a journey of three hours and 11 minutes by car. He said passenger demand was estimated at 3500 people per day, capturing 10 per cent of existing car traffic and all coach passengers. The estimate also factored in population growth, cruise passengers travelling from Eden to Canberra on shore excursions, and Canberrans heading to the coast for seaside holidays.

“If we were to build this railway tomorrow, there’s obviously not going to be anything like 3000 seats a day demand from the small towns on the Monaro,” Mr Michell said. “But consider that the ACT’s population growth rate over the last year was the equal highest in the nation, increasing at about 9000 people per year.

“If just 5 per cent of these new Canberrans were to decide not to settle in the city, but in regional townships where they could commute to work by fast train, within three years there would be [an estimated] 1500 return trips per day, and that’s just the commuter demand”.

Mr Michell estimated freight demand for the railway at about 5.3 million tonnes a year by 2025-26.

Mr Michell said providing a rail link to Eden was timely, with freight customers looking for alternatives to existing ports because of congested transport corridors, increasing energy costs and expensive port charges. “The natural advantages of Eden as an anchorage would ensure its strategic importance to NSW once suitable transportation infrastructure was in place,” he said.

He concluded saying passengers were essential to the project to help pay for the construction, and freight equally important to ensure its long-term viability.



The combination of RTS/EMD units RL305 and RL302 ‘bookending’ Goodwin/MLW unit 442s1 is an unusually matched set of locos for an SSR train, particularly since the RLs started life as rebuilds of 442 class. The train is approaching Junee North Box from the line to Narrandera on Monday 4 March, and with Junee Yard full, the train ended up on the main line between the two platform roads. The train loading was domestic grain, enroute to the Maldon flour mill. Peter Clark





**Above:** Oscar Set H8 stands at Kiama ready to form the 12.55pm return service to Sydney (Run C452) on Thursday 17 January. This train will terminate at Central rather than Bondi Junction. Neville Pollard

**Below:** On Wednesday 16 January, locomotives 1435, QBX002 and 1428 head downgrade toward Exeter with a cement train. Steve Munro





NR107, NR110 and AN9 lead 3YN2 Pacific National steel train through Bathurst on their way to Newcastle from Whyalla in South Australia, on Wednesday 13 March. This service is one of the relatively few Pacific National east-west interstate services that does not travel between Sydney and Parkes via Cootamundra.

Josh Noonan



## Bathurst businesses welcome second daily rail service announcement

A second daily rail service to Sydney will be a boost for local businesses, says Bathurst Business Chamber president Angus Edwards.

On Tuesday 19 February Bathurst MP Paul Toole announced a second daily service would be up and running by 2020 to complement the *Bathurst Bullet* service that has been running since 2012 (see December 2012 RD, page 26).

The second service will leave Bathurst around 7.30am each weekday and leave Sydney for the return trip around 3pm, getting passengers back into Bathurst by 7pm. Mr Toole confirmed there would also be a second weekend service to and from Sydney but advised that timetable details were still being finalised. (See page 35, this issue.)

Mr Edwards said the *Bullet* was already a popular choice for local business people with meetings to attend in Sydney but the late return to Bathurst – 9.32pm weekdays and 9.34pm weekends – was a problem.

“This second service will have the option of a 3pm departure out of Sydney so it will be perfect for people with morning meetings who can then be home by 7pm,” he said.

Rail Action Bathurst chairman John Hollis welcomed the announcement of a second service, saying *Bullet* patronage numbers showed it was needed (see October 2018 RD, page 11). “This is recognition that Bathurst is growing, recognition of the patronage of the *Bullet* and

recognition of the hard work of the members of Rail Action Bathurst all those years ago”.

Meanwhile, the announcement of a second day/return Bathurst service has also created interest in the nearby city of Orange where members of the Orange Rail Action Group (ORAG) may be the catalyst for the extension of the service further west.

ORAG member Neil Jones said the additional service, scheduled to depart Bathurst for Sydney at 7.30am, is an opportunity for the new train to be stabled in Orange.

“Access to the current early morning 5.46am *Bathurst Bullet* service requires the catching of a 4.55am coach from Orange, or driving by car to Bathurst,” Mr Jones said. “Orange and region residents need and deserve a more convenient and direct train service to Sydney, without having to take the coach connection to Bathurst or Lithgow”.

Mr Jones said the proposed new *Bullet* service could start its journey in Orange at 6.15am, then also connect to Millthorpe and Blayney, and still arrive in Bathurst by 7.30am, its scheduled departure time for Sydney.

A petition calling for a daily return service, track upgrades and new trains has attracted more than 7000 signatures and is approaching the necessary 10,000 mark that will enable it to be tabled in NSW parliament by Member for Orange, Phil Donato.



12 Braidwood Road, Goulburn, NSW

Open 10.00am–3.00pm daily (except Mondays, Christmas Day, Boxing Day & Good Friday)

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Former Victorian Railways, and Pacific National, Clyde/EMD Y Class locomotives Y151 and Y115 rest between shunting duties at the Ettamogah freight hub at Ettamogah, north of Albury, on Friday 22 February. Peter Sansom



A crowd of over 500 gathered to witness the re-opening of Millthorpe railway station on Friday 15 March. Dignitaries, including Sydney Trains CE Howard Collins, arrived on WT27 Dubbo XPT where Member for the state seat of Bathurst, Paul Toole, had the honour of cutting the ribbon to formally commission the newly extended platform, assisted by Mayor of Blayney Shire Cr. Scott Ferguson and the captains of Millthorpe Public School. Speeches were held in the station forecourt and a plaque commemorating the event was unveiled. The Lachlan Valley Railway Society operated a special service from Orange to Blayney and return hauled by 4716, giving Millthorpe residents the first chance to board at train at their local station since 1984. Lawrance Ryan





**Above:** Each morning the *Xplorer* cars from Armidale and Moree are amalgamated at Werris Creek before continuing their journey to Sydney. In this Saturday, 16 February 2019 scene the four-car section from Armidale is in the platform while the two-car train from Moree has arrived via the track behind the station building and is now reversing to couple up to the Armidale portion. This ritual, which dates back to the introduction of the air-conditioned DEB railcar sets operating the Northern Tablelands Express in 1959, is reversed in the afternoon when the Down *Xplorer* arrives from Sydney. The *Xplorer* DMUs are due to be replaced by CAF-built DEMUs from 2022. The Rail Journeys Museum is located in the station building and in an adjacent area is the Australian Railway Monument commemorating railway employees who lost their lives in the course of their employment. John Hoyle

**Below:** EL57 and EL56 on AS913 coal train from Austar's Pelton mine approach Maitland High Street on Friday 22 February. Mitch Campton







Thursday 17 January at 6.46am. The morning mist is still lingering in the valleys just to the north of Moss vale, as an *Endeavour* set led by 2862 takes its passengers south towards Goulburn. Steve Munro

## Tenders open for Cowra Lines Reinstatement Feasibility Study

In a move that received little pre-publicity, John Holland Rail – at the request of Transport for NSW has invited tenders for the provision of a study into the feasibility of reinstatement of the Cowra rail lines in the NSW Central West.

The Blayney to Demondrille cross-country line (approximately 179 kilometres linking the NSW Main Western and Main Southern lines), the Koorawatha to Grenfell branch (approximately 51 kilometres) and the Cowra to Eugowra branch (approximately 80 kilometres) - collectively referred to as the Cowra Lines - were progressively suspended from operation between 1991 and 2009 due to low traffic volumes, high maintenance costs and safety concerns. The Cowra lines form part of the NSW Country Regional Network (CRN) and are managed by John Holland Rail (JHR).

The purpose of the Cowra Lines Reinstatement Feasibility Study (the Study) is to provide sufficient information to establish the economic case, for or against, the upgrade of the existing infrastructure to reinstate all or part of the Cowra Lines.

The tender calls for the delivery of five key outputs:

- Demand for the Cowra Lines,
- Engineering Assessment (including provision of a scope of works and estimate of the costs (+/-50%) to restore the line to Class 1 standard for 25 tonne axle load at 80km/h with sensitivity tests for 25 tonne axle load at 60 km/h and 23 tonne axle load at 80 km/h),
- Land use and environmental assessment,
- Economic and financial analysis; and
- Benefit and cost estimation.

The invitation to tender follows the production of a pre-feasibility assessment of Blayney – Demondrille cross-country line completed at the request of the NSW Department of Premier and Cabinet by engineering and project delivery group Lycopodium in 2018.

While details of the pre-feasibility assessment have not been released, an anticipated freight task of over half a million tonnes per annum (excluding seasonal grain) has been identified in previously

prepared reports as potentially using the upgraded cross-country line.

The Lycopodium report also took into consideration the financial benefits to be gained by using the cross-country line as an alternate route for freight that would otherwise pass through the Sydney metropolitan area en route to its destination, and the economic benefits to regional employment and tourism of allowing the Lachlan Valley Railway, one of the state's largest rail heritage operators, to return to its home base at Cowra Locomotive Depot.

It is assumed that the Benefit Cost Analysis using these externalities may have been strong enough to progress the current study.

Mayor of Cowra Cr. Bill West said he is happy to hear that the Cowra line reinstatement is still under consideration. However, like many others associated with ten years of attempts to reopen the lines, he is concerned that yet another study will only further delay the project.

"Reopening of the Cowra Lines has been a topic of discussion since the day the last of the lines closed in 2009 and we still don't seem to be any closer to a final decision", Cr West said.

"Last year's Lycopodium report was completed at the request of the Department of Premier and Cabinet and took into considerations externalities other than just 'take or pay' freight guarantees required by previous studies. Add these considerations into the mix and the benefits of reopening at least the Blayney –Demondrille cross-country line becomes compelling," Cr West continued. "It is disappointing that this report has not been made publicly available".

"I hope that the additional information gathered for the Lycopodium report is considered in the current study and that sufficient time is allow for the proper presentation and consideration of the reinstatement project", Mayor West concluded.

Tenders for completion of the Cowra Lines Reinstatement Feasibility Study opened on 21 February and closed on 27 March. The contract is expected to be awarded by 30th April 2019. The completion date for the project is 26 July 2019.



## Around Sydney

### Fifth tunnel boring machine arrives for Sydney Metro harbour dig

Sydney Metro's fifth mega tunnel boring machine arrived in mid-February to begin work on the rail crossing under Sydney Harbour.

Tunnel boring machine (TBM) *Kathleen* has been assembled at the site of the new Barangaroo metro station, to start tunnelling under the Harbour in the coming months.

NSW Minister for Transport and Infrastructure Andrew Constance said this specialised TBM is named after Kathleen Butler, who played a vital role in the construction of the Sydney Harbour Bridge as the technical advisor to legendary engineer John Bradfield.

Specially designed for the geological conditions under Sydney Harbour, the 975 tonne Herrenknecht slurry TBM will dig twin metro rail tunnels from Barangaroo to Blues Point.

*Kathleen* arrived by ship at White Bay and was transported by barge to Barangaroo Station near Hickson Road.

*Kathleen* will start her journey deep underground later this year from a massive cavern next to Barangaroo Station, excavated to allow trains to change tracks on the approach to the Sydney Harbour crossing.

After building the first tunnel, TBM *Kathleen* will have her cutter head and main section lifted out at Blues Point, on the northern side of Sydney Harbour, and placed on a barge to return to Barangaroo. The machine's support trailers will be pulled back to Barangaroo inside the first tunnel. *Kathleen* will then build the second tunnel under Sydney Harbour before being retrieved at Blues Point and taken away by barge.

The machine is expected to tunnel through clay, silt and sediment and will use state-of-the-art tunnelling technology to safely make its way under the harbour. Each tunnel is about one kilometre long.

Traditionally tunnellers look to St Barbara for protection and tunnel boring machines are given female names.

In 1924, John Bradfield acknowledged the incredible work done by Kathleen Butler as his only assistant in preparing the specification for the Sydney Harbour Bridge. Ms Butler was the first woman in Australia to have such a senior role in managing a project of this scale.

TBM *Kathleen* will join the four borers currently digging from Marrickville and Chatswood towards the harbour's edge (see December 2018 RD, page 14 and January 2019 RD, page 14). Together all five TBMs will deliver twin 15.5 kilometre rail tunnels for Australia's biggest public transport project.

### New commuter car parking spaces ready for Sydney Northwest Metro opening

A total of 4160 new commuter car parking spaces have been completed along the route of the Northwest Metro rail line, which will open to commuters from Rouse Hill to Chatswood within months.

The Sydney Metro Northwest car parks have been established at:

- Tallawong (35 kilometres from Chatswood) - 1000 spaces,
- Kellyville (30 kilometres from Chatswood) - 1360 spaces,
- Bella Vista (28 kilometres from Chatswood) - 800 spaces,
- Hills Showground (Castle Hill - 23 kilometres from Chatswood) - 600 spaces; and
- Cherrybrook (19 Kilometres from Chatswood) - 400 spaces.

There are more than 340 spaces for bikes, 16 new bus stops, 52 taxi spaces and provisions for more than 100 kiss and ride spaces across the Sydney Metro Northwest line.

Sydney Metro is being extended from the north west into the CBD, with services to start in 2024 - when Sydney will have 31 metro stations and a new 66 kilometre standalone metro railway.



UGL/GE C44aci units PHC001 *Carrot* and PHC002 *Spud* power through Hawkesbury River on the daily Crawford's/Sydney Rail Services freight service No.4190 from Sandgate to Port Botany on Thursday 31 January. Simon Li



## Mount Isa line flood damage recovery plan

In late February Queensland Rail (QR) created a dedicated taskforce to lead recovery of more than 200 kilometres of flood-damaged track on the Richmond – Oorindi section of the Townsville – Mount Isa line. QR is mobilising more than 400 employees and contractors to work on repairs. QR CEO Nick Easy said the coordinated recovery teams would allow the line's repair time to be condensed down to eight to twelve weeks, subject to favourable weather and construction conditions. Mr Easy said that repair and recovery works for the remaining damaged section between Richmond and Cloncurry were on schedule, with crews progressing from both east and west. Subject to weather conditions this would allow the line to reopen between late April and mid-May this year.

QR said the dedicated taskforce would coordinate the efforts of engineers and track workers – including those brought in from South East Queensland – in addition to surveyors, earthworks, excavators, truck operators and traffic control. The taskforce will also be part of the recovery of the Pacific National train at Nelia, east of Julia Creek.

Pacific National is finalising its recovery plans for locomotive 8317, wagons and products, with support from Queensland Rail and Glencore. QR plans to build a temporary deviation around the derailment site so that rail services can be resumed in the event that the recovery of the train takes longer than the remainder of the repair works on the Mount Isa line. In early March Pacific National was establishing a crane pad and access road to enable recovery work to start and QR was undertaking surveying and early earthworks for the deviation.

Following those repairs QR says the focus will move to 150 damaged sites, spanning 200 kilometres west of Richmond through to Oorindi. The damage between Richmond and Oorindi includes track washouts and scouring, 16 damaged rail bridges, damage to track formations, and many locations where access roads, culverts and drainage have also been damaged or washed away. Two ballast trains are positioned at either end of the damaged section and QR says it will be working closely with earthworks contractors to repair access roads, track formations and surfaces, and replace ballast and track from both east and west. A number of critical sites requiring repairs remain impaired by wet ground conditions, and to combat this, QR has arranged for three kilometres of plastic mats, or 28 semi-trailer loads, to be delivered to site and allow the start of constructing temporary access roads at several locations, including the Gilliat River and Eastern Creek rail bridges. The teams will continue to utilise this matting as required to build access roads in areas that remain wet as repairs continue.

On 4 March QR completed repairs to the 113 km section between Hughenden and Richmond with work completed at 50 damaged sites. Crews then moved on to repair the 145 km Richmond to Julia Creek section. The magnitude of the repair works is illustrated by the need to accommodate the 400 workers at Richmond and Julia Creek. QR says accommodation proved to be a significant challenge for the recovery task but after partnering with the Department of Public Works and Housing workers camps have been established in the two towns. A 60-bed camp has been established at Richmond and a 120-bed camp at Julia Creek to accommodate recovery works at Nelia. Local contractors have been engaged to transport mobile, stackable buildings on trailers that will house the workers unable to be accommodated in local motels and caravan parks and local suppliers in each town have been hired to provide food, cleaning and supplies to the camps.

By early March QR had completed the following works:

### Eastern Track Team:

- Ballasting and resurfacing completed Hughenden to Richmond and this section declared fit for rail traffic
- Bridge works at O'Connell Creek and Carragh Creek completed
- Track formation rebuild at O'Connell Creek completed and track relaying commenced
- Track rebuild at Carragh Creek completed

- Chatfield Creek bridge repairs have commenced
- Access roads being constructed between Maxwellton and Nelia
- Washout repairs to many of the sites ahead of schedule to allow for earthworks.

### Western Track Team:

- Site access has been built from Goldring Street to Julia Creek bridge
- Compacted rockfill has been built up on both sides of the rail embankment in preparation for formation works from Gilliat to Eastern Creek
- Formation works have been completed from Gilliat to Tibbarri in preparation for the relaying of rail and ballast
- Contractors are completing installation of compacted rockfill and capping fill across several sites.

Following the reopening of the Mount Isa line between Townsville and Richmond QR plans to implement temporary road transport west of Richmond for some freight until the Julia Creek to Cloncurry section is repaired. Glencore is planning to truck output from its Mount Isa mine to Hughenden and transfer it to rail while Incitec Pivot's fertiliser works at Phosphate Hill will transport its output to Richmond for transfer to rail. Incitec Pivot says that depending on when the line reopens and the extent of mitigating measures including using limited road transport, the company expects to see earnings reduced by approximately \$100 – 120 million.

## Queensland Rail maintains strong focus on SPAD prevention

Queensland Rail has achieved the lowest Signal Passed at Danger (SPAD) rate in its organisations' history, following the implementation of a dedicated 'SPAD Prevention Taskforce' in late 2017 and a broad range of additional SPAD-prevention controls and initiatives.

"Safety is Queensland Rail's number one priority, and we're extremely pleased to have seen our SPAD rate decrease steadily since February 2018, to the point where we recorded our organisation's best-ever SPAD rate last month of 1.44 SPADs per million train kilometres travelled," Queensland Rail's CEO Nick Easy said. "This is a rate improvement of 43 per cent compared with January 2018, when we recorded a peak SPAD rate of 2.53."

"Since its establishment in October 2017, the SPAD Prevention Taskforce has brought together key employees from across Queensland Rail to deliver a comprehensive SPAD strategy and a broad range of new safety controls focused on human factors, driver behaviour, and increased levels of engagement with our staff."

"In October 2018, we also appointed an Organisational Psychologist specialising in human performance in safety critical settings to work directly with our train drivers and to help guide the work of the Taskforce."

"The taskforce has already implemented new toolbox talks for staff, increased one-on-one engagement with train drivers to improve SPAD awareness, and physical changes to signalling infrastructure at a number of locations including Normanby and Northgate."

Mr Easy said every SPAD on the Queensland Rail network was taken very seriously and investigated thoroughly to identify all contributing factors and to make any recommendations to prevent recurrence.

A Signal Passed at Danger, or SPAD, occurs when a train passes a red stop signal and occupies a section of track without authority to do so. SPAD incidents can occur for varying reasons, are industry-wide and faced by rail operators all over the world.

Drivers who are involved in SPAD incidents are removed from duty, undergo alcohol and drug testing, debrief and safety investigation, and must pass a competency assessment and undergo on-track monitoring to confirm their skills prior to returning to driving duties.

There have been no Citytrain collisions as a result of a SPAD on the South-East Queensland network since 1996.





**Above:** Fokker meets Next Generation Rollingstock. Two of Alliance Airlines' Fokker 70s rest up as Queensland Rail's Next Generation Rollingstock set 27 rolls into Brisbane's Domestic airport terminal with another service from the Gold Coast, on Friday 8 March. Rob Cook  
**Below:** Newly repainted EDI/EMD unit PN011 approaches Zillmere station on container train No. 8UP9 on Sunday 3 March. Luka Ruckels





## City tram loop and hospital site development top Adelaide City Council wish list for federal funding

An “immediate focus” on an Adelaide city tram loop and expansion to North Adelaide, as well as the completion of a City Deal centred around the Lot Fourteen development on the former Royal Adelaide Hospital site, are on the city council’s wish list for the looming federal election.

Lord Mayor Sandy Verschoor said the council was seeking federal support and funding for the two major infrastructure projects.

The SA government scrapped the former Labor government’s AdeLINK tram extension plans, arguing that many of the proposed routes, particularly a line east along The Parade to Norwood, was not required.

Federal Labor’s infrastructure spokesman Anthony Albanese has subsequently said that an incoming Labor government would commit to the AdeLINK plan.

Ms Verschoor said the city council supported an “immediate focus” on a city loop and an expansion through North Adelaide along O’Connell Street. “These projects would promote the use of a quiet, sustainable form of mass transit within the City of Adelaide, which has been proven to increase property values and encourage private development,” she said. “They would provide greater connections between residential, commercial and entertainment precincts, as well as to key destinations such as the Adelaide Oval”.

A federal Transport Department spokesman said the Government “is supporting dozens of projects right across South Australia” as part of more than \$5.3 billion funded. But he did not mention anything about trams.

The AdeLINK plan is still listed as a medium term (5 – 10 year) project on the Infrastructure Australia Priority list.

A sticking point could be who funds required upgrades of the King William Street bridge, which would be unable to bear the load of a tram if the line is extended to North Adelaide.

It is understood that it would cost \$10 million to \$15 million to structurally upgrade the bridge.

Ms Verschoor said the other main project the council was pushing for was the final negotiation and completion of a City Deal for Adelaide, centred around Lot Fourteen - the old Royal Adelaide Hospital site.

## Seaford and Tonsley line closures

The Seaford rail line will be closed between Adelaide and Brighton stations from first service Saturday 13 April with lines reopening from first service Monday 6 May 2019.

The closure is to allow connection of the Oaklands Crossing Grade Separation to the rail network.

As the closure is between Adelaide and Brighton, this will also impact the Tonsley train line for the same period. Trains will not run on the Tonsley line during this time.

- Seaford trains will run between Seaford and Brighton with substitute buses between Brighton and Adelaide.
- Tonsley trains will not run at all and will have substitute buses between Tonsley and Adelaide.

Substitute bus timetables will be available here in the weeks prior to the closure, as well as signage at affected stations along the Seaford and Tonsley train lines.

The rail closures are necessary to connect the rail line to the new Oaklands railway station. The new station will be operational from Monday 6 May.

A spokesman for Federal Minister for Cities, Urban Infrastructure and Population, Alan Tudge MP, said the Adelaide City Deal would be finalised “soon”.

## Eyre Peninsula grain movements to cease at end of May

Grain handling group Vittera will not renew its contract with rail company Genesee and Wyoming Australia (GWA) at the end of May for grain movement on the Eyre Peninsula (EP).

On Tuesday 26 February Vittera announced that it wants to ensure the company continues to provide growers and exporters with a competitive supply chain. To do this the company will move to transporting EP grain entirely by road from 1 June 2019.

Vittera commercial and logistics manager James Murray said it was essential Vittera provided an efficient and cost-effective service that met

Adelaide Metro A-City EMU set 4020 crosses 3000 class DEMU set 3130-3129 at Kilburn, in Adelaide’s northern suburbs, on Friday 22 February. John Scott







**With closure of GWA Eyre Peninsula grain haulage operations looming and drought affecting the 2018/19 harvest, it seems likely that the last train may already have run from Port Lincoln to Kimba. Back in happier times, 1203, 873, 850 and 905 rumble into sunny skies with Darke Peak looming large at rear. The empty train is doing at best 20 km/h on the severely degraded 3ft 6in gauge trackbed, on Thursday 24 May 2018. Malcolm Holdsworth**

the needs of growers and exporters to ensure South Australian grain was competitive internationally.

Viterra said the condition of the rail infrastructure, restrictions placed on operations, and cost have all contributed to rail no longer being seen as efficient or cost-effective to move grain, the only commodity transported on the system.

In 2015 Viterra entered a three-year agreement with GWA and extended it for a further 12 months in 2017 to allow Viterra, GWA, the South Australian Government, and other stakeholders to work through options for grain movement. The rail agreement was again extended for a further two months until 31 May to meet export shipping bookings for the 2018/19 season.

Viterra has spent \$128 million on maintaining and improving its supply chain and services to growers and exporters on the Eyre Peninsula since 2010, and is GWA's only customer on the EP line, which links Port Lincoln to Cummins, the junction of branch lines to Wudinna and Kimba.

One of the biggest concerns for Eyre Peninsula locals has been the state of the roads, with South Australian Senator Alex Gallacher raising in the Australian Senate recently that a move to complete road transport would be "catastrophic".

GWA released a statement to say it had notified its employees that Viterra would not be renewing its rail grain haulage agreement. (It is understood 33 full-time employees will lose their jobs as a result of closure of the rail network.)

The closure does not affect GWA's gypsum services operated

between Kevin and Thevenard (Ceduna) at the western end of the Eyre Peninsula network

The company said it had worked for the past four years with Viterra and the South Australian Government to explore all commercially viable future rail options and these efforts had been in the face of reduced grain volumes on rail, and the historic legacy of the cost to upgrade and maintain what is an under-utilised narrow-gauge rail network used only by one customer. GWA also said the rail network would remain open for the foreseeable future for any potential customer usage.

David Bascombe farms just outside of Port Lincoln in the Poonindie Hills and said his biggest concern will be the congestion on the roads and at the silos. He said the rail was shut for a short time last year and the turnaround from a 10-kilometre trip to Port Lincoln for him to deliver grain was four hours.

The state's peak transport industry lobby group, the South Australian Freight Council expressed its disappointment on the impending closure of the rail network. Council executive officer Evan Knapp said the South Australian Department of Planning, Transport and Infrastructure needed to publicly release the Eyre Peninsula Freight Strategy, a document prepared during 2017 and 2018. Mr Knapp said they need to see what this report details so they know what the options are for future grain movement.

He said they want to see options for keeping the rail line open.

South Australia's Transport Minister Stephan Knoll said he has the report and has been in discussions with Viterra and GWA for some time, but that the latest decision is a commercial one between Viterra and GWA.





**Above:** On the morning of Friday 15 February, DL 47, DL 41 and 8251 load grain at Mallala grain silo in South Australia. Much later in the afternoon the train will run into Two Wells and, after swapping the locomotives around, will depart Two Wells just after 5.30pm behind 8251, DL 41 and DL 47 as train SAG4, being designated as an Adelaide to Goobang (Parkes) train. This is one of many grain trains being operated at the moment by PN, Qube and SSR to transfer grain from South Australia, due to a severe grain shortage in the eastern states. Mike Martin

**Below:** Late afternoon on Monday 4 March, the sun catches SCT EDI/EMD units SCT14 and SCT004 on 1MP9, Melbourne to Perth freight, as they enter the Yard/Crossing Loop precinct at Pimba. Stormy weather had prevailed during the day, and produced the ominous black background sky. Steve Munro





## Tourism boss says Hobart City Deal fails to deliver 'game-changing' project

After more than two years of talks, the Hobart City Deal was signed by federal, state and local representatives on Sunday 24 February but there is criticism that much of its funding was already known and opportunities have been missed.

Prime Minister Scott Morrison signed the \$1.43 billion deal in Hobart with new federal funding including:

- \$30 million for affordable housing
- \$82 million for border protection services at the airport
- \$450 million for Antarctic research, and
- \$130.5 million for 'congestion busting' projects, including \$25 million for the Northern Suburbs Transit Corridor project, which includes the potential for light rail from Hobart to the northern suburbs along the route of the former heavy rail line.

However, the inclusion of prior election commitments, in particular the \$461 million funding for a new Bridgewater Bridge, drew criticism.

The Tourism Industry Council Tasmania CEO Luke Martin took to social media to label the deal "a bore". While he welcomed the airport funding, he said he was disappointed there was no "clear commitment" to the Macquarie Point redevelopment, which is converting the former rail yard on Hobart's waterfront to an arts, cultural, design, science and tourism precinct.

"There's no real tangible development proposal around that," he said. "It's a bit wishy-washy around its commitment to achieve that vision".

He said most of what was in the deal was already in the works.

Sue Hickey, the Speaker of the Tasmanian House of Assembly, who was involved in the deal when she was Hobart Lord Mayor, said she would also have liked to have seen more money injected into housing and rail, and described the \$25 million for the Northern Transit Corridor as "a drop in the ocean", though she did say the deal was "quite exciting" on other measures.

### TasRail puts older locomotives up for sale

TasRail has advertised via Manheim Auctions that it is calling for expressions of interest for a number of locomotives that are surplus to requirements. The locomotives involved are English Electric units of the 2100 (ZR) class (two), 2110 (Z) class (four), 2114 (ZA) class (one) and MKA (2130) class (six). The auction notice also lists the four 2050 class Clyde/EMD units (formerly Queensland Rail 2150 Class) although two of this class, 2051 and 2054 (ex QR 2151D and 2154 D) were reactivated on 31 December 2018 and are currently in service, mainly powering the Fingal to Railton coal train. The other two (2052 and 2053) are stored at East Tamar Junction (Launceston) workshops. Also listed for sale are the two ex-West Australian Clyde/EMD D class units (2020 and 2021) but these have already being sold and were returned to WA in January 2018 where they are in use with Watco. They were overhauled at Southern Shorthaul Railroad's Bendigo Workshops (see *From D to DR* from page 34 this issue).

## Shepparton line upgrade

Extra train services on the Shepparton line are set to commence from 1 April following completion of stage one of the Shepparton Line Upgrade project. Passengers will have more choice on when to travel, with 10 weekly services being introduced between Shepparton and Melbourne.

(Shepparton is located 182 kilometres from Southern Cross station on the Tocomwal line. Since 1993 Shepparton has been the terminating point for passenger services on the line.)

The stage one upgrade includes improvements to stabling facilities at Shepparton station, such as the installation of more than 200 concrete sleepers in the stabling yard. Another significant component of the upgrade is signalling changes designed to minimise disruptions to motorists as trains enter and exit the stabling yard. The upgrade will allow an additional train to be held overnight at Shepparton ready for departure to Melbourne the following morning.

More than 60 people, including rail workers and project staff, signalling experts, civil contractors and designers worked a combined 4,500 hours to deliver stage one of the project.

Work has already begun on stage two, which will allow VLocity trains to travel to and from Shepparton for the first time.

Site investigations kicked off at Nagambie (128 kilometres from Southern Cross) in mid-February. Subsequently, crews have begun excavating 22 test pits and drilling six boreholes between Nagambie and Shepparton to better understand ground conditions and soil quality in the project area. Specialists also conducted a track assessment between Seymour and Shepparton during January and early February, walking more than 80 kilometres to document sleepers, ballast and the general condition of the track to inform the design and construction of the project.

This data will be integral to the design and construction of the stage two works, which includes platform extensions, level crossing

upgrades, signalling and track upgrades and a new stabling facility north of Shepparton to house VLocity trains.

These upgrades will deliver up to a 20-minute travel time reduction between Melbourne and Shepparton once complete.

## Major Ballarat line station upgrades on track

Ballarat line passengers will have better stations and services with the half-a-billion-dollar transformation of the line well underway.

Victorian Premier Daniel Andrews and Minister for Transport Infrastructure Jacinta Allan visited Ballan Station (located 79.5 kilometres from Southern Cross) on Friday 1 March to inspect progress on the station upgrade, being delivered as part of the Ballarat Line Upgrade (BLU).

Structures are now in place to support Ballan station's new pedestrian overpass, which will include stairs, ramps and lifts to boost accessibility. The overpass, which was constructed off-site, was subsequently lifted into place by crane in March.

The structure for a new second platform next to the future site of the station's new car park is also taking shape.

The upgrade, which is due to be complete later this year, will also deliver new, secure bicycle storage and improved security, lighting and landscaping.

Other station upgrades on the Ballarat line are continuing, with work beginning soon at Wendouree (118 kilometres from Southern Cross), and a new station well on the way at Cobblebank (34.4 kilometres). At Rockbank station (30.2 kilometres) roof canopies are in place for platforms, and the new pedestrian overpass structure being built on site will soon be ready to lift into place.

The BLU is being delivered as part of the \$1.75 billion Regional Rail Revival. It will transform the state's second busiest regional rail line to run more services in the peak and allow trains every 40 minutes off-peak.





On Monday 4 February at 1.59pm. V/Line Clyde/EMD loco N460, on the Down Shepparton service, 12.52pm ex Southern Cross, passes Signal Post 18, the Up Broadford (co acting) arrival signal, about 75 km north east of Melbourne. Sadly, the signals at Broadford were removed about a fortnight later, and Broadford no longer plays a safeworking role on the north east line. Steve Munro

## First train uses Ararat eastern connection and diamond crossing, Merbein service goes to five days a week

On Monday evening, 18 February, in another step forward for the troubled Murray Basin gauge conversion project, the first train traversed the new eastern leg of the northern junction and a new diamond crossing across the broad-gauge line at Ararat to link the Maryborough – Ararat line directly to the ARTC Melbourne – Adelaide (see photo of the diamond crossing, last month's *RD*, page 25). The train was Pacific National's thrice weekly intermodal service (No. 7902) from Seaway Intermodal's (formerly Wakefield Intermodal) Merbein (Mildura) terminal to Melbourne. Since the conversion to standard gauge of the Ararat – Maryborough line the absence of a direct eastern connection at Ararat to the ARTC main line resulted in trains having to proceed to Pyrenees crossing loop, four kilometres west of Ararat, where locomotives were run around to allow trains to continue their journey. This resulted in around an hour being added to journey times. Although the new connection is operational it remains to have signalling installed with reports that this will not be commissioned for several months. The new connection to the ARTC line near the diamond crossing is known as Ararat East Junction while the junction north of Ararat leading to either the new East Junction or to the western connection with the ARTC line is known as Ararat North Junction.

In another piece of positive news for the Mildura line V/Line Network announced that the abovementioned thrice-weekly intermodal service will operate five days a week from 28 February, following the infrastructure improvements at Ararat. Using two train sets, the service (No. 7901) will depart Melbourne on Tuesday, Wednesday, Thursday, Friday and Saturday, arriving at Merbein the following day early in the afternoon. The return workings (No. 7902) are timetabled to depart Merbein on Sunday at 4.00 pm and at 8.40 pm on Monday, Tuesday, Wednesday and Thursday. Opposing train movements are timetabled to cross at Maryborough at around 4.00 am to 5.00 am on Tuesday, Wednesday, Thursday and Friday. In addition to the extra services, three trains a week (departing Melbourne on Tuesday, Thursday and Saturday and from Merbein on Sunday, Tuesday and Thursday) will be scheduled to operate at 1,200 metres in length. The two remaining services will be scheduled to operate at the previous maximum length of 700 metres. The longest loop on the Mildura line, at Sutherland, is just 1,000 metres. Motive power for the Merbein service is typically provided by BL, G or XR class locomotives. The service to Merbein is now carrying windfarm components that provide valuable backloading.



## Around Melbourne

### Campaign aims to save lives on the Victorian rail network

The Victorian Government is participating in a digital campaign aimed at saving lives by reminding those doing it tough about the support available to them.

Minister for Public Transport Melissa Horne said the *Pause. Call. Be Heard.* campaign was an important step for the government in reducing suicide rates.

The campaign, developed by the TrackSAFE Foundation and Lifeline Australia was launched on Monday 4 February. It allows passengers to receive messages on their smartphones about Lifeline's services as they scroll through their social media feeds. The messages will be delivered to passengers through a digital platform – via Facebook, Instagram, Spotify and YouTube – in times and at places that Lifeline know pose greatest risk for people who are doing it tough.

The *Pause. Call. Be Heard.* campaign commenced in 2018 through billboards at Victorian railway stations, with a University of Melbourne evaluation showing it had already had an impact in reducing incidents. The results showed that 26 per cent of randomly selected commuters had noticed the billboards during their train travels over a one-month period and of those, 75 per cent had directly engaged with the messaging.

"Millions of Victorians visit our stations every day – this is a new way to promote the support available to those who are doing it tough," Ms Horne said.

The Government is also finalising terms of reference on a Royal Commission into the state's Mental Health service system, which will provide a comprehensive set of recommendations on how best to reform the mental health system and support Victorians with mental illness, including those at risk of suicide.

"This decision to fund the digitisation of the *Pause. Call. Be Heard.* campaign across Victoria will help this campaign reach millions of

commuters, meaning more people are encouraged to phone Lifeline on 13 11 14 when in need," said TrackSAFE Chairman Bob Herbert AM.

For more information on Lifeline's services go to [www.lifeline.org.au](http://www.lifeline.org.au)

### Toorak Road level crossing to go

The dangerous and congested level crossing on the Glen Waverley line at Toorak Road in Kooyong is set for removal by 2021 as part of the Victorian government's Level Crossing Removal Project.

The intersection is one of Melbourne's busiest and most congested, with the boom gates down 35 per cent of the morning peak.

Early planning works began in December 2018, including geotechnical and engineering assessments to determine the best way to remove the level crossing.

A rail bridge will be built to replace the crossing, which is a major bottleneck for the thousands of people travelling on the Monash Freeway and CityLink via local roads. The design will improve pedestrian and cycling connections, create new open space, minimise disruption and limit the loss of trees. It also avoids the need to relocate complex services, including one of Melbourne's largest telecommunication cables that connects local homes and businesses in the eastern suburbs.

Other designs would interrupt the flow of flood water into nearby Gardiners Creek, take more than a year longer to build and require Toorak Road to be closed for several months. This would impede access to and from the Monash freeway and disrupt the flow of 37,000 vehicles that travel through the level crossing each day.

This design also avoids the need for buses to replace trains on the busy Glen Waverley line. Building a road underpass beneath the Glen Waverley line, or bridge above it, is not possible due to the area's topography and proximity to the Monash freeway.

The community is encouraged to provide feedback about how they would like the new open space to be designed and used – and about improvements to pedestrian and cycling connections.



C2 class number 5106, wearing art tram livery, heads up St Kilda Esplanade during testing on Saturday 2 February. James Chuang





**Above:** Clyde/EMD units XR551 and G524 (in Freight Australia livery), and Clyde/EMD unit G522 (in PN colours, with large side numbers) are seen on two broad-gauge intermodal freight trains at Appleton Dock on Sunday 3 March. Peter Clark

**Below:** An assortment of Metro Trains Melbourne EMU sets wait to depart Flinders Street station on Monday 25 February. Peter Sansom







AI X'Trapolis 100 s M appr

i n Tuesday 29 January. Linden Lyons s

## Names for Metro Tunnel's boring machines revealed

The first of the Metro Tunnel's four tunnel boring machines (TBMs) has arrived in Melbourne and will soon begin tunnelling deep beneath the city.

With three more TBMs on the way, the Victorian Premier Daniel Andrews and Minister for Infrastructure Jacinta Allan combined on Tuesday 12 February to reveal the names given to the massive machines following a public competition to honour ground-breaking women.

They were joined by women's cricket star Meg Lanning, who led Australia to victory at the recent ICC Women's *Twenty20* World Cup in the West Indies and is one of Victoria's greatest cricketers.

Each TBM has its own coloured cutterhead – red, blue, green and yellow – which can grind through rock six times harder than concrete.

The red TBM – named *Joan* after former Premier Joan Kirner arrived on Saturday 2 February. Next will be the blue TBM – named *Meg Lanning* – already on its way to Australia. The green and yellow machines are named after wartime military nurse Alice Appleford, and Victoria's first female MP Millie Peacock.

- Meg Lanning is the youngest Australian – male or female – to score an international century. She also holds the record for most centuries in women's one-day internationals.
- Joan Kirner was the 42nd Premier of Victoria and the state's first female Premier, serving from 1990 to 1992.
- Alice Appleford won the Military Medal for Gallantry in the First World War and was also awarded the Florence Nightingale Medal.
- Millie Peacock was the first woman elected to the Victorian Parliament, in 1933.

Tradition dictates that a TBM is given a female name before it can start tunnelling, granting good luck for the project ahead. The tradition dates from the 1500s when miners and military engineers using explosives

for excavation prayed to Saint Barbara – the patron saint of tunnellers and miners.

Each custom-built TBM for the Metro Tunnel is 120 metres long, weighs more than 1,100 tonnes with a diameter of 7.28 metres, and is specifically designed to bore through Melbourne's unique ground conditions.

The first TBM began the journey to Australia late last year with its pieces being progressively transported by truck from the Port of Melbourne to the North Melbourne station construction site near Arden Street.

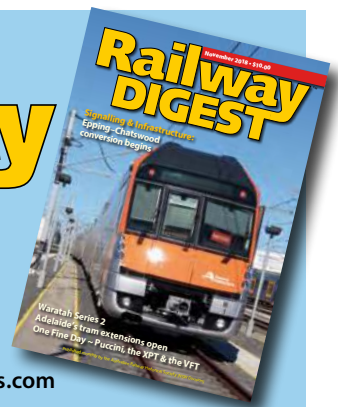
The red and blue TBMs will be launched from the North Melbourne site and the green and yellow machines will start from St Kilda Road at the site of the new underground Anzac Station. They will first travel away from the city, towards Kensington and South Yarra respectively, before being dismantled and trucked back to their starting points and relaunched towards the city.

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## Perth rail passengers remain most satisfied for sixth consecutive survey

Transperth, the Western Australian public transport system serving the city and suburban areas of Perth, has again been ranked as having Australia's best metropolitan rail system by independent national consumer review and comparison website Canstar Blue.

Transperth has taken out the top rating in the City Trains category - which pits the Brisbane, Sydney, Melbourne, Adelaide and Perth urban rail networks against one another to find who has the most satisfied customers - for the sixth consecutive survey.

This year's ratings were based on the responses of 4,423 people who have caught a metropolitan train in the last six months.

Transperth was given five-star ratings - the highest possible - in the overall satisfaction, service reliability, timetabling, trip comfort, cleanliness and ticketing system categories.

Adelaide Metro came in second, with one five-star rating and seven four-star ratings.

In addition to rating the five city rail networks on customer satisfaction, the survey also revealed the main 'drivers' of passenger approval. Regression analysis found that service reliability is the biggest factor in determining the satisfaction of Australian rail passengers, followed by:

2. Timetable/scheduling
3. Cost (ticket prices)
4. Trip comfort
5. Safety (at stations and on trains)
6. Train/station cleanliness
7. Ticketing system

Across the country, 39 per cent of survey respondents said they often experience delays when catching the train. Regular delays were reported by 48 per cent of Metro Trains (Melbourne) passengers, followed by Sydney Trains (45 per cent), Adelaide Metro (33 per cent), Queensland Rail (31 per cent) and TransPerth (16 per cent).

Just 47 per cent of respondents nationwide said punctuality is a strength of their train network. Those who use Metro Trains in Melbourne were least likely to describe punctuality as a strength (40 per cent), followed closely by Sydney Trains (41 per cent), Adelaide Metro and Queensland Rail (56 per cent) and TransPerth (72 per cent).

A total of 58 per cent of survey respondents nationwide said they often experience overcrowding on trains with the worst result recorded by Melbourne Metro Trains at 69 per cent compared to the best performing TransPerth at 43 per cent.

The survey found that 86 per cent of passengers generally feel safe catching the train during the day, but this changes significantly when it comes to travelling at night with just 49 per cent of respondents feeling secure. Queensland Rail passengers (89 per cent) were most likely to report feeling safe during the day. While at night the Adelaide Metro commuters were most likely to feel safe (56 per cent), ahead of Queensland Rail (52 per cent), Sydney Trains (51 per cent), Metro Trains Melbourne (45 per cent) and then TransPerth (42 per cent).

Users of all state rail networks said that they would like to see extra security staff on trains.

An average of just 39 per cent of survey respondents across the country described the cleanliness of their trains and stations as a strength of their network.

Survey respondents were also asked about their 'pet hates' of train travel. The most common complaints in order of priority were:

- People having loud personal conversations (including on the phone)
- Smelly passengers
- People being rude or aggressive
- Sick people (coughing, sneezing)
- People playing music loudly
- Children being loud or misbehaving
- People pushing past to get to/from seats
- People taking up too much space (with laptops, newspapers)
- Young people not giving up seats for older passengers
- Other people standing too close.

There were some notable differences between state networks.

- Queensland Rail passengers get most annoyed by loud personal conversations and children being loud or misbehaving.
- Adelaide Metro passengers are least bothered by loud personal conversations and people playing music loudly.
- Sydney Trains passengers are most likely to get annoyed by people pushing past them.
- Metro Trains Melbourne passengers are the most likely to complain about people taking up too much space and people standing too close.
- TransPerth passengers are the most likely to declare rude or aggressive people a problem.

More information about the survey can be found on the Canstar Blue website.

**Transperth Bombardier B series sets 5088 & 6025 are seen leaving Wanbro Station with a Mandurah-bound service on Boxing Day 2018.**  
Cooper Whitehead





## Infrastructure Australia's priority list recognises more WA projects

The Western Australian Government has welcomed the inclusion of new Western Australian initiatives, including METRONET (see July 2018 *RD*, page 26), in Infrastructure Australia's (IA) latest Infrastructure Priority List released on Tuesday 14 February.

This year's priority list has two 'projects' and 13 'initiatives' for WA transport infrastructure, compared with just one project and six initiatives in 2016.

The priority list classes 'projects' as an infrastructure solution that has been positively assessed and is underway, and 'initiatives' as infrastructure opportunities that have not yet completed the IA assessment process.

New 'initiative' listings include:

- Morley-Ellenbrook Line (Transport Connectivity between Morley and Ellenbrook);
- Fremantle Traffic Bridge;
- Tonkin Highway Gap;
- Karratha-Tom Price Road; and
- Canning Bridge crossing capacity and interchange (IA identified initiative).

The Yanchep Rail Extension was assessed as one of eight 'High Priority Projects' as it will provide more transport choices for residents and reduce demand on the roads, particularly in peak periods.

Meanwhile, the Thornlie-Cockburn Link is one of 10 'Priority Projects' and will promote urban renewal along the line, relieve pressure on existing stations and reduce road congestion.

The full list is available on the Infrastructure Australia website; <https://infrastructureaustralia.gov.au/>

## Rail bridge works completed on South West Mainline

During February and March Arc Infrastructure completed essential works on its South West Mainline railway near Burekup (located 167 kilometres south of Perth), adjacent to the South West Highway.

The works included the replacement of two rail bridge structures located between the Coalfields Highway and Russel Road. These replacements were scheduled to meet the expected increase in customer train loadings and to relieve temporary speed restrictions on the line. Other track maintenance and works on nearby level crossings was also conducted.

Pre-works commenced on site in mid-February while the main bridge works were completed during a mainline shutdown between Sunday 24 February and Friday 1 March.

Work at level crossings on Russel Road, the South West Highway and Heppingstone Road were also completed during the mainline shutdown.

It is understood that all works were finalised by Friday 15 March.



Leaving the Fuel Distributors of Western Australia Pty Ltd siding on Saturday 2 March, UGR/GE unit AC4301 rejoins the main line heading north to pick-up a few more wagons from the CSBP chemical plant at Kwinana, before finishing up at Kwinana marshalling yard. James Chuang



## JAPAN

JR East has conducted late night trials of driverless trains on the Yamanote line in Tokyo. The 34.5 km line that encircles Tokyo is one of the city's busiest, with trains running only 2 ½ minutes apart during peak periods. A standard 11-car train was used in the tests, which were conducted during December and January after the conclusion of regular passenger services for the night. Driverless trains are considered to be a possible means to address looming staff shortages as the ageing railway workforce enters retirement as well as potentially being an option for low-traffic rural lines. There are currently no driverless train operations in Japan and considerable infrastructure work would be required before such services could commence regular operation, including the installation of platform screens (which are already fitted to some Yamanote line stations). If automation is to occur, JR East plans to start with lines that do not have level crossings and trains would initially operate with an on board 'supervisor', although longer term planning envisages completely unattended operation.

## NORTH KOREA

A special train from South Korea has conducted a survey of around 1200 km of railway lines in North Korea as a precursor to the possible reopening of rail links between the two countries. The train crossed the demilitarised zone late last year – the first such movement in over a decade and the first time a South Korean train has toured the North – before spending some weeks assessing the state of the North's rail infrastructure. A follow up ceremony occurred at the one-time industrial park at Kaesong, North Korea, in late December. The North Korean leader has admitted that parts of the network are in an 'embarrassing' condition and that the country needs help to modernise its system, although the cost to rehabilitate the network is believed to be very expensive and the work would take years to complete. The commencement of any reconstruction work is also subject to the easing of economic sanctions imposed by the United Nations and United States (an exemption to the sanctions had to be obtained for the work undertaken so far). The reintroduction of services between the two Koreas could lead to operational benefits for the North, including hosting international services linking South Korea with destinations as far afield as Europe as well as other Asian destinations. A number of border crossings between North Korea and Russia and China remain in place, prompting interest from the South in achieving international connections. Cross-border rail links between North and South Korea were suspended during the Korean War, although a number of attempts to re-establish crossing points have been made in the intervening years, none of which has lasted for any length of time. A cross-border line serving Kaesong was reopened in 2007 but was closed the following year after a flare up in tensions between the two sides. Today, the two systems present a stark contrast with South Korea boasting a modern and sophisticated rail industry while the North, from various accounts published over the years, has languished with an increasingly dilapidated and unreliable network.

The North Korean leader again travelled by his private train from Pyongyang to Beijing and return in early January. As with an earlier trip made last year, guests at a hotel in the Chinese border city of Dandong were not given access to rooms overlooking the railway line during the times the train was due to pass through. In late February, the leader boarded the train again, this time to travel to Hanoi (Vietnam) for a meeting with the US president. Due to the break of gauge, the train only reached the China/Vietnam border city of Dong Dang with the remainder of the leader's journey being undertaken in his customised Mercedes.

## CHINA

Five new high-speed lines were opened over two days in December, adding about 1800 km of additional routes to the network. One of the new routes, that between Harbin and Mudanjiang, ends at a station near the Russian border and a longer-term plan may see the line extended by 380 km to reach the Russian far eastern city of Vladivostok. Another new line, between Hangzhou and Huangshan, forms part of a larger high-speed network that will be completed in 2022. A new 350 km/h

line links the cities of Jinan and Qingdao and this line is also connected to the Beijing – Shanghai line at Jinan. Of note is that 87km of the 308 km line has been built on viaducts (a not uncommon engineering solution in Asia) while a tunnel takes the line below Qingdao airport, which features a new underground station. China's still growing high-speed network is the world's largest, both in terms of passengers carried and route length. Earlier safety concerns appear to have subsided, with new trains running at ever increasing speeds and more lines being approved for construction.

## SRI LANKA

Increasing numbers of elephants are being killed by trains in Sri Lanka, which is home to about 7000 of the wild animals. Massive development over the last 10 years since the end of the country's civil war has greatly eroded elephant habitats and forced increasing numbers of the animals to live in close proximity to humans. Fifteen elephants were killed by trains last year, nearly the double the number that died in 2017. Some wildlife experts believe the elephants have become 'acclimatised' to trains and sometimes don't move quickly enough away from rail lines when trains are approaching. Most of those killed are adult males, who are more inclined to roam over wide areas, although some recent deaths involved females and juveniles. In one of the worst examples from last year, four elephants, including an unborn baby, were killed when hit by a night mail train.

## SENEGAL

The president of the west African country of Senegal was one of the guests who travelled on the first run of a new Alstom-built standard-gauge train on a new line that will eventually link the capital, Dakar, with a new airport at Diass, over a distance of 55 km. Operating under the name of 'Train Express Regional' (TER), the four-car trains, of which 15 will eventually be in service, will be capable of travelling at speeds of up to 160 km/h. The new railway, which will be opened in two stages, is forecasting patronage of 115,000 passengers per year once it is fully operational. Senegal's legacy rail system is a metre gauge network of around 900 km but part of the system will be converted to standard gauge under the TER project.

## NEW ZEALAND

KiwiRail has completed the first stage of planning for a new branch line to Northport, located at Marsden Point on the North Island to the north of Auckland. Although the planned line will be only 20 km in length, it would be the country's first significant construction of a new branch line in over 50 years. Some exploratory work was undertaken in January and further planning will be undertaken this year. The project also includes upgrading the line between Auckland and Oakleigh (from where the new line will be constructed), which is presently unable to carry passenger trains and is restricted in its freight handling capacity. KiwiRail's chairman said that there is a growing acceptance of the role that rail can play in regional areas, including lower road maintenance costs, a transfer of freight traffic to rail and improved road safety. The new line would present something of a saviour for the so-called North Auckland Line, which has not seen regular passenger trains beyond the limit of the Auckland suburban network since the 1960s. Freight services presently operate no further north than Kauri.

## USA

Coal production in the Powder River Basin is falling as American power stations switch to other energy sources, including natural gas. The amount of coal mined has fallen about 30% over the last decade. The Powder River Basin, stretching across an area covering parts of Montana and Wyoming, produces thermal coal that is used by power stations. However, the number of coal-fired power stations in the US has been declining as cheaper energy sources come into the market. Coal output is expected to continue to fall this year, with the industry expecting a figure as low as 315 million tonnes to be shipped, well below the rail capacity of 400 million tonnes. Powder River coal is railed to power plants across the US, with most of it carried by BNSF Railway and Union Pacific trains. The two railroads share a triple track line that runs along



the southern side of the basin and about 80 trains each day serve the area, some carrying loads up to 15,000 tonnes in 150 car trains. Coal mining companies have already started reducing staff numbers and facilities in anticipation of falling demand.

The future of the proposed high-speed rail link between Los Angeles and San Francisco is again embroiled in controversy after the Federal Railroad Administration (FRA) advised that it was intending to cancel nearly \$1 billion of a grant towards the project's construction. The announcement followed an audit conducted last year that highlighted the project was struggling to meet a construction deadline imposed by the Federal government in return for the funding package. Under the agreement, the first stage of the line, between the Central Valley towns of Madera and Bakersfield, was to be completed by 2022, but the pace of work would need to double if anything like that target was going to be met. Adding further to the project's woes, the California Governor announced in February that the state's high-speed program would be 'scaled back' to the extent that only the middle 250 km of the line will be built, leaving the termini at both ends about 150 km beyond the limits of the metropolitan areas of the state's two largest cities. Governor Gavin Newsom said the original design cost too much and would take too long to build while denying suggestions the shortened route would be a 'train to nowhere'. The latest developments are just the latest chapter in an ongoing struggle for the project, which has been beset by controversy, criticism and legal challenges since it was first announced. The project's twists and turns have also highlighted the seemingly insurmountable obstacles that high-speed rail faces in the US more generally, with numerous proposals struggling to get beyond the concept or planning phase.

A new rail service has commenced operation between Fort Worth and Dallas-Fort Worth Airport (DFW). Launched in January and operating under the name 'Tex Rail', the newly-built diesel multiple unit trains take 52 minutes to cover the 43 km route, with nine stations in total, including two at the airport and two in downtown Fort Worth. The route follows a mix of existing freight railway alignments and newly-built trackage. DFW is one of America's busiest airports, handling approximately 67 million passengers each year, although less than three million of those are expected to use the new train during its first year of operation. Travel on the new service was free for the first month, after which a \$2.50 fare took effect. Rail options to get to and from DFW have been incrementally added in recent years, with the airport already served by rail transport in the form of Dallas Area Rapid Transit (DART) light rail services and Trinity Railway Express trains to Dallas.

A planned 15-month shutdown of a subway tunnel linking Manhattan and Brooklyn in New York City will not go ahead after an expert panel devised an alternative method to complete extensive remedial work while still allowing some trains to keep running throughout the construction period. The closure of the Canarsie/L Subway line tunnel was programmed to begin this month but after concerns were

raised about the suitability of alternative transport options the State Governor appointed a group of academics to come up with a better solution. Under the new proposal, work will be carried out at night and weekends, whilst one of the tunnel's two bores will remain open for single line working. Some of the planned work has also been reduced in scope. Most of the rebuilding tasks are still expected to be completed within a 15-20 month period. The tunnel requires considerable work to repair damage caused seven years ago by so-called 'Superstorm Sandy', a severe weather event that caused billions of dollars in damage to infrastructure along the US east coast.

The national long-distance passenger train operator, Amtrak, is considering an overhaul of its timetable that would see more short-medium distance trains running between city pairs that could support more intensive services. However, the price of such a change could be the elimination of some of Amtrak's best known and iconic trains that run over distances of 2000 km or more, including the *Empire Builder*, *Southwest Chief* and the *City of New Orleans*. Amtrak's longer distance trains carry only a small percentage of passengers (about 15%, of whom only a fraction actually ride the train from end to end) but they incur most of the financial losses. The famous 'name trains' date from the pre-Amtrak era and were once showpieces for the railroads that owned them. They still retain strong grassroots and Congressional support despite steadily losing customers over the years. Switching to more frequent but shorter-journey trains won't necessarily be an easy option for other reasons: the freight railroads that own the tracks over which Amtrak operates often have a 'testy' relationship with the passenger operator and are likely to resist more intrusions on their turf, particularly as the industry is enjoying strong financial returns and lines are congested with ever-increasing volumes of rail freight.

## EUROPE

A proposed merger between rail manufacturing and technology companies Alstom and Siemens will not go ahead after the European Commission ruled against the move because of concerns over a loss of competition that would occur if the deal was finalised. The companies had proposed the merger as a means of better competing against the rail industry manufacturing might of China but the EU formed the view that serious competition concerns within Europe were not addressed under the merger plan. The possibility of the two companies merging had also raised concerns in Australia, particularly around the cost of signalling – an area in which both companies specialise and traditionally compete. The EU Commission also claimed that any merger would have resulted in higher prices for continental signalling systems. In the wake of the decision that the deal would not be approved, both companies said they would pursue their own growth plans, although Alstom stated that the EU's decision was a 'clear set-back for industry in Europe'.

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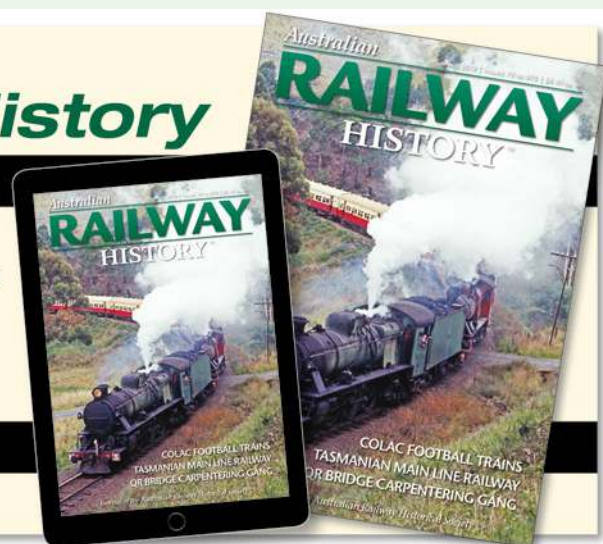
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# Central West NSW: New crossing loops, signalling and platform

John Hoyle



## Rydal and Georges Plains loops and follow-on signals at Wimbledon commissioned

During a weekend shutdown on 16/17 February the track manager for the NSW Western Line between Lithgow and Parkes, John Holland Country Regional Network (CRN), commissioned new crossing loops at Rydal, between Wallerawang and Tarana, and at Georges Plains in the Bathurst – Blayney section. In addition, new follow-on signals were commissioned at Wimbledon, between Georges Plains and Newbridge. Known as the Main Western Line Capacity Enhancement project, it was funded by the NSW Government at a cost of \$21.5 million. The lead contractor for the signalling portion of the project was Aldridge Signal Infrastructure based at Lidcombe, Sydney. Aldridge was originally involved in road traffic signal design, manufacture, installation and maintenance before branching into the railway signalling industry in the early 1990s. It was responsible for installation of Australia's first LED rail signals on Sydney's City Circle railway in 1995.

Control of the signalling for these locations was integrated into the existing Centralised Traffic Control (also known as Rail Vehicle Detection) that applies between Lithgow and Orange and is operated from John Holland's Network Control Office at Mayfield, Newcastle using the Phoenix control system. (The actual dividing point between John Holland CRN and Sydney Trains trackage is just west of the former Bowenfels station at 158.800 km although John Holland CRN does have operational control to a point known as Hermitage, just west of Lithgow station.) Prior to the weekend closedown, from Friday, 15 February at 7.00 am to 7.00 am on Saturday 16 February Pilot Staff working was implemented to maintain rail traffic between Bathurst and Newbridge while signalling work was under way.

The eastern end of the 1,625 metre loop at Rydal is located 1.7 kilometres west of the station and it breaks up the 26.9 km single track section between Wallerawang and Tarana into two sections of 11.8 km between Wallerawang and Rydal and 13.3 km between the western end of Rydal loop and Tarana where double track recommences. The loop has the standard Distant, Home and Starter signals, plus a

**Above: The first passenger train to use the new signalling at Georges Plains was the weekly Sydney to Broken Hill Xplorer on Monday, 18 February. Teething problems associated with the signalling resulted in a delay to this service, which is seen here accelerating past the Down Main Starter signal (GP 7) at stop, under radio authorisation from the John Holland Country Regional Network control centre at Mayfield, Newcastle. After rounding the curve the train will commence the 1 in 40 climb up Tumulla Bank. John Hoyle**

repeater signal in the rear of the Down Home signal. The Home signals are equipped with the NSW standard row of white lights that are illuminated to indicate entry in to the loop.

The new Georges Plains loop is 1,660 metres in length and its eastern end is adjacent to the derelict station building. The usual Distant, Home and Starter signals are provided. The new loop extends almost to the commencement of the well-known Tumulla Bank with its 1 in 40 grade against Down trains and scene of steam bank engine operation in earlier times. The loop divides the 32.5 km Bathurst to Newbridge single-track section into two new sections – the 11.1 km Bathurst to the eastern points at Georges Plains section and the 19.6 km section from the western end of the loop to the start of double track at Newbridge. The previous loop at this location was closed in December 1995.

The final work in the Western Line Capacity Enhancement project was the establishment of a "follow on" block point at Wimbledon, between Georges Plains and Newbridge, to allow trains to more closely follow each other. Distant and Home signals are located either side of Bathampton Road level crossing at Wimbledon. As mentioned in the previous paragraph the single-track section between Georges Plains and Newbridge is 19.6 km long and it includes Tumulla Bank and a 1 in 50 grade against Down trains on Stringybark Range, between Wimbledon and Newbridge. The presence of the new signals at Wimbledon will divide that section into a 9.2 km section between the Western end of the Georges Plains loop and the block point at Wimbledon and a 10.4 km section from Wimbledon to Newbridge.





The eastern end of the new Georges Plains crossing loop is located adjacent to the increasingly decrepit railway station. In line with an increasingly common practice, concrete bearers are used for the pointwork. The new Up Loop Starter signal (GP 6) is in the background. Lawrance Ryan

On Sunday, 17 February, the second day of the Western Line shutdown, two “trains”, operated by Southern Shorthaul Railroad, were employed to test the track circuits and other functions associated with the signalling. Goodwin/Alco units 442S2 and 44206 were used to test the signalling and points at Rydal while Bendigo Workshops/EMD locomotives BRM 001 and 002 tested the Georges Plains equipment, including both the main line and loop, and the signalling at Wimbleton.

On Monday, 18 February, when the line reopened for normal

services, some teething problems were encountered with the new signalling. The weekly Sydney to Broken Hill *Xplorer* experienced delays, departing Georges Plains at 10.40 am on radio authority when the Down Starter for the main line was unable to be cleared. The service was 37 minutes behind schedule at that time. The Dubbo XPT was also affected with a delay of around 20 minutes. (More details on the new Western Line signalling installations will be included in the Signalling and Infrastructure feature in the May issue).



On Sunday, 17 February, a test ‘train’ comprising Southern Shorthaul Railroad BRM Class units 001 and 002 was used to test signalling at the new Georges Plains crossing loop and the ‘follow on’ block post at Wimbleton. The two locomotives are seen at the Bathampton Road level crossing at Wimbleton on a test run as technicians check the track circuits in the equipment hut to the left. John Hoyle





### Millthorpe's new platform and Newbridge's new road bridge

Another change to Central West NSW rail infrastructure is the provision of a new platform at Millthorpe, population 1,253 at the 2016 census, and located between Blayney and Orange. Millthorpe's residents, through the Millthorpe Village Committee and its sub-committee, Millthorpe on Track led by Laurie Williams, have been campaigning for several years to have a passenger rail service reinstated, pointing out that Millthorpe, with its many heritage buildings, was becoming a sought-after tourist destination. In 2013 the Committee compiled a submission to the NSW Parliament calling for the daily Sydney – Dubbo XPT service to stop at the station and finally in October 2017 the NSW Government announced that \$1.1 million had been allocated to construct a short (15 metre) platform that will extend out from the existing platform to allow the XPT to make a request stop at the station. The existing track had been previously aligned away from the platform

thereby preventing passenger train access at the station. Degnan Constructions commenced work in September 2018 on constructing the concrete and steel platform. It includes a wooden picket fence to blend with the heritage-listed station building dating from 1886. Additional lighting, an information board, CCTV, tactile indicators and a customer help point are being provided.

The platform was officially opened on Friday, 15 March by Member for the state seat of Bathurst Paul Toole, coinciding with the arrival of the Down Dubbo XPT, (See news item, page 12).

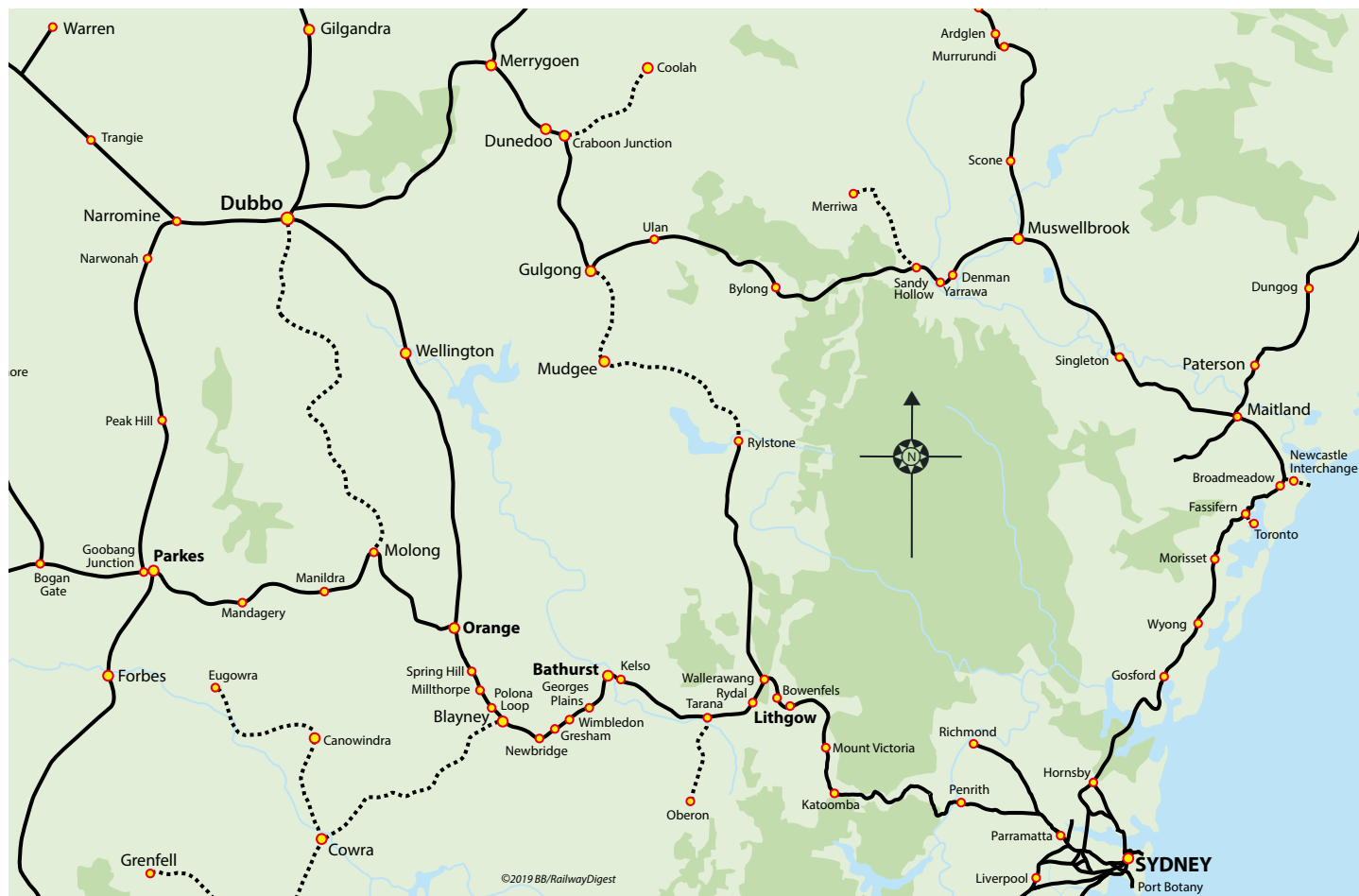
The Down XPT is timetabled to call at Millthorpe at 11. 49am and at 4.10 pm on the Up journey. No additional running time has been added to the XPT schedule with a six-minute allowance in the Down direction and eight minutes in the Up direction between Polona loop and Spring Hill (Millthorpe is between those locations) applying in both the former John Holland CRN Standard Working Timetable dated 5 January this year and the new timetable commencing from 28 April. In addition to

**Above:** Millthorpe, located between Blayney and Orange, is being reconnected to the passenger train network through the installation of a short platform to allow the Dubbo XPT to make a conditional stop at the station. On Monday, 18 February, the Down Dubbo XPT is about to pass the new platform which can be seen protruding from the existing platform at the station. John Hoyle

**Right:** A new bridge at Newbridge. Work is well underway on the construction of a replacement bridge carrying Blayney Street over the Main Western Railway line in this view taken on Saturday 16 February. Blayney Street becomes Village Road and follows the railway to Athol, located east of Blayney. Lawrance Ryan







including Millthorpe, the new timetable has added Georges Plains and Wimbleton as timing points. Rydal, being an existing passenger stop, was already shown in the Working Timetable.

Although not a rail-related project the construction of a new road bridge over the Western Line at Newbridge will change the rail landscape at this Central West village. The original Blayney Street single lane timber bridge, with its five-tonne load limit, has been demolished and is being replaced by a two-lane concrete bridge with a 160 tonne load limit. The bridge is a well-known location for rail photographers as it looks down on Newbridge station and (on the western side) the start of the double track section to Murrobo, near Blayney.

### Western Line ‘renaissance’

While larger projects such as the Melbourne – Brisbane Inland Railway and the botched Murray Basin gauge standardisation in Victoria currently dominate regional rail news, the Main Western Line Capacity Enhancement project will improve train operations and highlights the ‘renaissance’ that the NSW Western Line is experiencing after a period of decline in the 1990s. A blow to the line’s fortunes was the closure of Sydney’s Glebe Island grain terminal in 1990 and the resultant diversion of grain traffic away from the Western Line to Port Kembla. During the same decade the then National Rail’s decision to divert most interstate freight trains to Adelaide and Perth via the Southern Line, coupled with a general decline in rail freight activity, further reduced the importance of the Western Line.

This decrease in rail activity prompted the singling of the six-kilometre double track section between Gresham and Newbridge in September 1990 and the 27-kilometre section between Wallerawang and Tarana in December 1995. Today Pacific National continues National Rail’s practice of operating most of its Sydney to Adelaide/Perth services via Cootamundra and Parkes to avoid the heavy Blue Mountains grades but a resurgence in intrastate freight business, especially port-related container services and additional passenger services, has led to an increase in rail activity on the Western Line.

Illustrating this increase in traffic, Pacific National and Southern

Shorthaul Railroad (SSR) operate intermodal services from Kelso (Bathurst) to Port Botany (combined, these equate to an almost daily service), SSR operates a thrice-weekly container service for Fletcher International Exports from Dubbo to Port Botany and Qube hauls Cadia mineral concentrates from the Sealink Sidings at Blayney to Port Kembla as required. Pacific National hauls flour from Manildra Group’s mill at the town of the same name to the company’s Bomaderry plant – generally three days a week. Seasonal export cotton trains, operated by Freightliner (Genesee & Wyoming Australia) and Qube from Warren South and Trangie, also add to the volume of freight on the Western Line while Pacific National operates some interstate services via the Western Line.

Apart from the daily Dubbo XPT and weekly Broken Hill and *Indian Pacific* services, the daily Bathurst – Sydney *Endeavour* railcar service (known as the ‘Bathurst Bullet’) adds to the mix of passenger trains on the line. The railcar set used on this service is based in Lithgow and runs out to Bathurst each morning and returns from Bathurst to Lithgow in the late evening. In the lead-up to the state election on 23 March the Member for Bathurst, Paul Toole, announced on 25 February that a second ‘Bathurst Bullet’ passenger service will be introduced in 2020. The proposed service would leave Bathurst on weekdays around 7.30 am and reach Sydney around 11.30 am. An approximate 3.00 pm Sydney departure would see a Bathurst arrival before 7.00 pm. There has also been a campaign to provide a daily morning service from Dubbo to Sydney and return in the afternoon. This might eventuate when deliveries of the CAF DEMU regional fleet commence in 2023. The maintenance centre for the fleet will be located at Dubbo (see last month’s *RD*, page 9).

According to Mr Toole the Western Line is handling around nine million tonnes of freight a year at present and, with the introduction of additional passenger services such as a second Bathurst – Sydney train, the additional crossing loops and signalling will assist in providing capacity for growth on this rail corridor.

Special thanks to Lawrance Ryan and Graham Vincent for their assistance in compiling this report.



# From D to DR

Phil Melling



*A brief history of two locomotives that were originally built for the Western Australian Government Railways, later rebuilt in New Zealand for use in Tasmania then a return back to Western Australia.*

## The Western Australian Government Railways/ Westrail Era

The Western Australian Government Railways (the WAGR) placed into service in 1971 five D class locomotives built by Clyde Engineering at Granville in New South Wales. The D class were numbered D1561 to D1565 and cost, when new, \$315,267 each, being of Co-Co wheel arrangement and fitted with an EMD 16-645E engine having a 2000HP (1490kW) power output.

The D class were also equipped with dynamic brakes and quickly found service in pairs on the Kwinana to Jarrahdale bauxite trains. Empty trains were faced with a 1 in 35 climb from Mundijong Junction up the Darling Range to the loading point at Alcoa Jarrahdale and it certainly gave the locos a real test.

The D class were not just limited to the bauxite trains and over the years were used in other areas of Western Australia's South West including coal, alumina and again in pairs on the Lambert to Bunbury woodchip trains.

Over time the Comeng built Alco N classes and Clyde built DB class came to share the D class duties, it was not uncommon for trains to be hauled by mixed combinations of D/N or D/DB locomotives.

The D classes were worked hard by the WAGR/ Westrail and inevitably with newer locomotives being placed in service the D classes began to be withdrawn. What was perhaps remarkable is that of the five locomotives, only D1561 was scrapped in Western Australia. The other four examples were to live on with new owners in other parts of the world (refer to the table above right):

Loco Number	Details
D1562	Last D in service. Exported to South Africa and sold to Rovos Rail in South Africa in 2015.
D1563	Exported to Chile for use by Ferrocarril de Antofagasta a Bolivia (FCAB) in 1998.
D1564	Exported to New Zealand for rebuilding by Tranz Rail in 1998 for use by affiliated company Tasrail.
D1565	Exported to New Zealand for rebuilding by Tranz Rail in 1998 for use by affiliated company Tasrail.

## The Tasrail Era

In 1998, D1564 and D1565 were initially purchased by Tranz Rail and after a rebuild in New Zealand were sent to affiliated company Tasrail in Tasmania in June 2001. The rebuild included a new cab replacing the previous 'hood' arrangement. The cab design adopted for use on the two D class was based on the cab fitted to the rebuilt New Zealand Rail loco DXR 8007 in 1993. In the overhaul D1564 also received a new engine and a different exhaust arrangement. The locomotives were painted in the Wisconsin Central maroon with yellow stripe livery and renumbered 2020 and 2021 respectively.

The locomotives were delivered to the Tasrail system in June 2001 and entered service later in the year. Interestingly the two locomotives were supplied without traction motors so were fitted initially with English Electric traction motors by Tasrail. These were replaced with EMD units over time.





**Left (page 34):** D1565 soon after a repaint on a freight heading towards Midland, passing High Wycombe on 7 December 1979. Phil Melling

**Above:** D1562 and D1564 haul an empty bauxite train to Jarrahdale on 15 October 1983. Phil Melling

**Below:** D1565 and D1564 on a bauxite train on the Jarradale branch on 2 January 1975. Jeff Austin

The two locomotives joined the mixed English Electric and EMD-powered fleet. Tasmania were actually able to rewire their locomotives, so that the EMD and English Electric locomotives could operate in multiple, a characteristic that was unique to Australia.

The two locomotives earned a reputation of not being very powerful

but continued in service until the arrival of the 17 new TR class locomotives in 2013-14. The locomotives now found themselves stored a second time in their working career, in 2014. They were placed into open storage at Tasrail's East Tamar Workshops, and the future did not look promising for any of the stored locomotives.







**Above:** 2020, 2003, 2051 and 2002 head light engine to Boyer passing Beedhams Bay, Claremont, on 10 January 2014. Phil Melling  
**Below:** 2021 and 2020 on 764 empty log wagons from Hobart to Brighton cross the causeway at Bridgewater on 25 January 2014. Phil Melling





**Right:** DR1565 and DR1564 after running round their loaded grain train at York CBH on 9 January 2019. Phil Melling  
**Below:** DR1564 and DR1565 on 4K03 empty grain train to York pass through Wilberforce on 9 January 2019 (the DR's second day on grain trains). Phil Melling



### Watco Australia- A West Australian return

On 5 May 2017, at East Tamar workshops, 2020 was loaded on to a truck for transport to Southern Shorthaul Railroad's Bendigo Workshops in Victoria for a rebuild. A week later 2021 was also on its way to Bendigo. Both locomotives were to be refurbished for Watco Australia for use in Western Australia on infrastructure trains.

The locomotives were observed in Watco colours outside the Bendigo workshops in November 2017 and bore the classification DR and carrying the numbers 1564 and 1565, a return back to their original WA numbering. The locomotives were painted in Watco's corporate black and yellow paint scheme.

DR1565 was the first to arrive at UGL Bassendean, where Watco leases space, on 9 January 2018. DR1564 arrived at UGL Bassendean on 22 January 2018.

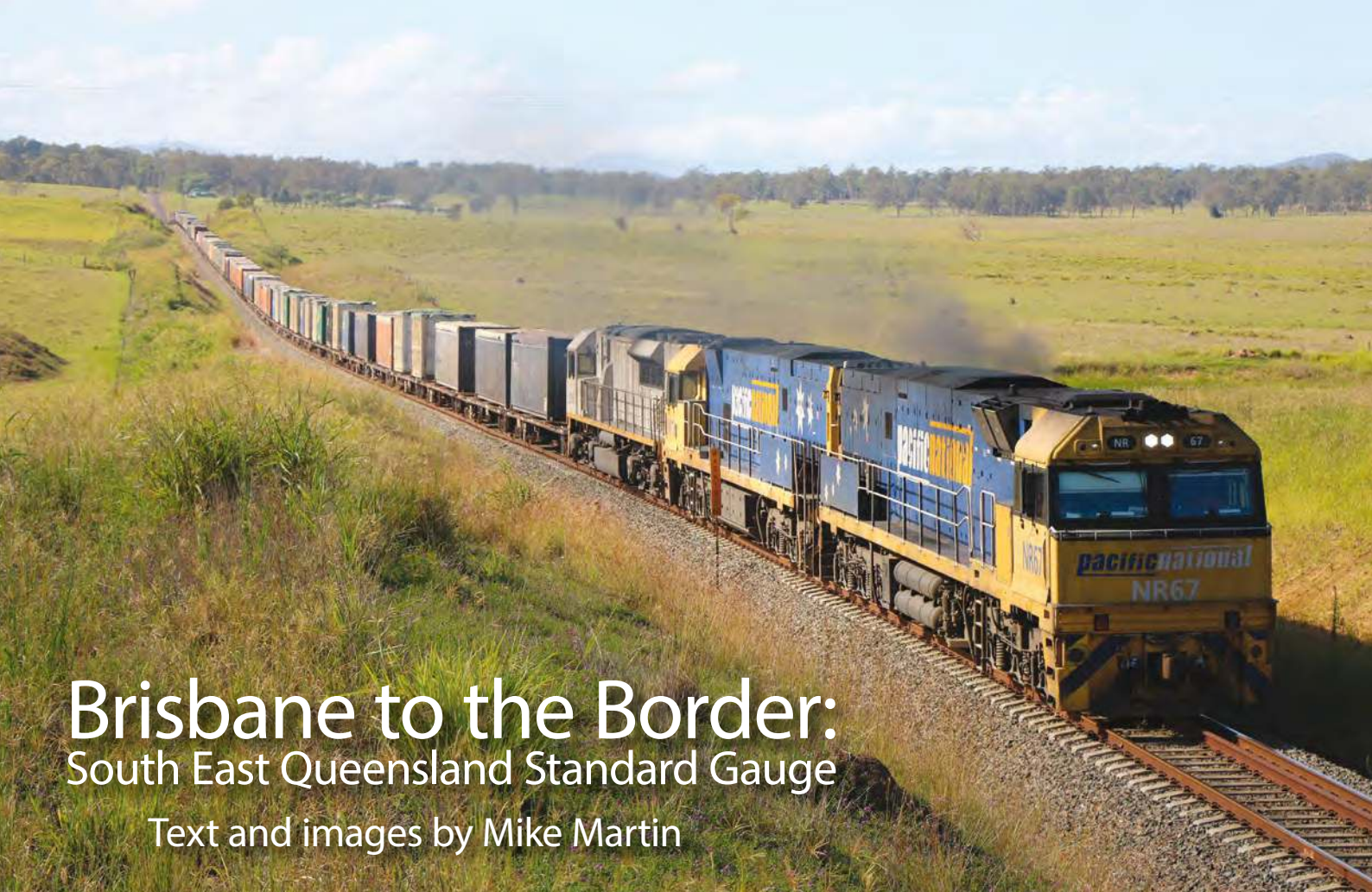
Further preparation work was undertaken in WA and the next move occurred on 29 June 2018 when DR1564 was towed to Forrestfield and entered Gemco's workshop on 30 June 2018.

Both DRs trialed to CBH Kwinana on 6 November 2018, and only a day later worked on a ballast train into the Avon Valley, marking their return once again hauling trains in WA. On 16 November both locomotives were used to transfer new Transperth EMU set 123 from the Public Transport Authority's Bellevue facility to Midland Railway station.

On 8 January this year, DR1565 and DR1564 led 3K03 empty grain train from Kwinana CBH to York CBH to load grain. The DRs then became a regular feature on various CBH grain trains each day during January and early February to help with a large harvest. It is understood the DR's will be replaced on the grain trains once CBH's first three refurbished DBZ locomotives become available.







# Brisbane to the Border:

## South East Queensland Standard Gauge

Text and images by Mike Martin

**T**here are reasons why the 111-kilometre standard-gauge line in southeast Queensland, lying between Brisbane and the Queensland/NSW border, might be looked down upon as a poor cousin of southern states counterparts. It carries fewer trains, has less motive power variety, fewer operators and the majority of traffic runs after dark. These characteristics make it a hard ask for rail enthusiasts, who are generally keen to get images of trains in daylight, preferably during the 'golden hours', and showcasing a variety of traffic, motive power and operators.

Nonetheless, the last 25 years have seen a number of developments that merit attention on this stretch of track. These include the introduction of NR Class locomotives in January 1997, longer trains and passing loops, improved signalling and infrastructure, plus the entry (SCT) and exit (Aurizon) of system operators. However, the most significant change in the period under review was the handing over by Queensland Rail of the track between the state border and Acacia Ridge to the Australian Rail Track Corporation (ARTC) under a 60-year lease arrangement on 15 January 2010. A ceremonial concrete sleeper was laid on that day just south of Acacia Ridge to mark the completion of the concrete sleeper program a few days before.

One consequence of running more powerful locomotives – such as the ubiquitous NR class – and longer trains (because of lengthened passing loops) has been fewer services that are both longer and heavier.

### BACKGROUND

After a long period of stagnancy, ARTC and private investment north of the border has brought about much change and modernisation over the last decade. These include centralised traffic control (CTC), which was commissioned between Casino and Acacia Ridge in June 2008, and the opening of new freight interchange operations. As a result, what was once known as the Uniform Gauge Railway has seen different operators, changing consists, increased gross tonnages, higher train speeds and more variety in motive power.

### TRACK IMPROVEMENTS

In order to better hold the gauge and stabilise a deteriorating track, Queensland Rail (who was responsible for the track prior to the ARTC

**Above: On Tuesday 24 December 2018 (Christmas Eve), NR 67, NR 112 and LDP 009 head a very late running SWB3 through Kagaru at 7.55am. The train doesn't look like a steel-train consist, but after a lengthy stopover in Sydney due to inclement weather and flooding, a lot of container traffic had been added to the front of the train.**

takeover) installed Low Profile Concrete (LPC) sleepers on an interspersed basis around 2005. Being the same profile as timber, these sleepers can be easily inserted into the trackbed without further excavation.

However, this was only a stopgap measure for a line that Queensland had shown little interest in and just a few years later, the ARTC, with \$55.8 million of Commonwealth Government funding, commenced installation of full-depth concrete sleepers between Glenapp and Acacia Ridge in November 2009. Glenapp was then the northern limit of continuous concrete sleepers from Maitland.

Dual gauge sleepers and a third rail were installed from Acacia Ridge to Bromelton (although a narrow-gauge train has yet to make use of the facility). In addition, heavier 60 kg rail was installed in selected areas.

### INFRASTRUCTURE IMPROVEMENTS

The most noticeable recent infrastructure improvement was the construction of the road overpass at Beaudesert Road near Elizabeth Street, Acacia Ridge. This \$113M project lowered the rail floor by about ten metres while leaving the road level largely unchanged. The project was completed in June 2009 and opened on the Monday of the Queen's Birthday weekend, after a 72-hour closure.

The main benefit was to motorists who used to queue up for up to 15 minutes at the boom gates while container trains crossed Beaudesert Road, almost invariably at peak hours. Southbound trains were timetabled to leave Acacia Ridge in the afternoon peak between 4.00 pm and 6.00 pm, whilst northbound trains regularly arrived during the morning peak between 7.00 am and 9.00 am. However, trains heading south greatly benefit from this new alignment, which has eased standing starts by eliminating a sharp four percent grade out of Acacia Ridge Yard.



## CROSSING LOOPS

The short crossing loop at Kagaru was eliminated in the late 90s' as longer trains were introduced. In 2002 there was the 412m passing loop at Greenbank, a 1618m passing loop at Bromelton (North) and a 1,535m passing loop at Glenapp. The 412 metre Greenbank passing loop was really only suitable for a container train to pass the northbound XPT [NT 31] or the southbound XPT [NT 32], limiting its operational usefulness.

By the end of that decade, the Border loop crossing had been eliminated, the Greenbank passing loop had been extended to 1,570 metres and a new 1,560 metre crossing loop constructed at Tamrookum. (There was a previous loop at Tamrookum, one of a number commissioned during World War II on the Sydney – Brisbane line. Greenbank was also a 'wartime' loop.) In 2019, passing loops are available at Greenbank, Bromelton North, Tamrookum and Glenapp with all capable of holding 1,500m container/intermodal trains and the 1,200m metre plus steel trains.

## SIGNALLING

Before the passing loops were lengthened and/or extended major changes were made to the signalling system with the introduction of CTC. The system replaced an almost century-old Electric Staff method of Safe Working that had required all trains to stop at each crossing loop (if the loop was unattended, as they were in later years) and exchange a small metal token to give permission to proceed onto the next section of track. This was required regardless of whether the train had to cross another or not.

The calculated CTC time saving between Brisbane and Casino is 45 minutes. From personal observation, it was easily possible for each loop to cost 10 minutes transit time, which included slowing to a halt, dwell time for the driver's assistant to alight and open the signal hut, return to the locomotive and move the train from rest back up to track speed.

## OPERATORS

Since about 1997 the major operator on this corridor has been, and currently still is Pacific National. Aurizon ventured onto the standard gauge between Murwillumbah and Casino as the Northern Rivers Railroad, before changing to QR National and finally Aurizon (since December 2012). It operated a fairly comprehensive operation out of Acacia Ridge until the end of 2017 when the company decided to exit standard-gauge intermodal haulage.

Prior to exiting, Aurizon was running container trains to all mainland state capital cities in Australia including Perth. For the last few years before exit, Aurizon had hauled van traffic for SCT. On some occasions, the SCT component of Aurizon trains leaving Acacia Ridge was up to 25 per cent or more of the loading.

SCT opened an intermodal terminal at Bromelton in June 2017 and now runs four trains in each direction to/from Melbourne every week out of Bromelton. Aurizon had only given SCT 12 months' notice to cease using Aurizon's trains (the absolute minimum under the contract), so SCT initiated a "quick build" to established premises at Bromelton (as part of Bromelton Industrial estate). The 2019 situation is that Pacific National is the sole operator of standard-gauge trains into and out of Acacia Ridge, while SCT run trains from their site within the Bromelton Industrial estate.

## TRAFFIC

The January 2019 ARTC timetable indicates the XPT passenger train and dozens of weekly freight services in each direction along this short corridor. XPT services operate daily [NT 31 northbound and NT 32 southbound] into dual-gauge track on platform two at Brisbane's Roma Street station. During Daylight Saving time (October to April), these trains roll out of Platform 2 at 4:55am, with the northbound services arriving at an equally unsavoury 4.00 am.

Limited track capacity and priority given to suburban services are usually offered as the official reasons for these unfriendly operating times.









There are 25 freight services each way per week comprising 4 MB9/ BM9 services weekly (operated by SCT), 6 WB/BW steel trains from/ to Wollongong (Port Kembla) weekly. There are another 15 intermodal services in each direction weekly, being Brisbane to Sydney (BS), Brisbane to Melbourne (BM) or Brisbane to Adelaide (BA) services or their northbound equivalents (SB/MB or AB trains). All the steel trains and intermodal trains – apart from the BM9/MB9 SCT services to/ from Bromelton – are operated into and out of Acacia Ridge by Pacific National (PN).

These trains predominantly arrive or depart in non-daylight hours; however, there are some opportunities for photographers in the late afternoon for some southbound container trains and in the early morning for some Sydney-Brisbane services. If running on time, there are no opportunities for photographing steel trains into or out of Acacia Ridge. There is limited scope for capturing the SCT trains as they arrive at Bromelton around midnight and depart around 6.30pm or later.

## TONNAGES

The XPT services have a gross tonnage of around 350 tonnes. The Wollongong to Brisbane (WB) loaded steel trains are in the 1,200-1,400m length range and gross around 4,000-4,500 tonnes while the southbound equivalents are often mostly empty but still can still gross up to 1,500 tonnes with three locomotives up front.

Container trains - up to the maximum allowable length of 1,500 metres - are typically 2,500 -3,000 tonnes in the northbound (mostly loaded containers) and less in the southbound direction with some empty loading quite often present.

A recent example of a typical working was 5MB4 on Saturday 9 February 2019. At the business end were NR 82, NR 14 and AN 4 in charge of 5MB4 with a close-to-maximum length of 1,497 metres and a weight that exceeded 3,000 tonnes, seen as it worked through Greenbank at 6.00am. All up, annual tonnage on the standard gauge in Queensland is generally estimated to be 7.0 MGT (Million Gross Tonnes per annum).

## SPEEDS

Maximum allowable speeds for container trains (23.0 tonne axle loads) are 100 km/hour and for steel trains (26.0 tonne axle loads) are 80 km/hour. The XPT services naturally operate at lower axle loads and higher speeds.

However average speeds are much lower than this for container and steel trains. Over a long period of time, writer observations suggest a typical average speed for a container train from Sydney to Brisbane is 60 km/hour with steel trains slightly slower at around 50 km/hour. These can vary greatly depending upon other issues such as dwell time at Taree for crew change purposes and number of crosses required throughout. For instance, an SB container service will have to wait for NT31 to get ahead of it and then to cross it later (as NT32) and also may have to cross BM9, BM4, BW4 and BS6 container trains in the opposite direction.

**Above left (page 40):** NT 32 – the southbound XPT service from Roma Street, Brisbane to Central, Sydney – has left Brisbane at 5am on Thursday 27 December 2018, powered by units 2008 and 1012. The train is seen passing through the tunnel at Gloucester Street, between Roma Street and Acacia Ridge.

**Below left (page 40):** A very busy Acacia Ridge Yard on Friday 4 January 2019. In the foreground, NR 56, G 526 and NR 48 are departing with 6BA6 at 5.20pm. In the right background, NR 90, AN 5 and NR 23 wait patiently with 6BM4, which will depart several hours later.

**Right:** A novel use of two SCT containers to denote the entrance to SCT's Intermodal site at Bromelton, approximately 75 km south of Brisbane. SCT began operating trains on a regular basis from this site in June 2017.

## SOME TYPICAL RECENT SIGHTINGS

To give an idea of the current workings, listed below are some recent workings into and out of Acacia Ridge and/or Bromelton.

1. NR 1 + AN 5 + NR 101 on 6BA6 on Friday 07 December 2018;
2. NR 48 + 9305 + NR 98 On 1BS3 on Saturday 15 December 2018;
3. NR 81 + NR 42 + NR 57 on 6BA6 on Friday 21 December 2018;
4. NR 67 + NR 112 + LDP 009 on a very-late running 5WB3 on Monday 24 December 2018;
5. NR 115 + AN 8 + NR 66 on 6BA6 on Friday 28 December 2018;
6. NR 112 + LDP 009 + NR 67 on 6BM4 on Friday 28 December 2018;
7. NR 20 + NR 21 + AN 5 + NR 111 on 2BM4 on Monday 31 December 2018;
8. NR 6 + NR 26 on 2BS6 on Monday 31 December 2018;
9. NR 56 + G 526 + NR 48 on 6BA6 on Friday 04 January 2019;
10. NR 90 + AN 5 + NR 23 on 6BM4 on Friday 04 January 2019;
11. NR 38 + NR 37 on 7BW4 on Saturday 05 January 2019;
12. NR 109 + TT 107 on 7SB1 on Sunday 06 January 2019;
13. NR 6 + TT 107 + NR 109 on 3BM4 on Tuesday 08 January 2019;
14. SCT 004 + SCT 012 on 5BM9 on Thursday 10 January 2019;
15. NR 13 + TT 107 + NR 121 on 6BA6 on Friday 11 January 2019;
16. NR 2 + NR 82 + NR 39 on 6BM4 on Friday 11 January 2019;
17. NR 44 + TT 108 + NR 72 on 6SB1 on Saturday 12 January 2019;
18. NR 50 + 8206 on 7BW2 on Saturday 12 January 2019;
19. NR 50 + NR 83 on 3BS6 on Tuesday 15 January 2019;
20. NR 108 + NR 32 + AN 5 on 3BM4 on Tuesday 15 January 2019;
21. NR 54 + NR 18 + NR 29 + NR 90 + NR 69 on 6BA 6 on Friday 18 January 2019;
22. NR 107 + TT 107 + NR 15 on 6BM4 on Friday 18 January 2019;
23. NR 64 + TT 1110 on 4SB1 on Thursday 24 January 2019;
24. NR 14 + NR 108 + NR 79 on 6BA6 on Friday 25 January 2019;
25. NR 84 + LDP 006 + NR 10 on 6BM4 on Friday 25 January 2019;
26. NR 24 + AN 4 + NR 41 on 6BM4 on Saturday 26 January 2019;
27. NR 64 + TT 110 + TT 105 on 7WB3 on Sunday 27 January 2019;
28. NR 115 + 8184 on 2MB4 on Monday 28 January 2019.

This is a lengthy list of sightings but it is necessary to give an indication of the variety of combinations that can occur. Even on the Queensland section of the interstate line, if one is patient and persevering and prepared for some early starts, there is still a reasonable smorgasbord of trains and locomotives to be seen.







**Above:** In a rare daytime working for a steel train out of Acacia Ridge, 1BW4 races through Greenbank, and past the 956 Km mark, just after 1.20pm on Sunday 10 March. The locomotives were the unusual combination of NR 99 + TT 115 + LDP 007 . The train departed Acacia Ridge at 1.10pm and was a delayed 7BW4, due to a weekend closure on the North Coast Line. Note the dual-gauge track on both roads. This was one of the passing loops extended to over 1500m in 2009 to handle the longer 1500m intermodal services on the standard gauge in Queensland.

**Below:** A late running 3MB9 intermodal passes through Tamrookum behind LDP 002, CSR 008 and CSR 006 at 8.55am on Thursday 29 November 2018. Tamrookum was one of the 1500m plus passing loops established in 2009.







NR 64, TT 110 and TT 105 race north through Glenapp at 6 pm on Sunday 27 January with the 7WB3 service. Glenapp is now the last passing loop when heading south in Queensland. The others are at Greenback, Bromelton North and Tamrookum.

## MOTIVE POWER

Up until about 10 years ago, there was a reasonable variety of motive power on the standard gauge in Queensland. Aurizon was using the CLP and CLF's along with LDP's and the occasional G or X class in Aurizon colours; more recently Aurizon stopped using most of the above except the LDP's and started running 6000 and 6020 class units.

Again, until fairly recently, Pacific National (PN) ran an almost exclusive NR service with a DL or AN sometimes sandwiched between two NR's instead of the fairly standard three NR's. About two or so years ago the DL's were taken off intermodal services and transferred south, where they are currently used on drought relief interstate grain haulage.

Since Acacia Ridge is now a PN-only standard gauge depot, trains will usually have a mix of NRs, ANs and the occasional G or TT class. The NR class seem to be most common, with the appearance of TTs the most recent change. (The TT class are rated 3,200kW against the 3,000kW of the NR's.) Like the DL's and AN's it doesn't appear likely that TT's will lead on intermodals.

82 class and 93 class occasionally visit on intermodals or steel trains, while the shunting unit at Acacia Ridge is generally an 81 class locomotive. LDP's are also making the occasional appearance on some steel and intermodal services operated by PN and container services, operated by SCT. Current workings into and out of Bromelton are dominated by the SCT and CSR classes but recently have sometimes included an LDP locomotive.

## THE FUTURE

The Melbourne – Brisbane Inland Railway is coming to Queensland, with the new line junctioning with the existing standard gauge track at Kagaru. There are also proposals for a new railway between Acacia Ridge and the Port of Brisbane at Fisherman Islands to completely segregate freight trains from Queensland Rail suburban services.

These developments provide good prospects for a fresh infusion of motive power and services along the standard gauge track in southeast Queensland.



SCT 004 and SCT 012 depart SCT's Bromelton Intermodal depot at 6.25 pm on Thursday 10 January with the 5BM9 service. There are four of each of the BM9 and MB9 trains leaving and arriving at Bromelton on a weekly basis.





# North Tassie trappings

Text and images by Malcolm Holdsworth

Being one of the 21st century's least technologically competent people, on my occasional railfan outings I tend to turn up in areas with a bit of general knowledge about train running and then wait around to see what really happens. No train trackers or scanners for me. While this approach can be incredibly frustrating on the 75% of occasions when things work out badly, I am pleasantly surprised when they go right.

I lobbied into Launceston by Qantaslink Dash 8 at around 1.30pm on Friday 15 February. Before flying over I'd been told by some well-informed enthusiasts that the running was broadly as it had been for decades, ie No. 46 loaded coal train from Fingal to Railton should run on Monday, Tuesday and Thursday; the two Hobart – Burnie trains arrive in the morning six days a week, the first one well before dawn and No. 36 at around 10.00am. No. 31 'paper train' leaves at about 10.30am and No. 35 departs at about 8.00pm. In a variation on the standard 'table', they follow each other out of Burnie on Sunday evenings, one at around 3.00pm and the other close to 7.00pm. The Melba line ore train leaves Burnie at about 9.30am each day and the Devonport – Railton cement shuttle runs most of the time.

This turned out to be broadly correct.

I hoped to see No. 31 as I made my way to my night's lodgings at Deloraine, but that didn't happen. Being a Friday, there was no coal loading to be picked up at Western Junction for the Boyer timber mill and no cross and crew change with the coalie was required at Deloraine, so it snuck past. The only train action I was aware of before sunup on Saturday 16 February was repeated horn blasts at 3.45am as the second of the jobs from Hobart went through town to the north.

Faced with a lean morning's action, I found the cement shuttle coming into Railton. The first thing I learnt was that the old arrangement of a DQ or TR and the Y class 'shell' with driver's controls topping and tailing the hopper set had ended after a runaway in September last year, when

TR11 and seven wagons came to grief (see November 2018 *RD*, page 23). A TR class currently heads the loaded consists with a powered DQ at the rear. A driver told me that steps are being taken to gut a stored DQ to create another engine-less 'driving cab' for these workings. The weather was a mixed bag, as it would be throughout my stay, but I managed to take a few shots near the cement plant and in the forest. I drove through to Burnie that afternoon and there were plenty of loaded container flats in the yard. Overnighting at Ulverstone was very pleasant and the Red Grasshopper pizza parlour is a standout.

Sunday 17 Feb dawned fairly bright, so I went into Burnie, more in hope than expectation that anything would be happening. Yay! Four DQs were hitched up to the empty ore train, one more loco than I was used to from previous trips, and they were expected to 'jump' at 9.30am. Up the hill I went. The climb into the hinterland from Burnie is steep and scenic with constant S turns, but it is incredibly hard to photograph well. Not far short of Ridgley, Metaira Road loops around beside the line for a kilometre or so. It was fun chatting to some inquisitive young heifers, but I had a somewhat less positive experience when I stepped on a tiger snake in long trackside grass. This reminded me of tales from the 1971 railway centenary, where railfans were seen leaping into the air all over a sun drenched hillside as they encountered various vipers.

A rare moment of sun and the shot was in the bag. The chase to the point where rail and the Queenstown road finally part company was gentle, 2008's driver leaving the cab door open for air flow in the brutal 23 degree heat. A set of ballast hoppers was almost loaded at the loop adjacent to Guildford Road and I was told that the two spare DQs in Burnie yard would be taking them further down the line for track work the following day. Cloud thwarted my attempts to record the evening departures on the main line. I was based in Burnie's Beach Hotel for three nights. Despite its average external presentation, I can report that their steaks were first rate.





**Left (page 44):** Having endured five failed attempts at getting sun between Deloraine and Dunorlan with Quamby Bluff and the Great Western Tiers rising in the background over many years, it was great to find the coalie running on Monday 18 February with nicely proportioned power up front in the form of 2054/2051.

**Above:** Early afternoon on Saturday 16 February finds cement and graffiti coated DQ2011 rolling slowly up to the points at the entrance to the Cement Australia loading facility at Railton. Under current arrangements, a DQ powers the empty train with a TR dead attached in the rear, and vice versa on the heavier return run to Devonport.

**Below:** Later the same day, TR014 leads a loaded consist towards the discharge point at the docks on the western side of the Mersey River. Bulk carrier *Goliath* will take on some thousands of tonnes of cement for the voyage across Bass Strait to the booming Melbourne property market.







Not expecting anything to come in early on Monday morning, I was slow off the mark. I paid the usual price as the train from Hobart ran roughly two hours ahead of time. I then paid a second price as the Melba line ore run was axed due to the ballasting work and a need for the locos to receive shed attention.

Cunard's *Queen Elizabeth* was moored beside the container depot, so it was possible to get shots of the huge vessel towering over the town and yard. I chased No. 31 eastwards and kept going with it although the weather was grim. It met No. 46 coalie at Deloraine as programmed. The crews swapped over, taking about 45 minutes. Having tried and failed five times in 20 years to get a sunny shot with the Great Western Tiers in the background on the climb away from Deloraine, I was amazed when the weather behaved itself.

On Tuesday 19 Feb conditions were even more dodgy than the preceding day, but the ore train ran with the same quad lash-up and I took one or two sunny shots. DQ 2009 and its partner provided an interesting juxtaposition with some track lifting machinery as they snoozed in the Guildford Road ballast siding, then it was back to more cement running and a visit to the ever-friendly Don River Railway museum.

The ore train didn't run on Wednesday 20 Feb, and I could find no sign of the paper train, so I went east. Driving via Launceston Loco, I was told that the coalie was coming up from Fingal, even though it was a Wednesday, and that it would cross No. 31 (which I assumed had been cancelled) at Deloraine as usual. One of the managers said that the train was running four days a week with a pair of 2050s, having relied on two or three Zs/ZAs (and more recently two TRs) for years, and that several locos were out of action, making motive power availability tight. I was pointed at the back of a fast-vanishing white 4wd which was

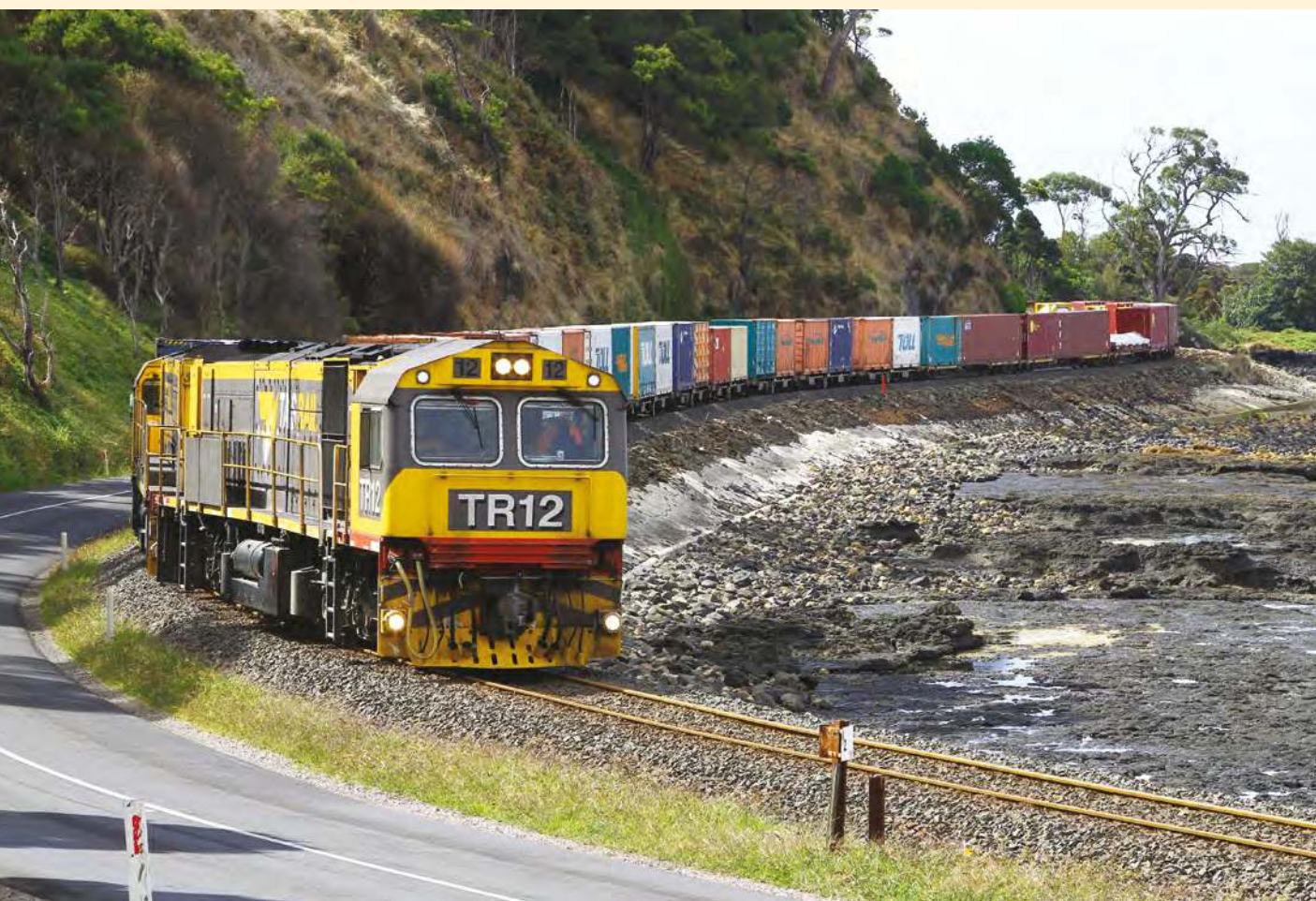
heading to Western Junction to do the crew change. 46 dropped the usual four wagons for transfer south to Boyer by 31. I have no idea why they don't leave them at Conara Jct and let both trains save on fuel and dropped running time. 46 met 31 at Deloraine, the latter turning out to be a single TR with a light load, including cement encrusted DQ 2011 heading to Launceston for attention. I again fluked the coalie in sun on the climb towards Dunorlan and managed to overtake 31 in time to shoot it on Longford viaduct.

I then headed off for a few days of pleasant, stress-free tourism in Hobart and on the Freycinet Peninsula. Throughout my time in the former 'Apple Isle', I found the train crews to be incredibly patient and forthcoming regarding the running. Without them my casual approach would have yielded far less coverage than it did.

**Above:** Friendly cows out of sight at right and big glossy black snake well hidden in the grass at left, DQs 2008, 2010, 2002 and 2001 occupy centre stage as they wriggle the 9.30am empty Melba line ore train from Burnie parallel with Metaira Road on Sunday 17 February. The first three locos are powered up and making a lovely EMD racket.

**Right:** Not the most handsome engines to grace the planet, the Tasrail TRs get to run through some of its most pleasant scenery. Low tide finds Nos. 12 and 17 of that class working No. 31 'paper train' around the rugged rocks beside Penguin Road on Sunday 17 February with the tiny Three Sisters-Goat Island Nature Reserve behind them.









**Above:** The grace and scale of Cunard's luxury liner *Queen Elizabeth* dominate the harbour at Burnie while passengers and crew hit the town on Monday 18 February. TR15 loiters in the foreground with the intermodal service from Hobart's Brighton freight hub. Toll's *Tasmanian Achiever II* container ferry swings at rear as tugs line it up for another trip to the mainland.

**Right:** Keeping well below my radar for most of its journey from Burnie, single-headed TR04 (2011 being part of the load) scampers over Longford viaduct with train No. 31's short consist on 20 February.





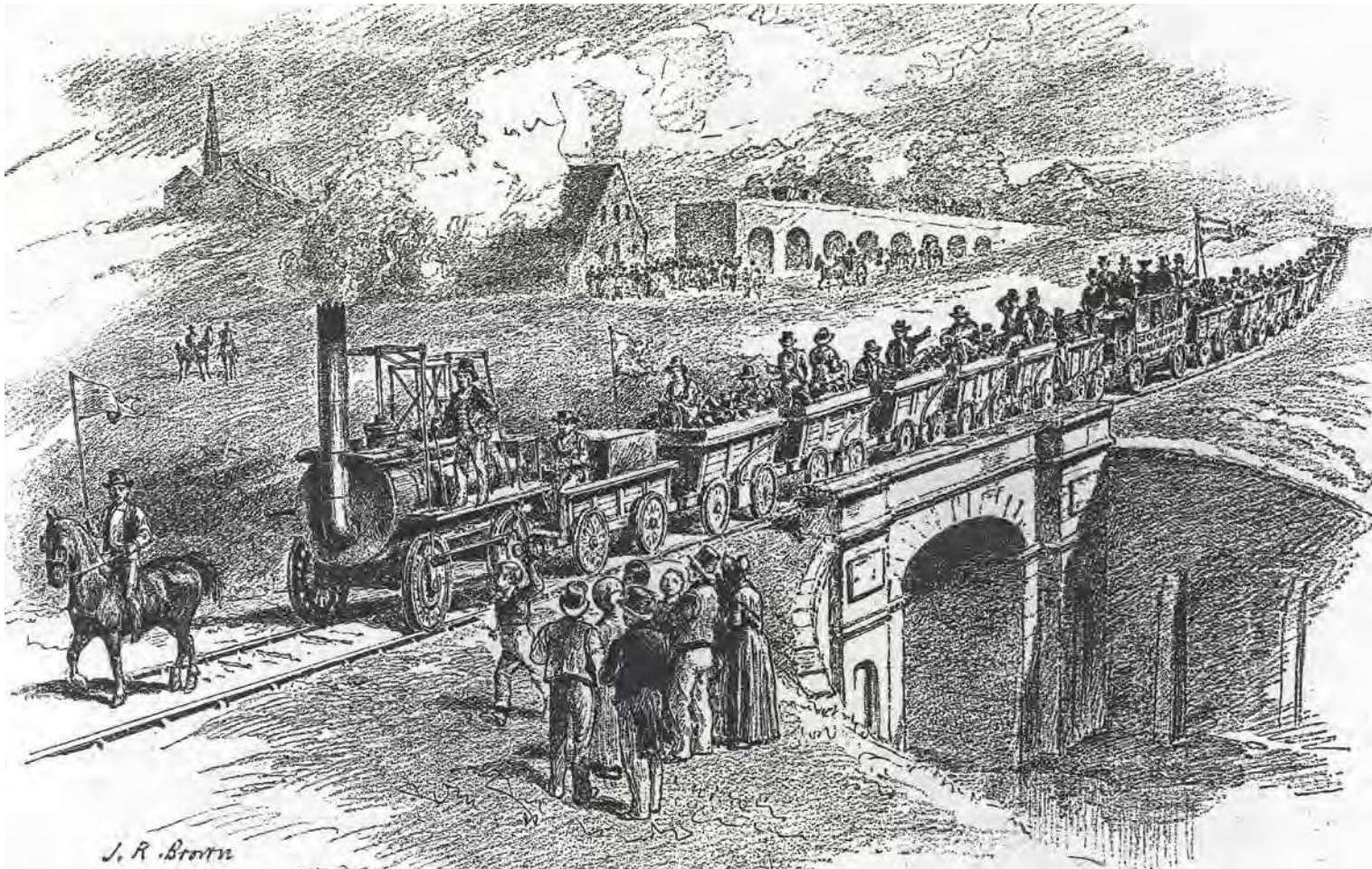


**Above:** A dash inland from Burnie on 19 February produced a few more sunny shots of the ore train and this fluky view of DQ 2009 through the arm of a track maintenance machine.

**Below:** TR15 and an unidentified sister power up for the last short leg of their journey as they work No. 36 intermodal past TR04 at South Burnie on Monday 18 February. The decaying hulk of the once huge Associated Pulp and Paper Mills plant rises behind the train.







# THE FIRST TRAIN DRIVERS

## FRANK J HUSSEY

In a discussion within an email group I belong to, the question of train drivers' rates and conditions came up. I proffered the view that one of the main influences of improvements in these aspects was a consequence of industry privatisation. Drivers are now skilled tradespersons and able to ply their trade to whomever and wherever they might find the best arrangements economically and socially.

25 years ago, this was not the case. Apart from the Pilbara railways, and a few industrial operators, the only employers were the state-owned rail systems and more particularly your home state rail system. Once signed up with them you were stranded as there was no way, for example, to carry your NSW drivers' qualification into Victoria or Queensland. I suffered my own example of this when I moved from Sydney, where I was an acting fireman with two years' experience, to Victoria where I started from scratch with the Victorian Railways in a class of students with no rail experience at all.

The main factors for change here were National Rail (NR) and the coincident reforms in trades training under the Australian Qualifications Framework (AQF). The latter produced a National Certificate in train driving and the former used it to recognise the skill of train driving no matter where learnt or practised. This enabled NR to populate its depots and run crews across state borders (naturally with the necessary additional training to cater for different safeworking and signalling systems).

Nowadays I think that some drivers have a Velcro patch on their hi-viz shirts to stick on the logo of whomever they are working for at the moment! And good luck to them I say – they are like any other tradesperson.

Now for the segue to the first train drivers. Consequent of moving house, and my book collection, I have been re-reading a number as I rearrange them. Two of these were *Speaking of Steam* by ES Cox (1971 Ian Allan) and *George and Robert Stephenson - The railway revolution* by LTC Rolt

(of *Red for Danger* fame) 1960 Penguin publishers. The former draws from papers submitted to the Institution of Mechanical Engineers from 1849 and particularly one Joseph Tomlinson, the son of the superintendent of the world's first steam operated public railway – the Stockton and Darlington, opened in 1825. He was apprenticed to Timothy Hackworth – the locomotive superintendent of the railway, based at Shildon shed. The latter book draws from a variety of historical sources and in a chapter called 'The first railwaymen' it vividly paints a picture of those times, circa 1825.

These were the ultimate in contract drivers. Provided with a locomotive and wagons they were paid 1/4 pence per ton per mile. They engaged their own firemen and provided their own fuel and oil. From Tomlinson "The driver had two men in his pay – one a driver/ fireman the other a fireman. Steam was got up on Sunday night by the fireman and the driver and he ran the first train on Monday morning....On the return to Shildon about 8 or 9 hours later the fireman went home and the driver with his fireman/driver ran the second trip. The driver then went home, the fireman off rest came and worked with the driver/fireman etc day after day. No trains ran on Sunday."

"On the return after a trip the engine was taken to the coal depot and coaled with a shovel by the men themselves. If traffic was plentiful the stay was short and after a meal the engine was off again. There was no timetable. After going about a mile from Shildon all the wagons had to be oiled as there were no grease (axle) boxes, the engine was slowed down on the level, the two men got down one on each side with his oil can and brushes and with this the underside of each journal running in a cast iron plummer block was oiled." The only problem with this process was that sometimes the train would respond to the increased lubrication by rapid acceleration. Our intrepid crew would have to run



back to catch the loco – but with a loaded train they would climb on the last wagon and go back over the coal. It was necessary in daytime to put up a board on the last wagon so as to be sure they had not lost any of the train – at night a large pan of fire was affixed to the last wagon and the front of the tender for the same purpose and it was the duty of the fireman to keep both alight.

A driver by the name of George Sunter was famous for making the run without stopping, by dropping off his fireman to uncouple the engine, then run ahead and take water while his train trundled along behind and with perfect timing re couple and proceed with a full barrel of water!

There were no brakes on the engine or tender – only crude wooden brake blocks on the wagons that had to be held down. The only way the train could be stopped was by the fireman dropping off the engine and putting down hand brakes – or by putting the loco into reverse. As there was no reversing gear to do this the eccentric rods had to be lifted and the valves worked by hand – this required considerable skill and dexterity and those few who were able to practise it while the loco was in motion were truly ‘kings of the road’.

From Rolt’s book we read that the “road” was in fact a public highway occupied by “bye traders” working horse-hauled coal trains and six firms of coach operators operating horse carriage passenger services to a daily timetable. At first there were four passing places per mile on the Stockton and Darlington. Passenger coaches had right of way, and loco hauled trains over horse drawn. Midway between each passing loop was a lineside post with the rule that whomever had passed the post had right of way, the other compelled to retreat. One can only imagine the chaos when the “kings of the road” confronted the horse leaders who were not infrequently tipsy. For example, two drunken horse drivers decided to run their horse at a gallop resulting in a derailment of one of the vehicles that started to tear up the track. They forced another horse driver to back up even though he was passed the marker, and then overturned his empty wagons. They then encountered a steam loco, refused to give way, tore up a rail and threatened to throw the engine off the tracks.

Cox paints a wonderfully evocative picture of the times:

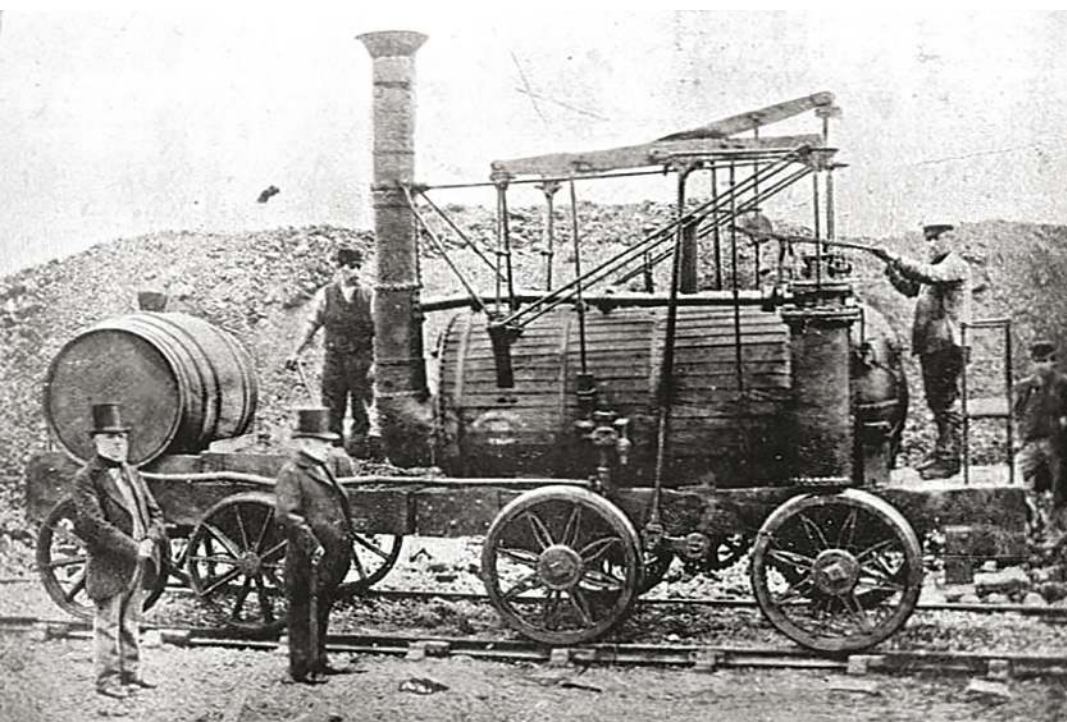
“Imagine standing line side on a black November evening with a full gale driving the rain across from the sea. The flickering smoky flame of the fire cresset hanging out in front heralds the approach of a clanking monster horrific to sight and hearing. Hauling its train against the grade an irregular harsh exhaust note

sends showers of sparks from its tall chimney and as the engine lurches past, its springless wheels dipping shudderingly over the rail joints. It is seen to be quite unattended, by either its fireman at its forward end under the chimney or by the driver on his unprotected platform high above the boiler. The fire has been fed, the crosshead driven pump is looking after the water level and the train in front is believed – hoped – to be so far ahead as to require no particular lookout. The wagons clank past at a steady 4 mph and presently above us we see a muffled figure slipping and scrambling over the dripping coals. This is the driver returning to the loco – this journey, as he clambers from wagon to wagon, hardly less dangerous than was his previous stance lineside as he applied a dab of lubricant to the passing journals. Now as the final wagon approaches with flames leaping upward from the rearward cresset we see our fireman, black of hands and face, who has just replenished the cresset before following the driver over the dancing wagons back to his duties at the firehole. The rumbling dies away and an accelerated exhaust note tells us that the driver is back and has opened out to his customary 8 mph and the volcano of incandescent sparks tells us that the fireman is also back on the job.”

Perhaps the last word on Drivers should belong to Robert Stephenson who, in a letter to a friend written on New Year’s Day 1828, was complaining about the demands that the coal owners, frustrated in their dealings with their drivers, were putting on him and his father. “My father has agreed to an alteration (in design) which I think will considerably reduce the quantity of machinery as well as the liability to mismanagement. Mr Pease writes my father that in their present complicated state they (locomotives) cannot be managed by “fools” therefore they must undergo some alteration or amendment. It is very true that the locomotive engine ...may be shaken to pieces, but such accidents are in a great measure under the control of enginemen, which are, by the by, not the most manageable class of beings. They perhaps want improvement as much as the engines...”

It is fair to say that in the intervening 190 years considerable improvements have been made to locomotives. As for the drivers – the strong independent nature of the craft of train driving that relies heavily on self-management, and the strong bond between them, has ensured their union membership and representation has not declined even in this age of outsourcing/contracting and privatisation.

Hence, I suspect many modern operations managers may relate to RS’s comments!



**Top left (page 50):** *The Opening of the Stockton & Darlington Railway in 1825* by artist JR Brown, originally published in *The Graphic* in 1888, depicts George Stephenson’s locomotive *Locomotion No.1* pulling 36 wagons carrying a mix of coal and flour as well as guests and workmen on opening day. The lone passenger car in the train clearly displays its stagecoach origins.

**Left:** Photographed in 1862, reputedly the year of its retirement, *Wylam Dilly* was built around 1815 by William Hedley and Timothy Hackworth for use at Wylam colliery, near Newcastle upon Tyne. Its 50psi ‘return flue’ boiler required the fireman to work from the chimney end, though it did at least allow the driver to have a proper footplate!





# The Great South Pacific Express goes west

Text and images by Basil Hancock

**I**n early 2016 the mothballed Queensland Rail Great South Pacific Express train was sold to Belmond for operation in Peru. In May 2017 after refurbishment it entered service as the Andean Explorer, operating luxury tours through the Andes. Basil Hancock spent three days on the train in November 2018.

## The Great South Pacific Express

The *Great South Pacific Express* (GSPE) was a venture by Queensland Rail (QR) into the luxury tourist train market in Australia, epitomised today by the *Indian Pacific* and the *Ghan*. It comprised a fleet of Pullman-style carriages constructed by QR at its Townsville workshops during the late 1990s at a cost of around \$35 million, using largely secondhand underframes and bogies with new bodies designed to replicate a vintage train. It included sleeping compartments in various layouts, lounge/bar, dining and kitchen cars, an observation car and crew and generator/luggage cars. The interiors were in a vintage style and the accommodation and finish were to a very high, if perhaps slightly sombre, standard.

It was intended to operate tours from Kuranda down the East Coast as far as Melbourne, and so two sets of bogies were provided to suit both 1067mm and 1435mm (standard) gauges, with bogie changes taking place at Acacia Ridge in Queensland while the passengers were on an off-train excursion.

In fact, the train was a joint venture between QR and Orient Express Hotels, the operators of the famed *Venice Simplon Orient Express* (VSOE) train in Europe. Orient Express Hotels later became part of Belmond which, as will be seen later, came to have considerable relevance to the train's current operations.

The GSPE commenced operating in April 1999 and certainly reached Melbourne on at least one trip and the Blue Mountains on a number of occasions, as well as a number of trips to Kuranda.

Unfortunately the train was a victim of a decline in tourism, combined

with high operating costs and reported poor ride on its secondhand bogies. The latter required reductions in running speeds and the addition of overnight stops, instead of passengers sleeping on the move, which played havoc with the originally planned schedules. In 2003 it ceased operation, having reportedly run up a deficit of \$12 million. The carriages were put into store in Ipswich workshops, and there was some debate for a number of years as to who actually owned them.

Further details of the GSPE and its Australian operations appeared in the June 1998 and December 2000 ARHS *Bulletin* magazines, amongst others, which include details of the train, its operations and fleet lists.

## Sale to Peru

After a number of rumours, it was announced that the GSPE carriages (with the possible exception of one car – see below) had been sold to Belmond Ltd, who already part-owned them anyway, as a result of taking over Orient Express Hotels, for operation on a new luxury train service in Peru, to be called the *Belmond Andean Explorer*.

The cars were shipped to Peru, presumably without the 1067mm gauge bogies, as they now only operate on standard-gauge tracks, and were refurbished at the PeruRail Arequipa workshops before entering service in May 2017.

## Belmond

Belmond Ltd is a hotel and leisure company that operates luxury hotels, train services and river cruises around the world. Amongst its portfolio are five luxury cruise trains, the *Venice Simplon Orient Express* (VSOE) in Europe, the *Royal Scotsman* (Scotland), the *Grand Hibernian* (Ireland), the *Eastern and Oriental Express* (Thailand, Malaysia and Singapore) and the *Andean Explorer* (Peru). It also operates three luxury day trains, the *Belmond British Pullman*, the *Hiram Bingham*, which takes tourists from Cusco to Aguas Calientes (the closest location to Machu Picchu) and the *Titicaca*, both of the latter in Peru.



**Left (page 52):** Observation Car QHOC 1830 is seen at the rear of the *Andean Explorer* just after the train has arrived on the dockside at Puno on Sunday 4 November 2018.

**Right:** On Monday 5 November 2018 Peru Rail Progress Rail GT42AC 223 kW Diesel-Electric Co-Co 814, built in 2015, heads the Cusco-bound *Andean Explorer* at Tinta station while the passengers are returning from a visit to the nearby Raqchi Inca ruins and archaeological site.

**Below:** On Wednesday 31 October 2018 Peru Rail Progress Rail GT42AC Co-Co 804 and 807, built in 2015, head empty mineral containers eastbound around 50 kilometres east of Arequipa. The desolate nature of the countryside and the sinuous nature of the track can be seen clearly as the train climbs a grade of around 4% (1 in 25). This is on the route of the *Andean Explorer*.



### The Andean Explorer

Today the new *Belmond Andean Explorer* train operates an intensive 7-day roster, on a Cusco-Puno-Arequipa-Puno-Cusco-Puno-Cusco cycle. The 7-day cycle offers various opportunities for different itineraries, ranging from one to five days, all with off-train excursions included. Six of the seven nights are spent with the train stationary, and only on the Saturday night do passengers sleep on a moving train.

Every week the train travels around 2,236 km in service, plus a little more empty running for turning, servicing, etc. While this may not be a large distance in comparison with many other trains,

such as the *Ghan* and *Indian Pacific*, most of it is on winding track with some significant and prolonged gradients, with maximum speeds probably less than 80 km/h, and all at high altitude in a very dry climate. Indeed the GSPE cars today operate through altitudes ranging from a low of 2,335 metres at Arequipa to a high of 4,313 metres at La Raya, a far cry from the maximum heights they would have reached in Australia.

The train is advertised as running for eleven months each year (March to January inclusive), with no services in February, which presumably allows for annual maintenance of the carriages. This suggests that, in total, it travels around 110,000 km each year.





## The train today

The *Andean Explorer* carriages are still recognisably the same as the GSPE train they originally formed. Cars still carry their Queensland numbers, as do the bogies, and most still have QR Townsville builders plates. Some still have QR embossed toplights in some windows. However the train has been refurbished both inside and out.

The former Pullman style deep red (almost brown) and cream GSPE livery has been replaced by a dark blue and white colour scheme, and the cars now carry large *Belmond Andean Explorer* names on the side, in stainless steel letters. The sleeping, lounge and dining cars also now carry names, which are displayed both inside and outside.

Internally the sombre polished wood finishes of the GSPE have largely been replaced by lighter colours, mainly in light grey shades, and the upholstery and sleeping car interiors have been replaced by lighter colours reflecting Peruvian culture. The display panels in the dining cars now include butterflies and other interesting items. Altogether the train now presents a much brighter appearance than in its GSPE days. Whether that is an improvement or not depends on your view, but I certainly found it attractive and welcoming.

One interesting feature of the train we travelled on was that the total passenger capacity was only 54. I think that, even though all sleeping compartments were occupied, we only had 48 passengers on board as some berths had single-person occupancy. This illustrates a major difference compared with the *Indian Pacific* and *Ghan*, where much larger passenger numbers are carried (sources suggest over 200 passengers on the *Indian Pacific* and up to 400 on the *Ghan*). This would provide a passenger to crew ratio of around perhaps seven or eight to one, I suspect. However, the low capacity of the *Andean Explorer* and the number of crew on board would probably make the ratio around three to one. This would be achievable in Peru where labour costs are, by western terms, comparatively low, but it might suggest one reason why the GSPE failed to make money in its native country.



**Top:** A Queensland Rail, Townsville Workshops, builder's plate fitted to *Andean Explorer* Sleeping Car State QHDS 1825 *Kiwicha* seen on the dockside at Puno on Sunday 4 November 2018.

**Above:** A QR glass toplight in one of the doors of Crew Car QHSC 1853, seen on Monday 5 November 2018.

## The fleet

There was at one time some confusion about how many GSPE cars were actually built and what their layouts, classifications and fleet numbers were. Reports vary, but it would appear, thanks to information provided by John Beckhaus, that in total 21 cars were built, of which fifteen were built on secondhand underframes and bogies and six were completely new.

The fleet remained in store after the end of QR operation, and one car is reported to have gone to Italy, although why and what happened to it are not known. The two *Bulletin* articles referenced earlier show some differences in the fleet details and car numbers, and the car numbers operating in Peru in 2018 were slightly different yet again.

This article does not attempt to resolve the issues and contradictions, as there is not sufficient space, but a list of the cars forming the train on which the author travelled is shown below in the order in which they were marshalled. The power van was at the front of the train in all cases and the observation car was at the rear, the train being turned on triangles at both termini and also at Puno.

The train was composed of 17 carriages as listed.

ANDEAN PACIFIC TRAIN FORMATION 3-5 NOVEMBER 2018				
CAR No.	NAME	QR CODE	QR DESCRIPTION	BERTHS
1832		QHPB	POWER VAN	
1854		QHSC	CREW CAR	Not noted
1853		QHSC	CREW CAR	18
1859	YARETA	QHDS	SLEEPING CAR STATE	8
1825	KIWICHA	QHDS	SLEEPING CAR STATE	8
1858	MOLLE	QHDS	SLEEPING CAR STATE	8
1841	TARA	QHLS	SLEEPING CAR PULLMAN	6
1843	TOLA	QHLS	SLEEPING CAR PULLMAN	6
1834	CAPULI	QHLS	SLEEPING CAR PULLMAN	4
1847	CHICA	QHLS	SLEEPING CAR PULLMAN	4
1831	COCA	QHSS	SLEEPING CAR COMMISSIONERS	4
1850	PICAFLO	QHLS	SLEEPING CAR PULLMAN + MASSAGE	6
1839	MACA	QHLC	LOUNGE	0
1852	MUNA	QHDC	DINING CAR	0
1836		QHGC	KITCHEN	0
1838	LLAMA	QHDB	DINING CAR/SHOP	0
1830		QHOC	OBSERVATION	0

It is reported that of the four cars not seen (1855, 1860, 1861 and 1863), at least three came to Peru, possibly all four, depending on what happened to the car that may have gone to Italy. However, as the workshops at Arequipa were passed in darkness it is not possible to say whether any spare cars were stored there. But given the intensive seven-day cycle that the train operates for eleven months a year, there would seem to be a need for spare cars to cover for maintenance and overhauls.

The oddity is car 1825 *Kiwicha*. None of the previous lists seen shows a GSPE car numbered 1825, but there was supposedly an identical GSPE car numbered 1826 that was not seen. *Kiwicha's* body, bogies and identification labels all clearly stated 1825, so whether this car was actually 1825 in Australia or is a renumbered 1826 is not clear.



## Conclusion

The *Great South Pacific Express* is alive and well and undoubtedly working harder than it ever did in Australia. It runs through some amazing scenery at high altitudes on some charming railways and is staffed by a very attentive and caring crew. The trip is highly recommended.

## Postscript

In December 2018 it was announced that LVMH (Louis Vuitton Moët Hennessy), which owns brands including Christian Dior, Givenchy, Bvlgari and TAG Heuer watches amongst many others, had acquired Belmond. It is not known how this might affect any of the Belmond train operations, including the *Andean Explorer*.



**Clockwise, from top right:** Photographed from the observation car at the rear of the train, Peru Rail 814 heads the *Andean Explorer* train about 50 kilometres east of Cusco on Monday 5 November 2018 as it runs alongside the Urubamba River. The train was at a height of around 3600 metres above sea level at this point. • The interior of *Andean Explorer* Lounge Car QHLC 1839 "Maca", with the bar at the far end and the grand piano in the foreground. • One of the two large bedrooms inside Sleeping Car Commissioners QHSS 1831 Cocar, showing how much brighter the interior is than in GSPE days. • A view inside *Andean Explorer* Observation Car QHOC 1830 looking from the bar onto the open platform. • One of the standard-gauge bogies fitted to *Andean Explorer* Sleeping Car State QHDS 1825 *Kiwicha*, seen on the dockside at Puno on Sunday 4 November 2018.





**Above:** Seen on a sunny Wednesday 27 February, the original Port Pirie (Ellen Street) railway station, opened in 1875 and closed in 1967 when it was replaced by the new Mary Elie Street station, is now a museum. *Port Pirie*, the locomotive, on display outside, was built by Andrew Barclay in 1928 for Broken Hill Associated Smelters, at Port Pirie, where it worked until the mid-1960s. John Scott

**Below:** Seen here on Saturday 9 February, former *Southern Aurora* carriage NAM 2337 was donated by V/Line to the Violet Town community to form part of the new commemoration garden in Cowslip Street. Officially opened on Sunday 10 February, the new garden, opposite the Violet Town Railway Station, also includes a remembrance sculpture, as well as a 1km walking track from the memorial garden to the crash site. Though NAM 2337 was not part of the set involved in the crash that occurred on 7 February 1969 claiming nine lives, there were several sister NAM carriages in the crash: NAM 2335, 2336, 2339 and 2343. Steve Munro





## Restoration of historic Queenscliff Station complete

The upgrade to the historic Queenscliff Station building is now complete, preserving it for the future and ongoing use by tourist heritage group, the Bellarine Railway (see September 2018 RD, page 57).

Victorian Minister for Public Transport Melissa Horne and Member for Bellarine Lisa Neville joined staff and volunteers from the Bellarine Railway on Thursday 28 February to celebrate the completion of the works on one of the state's most historically significant railway stations.

Built in 1881, the heritage listed building is the oldest station in Victoria principally designed to cater for tourists. The station was built with a large waiting area to accommodate the high numbers of tourists who would visit during the holiday season.

(Queenscliff was the terminus of a branchline that left the Warrnambool line near South Geelong. The line opened in 1879

and operated until 6 November 1976. Following closure, the line was taken over by the (then) Bellarine Peninsula Railway who converted part of it from broad gauge to 3ft 6in narrow-gauge operation.)

The Bellarine Railway, who continue to operate heritage rail services on a 16-kilometre section of the former Queenscliff branchline between Queenscliff and Drysdale, have used the station building for around forty years. The recently completed works mean it can continue to support high quality heritage rail services.

The \$600,000 upgrade includes significant repairs to the station building, including restumping, re-roofing and painting, replacing and repairing timber, and fitting a new kitchen and toilet.

The works were completed under VicTrack's heritage program, which protects significant buildings and structures to preserve Victoria's rail history.

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### Broadford signalling

A small but significant issue to do with the caption to the picture on the inside front cover of a pair of Sprinters departing Broadford. The comment that "Soon signal No.7 and Broadford's other semaphores will be replaced with modern electric light signals" is in fact 'false news', even though it would be nice if it were true. In mid-February all the

signals (mostly semaphore but including a couple of 'manually' worked colour lights) were indeed removed, but to be replaced with nothing.

A bit of background – a long and troublesome series of wire thefts has virtually disabled normal functioning of the last remaining double line block left in Australia, between Craigieburn and Seymour (or Dysart 4 km south to be exact).

While wire theft disables the far more modern CTC-type signalling on the ARTC standard gauge, the antique broad gauge double line block simply reverts to telephone block over the commercial telephone system.

While wire theft has been going on for some time it has become apparent that removing Broadford as a block station altogether was entirely compatible with existing

services (in recent times prior to all this Broadford was only switched in for a few hours only on weekday mornings). So in mid-Feb the signals were removed and subsequently the signal posts and frame will be/ have been removed, leaving Broadford as a simple two-platform station with no safeworking role at all.

The next signalling change on the Seymour line is likely to



be some form of more modern (higher capacity) signalling between Craigieburn and Wallan to allow peak hour short workings and in the medium term to facilitate electrification to Wallan (which will serve a number of planned additional stations such as Cloverdon and Beveridge). The old ways will remain between Wallan and Seymour until services north of Wallan need amplification or more likely some substantial change is made to that part of the network.

On a slightly tangential issue Les Shepherd, in his op-ed (Platform 2019) noted that Sydney, Canberra and Melbourne currently have a combined population of 11 million. In my view the numbers should be those applicable at some date in the foreseeable future such as 2030 or 2040 since that will be the population that will be available to support an HSR. Melbourne is anticipating 8 million by 2050 and I would imagine Sydney would be something similar. Canberra will only add a marginal amount to the 16 million of the major cities, but when the large intermediate conurbations (notably Wagga and Albury/Wodonga) are added then we are talking something in the 17-18 million range. If 11 million people on line is enough to justify an HSR then how much more would 17

million people? Given the time required to build such a railway then the higher population pool should certainly be brought into the evaluation and justification of this project.

Max Michell  
via email

### Railway Digest

I've been a reader for a few years now, and I believe the substitution of a hard copy should never be superseded by virtual reality. I do hope you find more income streams to keep prices reasonable. And to remind the players in the railway industry to be good corporate citizens to support all those who support them. For instance, CFCL Australia and SCT are able to claim good Australian citizenship.

The separate titles *Railway Digest* and *Australian Railway History* should be maintained as they support the two different areas of interest. One for the current and future and the other covering the past history. Personally, I would like to read more about traction rolling stock and ground infrastructure management. Like, how are those Rockhampton Bo-Bo-Bo locomotives going with their flange wear, and about the Fletchers train operation that runs back and forth over the Blue Mountains, compared to those Co-Co's that head over to

Parkes via the Main South line.

I do enjoy reading about the amateur's point of view as I have often come to the same opinion, in complete isolation to them. There is always room for improvement, but you are doing much more right than wrong.

Daniel Wood  
Walgett, NSW

### Track upgrades for the Sunshine Coast

Mike Martin's article in the February edition did not mention an important aspect of the upgrade already carried out to Beerburum, and the planned upgrades to come. QR does not only duplicate and strengthen the track, but they also adopt a new, much straighter and higher speed, alignment. For example, most of the route from Elimbah to Beerburum is completely new, as was covered in an *RD* article when it opened, saving significant travel time. This is in contrast to NSW, where they often seem to duplicate or replace bridges on the old steam-age winding alignment.

Knox Cameron  
via email

### Freight on Rail

In reference to Alan Templeman's letter in *RD* February 2019 edition:

Okay, Mr Dalla Valle has spoken and the article creates a

knee jerk reaction from the readers of *Railway Digest*. Personally, I read between the lines – relay out of Parkes. The new Intermodal way of doing things.

Whoo! Hang on. Whose safeworking is going to be adopted? Here we go again. Just like when the Office of National Rail Safety was created from all the State and Territory offices. They all wanted their own procedures applied.

Mind you, Mr Dalla Valle had just returned from the United States of America, where a train arrives and/or departs a yard as big as Broken Hill every 15 minutes. Where the population is bigger, causing demand and supply being greater. I am thinking of demand and supply as the letter talks about Parkes to Perth, which has a peak period from Port Augusta to Perth from Thursday to Sunday.

Also, after the debacle, which safeworking procedures are going to be implemented. It would cost an arm and a leg in setup cost including training, because it would be parts of each state's safeworking and signalling system.

Can't see it happening tomorrow. I can see the rail companies working independently of the government, as Mr Della Valle mentioned.

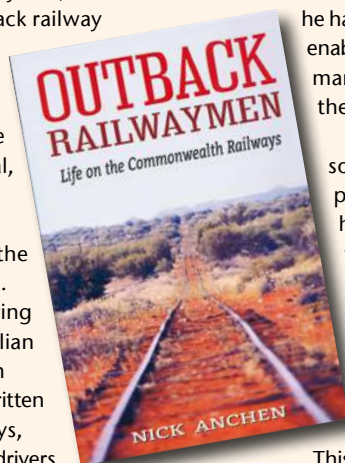
Jack Newmeyer  
via email

## Book review: Outback Railwaymen

By Nick Anchen. Published by Sierra Publishing, Melbourne. 248 pages, soft cover, 197mm x 130mm, portrait format with over 100 B&W and colour photos throughout and four maps. Available for \$35 plus p&p (members' discount applies) at the ARHSnsw Bookshop, 67 Renwick Street. Redfern 2016. <https://arhsnsw.com.au/shop/>

Yet another book by prolific author and railwayman, Nick Anchen covering one of his favourite topics, outback railway systems and those that operate them. It appears to be a sequel to his 2017 publication *Iron Road in the Outback*. I have no particular objection to that as a reviewer, however if someone is looking for a book that covers different material, think again. In addition, some photographs used in the earlier book get used again, albeit smaller, due to the size of this book. The same applies to the maps and posters, and some stories are repeated.

The book is laid out in three main parts, covering The Central Australian Railway, The North Australian Railway and the Trans-Australian Railway, with an introductory chapter for each part then chapters written by individuals who worked on the various railways, encompassing occupations from fettlers to guards, drivers, waiters, chefs to administration and professional staff.



The author is obviously a gregarious fellow and being a railwayman, he has much in common with the subjects of this book, which enable him to draw out experiences from these people, many of whom I daresay would be reluctant to impart their experiences to a non-railwayman.

Sometimes the stories are almost childlike and somewhat difficult to believe, however many are poignant and reflect a time in Australian society that has long vanished. A time of life experiences that were very hard, physically and mentally and for some individuals were just too much to bear with the inevitable result.

The comfortable life we lead in the 21st Century is far removed from the life of these pioneers and Nick has provided us with a glimpse into the lives of this group in a very readable form.

This book is a very worthwhile purchase if you do not already have a copy of *Iron Road*.

Shane O'Neil



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The Railway Resource Centre can help you with your research in most areas of railway history, especially:

- Locomotives
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- Buildings
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- Timetables
- Line histories

The ARHS<sub>nsw</sub> Railway Resource Centre's main research facility—The Mal Park Reading Room, features an intranet index database of research material and personal service by trained volunteers. Photocopying facilities are available, and image duplication or scanning can be arranged. For railway modellers or amateur historians — the Railway Resource Centre has something for everyone.



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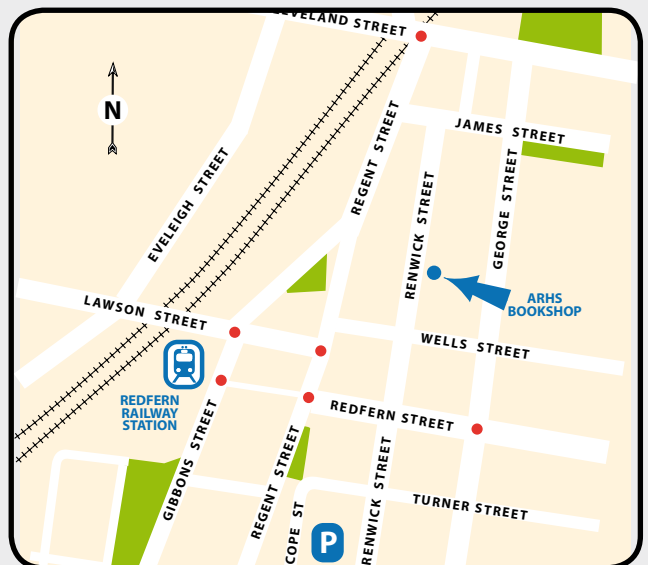


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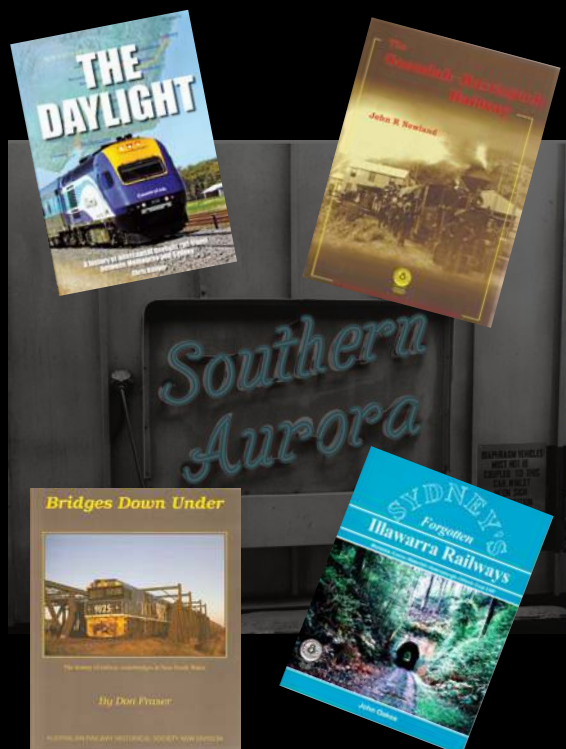
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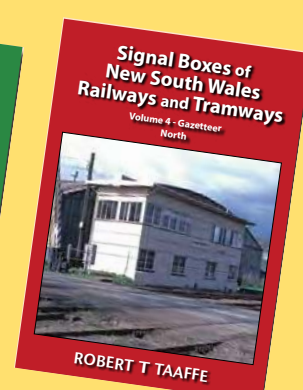
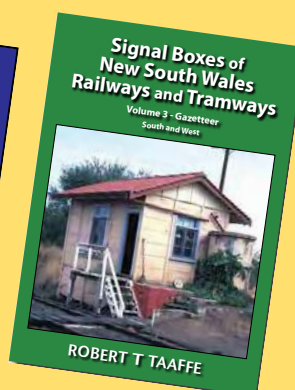
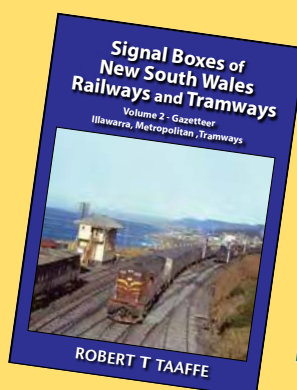
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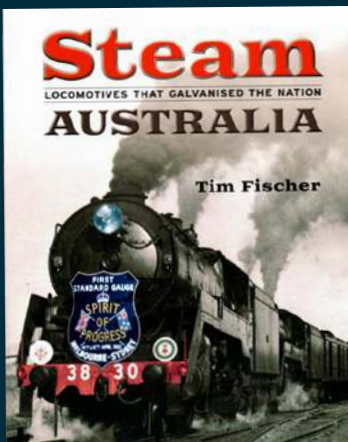
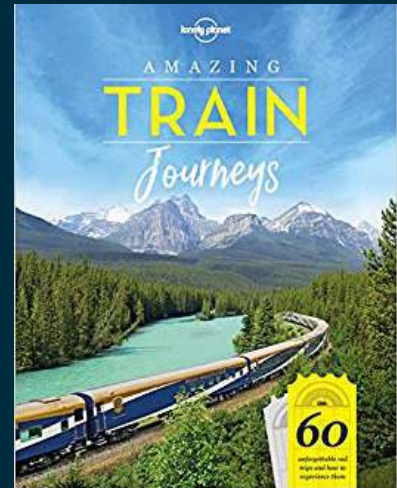




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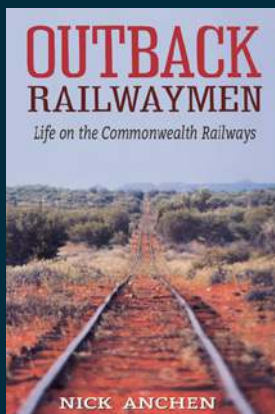
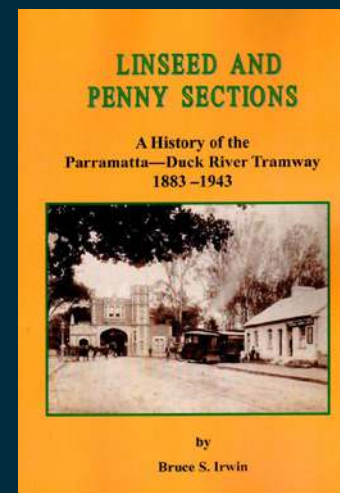
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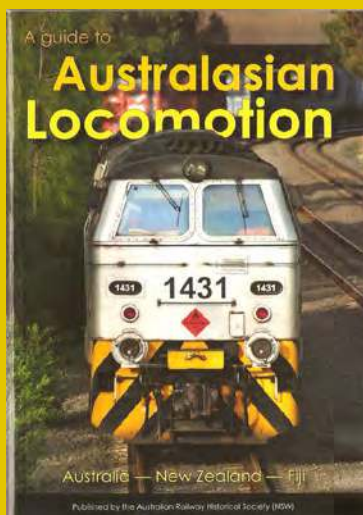


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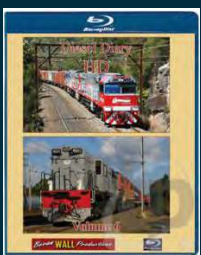
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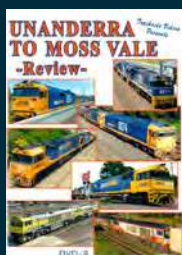
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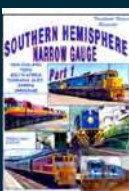
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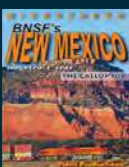
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