

March 2017

Railway DIGEST™

Rolling stock:
Swietelsky CPB Rail MFC-45
Ballast Spoil Wagons



Sticks and tricks
South of the border
The AK Cars go north-west
SCT commences Melbourne–Brisbane services



XRN

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GLENCORE

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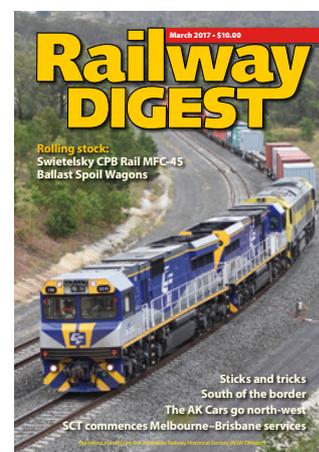
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Cover: On Thursday morning 19 January, CM3316, CM3307 and QBX003 head south near Tahmoor, NSW, with a QUBE intermodal freight service. Steve Munro

Opposite: XRN014, leading UGL/GE siblings GWU002 and XRN024, climbs the grade past East Maitland Gaol towards High Street with an Up coal train on New Year's Day, 1 January. Stephen Preston

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Volume 55, Number 3



Features

SCT commences Melbourne – Brisbane services 30

As foreshadowed in our January issue, SCT Logistics commenced operating rail services between Melbourne and the company's new terminal at Bromelton, 49 kilometres south of Brisbane's Acacia Ridge freight terminal, from 21 January. The inaugural service departed on that day from the company's Altona terminal with SCT Class EMD/Downer units 004, 007 and 006 hauling 37 vans of palletised freight, plus a crew car and container wagon carrying an on-line refuelling tank and a container. John Hoyle reports.

Sticks and tricks 34

The use of traditional timber sleepers is becoming problematic. Main line railways are using fewer of them (some almost not at all). The timber cutters and sawmills that provided them are closing, and good timber suitable for railway sleepers is getting harder to obtain. Concrete is favoured by most 'commercial' railways these days, but they don't come cheap, and they always need mechanisation for any handling. David Campbell takes a look at a new alternative to timber and concrete, currently undergoing extensive testing, that could make a big difference to the permanent way of heritage and secondary main lines.

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We present some recent images of rail operations around *The Garden State*.

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Back cover upper: 4702 and 4701 weave around Glenapp in the Qld-NSW Border Ranges with Train NK81 'AK Track Recording and Inspection Cars' on Wednesday 11 January. Michael James
Back cover lower: Clyde/EMD unit P17 heads Car Sets SH27 and SH35 followed by trailing unit P12 on No.8122 Up Bacchus Marsh to Southern Cross, at Parwan Curve on Thursday 2 February. Ewan McLean

Major transport projects added to infrastructure priority list

On Friday 20 January the nation's independent infrastructure advisor Infrastructure Australia (IA) added three major projects to its *Infrastructure Priority List*. Federal Minister for Urban Infrastructure Paul Fletcher said Infrastructure Australia had completed its assessments of the business cases for the Murray Basin Rail and Bringelly Road Stage 2 Projects, and the Melbourne Metro Project. "The Murray Basin Rail Project and Bringelly Road (Sydney) Upgrade Stage 2 are now regarded as Priority Projects by Infrastructure Australia, and the Melbourne Metro a High Priority Project," said Minister Fletcher. "The Australian Government has committed \$220 million to the Murray Basin Rail Project which will give farmers from the region access to Victoria's ports in a more efficient and cost competitive way.

The Murray Basin Rail Project will help address capacity constraints on the existing freight rail network, which includes standardising the broad-gauge track along the route, as well as increasing axle loadings to 21 tonnes to allow trains to run at full capacity.

The Australian Government welcomed the Victorian Government's commitment to fully fund the Melbourne Metro project saying that the inclusion of this project on the Infrastructure Priority List demonstrates the important work undertaken by Infrastructure Australia in identifying and assessing priorities that are capable of being funded independently of the federal Government.

The Australian Logistics Council (ALC) welcomed IA's support of the rail development. "ALC supports Infrastructure Australia as the impartial umpire when it comes to recommending infrastructure investment to the Commonwealth Government," said Michael Kilgariff, Managing Director of ALC. "The announcement...shows that the Murray Basin Rail Project has strong economic benefits and will improve the efficiency of the Victorian and national freight network".

Mr Kilgariff highlighted the benefits to Victorian freight and the Victorian economy. "The Murray Basin Rail Project will allow up to 500,000 more tonnes of grain, and 450,000 tonnes of general freight, to be moved by rail each year," he said. "Ports will also potentially benefit from the increased freight load, with an incentive to invest and add new jobs to manage the increasing rail freight."

Mr Kilgariff noted that the Murray Basin Rail Project would reinforce the need for clarity around the regional freight network. In particular, he said, the project should cause the Victorian Government to look at how connections between the regional freight network and ports can be further improved."

For more information on the Infrastructure Priority List, the assessment process, and to find the three business case assessments, visit <http://infrastructureaustralia.gov.au/>

Moorebank Intermodal Company and Qube reach financial close

The Agreement between Moorebank Intermodal Company and the Sydney Intermodal Terminal Alliance (SIMTA) for the development and operation of the Moorebank Intermodal Terminal Precinct reached financial close on Wednesday 25 January.

SIMTA is owned by Qube Holdings, one of Australia's leading freight logistic companies, following the acquisition of Aurizon's interests in the land and project on 23 December 2016. Qube will develop and operate the open access freight terminal and warehousing precinct under a 99-year lease on the combined Commonwealth and Qube owned sites.

Moorebank Intermodal Company signed the agreement with SIMTA in June 2015 for the development of the Moorebank Intermodal Terminal Precinct, which merged the SIMTA and Commonwealth intermodal terminal proposals into one (see July 2015 *RD*, page 5). Moorebank Intermodal Company will continue to be the Commonwealth entity responsible for facilitating the precinct's development.

Dr Kerry Schott, Chair of the Moorebank Intermodal Company, said the precinct would deliver significant benefits to south-west Sydney and the broader New South Wales economy. Dr Schott said "Together with the recently announced Commonwealth investment in airport infrastructure at Badgerys Creek, the Moorebank Intermodal Terminal will be a major economic contributor to south-west Sydney."

Other economic, environmental and community benefits will include:

- reducing constraints on container volumes moving through Port Botany;
- relieving traffic congestion on Sydney's roads and the nation's highways;
- reducing greenhouse gas emissions by cutting container truck movements and using more environmentally friendly automated technology on site; and
- enabling faster freight times and reduced costs to business and consumers.

The precinct will increase the proportion of shipping containers travelling by rail, remove thousands of heavy truck movements from Sydney's roads and the nation's highways every day, and increase the capacity and efficiency of Port Botany.

Moorebank was identified as a priority location for a freight terminal in 2004 and, in October 2016, was included on Infrastructure Australia's priority list for national infrastructure projects (see January 2017 *RD*, page 6). The site has a direct rail link to Port Botany and the interstate rail freight network which, along with its proximity to major motorways, make it ideal for an intermodal facility.

The precinct will include an import-export (IMEX) freight terminal with eventual annual throughput capacity of 1.05 million TEU, and an interstate terminal with capacity for 500,000 TEU (Twenty-foot equivalent unit - a unit of cargo capacity often used to describe the capacity of container ships and container terminals).

Qube Holdings' Managing Director, Maurice James, said the Moorebank precinct would transform the freight and logistics supply chain along the east coast. "The Moorebank development is certainly a once in a lifetime opportunity and Qube is pleased to have reached agreement with Moorebank Intermodal Company to deliver this important piece of national infrastructure," Mr James said. "Linking one of the nation's busiest ports by rail to an inland facility with the sheer scale and location benefits of the Moorebank site is a game changer that will deliver huge long term benefits to both business and consumers," he said.

Stage 1 of the project, which received planning approval in December 2016, will see the construction of the IMEX terminal with initial capacity of 250,000 TEU, rail links to the Southern Sydney Freight Line, and container processing areas. The first stage of the interstate terminal will follow with subsequent stages to be developed in line with demand (subject to future planning approvals).

The Commonwealth will invest around \$370 million in the development, including funding the rail connection between the terminal and the Southern Sydney Freight Line and land preparation works. Qube will develop, own and operate the terminals and has the development, property and asset management rights for associated warehousing.

The precinct will include up to 850,000 sqm of integrated warehousing when fully developed. The IMEX terminal is expected to start operating in late 2018, and the interstate terminal in early 2020. More information about the precinct is available at www.micl.com.au or www.simta.com.au.

NTC proposes information boost for Australia's transport planning

Investment and planning for Australia's transport network would be made more efficient and effective under a proposal to more regularly identify and report on transport trends.

A proposed five-yearly *Who moves what where* report was recommended by the National Transport Commission on Tuesday 31 January in the release of its *Who moves what where: Better informing transport planning for Australians* discussion paper.

(The NTC is an independent statutory body charged with improving the productivity, safety and environmental performance of Australia's road, rail and intermodal transport system.)

Chief executive of the National Transport Commission Paul Retter said it made sense to keep building upon the data the NTC had compiled from more than 150 data sets and released in the *Who moves what where* information paper on 8 September last year. "Publishing a regular report on passenger and freight movement trends would help industry, governments and local communities plan for the future," Mr Retter said. "If we are able to use the knowledge and power of even more big data sets and better analytics, we can produce detailed reports that identify national trends and the likely impact those trends will have on the transport systems and associated infrastructure routes we use every day. "Australia needs to have the best information to make the best investments in transport infrastructure, from large-scale projects to the location of bus stops.

Other proposed recommendations in the discussion paper are

related to a transport-wide approach to identifying long-term statistical and information priorities and introducing data collections to assist with measuring transport productivity.

"Every Australian has a stake in better, more productive transport systems, including consumers, employers and governments and I encourage all of them to make a submission through our website." Mr Retter said while the NTC's *Who moves what where* information paper went some way to analysing Australia's transport movements, information gaps were identified as predicted, and the NTC expects that any future editions would include much more data, such as information about port movements.

The NTC is also interested in working with other government agencies to find innovative ways to encourage the Australian community's use of relevant open data sets in the future.

Stakeholders can make a submission via the NTC's website before 5pm, Friday 10 March 2017. More information about this project is available at: <http://www.ntc.gov.au/current-projects/who-moves-what-where/>

Mr Retter said the feedback would help the NTC determine the final recommendations to be presented to Australia's transport ministers at their meeting scheduled for November 2017.

He said the project was a good example of the higher-level strategic work the NTC was encouraged to focus on as part of the 2015 review into the NTC.

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ARTC restricts access to 4Trak train tracking system

From 2 February access to the Australian Rail Track Corporation's 4Trak train tracking system was restricted to the Corporation's customers and internal users. Prior to this date the system had been widely used on an unofficial basis for some years by those interested in rail operations, including photographers, writers and 'armchair' enthusiasts, especially many retired senior managers who wished to maintain an interest in rail operations. 4Trak, which is supported by communications company 4Tel, covered operations on the ARTC, John Holland Country Regional Network and Brookfield Rail's standard-gauge trackage in Western Australia.

An ARTC spokesman told *Railway Digest* that 4Trak was designed for the Corporation's customers and was never intended for third parties. He said that after a review process into safety and security issues it was decided to restrict access to the system. One industry identity told *Railway Digest* that it was odd that almost every aircraft and ship in the world could be tracked but not trains in Australia. He said that passenger trains, which some would consider to be the highest security risk, have their schedules accessible to the public.

Following the ARTC's restriction to 4Trak access, 4Tel announced on its web site on 6 February that interest in the restriction had been far greater than expected, it had generated 'thousands of enquiries' and it would take 'a little while to work through all the detail'. The company said it appeared that the ARTC 4Trak system was disabled due to an 'unauthorised use of a user account'.

A number of former 4Trak users told this magazine that they would

be happy to register, submit to a security check and pay 'well above' normal commercial rates for a phone app that allowed tracking of trains on the standard gauge (or any other) network. The access restriction means that there is now no publicly accessible train tracking facility for country freight trains in any state. The Queensland, Tasmania and Western Australian narrow gauge networks have never had a publicly accessible regional train tracking system. However, Transport for NSW supports a public tracking system at <https://anyt.rip/map>. This allows the user to track Sydney Trains operations, NSW TrainLink trains and contracted coaches, Sydney light rail and ferry services and buses in the Sydney, Central Coast, Newcastle and Wollongong areas. A very small number of freight trains operating on the Sydney Trains network appear on this system. Other urban passenger transport operators, such as Adelaide Metro, TransLink (south east Queensland), TransPerth and Yarra Trams, also provide vehicle tracking information.

The US passenger train operator Amtrak provides a train tracking map of all its services (see <https://www.amtrak.com/trainlocationmap>) with an inset facility for busy areas like the North East Corridor while in the UK sites such as <http://www.opentraintimes.com/maps> provide diagrams of major rail routes showing the progress of trains, including freight trains. Deutsche Bahn trains can be tracked at http://www.apps-bahn.de/bin/livemap/query-livemap.exe/dn?L=vs_livefahrplan&livemap=yes

Siemens Wins Contract to Power Stage 2 of the Gold Coast Light Rail

As part of Gold Coast Light Rail Stage 2, Siemens has been awarded a contract to support the project with four Traction Power Substations. The win means Siemens will play an integral role in the construction of the 7.3km project which, when complete, will connect the existing light rail system at Gold Coast University Hospital to heavy rail at Helensvale Station.

Delivery of Stage 2 will not only enhance Stage 1 of the system but will also improve connectivity between Brisbane and the Gold Coast, providing significant economic benefits. GoldlinQ is delivering Stage 2 of Gold Coast Light Rail, which is due for completion in time for the 2018 Gold Coast Commonwealth Games. Siemens' design work on the Traction Power Substations is underway and the main works of the project are due for completion in 2017.

Speaking on the win, Max Eichhorn, Executive General Manager of Siemens Mobility in Australia and New Zealand said, "Congratulations to the team and all those involved. With the biggest team of rail engineers in Australia, Siemens has been an integral partner to several key pieces of infrastructure and transportation in the region. We look forward to bringing in our global and local expertise in delivering the Traction Power Substations for this significant light rail infrastructure."

This project is critical to meeting increasing demand for public transport before and during the 2018 Commonwealth Games in the Gold Coast. An estimated 6,600 athletes and team officials, 50,000 workers and volunteers, and 1.5 million ticketed spectators are expected to attend events.

Brookfield Rail completes successful upgrade works under the new maintenance model

As part of its ongoing capital upgrade and maintenance program, Brookfield Rail announced on Thursday 12 January that it had completed a \$1.74 million upgrade project on the rail network through Merredin in under 24 hours; the first of its kind under its new in-house maintenance model. (Merredin is located 256 kilometres east of Perth on the transcontinental main line.)

As reported previously (see October 2016 *RD*, page 27) from 15 August 2016 Brookfield Rail added track and civil maintenance activities previously carried out by John Holland to the signalling and communication systems maintenance capabilities that it had already internally managed.

In-house teams worked with a combination of metropolitan and regionally based contractors to undertake a turnout replacement, level crossing works and culvert installation during a single shutdown period over 17 hours, with minimal disruption to services along the network.

The line through Merredin provides the only rail connection to the east coast of Australia, transporting around 80% of all containerised freight, and provides bulk minerals and grain customers with access to Fremantle and Kwinana ports.

The works complimented the recent upgrade of the main line and passing loop between Barrack Street and Mary Street through the Merredin town site, ensuring the rail network not only remains fit-for-purpose but continues to be safe and reliable in the future.

The replacement and upgrade was designed to 'future proof' operations with structures that can withstand harsh conditions, carry higher axle loads and cater for projected rail traffic requirements, ensuring Brookfield Rail is able to optimise operations and work with customers to improve the supply chain and maximise use of the railway.



Railway Sleepers



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Brookfield Rail signs lease for Perth Airport building

Brookfield Rail has signed an eight-year lease for 2300sqm on the top floor of Perth Airport's Bravo building. The deal, which includes an option to extend, was flagged almost six months ago and has given Brookfield Rail an opportunity to redesign its work space.

Brookfield Rail general manager safety, people and corporate affairs Megan McCracken said the company was working with Create.ID to create a flexible workspace fostering interaction, collaboration and connectivity between the 150 employees who will move in.

"Our teams are based in regional towns across the South West ... so the location is perfect for our business, with easy access to main transport arteries and the airport," Mrs McCracken said.

Brookfield Rail, which has been occupying office space in the inner southeastern Perth suburb of Welshpool, for more than a decade, had

also contemplated moving into one of the WorkZone buildings on the fringe of the Perth CBD.

However, the location, the extra parking on offer, the big floor plan and natural light, allowed Bravo, located in the HKew Office Park at the entrance to Perth Airport's domestic terminal, to secure the Brookfield Rail lease.

Brookfield Rail plans to have a completely open plan workspace with meeting spaces, employee breakout areas, customer meeting and quiet zones, to allow employees a range of options depending on their work. The company plans to move into the building in April. Its Welshpool lease expires in March.

The Perth Airport HKew Office Park is about 17 kilometres from the Perth CBD.

Railway people

A win for Aurecon's Louise Adams at the Australian Engineering Excellence Awards

At the 2016 Australian Engineering Excellence Awards, Louise Adams, from engineering and project management company Aurecon, received a High Commendation for the Champions of Change Award – Female Leadership.

Louise is currently Aurecon's Regional Director for Victoria, South Australia and the ACT where she leads approximately 730 staff. She was appointed as an Executive Director to the Aurecon Global Board in June 2013 as recognition of her impressive leadership and analytical capabilities. With an ongoing passion to make a real difference in the lives of those less fortunate, Louise has taken Aurecon's Corporate Social Responsibility portfolio under her mandate, which aligns with her past aid work undertaken in places like South America and South East Asia.

Before returning to Australia to take up her current position, Louise was Country Manager in the United Arab Emirates.

At the event, Aurecon also won the prestigious Sir William Hudson Award for its Brisbane's Flood Recovery Ferry Terminals. In addition, the company also achieved two highly sought after Consult Australia Awards for Excellence, including Gold in Design Innovation for its work at 5 Martin Place, Sydney.



Louise Adams with her award

Fred Affleck receives AO for service to the transport industry

Fred Affleck was awarded an Officer in the General Division of the Order of Australia (AO) for services to the transport and logistics industries in the 2017 Australia Day awards.

Dr Affleck was involved in many transport organisations including the Australasian Railway Association where he was Acting Executive Director in 2003 and a Member of the Executive Committee from 2000 to 2003. He was General Manager, Corporate Affairs, for the National Rail Corporation from 1992 to 2000, Acting Chief Financial Officer, Australian National Railways in 1987 and General Manager, Corporate Affairs, with that organisation from 1984 to 1992. Other rail-related

involvement included an advisor on rail and public transport, Commonwealth Grants Commission, 1979 to 1982 and member of the Western Australian Rail Advisory Council from 1998 to 2004. Dr Affleck was also Chairman of the Strategic Grain Network Committee in 2009 which conducted a detailed review of the Western Australian grain rail and road network.



Fred Affleck

Andrew Constance remains NSW Transport Minister

Although there was an extensive reshuffle of Cabinet portfolios following the appointment of Gladys Berejiklian as NSW Premier on 23 January, the Transport and Infrastructure portfolio will continue to be held by Andrew Constance, the Liberal Member for Bega. He has held the position since April 2015.

However, the Roads, Maritime and Freight portfolio, which covers rail freight policy areas, has a new Minister, Melinda Pavey. Ms Pavey, who is the National Member for the seat of Oxley, has replaced Duncan Gay, Leader of the Government in the Legislative Council (Upper House).

The Oxley electorate is based on Kempsey and stretches from

Wauchope north to Nambucca Heads on the NSW North Coast.



Andrew Constance and Melinda Pavey

Mega project to shape ACT light rail corridor

Canberra developer Geocon has finalised plans for a mega 6200-square-metre precinct on Northbourne Avenue which will further connect the Capital Metro light rail network to the thriving suburb of Braddon.

'Midnight' will encompass a 160-room Abode Hotel, 250 residential apartments and 2500 square metres of commercial space. The nine-storey building will be built on the existing NRMA House site at 92 Northbourne Avenue, opposite the future Elouera Street tram stop. The \$185-million project will bring an extra 200 public car spaces to the area.

Geocon revealed the development's latest details at an official launch on Friday 13 January. Managing director Nick Georgalis said pedestrian connectivity between the tram stop and Mort Street in Braddon was an integral part of Midnight's design, which also includes a public courtyard.

"The light rail is the most progressive thing to happen in Canberra since the international airport," he said. "Midnight will be the first of the high-density developments along the light rail route that will link the tram to the Braddon precinct and deliver vibrancy, amenities and services for the whole community."

The project has been designed by Fender Katsalidis Architects and OCULUS, the architectural firms behind Canberra's NewActon precinct. Fender Katsalidis architect David Sutherland expected light rail to help transform the area from a car-dominated thoroughfare to a pedestrian boulevard.

With commercial businesses facing Elouera Street, tram commuters and passersby could walk through the precinct and make the most of the hospitality on offer, he said.

Train derails after collision with grader near Bogan Gate

Emergency services were called to the scene of a collision between a loaded wheat train and a Parkes Shire Council-owned grader late on the afternoon of Wednesday 18 January.

A 39-year-old Peak Hill man was lucky to escape serious injury when the grader he was driving was hit by No. 8824 Grain Train as it crossed the Main Western line approximately five kilometres east of Bogan Gate at around 4.50pm. The train was hauled by locomotives 48209 and 48215 with a trailing load of 20 wagons.

As the train rounded a left-hand bend, the driver sighted the Caterpillar grader ahead, but despite an emergency brake application a collision was unavoidable.

During the impact the leading bogie of 48209 derailed causing damage to the track. Both the front of the locomotive and the grader suffered extensive damage.

Rural Fire Service, Fire and Rescue and Police and Ambulance attended the crash. The driver of the grader was treated by paramedics at the scene before being transported to Parkes Hospital. He received injuries to his head and ribs. The train crew was uninjured.

Emergency crews from Bogan Gate, Gunningbland and Forbes Fire and Rescue assessed the area and dealt with diesel fuel spilt from the grader. A Police inquiry was conducted. The line was cleared and normal services had resumed by Thursday 19 January.



On Thursday 5 January, 4823N Down Newcastle–Parkes empty grain train, powered by Goodwin/Alco units 48161, 48101, 48203 and 48214, passes the silos at Tomingley West, just north of Peak Hill between Dubbo and Parkes. John Scott





Above left (page 10): 8218 and 8222 haul a maximum load of forty NGPF and NGKF grain wagons as Train 8926 nears the summit of Cullerin Bank on Saturday 17 December 2016. Peter Clark

Below left (page 10): SSR's Clyde/EMD units C506 and C510 on Train 8848, a short 20-wagon grain working, passing under the Wyndham Avenue overpass at Forbes, NSW, heading south towards Cootamundra on Thursday 12 January. Rhys Harrison

Above: North Star, terminus for the line from Moree which formerly went to Boggabilla in north west NSW, rarely sees any revenue trains other than very occasional grain services. However, with a large grain harvest requiring transport, a Pacific National train visited North Star on Wednesday, 1 February to transport grain to GrainCorp's export loader at Carrington, Newcastle. Train No. 4529, comprising 8119 and a very battered looking DL 43 in faded Australian National livery hauled 33 XGAY wagons to North Star where they were loaded before returning to Newcastle as train No. 5430. In this view DL 43 has been detached from the train while 8119 moves the train under the loader. This is the first time a DL unit has visited North Star. As reported in the February *RD* (page 10) a number of DL units have been returned to service to help move grain traffic in NSW. John Hoyle

Right: Leading the North Coast line pick-up service near Mt George on Wednesday 16 November 2016 is a pair of 82 Class locomotives with newly-repainted 8208 leading. Normally this train is worked by an 82/81 Class combination. Stephen Miller



Around Sydney

Parramatta Light Rail moves jobs to Western Sydney

More than 150 staff will move from the Sydney CBD to Parramatta to work on the Parramatta Light Rail project.

On Tuesday 10 January NSW Minister for Transport and Infrastructure Andrew Constance said the decision to move Parramatta Light Rail staff to the heart of the project made sense. (Parramatta is a major business district in the Sydney metropolitan area. It is located approximately 23 kilometres west of the Sydney CBD. It is located on the Main Western rail line.)

“This is a no-brainer. This move will bring project staff to the heart of the action, where they will have better access to the community, to stakeholders and to the city they will shape,” Mr Constance said. “The office will start with 150 staff, increasing to more than 220 this year to get the project steaming ahead.” Mr Constance said the jobs boost for Western Sydney grows the commitment by the NSW Government to move public sector jobs from the Sydney CBD to the West.

Parramatta Light Rail Program Director Tim Poole said many staff working on the project already live in the community. “By relocating to Parramatta’s CBD, we’re boosting the local economy ... and ensuring our service is the best it can be now and into the future,” Mr Poole said.

Transport for NSW will release the preferred route for the Parramatta Light Rail in coming months, with construction to begin in late 2018. The system will service the Greater Parramatta to Olympic Peninsula Priority Growth Area.

Operation Blueline targets anti-social behaviour

The NSW Police Transport Command (PTC) conducted a high-visibility operation targeting anti-social behaviour on trains between Wollie Creek (located 7.3 kilometres from Central station on the Illawarra line) and Cronulla (terminus of the Cronulla branch 34.8 kilometres from Central) on Thursday 19 January.

Throughout the operation, PTC officers were deployed in and around major transport interchanges throughout the day and night. They were assisted by officers from St George, Sutherland and Miranda Local Area Commands as well as officers from a number of specialist commands.

More than 58 trains were patrolled, 13 people were searched, 19 move-on directions issued, and 54 transport infringements were handed out.

Police also made four arrests for offences such as goods in custody, possession of a prohibited drug and transport offences.

Chief Inspector Craig James from the Police Transport Command said police will continue to focus on reducing crime on NSW public transport.

“People should feel safe and secure while using public transport in the Sutherland Shire and George’s River district,” Chief Inspector James said. “The Police Transport Command will continue to focus its attention on anti-social behaviour especially throughout the warmer months of the year.”



Left: On Wednesday 18 January, Tangara Set T125 on the Up Eastern Suburbs Line has just passed over the Woolloomooloo Viaduct and is about to enter the tunnel under the Art Gallery and The Domain. Scott Mitchell

Above: A full-size mock-up of an Alstom Metropolis Sydney Metro Car, located in a large display tent at Barangaroo, gave Sydneysiders a chance to check out the interior arrangement of the new trains, as this family is doing on Monday 16 January. Scott Mitchell

Above right (page 13): On Wednesday afternoon 18 January, the *Indian Pacific* passes through Redfern, running behind schedule due to the failure of NR27 out beyond Parkes. 8165 was taken off other duties and assisted the second unit, G530, in working the train into Sydney. Shane O’Neil

Below right (page 13): At Belfield, in Sydney’s inner-west, exhaust scrubber-equipped Goodwin/Alco unit 4819 leads an XPT Car on carriage transfer working HT 83 on Thursday 15 December 2016. John Scott



Second Building Queensland Pipeline Report released

The Queensland Government has welcomed the release of Building Queensland's second Infrastructure Pipeline Report, an independent analysis of Queensland's priority infrastructure projects.

Queensland Deputy Premier and Minister for Infrastructure, Local Government and Planning Jackie Trad said the release of the second Infrastructure Pipeline Report demonstrated the ongoing commitment to transparency and efficiency in infrastructure delivery.

"We know that building infrastructure is integral to delivering jobs and growing productivity across Queensland," Ms Trad said. "The Pipeline allows the Government to make informed decisions about which projects to investigate further and which projects to fund. "Building Queensland's arm's length expert advice provides confidence that public money is being spent wisely. "We have already committed funding to five projects from the first Building Queensland pipeline, including our number one infrastructure project Cross River Rail, vital M1 upgrades and the European Train Control System.

"This update to the Pipeline (Report) affirms the need for the Beerburum to Nambour Rail Upgrade Project, a major priority for the Sunshine Coast community which will provide a more integrated and effective transport system and improve connectivity in South East Queensland." (The Beerburum to Nambour Rail Upgrade Project proposes the duplication of approximately 40 kilometres of the North Coast Line between Beerburum and Nambour stations.)

An additional 19 proposals have been recommended in the Pipeline for further development including upgrades for the Port of Townsville, a new correctional precinct for Southern Queensland and a number of road and dam upgrades. "Building Queensland will undertake a thorough analysis of these projects and they will be further considered in subsequent updates," Ms Trad said. "We are committed to following proper process and ensuring infrastructure development and prioritisation is done properly, for the benefit of all Queenslanders. "It is essential that we are investing in projects that will both sustain the construction industry and create a lasting legacy for local communities throughout the state."

The full report is available at www.buildingqueensland.qld.gov.au

2017 Queensland Rail timetable confirmed

On Monday 23 January, Queensland Rail returned to the November 2016 'interim' timetable in place prior to the Summer school holidays.

Acting Chief Executive Officer Neil Scales said the timetable would be in place for the remainder of the year, providing more than 7,800 services each week.

The implementation of the November 2016 'interim' timetable coincided with the return to school for Queensland students.

The timetable, which was originally introduced on 7 November 2016 in answer to severe service disruptions resulting from a shortage of drivers following the opening of the Redcliffe Peninsula Line on Monday 3 October, delivered some degree of consistency for commuters, with an average of 94 per cent of trains running on time (see January 2017 *RD*, page 19).

Mr Scales said; "The 2017 timetable will operate until the end of the year and will provide certainty and reliability.

"It will also allow Queensland Rail to focus its efforts on teaching the pipeline of recruits which are being brought on as part of the Queensland Government's five-point plan. The five-point plan is key to restoring services and ensuring that Queensland Rail delivers the service that people expect and deserve", he concluded.

Gold Coast's Broadbeach monorail closes

After 28 years' operation the 1.3 kilometre monorail, which operated between the Oasis Shopping Centre at Broadbeach and Jupiters Casino, closed at 5.00 pm on Sunday, 29 January. Free rides were offered on the final weekend. According to Oasis, the monorail's operator, the day-to-day reliability of the monorail, which used the Von Roll Type 3 system, had become an issue and operational costs had significantly increased in recent times as patronage declined.

The monorail's demolition will allow Oasis shopping centre to redevelop the top floors of the shopping centre for office and dining areas. The casino owner, Star Entertainment Group, told the *Gold Coast Bulletin* the monorail's demolition, which is expected in the next six months, will allow the next stage of its hotel and apartment expansion to take place. Australia's last remaining operational monorail system is at the Gold Coast's Sea World at Southport. It opened in 1986 and is two kilometres in length.

Tram collision shuts down Gold Coast light rail network

A tram driver and two emergency services personnel were hospitalised after a crash between a tram and a fire truck on the Gold Coast on Sunday morning 15 January. The collision occurred shortly before 8am on the corner of Hamilton Avenue and Surfers Paradise Boulevard in Surfers Paradise.

The impact derailed the tram and shut down the Gold Coast's main public transport system. Five police units responded to the crash.

The tram driver and two Queensland Fire and Emergency Services officers were taken to hospital with minor injuries, while paramedics assessed the 17 people on board the tram at the scene.

Light rail services were suspended between Cavill Avenue and Broadbeach South Station and replaced by buses until early on Sunday afternoon.

It is believed that this is the first derailment in two-and-a-half years of operation of the Gold Coast G-LINK light rail system.

Plans for Richmond rail hub move forward

Plans to upgrade Richmond's rail facility have been finalised, according to local mayor John Wharton. (Richmond is located in western Queensland 1,551 km north-west of Brisbane and 498 kilometres west of Townsville. The town has approximately 520 residents.)

A proposed \$900,000 revamp will result in an upgrade of the north west Queensland town's rail cattle loading facilities and the construction of a new intermodal rail freight hub.

Cr Wharton said the project is a collaboration between the Richmond Shire Council, Queensland Rail, and the Queensland Department of Transport and Main Roads (TMR).

Funding of around \$50,000 was supplied by TMR to enable a feasibility study to be completed, plus construction plans and costings of the new infrastructure project to be prepared.

The plan estimates a \$300,000 to \$400,000 cost for upgrading current livestock rail loading facilities, with the Richmond Shire Council believing it can pay for those project expenses.

"We hope a private investor, with a business interest towards utilising Richmond as a rail freight hub, will provide funding for the new intermodal rail freight loading facility," Cr Wharton said.



After 28 years operation, the 1.3 kilometre monorail that operated on the Gold Coast between the Oasis shopping centre at Broadbeach and Jupiters Casino closed on Sunday, 29 January. To the left of the photographer the track crossed over the Gold Coast Highway and the light rail line – as depicted in the photograph on page 16 of the July 2016 RD. This view shows the final passenger service approaching the Oasis shopping centre just after 5.00 pm. John Hoyle

“Richmond has been identified as a pre-delivery centre for live export cattle because we are located within a suitable travel time frame to Townsville’s port,” Cr Wharton said. “It is very logical to do that transport by rail and the cattle trains can work in conjunction with road livestock transport.”

“When live exporters are loading a boat with 16,000 to 18,000 head of cattle, then numerous types of livestock transport are required to make it as efficient as possible.”

Cr Wharton added that plans hinged on bringing the rail corridor to Townsville port up to scratch. “It’s an issue because a full freight train

can’t get into Townsville’s shipping port and currently needs to be broken down to gain access,” he said.

A Queensland Rail spokesperson said it had invested \$41 million maintaining the Mount Isa rail line last financial year, as well as \$16 million in direct capital investment. “In 2016 and 2017, Queensland Rail is expected to spend approximately \$43 million on (Mt Isa) line maintenance and \$15 million in direct capital investment.

“We are well advanced in our project to replace more than 41 kilometres of steel sleepers on the Mount Isa line with more durable concrete sleepers, enhancing safety and reliability.”



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Newmarket Station, located on Queensland Rail's Ferny Grove Line, is currently undergoing extensive reconstruction as part of a \$212 million program to allow easier access to Brisbane suburban railway stations. The works include a new overbridge from Abuklea Street to replace the former timber bridge, a renovated subway (linking the platform to Wilston Road) and lift linking the overbridge, platform and subway. Sections of the island platform are being raised to correspond with train floor levels. An unusual aspect of the project has been the construction of temporary platforms for each track to allow work to proceed. A temporary ticket office and toilet facilities are provided on the inbound platform. The timber station building has been raised and a new accessible toilet including baby change facilities is being provided. In this 6 February view, Suburban Multiple Units 243 and 230 are arriving at the temporary outbound platform at Newmarket. The timber station building, which is being retained, is to the left of the train. The inbound temporary platform can just be discerned on the far left. John Holland Pty Ltd was awarded the Newmarket station contract in mid 2016 and work is expected to be completed by the middle of this year. The company is also undertaking an accessibility upgrade at Alderley, the next station along the Ferny Grove Line. John Hoyle

An interesting sight at Brisbane's Roma Street Station as narrow-gauge and standard-gauge trains meet. 8226 with the AK Cars (see February RD, page 3) sits in Platform 2, next to EMU 62 in Platform 3 with a service to Doomben, on Wednesday 11 January. Luka Ruckels



Strachan Inquiry into driver shortage critical of 'complacent' QR culture, Transport Minister Stirling Hinchliffe resigns

The Strachan Commission of Inquiry report into driver shortages on Queensland Rail's south east network was released by the Palaszczuk Government on 6 February. The inquiry, led by Phillip Strachan, identified a range of factors that were responsible for the driver shortage which has led to train cancellations following the opening of the Redcliffe Peninsula Line in October last year. These included:

- A QR preference to operate with a 5-10% undersupply of train crews and consequence over-reliance on overtime;
- Restrictions on the external recruitment of crew;
- A 12 month halt of driver training from February 2014; and
- Driver training taking 18 months on average.

The report reveals a culture of relying on intuition, complacency and being reluctant to share bad news within QR's operations team. It recommends better and shorter lines of communication within QR, so that problems can be addressed much more quickly. The Commission found that neither the board of Queensland Rail, the Chief Executive Officer nor responsible Ministers – the Minister for Transport and the Treasurer – were appropriately informed of the risk of a train crew shortfall prior to the opening of the Redcliffe Peninsula Line on 4 October last year, nor of the magnitude and longevity of the issues faced from October 2016.

The report's key recommendations include:

- Developing a five-year rolling monthly forecast of crew demand and supply;
- Moving from intermittent recruitment campaigns to ongoing recruitment;
- Assessing the sustainability of the current 23 January timetable to ensure stable services can be provided;
- Opening driver and guard positions to external applicants; including those with no previous experience; and
- Implementing 'sectorised' train crew deployment on the network and accelerating average crew training from 18 months to nine.
- Cabinet has also directed Queensland Rail to provide a high-level response plan within 30 days.

Other recommendations were designed to:

- implement regular reporting on train crew demand, supply and shortfalls to QR's Executive Leadership team and responsible Ministers.
- implement transparent and timely reporting to TransLink and the public regarding operational issues that are affecting, or may affect, service delivery, to enable customers to plan alternative travel arrangements. This information is to be available in real time at stations, online and through call centres.
- ensure that negotiations with train crew unions focus on best practice rules regarding continuous working time and other crewing practices to alleviate overtime pressure on train crews.
- work with train crew unions regarding introducing modern competency-based training arrangements. The training regime will shorten the average training time for new recruits without compromising safety.

Premier Anastacia Palaszczuk said State Cabinet had endorsed all 36 recommendations in the report and a new Citytrain Response Unit would be established for an initial 12 months which would, in effect, be a watchdog for QR, ensuring it stays on track and on time in delivering reforms. The Premier said the Government would also be meeting with rail unions to determine what additional measures can be taken to accelerate driver recruitment and training even further. This would involve discussing external recruitment and allowing drivers to qualify more quickly on a single sector of the network (currently drivers have to qualify across the entire network).

Ms Palaszczuk said, "The people of Queensland have been badly let down by Queensland Rail's inability to maintain an effective timetable, and my Government is very sorry and I apologise for that." She said the problems that led to driver shortages from October 2016 were many years in the making, but her Government took the responsibility, and is firmly resolved to fix them.

Coinciding with the release of the Strachan report Transport Minister Stirling Hinchliffe resigned as Transport Minister. Mr Hinchliffe said the issues at Queensland Rail had been some of the most challenging and, at times, frustrating issues he had needed to manage as a Minister. He said they had been a distraction for the Government's core task of delivering jobs for Queenslanders. Mr Hinchliffe said that the findings of the Strachan Commission of Inquiry demonstrated that no Minister or Government could have foreseen the driver shortage issue due to Queensland Rail mismanagement. He believed that Queensland Rail and the Transport portfolio have the path prepared for a fresh start to get back to delivering for rail users. Deputy Premier Jackie Trad was appointed Acting Transport Minister and on 10 February she was permanently appointed Minister for Transport, Infrastructure and Planning. Ms Trad, the Member for South Brisbane, was previously Transport Minister when the Palaszczuk Government came to power in February 2015.

The final personnel change on an eventful day saw Phillip Strachan, who had led the Commission of Inquiry, appointed as the new Chairman of Queensland Rail's Board. He replaces Michael Klug who, along with QR CEO Helen Gluer, resigned last October as the driver shortage crisis unfolded. Premier Palaszczuk said Mr Strachan had undertaken a comprehensive review of Queensland Rail, interviewing senior staff of the organisation and gaining a thorough understanding of its culture and practices. She said he was uniquely placed to lead the organisation through what will be a significant transition to focus on its customers – the travelling public. One of Mr Strachan's first tasks was to meet the shortlisted candidates for the position of QR Chief Executive Officer in the second week of February.

Mr Strachan was President and Chief Executive Officer of Rio Tinto Bauxite and Alumina and is a Board Member of the Great Barrier Reef Foundation and a Director of Tilt Renewables Limited. Mr Strachan spent 35 years working for the Rio Tinto Group in numerous finance and operating roles including in the head offices in London and Melbourne. He is a Fellow of CPA Australia and a Member of the Australia Institute of Company Directors.

Highlighting the political urgency of rectifying the QR driver shortage, the following day (7 February), the Premier and Acting Transport Minister were at Doomben station with newly-appointed QR Chairman Phillip Strachan to announce that Jacqui Walters would be the head of the CityTrain Response Unit. Ms Walters is organisational transformation and restructuring specialist who has worked with organisations such as Cathay Pacific, Indian Railways, Hewlett Packard and all three levels of government. The Unit will be based in Queensland Transport and Main Roads, not QR, in a move seen by some observers as demonstrating the determination of the Government to reform the operations sector within QR. One senior transport official told *Railway Digest* the real test for the Palaszczuk Labor Government will be to 'take on' the Rail, Tram and Bus Union and introduce direct recruitment of drivers from outside QR when insufficient internal applicants are available. The RTBU has, in the past, been opposed to direct recruiting.

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Above: After a three week closure from 2 January to enable the construction of a rail overpass at the former notoriously busy South Road level crossing, the Port line reopened for normal services on 23 January. The track was cut eastwards from Croydon Station towards Bowden with ramps built up to South Road, which also has been significantly lowered and widened as part of the 'Torrens-to-Torrens' road widening project. Sidewalls had been built previously to the closure and the steel bridgework pre-constructed off-site and lifted into place during a weekend road closure. Some 160 train services used this crossing daily, causing significant delays to traffic on Adelaide's major north-south corridor. On Tuesday 24 January, Railcars 3125+26 forming a Down Port line service leave the new South Road overpass bridge. The surrounding area is still a very large worksite for the ongoing road underpass construction task. Ian Hammond

Above right (page 19): NR63 and NR12 are waiting in the loop at Winninowie, south of Port Augusta, on 5NY3 Newcastle-Whyalla service (mostly steel related products), while NR's 14 and 111 race through with 4PM6 Perth-Melbourne intermodal freight on Friday 27 January. The car transporters at the front of 4PM6 will be detached in Adelaide. David Campbell

Right: Preliminary work has begun on the Torrens Junction project, which will eventually see the Port Line lowered in a trench under the standard-gauge main line at Torrens Junction, then under the busy ring road of Park Terrace, and continuing in a trench past the site of the present Bowden Station. Bowden, one of just two station buildings remaining from the original construction of the Port line in 1856 (the other being Alberton), will be demolished and a new station built below ground level. By avoiding conflict between broad-gauge (suburban) and standard-gauge trains, the project will eliminate delays for interstate freight trains with the attendant impact on level crossings in the area, and eliminate the very busy Park Terrace level crossing on the Port line. Here, an Up Grange Train formed by 3111 and 3112 pauses at Bowden on Tuesday 24 January. Ian Hammond





Glenelg Trams services affected by road overpass problem

At around 7am on Wednesday 18 January the Adelaide Traffic Management Centre received reports of debris falling from the South Road tram overpass (located about three kilometres south-west of the Adelaide CBD). (South Road is a major north-south thoroughfare in Adelaide. It carries much of the road traffic from southern suburbs towards the Adelaide city centre.)

Initial inspection showed debris falling from the Mike Turtur Bikeway attached to the tram overpass. In the interests of public safety, tram services were stopped in the area and South Road closed between Cross Road and Anzac Highway.

South Australian Transport Minister Stephen Mullighan said closing part of such a key road was a major inconvenience, but it was necessary. “The problem with the bridge seems to be the outermost span of the bridge, which is supporting the walking and cycling path, appears to have shifted slightly off its bearings. There are two sections which appear to have been affected,” he said.

A structural engineer was called to inspect the site, and an independent bridge expert was also consulted.

Adelaide Metro Glenelg line tram services were initially disrupted with buses substituting between Stop 8 – Beckham Street and South Terrace. However, by Thursday 19 January tram services had resumed with speed restrictions in place over the road overpass. Stop 6 – South Road, which is located on the overpass, remained out of use while repairs were affected.

Crews worked throughout the weekend of 21-22 January to install a brace to secure the bikeway to the overpass. South Road reopened on Sunday 22 January. However, the bikeway remained closed pending further remedial work. On Monday 23 January Minister Mullighan announced that international consulting engineering firm Aurecon had been appointed to complete a thorough and comprehensive external review of the South Road overpass. The review will identify the cause of the issues associated with the movement of the pedestrian and cycling pathway over South Road. The report will be made publicly available.

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ATSB releases findings into 2015 Nala derailment

On 10 January the Australian Transport Safety Bureau (ATSB) released its findings into the derailment of Tasrail Train No.532 near Nala in August 2015.

On Thursday 6 August 2015, TasRail northbound intermodal freight train 532, travelling from Boyer (near Hobart) to Burnie derailed on a section of track near Nala. The train consisted of locomotives TR15/TR13 hauling 34 wagons carrying rolls of newsprint and empty containers. The train had an overall length of 557.8 metres and a trailing mass 1,345.3 tonnes.

The driver was uninjured, but there was significant damage to rolling stock and about 200 m of track was destroyed.

The ATSB investigation determined that the leading wheelset on the front bogie of container wagon TQMF03G, derailed at the 95.185 kilometre point south. After the wagon derailed, the train travelled a further 2.3 km before it came to a stand.

Post-derailment measurements identified a series of track geometry defects in advance of the point of derailment (PoD). The largest defect exceeded safety limits specified in TasRail's Track and Structure Maintenance Standard. A review of maintenance records found that a defect was identified (near the PoD) three days before the derailment. The defect was categorised as priority 1 requiring immediate attention, but did not result in the maintenance response specified by the standard.

The ATSB also identified that the track through the area had an elevated risk for geometry defects. Difficulty in maintaining track geometry through the area was probably related to poor track formation, ballast quality and the use of steel sleepers, which demand considerable maintenance effort to hold track alignment. However, there was no record of the track having been identified as a hazardous location, so it had not attracted greater analysis focus or maintenance attention.

Computer modelling showed that the TQMF wagons (compared to TQAY wagons) were more susceptible to derailment at a critical speed of 36 km/h, when traversing the track irregularity as existed at the derailment site.

As a result of the derailment TasRail has implemented a range of initiatives to reduce the risk of a similar occurrence including, changes to operational and maintenance procedures, enhanced strategies for responding to twist defects, and the consideration of fitting constant-contact side bearers to the TQMF wagon fleet.

The ATSB stressed that early detection, assessment and effective management of track defects are critical in minimising the risk of derailment and maintaining safe rail operations.

The full report can be downloaded at: http://www.atsb.gov.au/publications/investigation_reports/2015/rair/ro-2015-014/

In a subsequent media release TasRail said that it will review the ATSB report and the investigation findings.

TasRail Chief Executive Officer, Damien White said the Company's Derailment Prevention Strategy was delivering outstanding results.

"TasRail recently achieved the significant milestone of 500 days without a major derailment", Mr White said. "It is the first time in decades that Tasmania's freight rail has delivered such a result in safety performance." "Eliminating derailments is front and centre of everything we do", he said. "Our customers, the public and the government expect nothing less, and it is fundamental to growing the freight task on rail."

TasRail operates the network in accordance with Track Engineering Standards that are consistent with industry best practice. This includes physical inspection of the infrastructure every 96 hours to detect and mitigate derailment risk. With funding assistance from the Australian and Tasmanian Governments, TasRail is progressively replacing life-expired infrastructure and upgrading priority sections of the rail network, but Mr White revealed that TasRail was also investing in new technology and assets to further enhance track monitoring and data accuracy.

"Examples include the recent purchase of digital track geometry trolleys; the adoption of ultrasonic testing and the commissioning of a state-of-the-art Advanced Network Train Control System", he said. "TasRail is also in the final stages of tender for the purchase of an in-house geometry car which will provide continuous access to a technology previously only available on a six-weekly contract rotation."

Mr White confirmed that TasRail had engaged the University of Tasmania to develop a computerised learning technology for the prediction of potential rail breaks.

"This is ground breaking work that will enable TasRail to proactively intervene before a rail break occurs, thus preventing the potential for derailments."

In addition to the investment in infrastructure and new technologies, TasRail has also invested in its internal technical capability.

"We now better understand the ongoing condition of our network and have the technical expertise to mitigate identified risks," Mr White said. "I am satisfied that TasRail's Derailment Prevention Strategy is thorough and appropriate. Our customers can be confident that rail remains the safest, most efficient and sustainable mode of moving freight."

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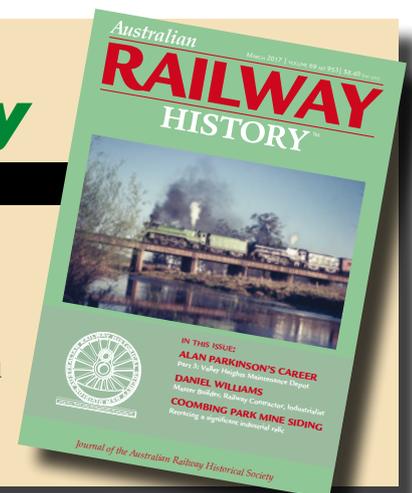
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The March issue features prominent railway men, commencing with Part 3 of Colin Bull's coverage of Alan Parkinson's career, which covers his management of rebuilding electric locomotives and wagon repair at the Valley Heights Depot.

Daniel Williams, the master builder, railway contractor and industrialist who arrived in the boom town Melbourne in May 1852 where his skills were in high demand. He moved to Sydney

with his family in 1861 to supervise a major project at Sydney University, but the death of his wife Eliza following childbirth resulted in a change of career to railway contracting work. He completed three contracts in NSW and the Toowoomba to Warwick contract in Queensland during the financial crisis there. Declining health led his investing in industrial projects, notably the Eskbank ironworks at Lithgow.





Above: Brighton-bound ex Burnie Train 435, led by TR05 and TR03, passes through Penguin on Wednesday morning 1 February. John Corry
Below: TR08, TR02 and red-liveried DQ Class unit 2011 are nearing the top of the Rekuna Bank, near Campania, with Train No.136 Brighton to Burnie intermodal freight on Sunday 29 January. Bruce Tilley



Caroline Springs Station opens, new V/Line timetable brings additional services

Caroline Springs Station, the latest addition to V/Line's network, opened for business on Sunday, 29 January, coinciding with a new V/Line timetable. Located 21.2 kilometres from Southern Cross between Deer Park and Rockbank stations on the Ballarat line, the station is provided with 350 car parking spaces, bus bays, taxi rank and secure bicycle storage. The station is located in Melbourne's zone two for fare purposes. The original design for the station called for a single platform on the single track line. However, with duplication of the Ballarat line from Deer Park West Junction to Melton being approved by the Andrews Government, an additional \$5.4 million was allocated to convert the single-sided platform into an island platform to accommodate a second track. The station buildings are being upgraded to accommodate staff and toilets, plus larger undercover waiting areas are being provided. The second track has now been extended to the station as part of the duplication project and a pedestrian subway provided to access the platform. The Government has provided \$518 million for the upgrade of the Ballarat line.

On weekdays between peak periods Caroline Springs will receive an hourly service, provided by services to and from Bacchus Marsh. On weekends Ballarat services will stop at the new station providing a mix of frequencies from approximately one hour 20 minutes in the morning/early afternoon period to hourly in late afternoon/evening. Running times for outbound journeys between Southern Cross and Carolyn Springs are generally 23 minutes while inbound trips generally take 29 or 30 minutes. Prior to opening some concerns were expressed

regarding the station's ability to handle the heavily-loaded morning peak period (see January 2017 *RD*, page 24). Melton Council's mayor, Sophie Ramsay, told ABC News the 350-space car park was likely to be full by 7.30 am. According to the City of Melton the forecast 2017 population for Caroline Springs is 24,451.

The 29 January V/Line timetable was officially launched in Ballarat the following day by Victorian Minister for Public Transport Jacinta Allan, Member for Buninyong Geoff Howard and Member for Wendouree Sharon Knight. The official launch also marked the first additional service to Maryborough since the line reopened for passenger services in 2010 - a new weekday Melbourne - Maryborough return service. The new timetable also includes new services on the Shepparton, Warrnambool, Bendigo, Ballarat, Geelong and Gippsland lines. Included in the timetable is a Seymour service extended to Shepparton in the afternoon during the week and a fourth train service has been introduced on the Warrnambool line each weekday, and an extra return on Sundays. Customers on the Ballarat, Bendigo, Geelong and Gippsland lines will benefit from extra evening weekday services. An additional train operates from Wyndham Vale to Southern Cross each weekday morning. An aside to the new timetable is the crossing of passenger trains at Camperdown on the Warrnambool line. The morning Down service (8861) crosses the second Up service (8862) which is refueled in the loop, after stopping at the platform. Full details of the new timetables can be seen at <https://www.vline.com.au/Timetables/Additional-pages/Timetable-list>



Following the timetable change in late January, Train 8118, the 0739 Bacchus Marsh to Southern Cross service, was worked by V/Line's veteran Clyde/EMD 'Streamliner' A66 hauling a relatively long H Set consist – previously A66 had only hauled a short three-car H set. The train is seen arriving at the newly-opened Caroline Springs Station on Friday 3 February, running almost 25 minutes late, due to one of the doors having jammed when the train stopped at Melton. Jo Asani



Resplendent in fresh red, white and yellow paint, following its recent overhaul, Clyde/EMD unit N454 hauled the midday Warrnambool to Southern Cross passenger service, and is seen approaching South Geelong crossing Barwon River Bridge, on Saturday 14 January. Bruce Payne

Cheaper public transport for Victorian children and young adults

From Monday 30 January, the age at which a child must start carrying a myki on Victorian public transport was lifted from four to five. (myki is Public Transport Victoria's reusable travel card for trains, trams and buses in Melbourne and regional Victorian centres.)

At the same time, the eligibility age for a child myki was lifted from 16 to 18 years of age. The change means young people will have access to concession fares until they are 19, even if they aren't at school or university. For a 17 or 18 year old working instead of studying, the shift will save them as much as \$800 a year.

In addition, 17 and 18 year olds will now be able to use a learner's drivers licence or Proof of Age card to prove their eligibility for concession fares. This change will save up to 10,000 fulltime students the cost of buying a Public Transport Victoria School Student ID.

Further information about changes to Victorian public transport fares can be found at: ptv.vic.gov.au.

Update on Warrnambool line services

On Wednesday 25 January V/Line issued an apology for ongoing delays that speed restrictions are causing to services on the Warrnambool line.

V/Line said the speed restrictions are in place to ensure the safety of passengers, staff and motorists following two 2016 incidents.

On 13 July, a truck collided with a train at a passive level crossing on Phalps Road in Pirron Yallock (see September 2016 *RD*, page 22). Following a review of the incident, V/Line put speed restrictions in place at 17 passive crossings between Waurin Ponds and Warrnambool where there is poor line of sight for both train drivers and road users.

The Phalps Road level crossing was subsequently upgraded to an active crossing, with lights, bells and boom gates (see October 2016 *RD*, page 24.) Then, in December 2016, V/Line imposed further speed restrictions at five active crossings on the Warrnambool line after a boom gate came down a few seconds later than the 25 second response time required.

The speed restrictions put in place as a result of these two incidents are causing delays averaging 20 minutes and in some cases significantly more in the 270 kilometre, three-and-a-half-hour journey between Warrnambool and Melbourne.

V/Line said that it recognises the significant impact this is having on passengers and is working with Public Transport Victoria, the safety regulator and other agencies on a range of short, medium and long-term measures to improve services and maintain safety. However, while this work is undertaken the delays currently being experienced will continue, and passengers will need to allow extra time for their journey.

New V/Line CEO James Pinder acknowledged the impact the ongoing delays were having on passengers: "We apologise to Warrnambool passengers for the ongoing delays speed restrictions are causing – we know it's frustrating and we know it needs to improve," Mr Pinder said. "We're working closely with PTV, the regulator and other agencies to develop an action plan to address these issues and improve services, while keeping people safe – but it will take time."

V/Line also announced that the new 5.13pm weekday service from Melbourne to Warrnambool would be an off-peak fare service in the new 29 January timetable. "The new evening service will not be a peak fare, reducing the cost of travel for people heading to Warrnambool during the week," Mr Pinder said.

To ensure consistency in pricing across the V/Line network, the 5.15am Shepparton to Melbourne service and the new 4:31pm service from Southern Cross Station to Shepparton will also be charged at an off-peak rate.

At Seymour, on Saturday 4 February, N470 on No.8309 Down Shepparton passenger service meets up with the veteran trio of B75, S303 and T396 hauling QUBE No.9375 Down Tocumwal freight. Ewan McLean



Limited support for Shepparton Station move

There appears to be a lack of community support for a proposal to relocate Shepparton Railway Station to the city side of the rail line despite a front page article in the Friday 13 January edition of the *Shepparton News*.

Stakeholders say the project, while valuable, needs to be part of a total package and that securing more daily train services for the city remains the priority.

Shepparton Mayor Dinny Adem said Victorian Public Transport Minister Jacinta Allan was aware of the city's ambition to relocate the station. Cr Adem said stakeholders had stressed the move was something to consider and said Ms Allan had remained positive about it while cautious about commitments to funding. "It's part of the rail story" Cr Adem said. "There's no point in switching the rail station to the other side without extra services".

Committee for Greater Shepparton chief executive Sam Birrell said securing more daily rail services was the main priority. "While it's good and long term would be fantastic to have the station feed into the CBD and the areas that are going to be tourist destinations while that's a good aim, the priority is improving the service," Mr Birrell said. He said the station remained satisfactory for the level of service being discussed, but that if it were to become a travel hub, it would need upgrading.

Cr Adem said at the moment the station was on "the wrong side of the tracks" and ultimately the plan was to move it to the other side.

He believed a shift in the station's location could help stimulate the Shepparton CBD, especially if state government funding for additional services was forthcoming over the next few years.

In July 2016 the project had been highlighted as part of Greater Shepparton City Council's funding pitch to Victorian and federal governments in a video outlining the city's project wishlist. The move is hoped to provide a warmer welcome to visitors and a short stroll into the city's central business district. "Currently the station turns its back on the CBD, rather than welcoming passengers into the area to shop," the video explained.

At the time, council had been asking for \$25million from state and federal governments for the reorientation of Shepparton Railway Station as a long-term project.

Last year, Shepparton was ranked the worst station in regional Victoria in the Royal Auto Club of Victoria's second On Track survey of 17,800 commuters. The top issues affecting commuters included; passengers feeling unsafe at certain times of day, poor connecting bus services, and a car park which is not safe/secure. It was also ranked third worst station for VLine service delivery with slow, infrequent services and dirty carriages flagged as major concerns.

Avoca Station works complete

Renovations to the historic Avoca Station were completed by Ballarat-based builders Searle Brothers in mid-February (see November 2016 *RD*, page 57).

The station has been transformed into a community arts hub, which has been leased by Pyrenees Shire Council and subsequently sub-let to Avoca Community Arts and Gardens Inc. The official launch of the new precinct is scheduled for Saturday 25 March with huge community celebrations planned.

The new arts hub will feature much more than just art with a fully-stocked nursery planned as well as a coffee café. "We hope we'll have local flora and trees and exotics in the nursery. There'll be a bit of a mixture," Avoca Community Arts and Gardens president Hugh Forster said. "There's no nursery in town and there are a lot of fantastic, very knowledgeable and enthusiastic gardeners in Avoca and the wider shire."

After months of negotiations, Avoca Community Arts and Gardens Inc. now manages the entire railway station complex which will fall under a 20-year lease agreement the group signed last year.

While the arts and gardens group will manage the site, Mr Forster said the precinct is open to the entire community.

Avoca is located in the Victorian Central Highlands approximately 71 kilometres north west of Ballarat. It is located on the standard-gauge line linking Maryborough and Ararat which is currently disused but will be rehabilitated as part of the Murray Basin gauge standardisation project.

The Avoca Station renovation is part of VicTrak's Community Use of Vacant Rail Buildings Program.

Around Melbourne

CBD streets closed to build new underground city station

Two streets in the Melbourne CBD closed from Monday 16 January to allow for construction of the \$10.9 billion Melbourne Metro Rail Tunnel. Sections of Franklin and A'Beckett Streets will be closed for many years and transformed into major construction sites to build the new CBD North Station. (The new Metro Tunnel will allow more trains run in and out of the city by connecting the Cranbourne / Pakenham and Sunbury lines via their own tunnel through the CBD. The Metro Tunnel scope includes five new underground stations, with two new city stations directly connected to Flinders Street and Melbourne Central.)

Construction crews will excavate 11 storeys below ground level to construct the new CBD North Station under Swanston Street. The new station will be linked directly to Melbourne Central Station, providing a seamless interchange between the new Metro Tunnel, the City Loop and the rest of the network.

Franklin Street is closed to vehicle traffic between Swanston Street and Victoria Street, and A'Beckett Street is closed between Swanston Street and Stewart Street. To improve traffic flow, parking near intersections on La Trobe Street between Exhibition and King Streets is being removed to introduce a new permanent traffic lane, and a 'no stopping' zone introduced eastbound on Victoria Street between Leicester and Nicholson streets in the morning.

"This is the start of major disruptions for this massive project, which will bring decades of benefits for Melbourne", said Victorian Acting Minister for Public Transport Jaala Pulford. "The Metro Tunnel is being built in the heart of the city, but it's a project for all of Victoria – enabling more trains, more often right across Melbourne."

"I thank people for their patience. I know these closures will be disruptive but they will enable us to build the turn-up-and-go train system we need to stay the most liveable city in the world."

Work is also underway on St Kilda Road at the site of the future Domain Station. Later this year, Domain Road will close from St Kilda Road to the edge of Edmund Herring Oval for construction of the new station.

For more information about the Metro Tunnel and upcoming construction activities, visit metrotunnel.vic.gov.au.

On Tuesday 3 January a large mobile crane was brought to Dudley Street yard, in Melbourne, to put Clyde/EMD shunting unit Y129 back on the track after it had split a set of points and derailed. The damaged points caused serious problems during the evening peak (see page 27). Peter Clark



Charges after Heyington track death

The Director of Transport Safety Victoria, David Hourigan, has charged rail operator Metro Trains Melbourne Pty Ltd (MTM) with breaching its rail safety obligations in relation to a fatal accident that occurred at Heyington station in 2014. (Heyington railway station is located on the Glen Waverley line approximately 7.1 kilometres from Southern Cross Station. It serves the eastern Melbourne suburb of Toorak.)

The incident occurred on 22 February 2014 when 18-year-old Mitchell Callaghan attempted to board a departing city-bound train. The doors were being held open by a number of other passengers and, as the train departed, Mr Callaghan fell through the gap between the train and the platform. Mr Callaghan died as a result of his injuries.

The charges filed against MTM are:

- breach of section 20 of the Rail Safety Act 2006 for failing to ensure the safety of its rail infrastructure operations (in relation to the gap between the platform and the train)
- breach of section 21 of the Rail Safety Act 2006 for failing to ensure the safety of its rolling stock operations (in relation to installing indefinite interlocking traction delay to prevent trains from being moved with open doors).

While responsibility for the regulation of Victoria's heavy rail operations now rests with the Office of the National Rail Safety Regulator (ONRSR), Transport Safety Victoria has investigated the incident pursuant to the Victorian law that existed at the time of the incident.

"As Victoria's transport safety regulator, my primary objective is to independently seek the highest transport safety standards that are reasonably practicable, and the filing of these charges is consistent with that purpose", Mr Hourigan said today. "This has been a long and thorough investigation and I am satisfied that taking court action in this case is in the public interest."

"As the matter is now before the Court, it would be inappropriate for me to make any further comment at this time", Mr Hourigan added.

The incident was previously investigated by the Australian Transport Safety Bureau (see June 2016 *RD*, page 25).

In January 2016 the train's driver was found to have no charge to answer over the passenger's death in a Melbourne Magistrates' Court hearing (see March 2016 *RD*, page 26.)

Major restoration continues at Flinders Street Station

The \$100 million project to restore and clean up Flinders Street Station is continuing. On Monday 30 January erection of scaffolding commenced on Flinders Street at the western end of the Administration Building, to enable extensive restoration works. These works will include repairs to the façade of the iconic building and repainting to its original 1910 colours.

The scaffolding will be constructed above the station awning, supported by ground-level towers running along the building's northern façade. For the safety of the public and workers, a construction zone will be fenced off underneath the scaffolding, which will reach just over a metre from the building. Shops along the Flinders Street side of the Administration Building will remain open throughout the works, and pedestrians will still be able to use the footpath, although it will be narrower.

Scaffolding had previously been installed on the Platform 1 side of the Administration Building to allow roof replacement, waterproofing and painting works to be carried out.

Works completed to the end of January include the refurbishment of toilets on the main concourse and upgrades to lighting across all platforms.

Planning is well progressed to refurbish the Elizabeth Street subway toilets and build a new entrance to Platform 10 at the western end of the station. These works are expected to start shortly.

The scaffolding on both sides of the Administration Building will remain in place until 2018.

Melbourne tram network to use solar energy

The Victorian government has said that a new solar energy plant to be built in regional Victoria will run Melbourne's entire tram network by the end of 2018.

In a Thursday 19 January media release the Government advised that it would run an open tender to build 75 megawatts of new solar farms — most likely in the state's north-west. The tender will run in the first half of 2017 with the state's first large scale solar farms operational by the end of next year.

Around 35 megawatts of the energy produced by the farms will offset the amount of electricity needed to run the 410 trams on Melbourne's network during peak periods.

Victorian Energy Minister Lily D'Ambrosio said the plan was a world first. "The world is moving to clean energy, we made a commitment as a Government, we continue to uphold that commitment to grow renewable energy," she said.

However, Ms D'Ambrosio would not say how much extra the solar energy would cost. "We won't be disclosing that figure," she said. "We know that [the] cost of solar plant is coming down every single day and we know that we will drive a very competitive process."



A Comeng Set working the 12.55 pm Flinders Street to Cranbourne service departs from Murrumbeena on Saturday 4 February, with the first of the piers for the Skyrail project taking shape in the background. Timothy Sutherland



During the afternoon of Tuesday 3 January, a derailment of a Y Class on a critical set of points in Dudley Street carriage sidings (behind the photographer – see page 25) trapped most of V/line’s reserve of locomotives in the North end of Dudley Street Sidings. As a result, VLocity Sets were more in evidence at Southern Cross at a quarter to five in the afternoon than might be expected on a normal day. Two sets, led by Set 50 in the V/Line colour scheme sit in Platform 2 while two more sets led by Set 39 in the modified original scheme sit in Platform 3. Set 45, alone, in the V/Line livery is heading for a more distant platform to the right while set 3, recently repainted into the current PTV ‘Gem’ scheme with a new centre car waits in Platform 5. A fifth unidentified set waits in front of the control centre. Peter Clark

B2 class tram 2057 heads East across the Latrobe Street Bridge on a route 86 working to Waterfront City at around half past five on Tuesday 3 January. This car is in the final Yarra Trams livery of white with stylised eucalypt leaves around the passenger doors. Peter Clark



Bayswater Station path upgrade

Works to upgrade the principal shared path (PSP) at Bayswater Station will begin in March.

The \$1.5 million upgrade will see the construction of a new section of PSP to connect the existing pathway at either end of the station. The project will also include extending the PSP over the existing pedestrian underpass.

When completed, the PSP connection will greatly improve safety and accessibility at the station by separating bicycle traffic from car and pedestrian traffic within the southern car park.

Forward works began in 2016 and included changing the alignment of the car bays and changes to access/egress. Now that this work is complete, vehicles are only able to enter the car park from the west and exit from the east.

The number of parking bays available is currently reduced due to the presence of water-filled barriers, which provide a safe pathway for cyclists through the carpark. Once the PSP upgrade is complete these bays will be reinstated and there will be no need for cyclists to enter the car park.

As with the initial car park upgrade works, construction will be staged to reduce the number of bays impacted during works.

The upgrade is expected to be complete by mid-2017.

Bayswater station is located on the Midland Line 6.7 kilometres from Perth station.

New Edgewater Station car park opens

On Sunday 22 January a new \$26 million multi-storey car park opened at Edgewater station in suburban Perth. (Edgewater is located on the Joondalup line 23 kilometres north of Perth station.)

The new car park provides 560 additional parking bays split over three levels, increasing Edgewater's total parking capacity to 1454 vehicles.

The new multi storey car park will help ease the growing demand for parking along the Joondalup Line, particularly as Perth's population continues to grow in this area. The car park's opening will further add to the Public Transport Authority of Western Australia's commitment to integrated, smart transport solutions, taking pressure off the roads by encouraging commuters to complete at least part of their journey using public transport.

Designed to maximise security, natural lighting and ventilation while

New mine and rail link for Pilbara

The Western Australian government has committed to a State Agreement with the proponents of a new \$5.6 billion integrated iron ore development in the Pilbara.

On Monday 23 Western Australian Premier Colin Barnett said the Balla Balla Infrastructure Group was planning to construct a new iron ore export facility at Balla Balla, near Whim Creek, on the Pilbara coast between Karratha and Port Hedland, with a 162-kilometre railway linking it to iron ore deposits in the central Pilbara.

"This State Agreement includes a requirement for local industry participation and community development plans to be submitted to the Government for approval, maximising the benefits of the project for West Australians," Mr Barnett said. "While there are still a number of hurdles for the proponent, it's estimated when it gets underway, the project will generate 3,300 jobs during construction and 910 jobs once operational."

The proposed export facility will use custom-built barges to transfer ore on to ships, reducing costs and environmental impacts.

State Development Minister Bill Marmion said the project showed that despite some economic headwinds, there was still great interest and investment opportunities in the WA resources sector.

"State Agreements provide certainty for business, resulting in longer-term investment and advantages for the West Australian economy through jobs and community benefits," Mr Marmion said.

providing shading and weather protection where possible, the car park includes two lifts, an open staircase and façade screening to half of the building. The facility also incorporates 75 CCTV cameras, 445 lights and three duress buttons.

Western Australian Transport Minister Bill Marmion said the project, originally budgeted at \$29.5 million, had been delivered for less than \$26 million thanks to a competitive tendering environment.

"We committed to this project at the last election and are proud to deliver it under budget," Mr Marmion said.

Construction of the car park began in late 2015.

An average of 1900 passengers board at Edgewater Station each weekday. On weekdays commuters pay \$2 per bay while on weekends parking is free. Parking is also free for disabled permit holders using accessible bays.

TransPerth's B Series EMU Set 5095 waits at Midland Station for a return run to Perth, on Saturday 14 January. Caleb Smith





Above: EMU Sets 5058 and 578 sit together at Perth Station on Saturday afternoon 14 January. 5058 is bound for Fremantle, while 578 will be heading in the opposite direction, to Midland. Caleb Smith

Below: Motive Power/Cummins unit CBH025, currently on loan to Watco, approaches the former Miguel Road crossing at Yangebup with SRT1 loaded rail train to Brunswick Junction on Sunday 29 December 2016. Jay Stavert





SCT commences Melbourne – Brisbane services, Bromelton terminal opens, BK Class purchased

John Hoyle

As foreshadowed in January *RD* (page 8) SCT Logistics commenced operating rail services between Melbourne and the company's new terminal at Bromelton, 49 kilometres south of Brisbane's Acacia Ridge freight terminal, from 21 January. The inaugural service departed on that day from the company's Altona terminal with SCT Class EMD/Downer units 004, 007 and 006 hauling 37 vans of palletised freight, plus a crew car and container wagon carrying an on-line refuelling tank and a container. The crew car, a former South Australian *Bluebird* railcar, was used to carry senior SCT management, including CEO Glenn Smith, on the trip. However, it will not normally be part of the train.

The initial service arrived at Bromelton early in the morning of 23 January. Crews for the new service are being provided by labour hire company Momentum Rail, part of engineering and railway rolling stock maintenance company Engenco Limited. Initially trains will operate four times a week in each direction as service numbers MB9/BM9. The timetable provides approximately one hour for services to call at SCT's Barnawartha terminal in each direction if required.

Previously SCT's vans had been hauled by Aurizon's MB7/BM7 services but SCT was given 12 month's notice by Aurizon to make alternative arrangements for their van haulage to Brisbane. The relatively short notice resulted in a tight timeframe to complete the terminal at Bromelton,



With a friendly wave from the driver, CSR 003 leads newly commissioned BK 001 (formerly imported into Australia by Bradken) through Pyrenees Loop, near Ararat in Victoria, with 9721 Dooen service on Sunday 29 January. These two Chinese-built locomotives are nearly identical, while the two members of the BK Class are doubtless welcome additions to SCT's fleet, particularly with their new services between Melbourne and Brisbane adding to demand for locomotives. David Campbell

Left (page 30): SCT Logistics' Bromelton terminal, 49 kilometres south of Brisbane's Acacia Ridge rail freight terminal, opened for business on 23 January when the first service from the company's Altona (Melbourne) terminal arrived at Bromelton. The second service arrived on Wednesday, 25 January and in this view on that day the return working (5BM9) is being made up by the train's locomotives, SCT Class 010 and 014, in preparation for its 6.30 pm (local time) departure. Attached to SCT 014 can be seen the container wagon carrying the locomotives' on-line fuel supply while the main terminal building is in the left background. A queue of SCT trucks can be seen in the middle background. John Hoyke

Right: SCT Logistics locomotives SCT 004, SCT 007 and SCT 006 at Kilbride on the NSW North Coast Line with the inaugural run of 7MB9, on Sunday afternoon 22 January. Stephen Miller

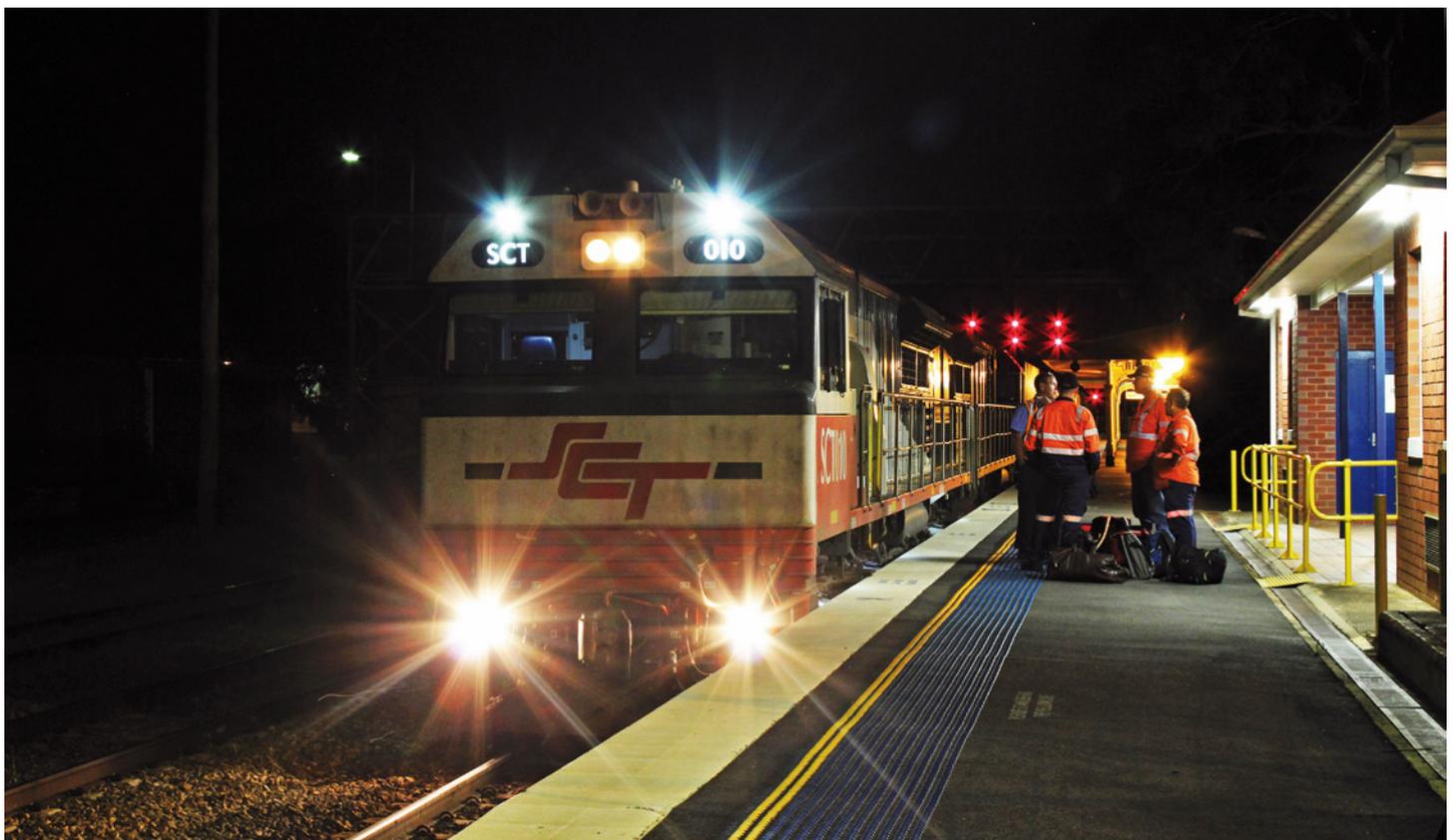
Below: At 9.20pm on Australia Day, SCT's 4BM9, powered by SCT 010 and SCT 014 and running 1hr 30 mins late, pauses at Junee for a crew change. The crew was scheduled to be relieved at Wagga Wagga, but due to a serious delay caused by a fuelling problem at Goulburn, the changeover point had to be moved north. Rhys Harrison



located six kilometres east of Beaudesert, opposite the site of the former Bromelton Station, once served by passenger trains such as the *Brisbane Limited Express*. The sidings within the SCT terminal were essentially completed the day before the first service arrived with ballasting carried out by truck in the week prior to opening. The ARTC installed the turnout for the SCT terminal on 10 January and contractor, Sigtech Solutions, commenced testing and commissioning on 20 January, one day before the departure of the first MB9 service. The signalling associated with the terminal had been installed earlier. Although the terminal is in operation work was still under way in early February to complete various parts of the terminal.

In recognition of the fact that the SCT terminal and future developments at the Bromelton State Development Area (including another rail terminal on land purchased by the ARTC) will generate additional truck traffic through Beaudesert, the Queensland Government is funding a \$27.5 million bypass of Beaudesert's town centre in partnership with the Scenic Rim Regional Council. Work on this project has recently commenced.

In a development related to its service expansion SCT has purchased the two BK Class locomotives that were obtained by Bradken but never used in revenue service by that company. The BK Class were built by CSR (now CRRC) in Ziyang, China and are virtually identical to SCT's CSR Class units. They are to be reclassified into the CSR Class and numbered 011 and 012.





Clyde/EMD units 8137 and DL45 on 8438N Down Parkes to Newcastle loaded grain train roll across Backwater Cowl, a wetland on the southern out-



skirts of Narromine, on New Year's Eve Saturday 31 December 2016. John Scott



Sticks and tricks

An innovative approach to trackwork

David Campbell

Have you ever had to work with a railway sleeper? Perhaps struggling to move one around your garden or building up a retaining wall, maybe even helping replace one on a railway somewhere?

Changing a railway sleeper in its native environment is hard work, whichever way you look at it. The workload is, if anything, increased on tourist and heritage railways, however mechanised the process. The task always involves manual handling issues, with often inexperienced people working on uneven and unstable ground. Even the tools and equipment are heavy and at times perhaps inadequate for the task, while all the time the volunteers struggling to do this work often battle more to gain interested, younger helpers.

The very use of timber for railway sleepers is becoming problematic. Main-line railways are using fewer timber sleepers (some almost not at all), so the timber cutters and sawmills that provided them are closing. Good timber suitable for railway sleepers is getting harder to obtain, as many areas were cut out in the past, and the current supply of new timber sleepers is generally of a much poorer quality; in previous years these would have been rejected instead of being put in track. The tourist and heritage railways still need sleepers, but the cost of timber is rising quickly, adding to the difficulty of continuing operations, while there is also competition for funds from other priorities within any railway besides just replacing sleepers.

But you just cannot ignore them; sleepers are an integral part of an infrastructure which supports safe operations. They support the rails, and assure correct gauge. You can always get away with a couple of failed sleepers here and there, relying on the inherent strength of the remainder to assure safety. However when two or more consecutive sleepers have become unserviceable that part of the track may fail inspection, or (worse) lead to a derailment condition.

Above: Russell Trevaskis and Douglas Hayhoe checking the status of the gauge and performance of trial sleepers installed in a working environment. Adrian Ponton

Sleeper condition has been the reason for the closure of several sidings and even railways over the years, or the imposition of load and speed restrictions. Some of the tourist and heritage railways in recent years have had to close as they found it impossible to maintain sleepers to a safe standard. The point is, you just cannot ignore sleeper condition.

So, what happens with a new sleeper? Just this task alone presents logistical challenges. Usually once a truck delivers a bundle to the railway is when the problems start. Storage is a problem; pilfering by the neighbours occurs (sad to say but too often true), the sleepers themselves rapidly deteriorate in storage, and as a number of tourist railways found out, a bushfire can destroy them all. Eventually the sleeper is loaded onto a train or trolley, and placed on site, ready to insert.

There's another job that really cannot wait, if anything they are now even more prone to theft. All that timber is too much of a temptation for some, yet so hard to trace once stolen. Fires and natural weathering can also destroy new sleepers lying around waiting installation.

Eventually a group of volunteers arrive and manage to replace some sleepers during a working bee. How many replaced can depend on the number of volunteers who present for the day, and the degree of mechanisation available. The number of insertions may range from half a dozen to perhaps over a hundred. Other factors, such as within station yards or deep cuttings, can reduce productivity. That day's hard work might have to be repeated several times a year, just to keep up with the routine deterioration of the timber. A tourist railway of say seven kilometres length will have around 10,000 sleepers, so they will need to replace between 500 and 1000 sleepers yearly. And if ignored



A steel sleeper interspersed with timber. Note the gang nail across the end of the timber sleeper to try and prevent cracking and splits.
Adrian Ponton

for this year, then next year they may have to replace up to 2000. Another year or so and rail operations may have to cease. Completely. Probably forever.

How long does a sleeper last? In the past, a good quality ironbark sleeper may have lasted up to 35 years with favourable conditions. Its lifespan helped by a dry climate, attention to drainage, light traffic volumes and good ballast. However, with the poor quality timber now being used for sleepers, sleeper life beyond 12 – 15 years is a rare occurrence. And not every railway is located where the climate supports longevity of the timber.

Some railways use second grade sleepers rejected by the main line operators; these might last 15 years, but are just as likely to fail after five or 10 years. Knots and splits, maybe the previous use of soft woods such as treated pine (where historically the treatment is often carcinogenic), the use of second-hand sleepers released from main lines, I've seen them all contribute to rapid failure of recently inserted sleepers.

This life cycle repeats again and again, and unfortunately sleepers now have to be replaced again and again. At each cycle of replacement the workforce has aged 10 or 15 years. A 50 year old person could comfortably handle this sort of work, maybe still so when they turn 65; but can they do so yet again at age 80? Can that railway reasonably expect to get enough new volunteers to handle this work in 15 or 30 years, as the older volunteers go looking for less strenuous roles? Even with good sleepers, that regular replacement work must not be deferred, lest the whole railway has to cease operations, as has happened to some tourist railways in Australia in the last year or so.

There are, of course, alternatives to the use of timber for railway sleepers. Concrete is favoured by most 'commercial' railways these days, but they don't come cheap, and they always need mechanisation for any handling. Concrete sleepers can also create big problems with ballast, the formation, and even bridges. If the support of the concrete sleeper from the ballast and formation is compromised, mud holes develop and the concrete sleepers can ultimately crack and fail.

Steel sleepers have been used, particularly for sidings and in some secondary main line areas. They have excellent gauge holding capacity, but they are very difficult to pack, and if the ballast depth is insufficient and steel sleepers are not adequately packed, holes will quickly develop, causing poor track geometry which could even lead to a derailment condition.

Soft timbers such as treated pine, or low quality red-gum, may offer savings on the purchase price, but need more frequent replacement, adding to the labour woes. And let's face it; once you have replaced

the same sleeper three times as a volunteer, it does become tedious. Extending the service life of those sleepers becomes such a valuable way for volunteer-based track gangs to maintain both their interest and their railway in the medium to long term.

Russell Trevaskis, a retired Victorian Railways Civil Engineer, with over 40 years' experience in track maintenance, construction, project management and senior management positions in Victoria and NSW, has been working with two Victorian manufacturers who specialise in recycled plastic products made from plastic waste and other waste products that would have gone to landfill, and Monash University, who developed the sleeper specification for the Victorian T&H operating parameters and conducted the bench testing of the sleepers to validate compliance to that specification.

The Victorian manufacturers are Integrated Recycling and Replas. Integrated Recycling's head office and warehouse/distribution centre is at Reservoir, in Melbourne, with its manufacturing plant in Mildura, while Replas' head office and warehousing /distribution centre is at Carrum Downs, with its manufacturing plant in Ballarat. Both supply plastic sleepers to miniature railways. These companies saw the potential in the development of railway sleepers when Russell first approached them with the concept in 2014, and it was particularly timely as the car manufacturing industry, with a reliance on plastic components of all sorts was in decline, coinciding with other industries in Regional areas which were gradually downsizing or closing.

Work progressed with the development of prototypes for initial fastening tests and the insertion of some aged recycled plastic sleepers that had been stored in the open for 10 years and subjected to UV rays and environmental elements. These particular sleepers had originally been obtained for a trial in the Melbourne metropolitan area that eventually didn't proceed, and the sleepers then provided useful data with respect to storage conditions as well.

The aged trial sleepers were placed in the most severe railway conditions that could be identified and subjected to locomotive lubricants, coal ash, hot fire boxes and hot water from locomotives that were stabled over them in engine roads, water, salt coastal conditions and areas subjected to herbicide spraying for vegetation control. The results from over two years show that there has been no deterioration in the sleeper surface and gauge holding capacity and they will remain in track for another five years for re-assessment.

The fastening that proved most efficient and reliable is the AJAX M19 double thread Dog Screw. The rail can be directly fastened to the sleeper, a shoulder sleeper plate can also be used, or a Pandrol plate can be attached to the sleeper by Dog or R type screws if a resilient fastening is required. The traditional dog spike, 'a square peg in a round hole', proved less efficient in withstanding the track uplift force when compared to the standard. The sleepers are typically pre-drilled on site to ensure a strong friction fit is provided.



An AJAX M19 double thread Dog Screw in use on a test sleeper.
Adrian Ponton



Trial sleepers of both suppliers were inserted using various patterns on tangent and curved track, into basalt ballast and gravel/ash ballast. Adrian Ponton

The sleeper manufacturers moved on to provide prototypes suitable for in track field trials and from early 2015 have progressively been inserted into tangent track as well as tight radius curves (3 chain to >11 chain Radius). The insertion pattern was interspersed in singles and groups of 2,3,4 and 6 and particularly under mechanical joints in the rail. This trial was also extended to 13 sleepers in a face on tangent track under a pedestrian crossing and sealed with proprietary crossing panels. The trial was later further extended to 17 in a face in the same manner at another location.

In determining a suitable sleeper for tourist railways, as can be seen above, an extensive assessment was undertaken of timber, steel, concrete and plastic. Given tourist railways collectively are only a small market and represent five different gauges and at least eight different rail weights, small production runs of concrete and steel sleepers were seen as uneconomical. One of the key benefits of plastic on the other hand, is that it is possible to use the same machinery to produce sleepers of the same cross section dimensions and differing lengths in small quantities.

The cost of purchasing and installation (including the human cost) must be weighed against the initial purchase price and installation of a sustainable sleeper that will have the capacity to outlast the timber counterpart by 3-4 times. All too often the use of lesser quality timber by tourist railways has addressed an immediate problem, but in the longer term is seen to be a false economy.

The sleepers are produced in standard width and depth, length to suit (based on gauge). Sleepers so far have been used on 610mm, 762mm, 1067mm and 1600mm gauge track. Lengths for other track gauges such as 915mm and 1435mm could be readily provided.

The participating T&H Railways in the field trials were selected on Track geometry (tight curves), continually wet/dry areas, ballast type

and condition, grades, maximum and minimum ambient temperatures and traffic type and density.

These T&H groups (all Victorian) are:

- Daylesford Spa Country
- Walhalla Goldfields Railway
- Victorian Goldfields Railway
- Puffing Billy Railway
- Mornington Peninsula
- Red Cliffs Steam Railway
- Bellarine Peninsula Railway

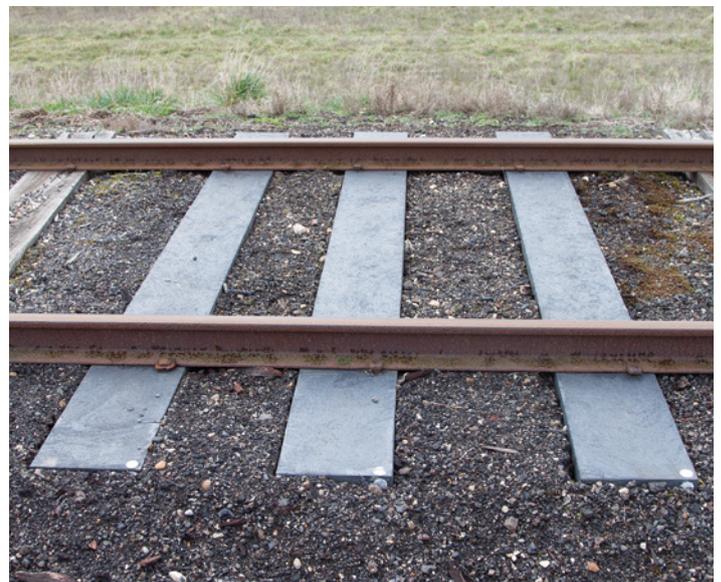
The above railways have funded the costs incurred for the installation and ongoing monitoring of the trial sleepers, while the suppliers have been funding the cost of sleeper development and the actual trial prototypes.

The weight of a plastic sleeper is similar to that of a dry red gum timber sleeper of the same dimensions. This enables the existing handling equipment to be used without any specialisation. The design life of these sustainable sleepers is currently estimated as 50 years, and it is expected that this will be extended as service life for these sleepers is proven (as was the case with concrete sleepers in past years). This whole of life approach allows T&H railways to make substantial long-term savings.

The sleeper's design parameters are 17.6 tonne axle load at 40km/h speed, with a service life of 50 years. At the time of writing this article [January 2017] the validation of the sleepers against the specification has been 98% successfully completed. The last remaining test is in the course of completion and the final validation report is expected mid-February 2017.

The anticipated 50 year service life is possibly the most important achievement from these sleepers. That gang slogging away to replace a sleeper, our 50-year-old volunteer will be 100 when that recycled plastic sleeper needs replacement, and I doubt will consider it to be his problem the next time around! The workload for those volunteers replacing the sleepers will effectively stop after 10 - 15 years, and this represents a huge benefit to many of these railways struggling to retain enough able-bodied people. These people will soon see their railways becoming more sustainable, as the reduction in heavy physical work is matched by the long-term reduction in costs. Volunteer hours can be transferred to other important tasks such as rolling stock restoration, or even operating the trains.

The use of recycled plastic sleepers will enable the costs of running trains by these groups to be reduced, with lower costs over the 50 year cycle. The enormous efforts by volunteers to replace sleepers would be a big, albeit intangible, saving; effectively these sleepers would lower replacement frequency by a factor of up to 4.



A side view of three sleepers in use for the comparative trials of the products of both suppliers. Adrian Ponton

These sleepers are made by moulding or extruded recycled plastic, and in turn when they reach the end of their effective use they can be recycled again into other plastic products...even sleepers!

Benefits and features of these recycled plastic sleepers include:-

1. Ecologically sustainable (around 400,000 timber sleepers are cut from healthy trees annually).
2. No corrosion as is found with the steel reinforcing in concrete sleepers and in steel sleepers themselves.
3. Not prone to cracking or decay and degradation, as is found with timber.
4. Inert against fungus attack.
5. Termites are uninterested.
6. Significant reduction of waste for landfill.
7. Requires less energy to produce than either steel or concrete.
8. Has a flexibility in track similar to timber sleepers.
9. Can be readily drilled and cut like timber, although unlike timber does not produce splinters.
10. Does not propagate fire.
11. From an environmental perspective, the benefit of reducing the amount of plastic products that end up as landfill.

Good quality timber sleepers in track often survive bush fires, less so as they age, when splits opening up can allow embers to be admitted, converting the sleeper to a pile of ash. The recycled plastic sleepers will self-extinguish when the fuel source is removed, however in a wild or bush fire situation where temperatures are extreme, they may partly or completely melt. The sleepers are considered to be at least as fire-resistant as are timber sleepers now.

It is conceivable that these sleepers could be used for secondary main line operations. However, further development would be needed with regard to axle loads (>21 tonnes) and speeds (which may be up to 160 km/h). Composite sleepers for heavier axle loads [>30 tonne] and much faster speeds have been developed and are used overseas but are also extremely expensive in comparison.



Plastic sleepers being inserted manually in the same manner as for timber sleepers. Russell Trevaskis



Traditional mechanical insertion methods in use. Insertion by hi-rail excavator with grab clamp also proved successful. Russell Trevaskis

Costs to date for the work undertaken by Monash University to develop standards and test sleepers against those standards have been met by Victoria's Registrar of Tourist and Heritage Railways.

Preliminary evaluation of other uses for recycled plastic currently include:

- Field trials are in the initial stage to determine if points and crossings timber replacement pieces, spliced if necessary as timber ones are occasionally, are feasible. If they are considered to be worthwhile then separate development and testing will be required.
- Non-slip platform coping timbers are a possibility if demand warrants development. Maybe a broad-gauge sleeper section will meet the requirement?
- Timber bridge decking and ballast retention kerb pieces, so necessary for the many timber bridges on T&H networks, are being investigated.
- Transom timbers for open-deck bridge spans
- Platform furniture and fencing (available now)

As remarked earlier, Monash University's work has included development of a Standard for this type of sleeper, and manufacturers will be obliged to produce their product in compliance with that Standard. The actual mixture forming the 'plastic' is protected by the manufacturers, who have had the courage to invest in this innovative product, while there are legitimate concerns that less ethical parties may attempt to supply cheap versions...and there are usually good reasons that some products are cheap!

Russell Trevaskis is very confident that these recycled plastic sleepers will soon be available to all tourist and heritage railways, and not just those within Victoria. The minimal changes to work practises will appeal to many, although interested groups will be required to deal with the paperwork; the Safety Management Systems, for example, may need to be varied to reflect the use of alternate materials (plastic in lieu of timber).

Acknowledgments

The author thanks Russell Trevaskis, General Manager RST Railway Engineering and Adrian Ponton, Registrar Victorian T&H [retired] for their technical assistance with this article.

Further reading:-

<http://www.replas.com.au/wp-content/uploads/2015/04/Miniature-Railway-Sleepers.pdf> www.integratedrecycling.com.au



South of the border...
Scenes from The Garden State





Above left (page 38): XR558 and G536 are seen near Broadford with Pacific National 9306 Up Tocumwal Freight early on Wednesday morning 25 January. Ewan McLean

Below left (page 38): VLocity Set 3, with 1103 leading, rolls out onto Rowsley Trestle Bridge just west of Bacchus Marsh with the 11.30 passenger service from Wendouree, on Tuesday 7 February. Steve Munro

Above: A VLocity Set working the 10.13 Southern Cross to Waurn Ponds service emerges from South Geelong Tunnel and is about to cross McKillop Street soon after leaving Geelong Station, on Saturday 14 January. James Chuang

Below: Seen near Seymour on Saturday 4 February, QUBE's Tocumwal Freight No.9375 has a very different collection of motive power to the Pacific National train, with veteran Clyde/EMD units B75, S303 and T386 doing the honours. Ewan McLean





Above: Late on Thursday afternoon 2 February, Sprinters 7013 and 7021 head south through Broadford, with its charming lower quadrant 'somersault' signals, on their way to Southern Cross with a service from Seymour. Steve Munro

Right (page 41): Clyde/EMD 'Streamliner' A66 works upgrade hauling an H Set forming the 0730 Southern Cross Passenger service out of Bacchus Marsh, on Tuesday 7 February. Steve Munro

Below: With the introduction of the new V/Line timetable on Sunday 29 January, numerous Xing signs have appeared around the network. N467 on Train No.8026, the Up Swan Hill service, approaches Riddells Creek on Wednesday 8 February. Ewan McLean







The AK Cars go north-west

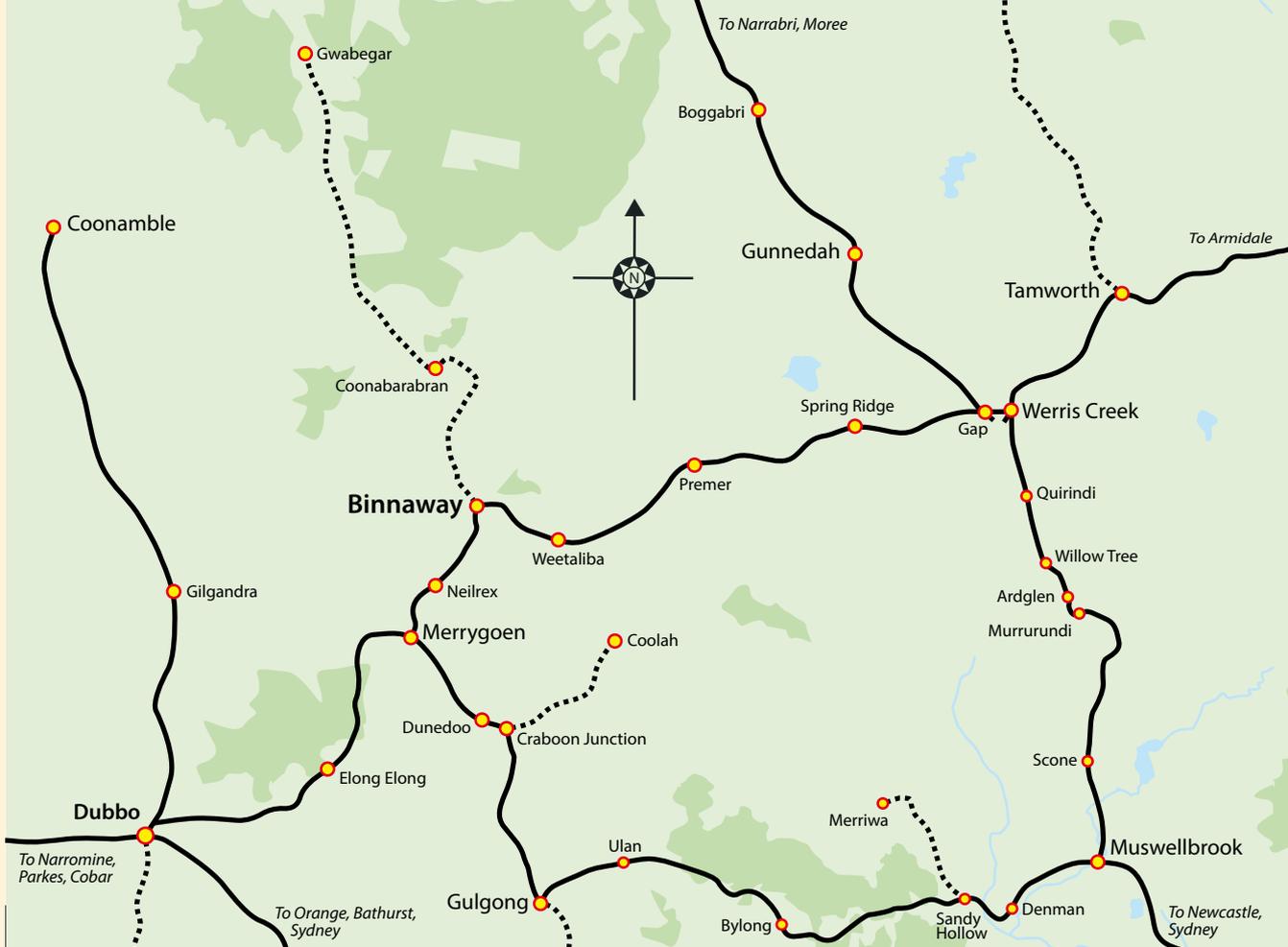
Text and images by Luke Stewart

The AK Track Recording Cars traversed a fair chunk of the NSW railway network throughout December last year and January of this year. These operations saw the cars traverse the Hunter Valley several times. During late December maintenance was carried out on the train at Goulburn, and after a transfer to Sydney, the AK's left on an excursion to Brisbane. Other locations visited during the month included Moree, Armidale, Binnaway, Ulan, Kooragang Island, Port Waratah, Islington Junction to Hamilton and finally back to Sydney. The cars also ran to Parkes, Cobar, the Warren branch line, Coonamble, Dubbo and finally back to Sydney, arriving back on Saturday 4 February.

Most operations of the AK cars during January made use of two 745kW Goninan/Caterpillar 47 Class locomotives, 4701 (in a de-branded SSR livery, this unit having been previously leased to SSR) and 4702 (in the Lachlan Valley Rail Freight livery), both locomotives being owned by LVR. The AKs were operated by Sydney Rail Services for the ARTC, in turn subcontracted by John Holland. Between Monday 23 and Friday 27 January, operations took place in the Sydney Metropolitan area, with Pacific National 2240kW Clyde/EMD units 8151 and 8170 doing the honours.

Track recording has been carried out in NSW since 1926. There were mechanical systems on earlier AK cars in place to undertake measurements.





However, there were limitations and short-comings in the frequency and accuracy. It's been said that the Granville disaster of January 1977 could have been avoided had the equipment in use at the time been able to detect the poor condition of the track.

In the mid-80s, Track Recording Vehicle RVX4 was commissioned, equipped with an electronic (although still partially mechanical) system that replaced the all-mechanical systems. The current AK Cars, running as a track recording train since late 2001, incorporate an all-electronic non-contact system. This is also in the process of being upgraded during 2017. Sydney Trains, also, are in the process of

commissioning self-propelled Track Inspection Car MTPV1, which will undertake track recording duties for Sydney Trains in the future. This will then enable Sydney Trains to withdraw from the current ARTC/Sydney Trains 50/50 Joint Venture.

The carriages that became the AK Cars were originally FAM (twinette) sleeping cars, built by Commonwealth Engineering in 1975/76 for the erstwhile *Brisbane Limited*. The cars were overhauled to add features specific to their requirements, including storage facilities, kitchen areas and the all-important track recording facilities. The cars are numbered AK 2383, AK 2384 and AK 2382.

Above left (page 44): The early morning sun reflects off the AK Cars as they stand in the siding where they were stabled overnight.

Left (page 44): The two 47s with the AK Cars wait on the triangle, south of the Binnaway yard, for the points to be changed, on Monday 16 January.

Right: Early on Tuesday morning 17 January the train waits on the triangle for clearance to depart from Binnaway.





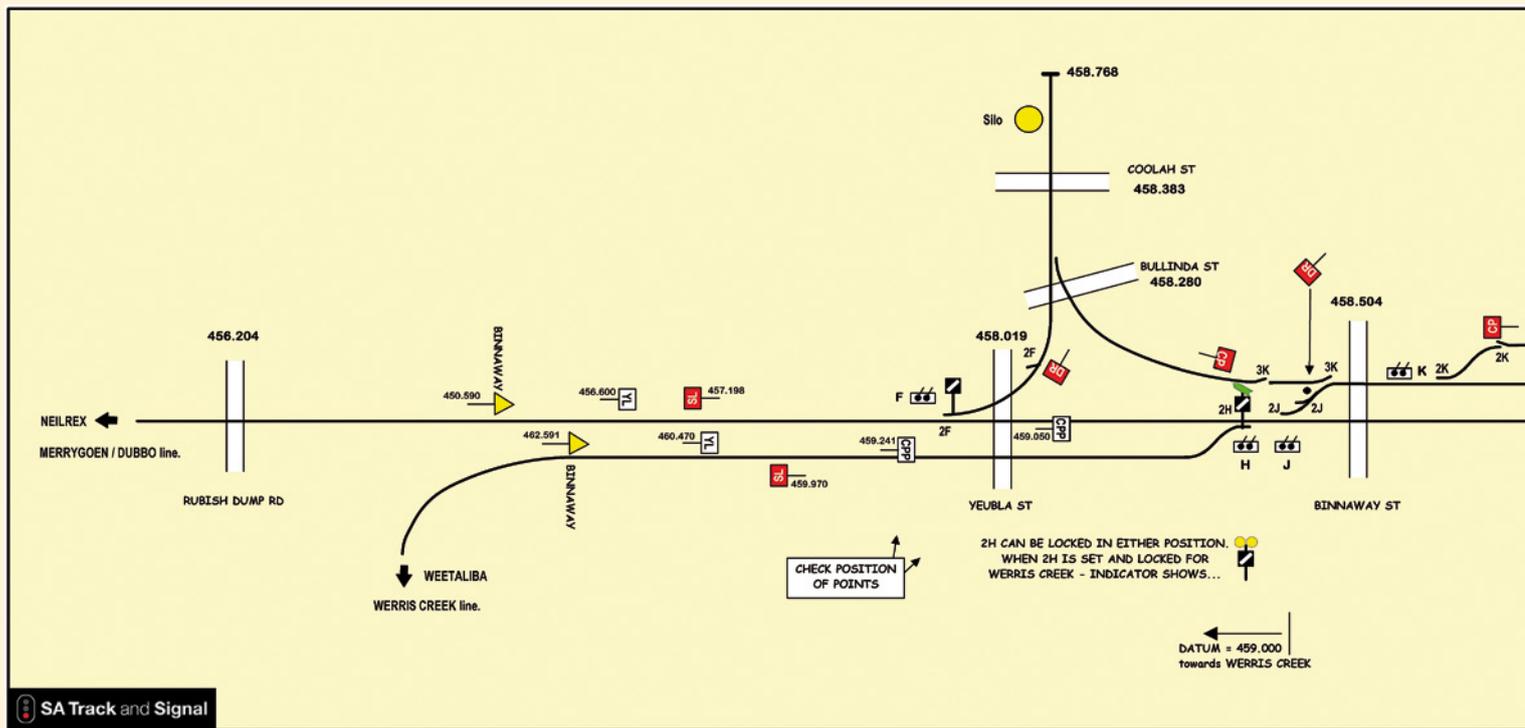
The crew of 4701 awaits clearance to depart as the train sits on the triangle at Binnaway at 7.08am on Tuesday 17 January. The large observation windows at the rear AK 2383 can be clearly seen.

The original numbers being retained, but with a change of prefix. In fact, AK 2384, the centre carriage, is still used as a sleeping car, being utilised by the crew on the train. AK 2383 and AK 2382 both feature observation windows at the end of the cars. (For more detailed information, see 'The AK Cars' in *Railway Digest*, September 2007).

It is interesting to note that the equipment in use can be operated at speeds of up to 110 kilometres per hour. The cars certainly make use of their ability to run at track speed, absolutely tearing through intercity and country stations at speeds comparable to XPTs.

In January, I took a trip to see the AK Cars at Binnaway. Located 458.7 kilometres (via Mudgee) from Sydney Terminal on what was once known as the Gwabegar Line, Binnaway now marks the end of the track, with stop blocks being placed across the line at the northern end of the yard. A triangle (a feature not often found in NSW) is at the south end of the yard, serving a wheat silo located at the end of a long siding. An ARTC Track Maintenance Depot is also located here.

The AK cars arrived onto the junction from the Binnaway - Werris Creek line just before 1700 hours. They eased past Frame H onto the main line,





Locomotives 4701 and 4702 are refuelled by a road tanker just after sunrise on the morning of Tuesday 17 January. Though the letters 'SSR' have been painted out, with the lease period having come to an end, 4701 is still in SSR's distinctive yellow and black livery.

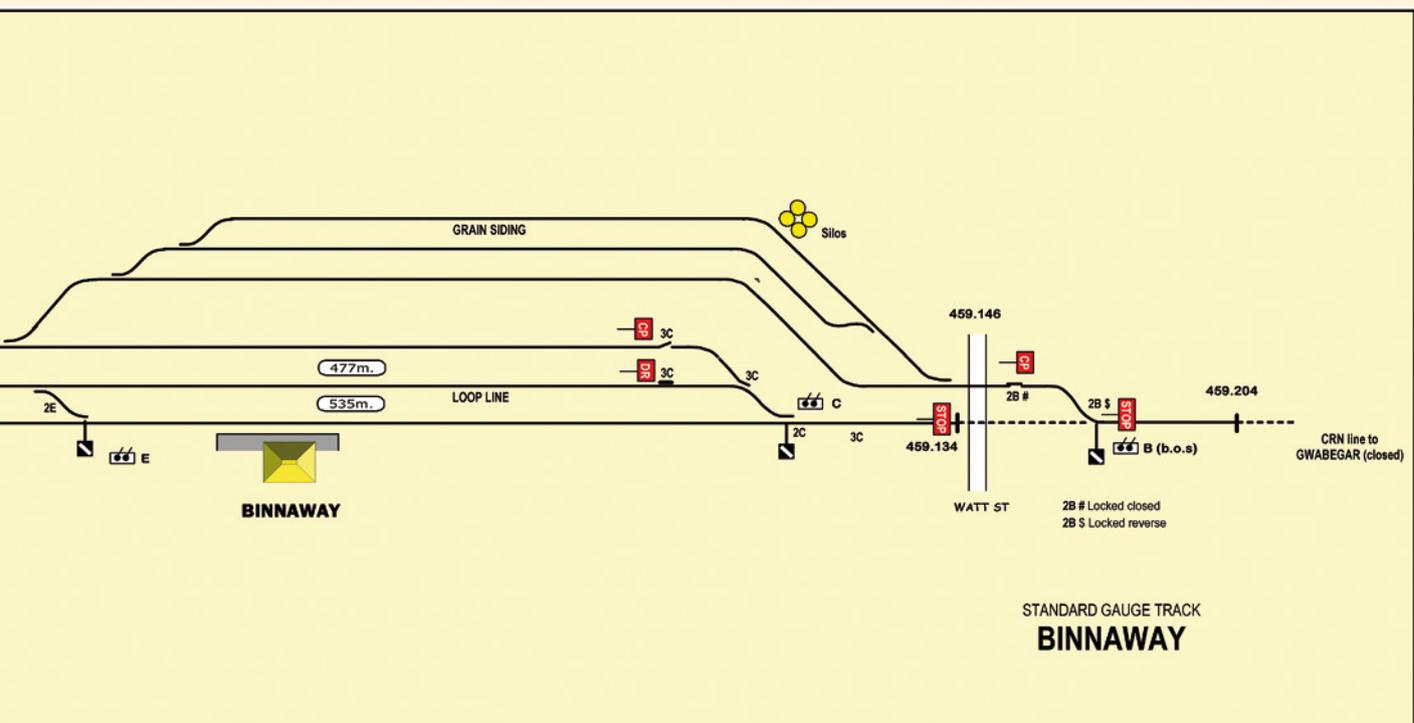
then onto the loop line, requiring Frame J to be operated by the crew. The train stopped just past the Renshaw Street level crossing, then commenced to reverse to re-enter the triangle junction, then to enter the wheat siding.

Once the train had crossed the points at the apex of the triangle, it stopped, and the points were reset so the train could proceed straight on to Dubbo the next morning.

For its overnight stay, the train was sandwiched between the points and the Bullinda Street level crossing, with only a

few metres to spare. Two wooden chocks were placed against the front wheels of the locomotive. The crew then locked the locomotives and boarded the cars for the night.

The next morning presented windy conditions. The locomotives were up and running quite early. Upon departure, the train proceeded around the triangle and stopped just before Frame F. The crew changed the points, moved the train past, then changed them back. 4701, 4702 and the AK Cars then departed for Dubbo, via Merrygoen.





Swietelsky CPB Rail MFC-45 Ballast Spoil Wagons

Text and images by John Beckhaus

The Swietelsky company was founded during 1936 by Hellmuth Swietelsky and has its Headquarters at Wien in Austria. The company today has 9,500 employees with the main activities of the company in 22 countries in Europe as well as Egypt and Australia. The main rollingstock depot is on a 24 hectare site at Fischamend in the south-east of Wien. The site includes a triangle for turning track machines, and as well as a two-storey administration building, has three workshop buildings. One is for the construction of new vehicles with one for the maintenance of tamping and plough machines. The fourth building is 'L' shaped with wagon maintenance at one end with the long section of the 'L' providing the ability to bring the long ballast cleaning and track renewal machines into the building.

Swietelsky delivers specialist construction projects including: tunnelling, bridge construction, highways, ground engineering, environmental engineering property developments, alpine

construction, sports and recreation facilities, research, laboratory testing and project planning functions and all aspects of mechanized track renewal and track maintenance.

Swietelsky Bahnbau is a world leader in developing and operating high performance on track technology.

The Division owns and operates over 500 rail mounted specialist machines including 12 high output track renewal and rehabilitation systems. The Division operates in over 25 countries and it has expanded to include other countries with Swietelsky founding its Rail Transport Services division during 2005. On 1 July 2006, the UIC changed its freight vehicle identification system as many new operators had commenced running trains in Europe. Instead of each railway having its own number, all vehicles are now registered in their country of origin with the country letter followed by the company's initials. For Swietelsky it is A-RTS, meaning Austria-Rail Transport Services, and uses the number 81.



Above: Wagon DR 73011 (Sammps 99 81 9353 022-2 A-RTS) at East Greta Junction in Maitland on Friday 16 December 2015 when the Joint Venture was LS Rail.

Left: Swietelsky CPB Rail wagon DR 73010 (Sammps 99 81 9353 020-6 A-RTS) at East Greta Junction in Maitland on Wednesday 14 December 2016.

Swietelsky Fleet

This Swietelsky fleet is mainly based in Europe but it can be moved as required to other areas. Certain vehicles are at present based in Australia. The Company owns and operates the world's largest and most modern private On Track Plant fleet including:

- Six track formation rehabilitation systems.
- Four high output track relaying systems.
- RU800S, the only combined high output relaying and ballast cleaning system in the world.
- 40+ advanced tamping systems and ballast management machines.
- Two track finishing systems and three track survey vehicles.
- Four medium output ballast cleaning systems.
- A fleet of over 170 MFS wagons (and also manufacture their own design).
- A haulage fleet of 40+ locomotives and over 800 wagons.
- Three high output switch and crossing transportation and relaying systems.
- A fleet of seven high capacity rail cranes (capacity over 100 tonnes).
- Three medium-output, track-based cranes and Switch and Crossing relaying systems.

CPB Contractors

CPB Contractors was formerly Leightons and was founded during 1949. This company became CPB Contractors in early 2016 when the CIMIC Group Limited (formally Leightons Holdings) merged Leighton Contractors with the Thiess Company.

CPB Contractors have carried out a range of rail, road, water and building construction projects in Australia as well as in Asia. The Australian rail projects have included the quadruplication of the line between Kingsgrove and Revesby along with the third track between Epping and Thornleigh in Sydney, level crossing removal work in Melbourne and the Moreton Bay line in Brisbane.

The Swietelsky CPB Rail Joint Venture for work in Australia was set up in August 2011. The early 2016 change of the Leighton company name resulted in the joint venture changing its identification from LS Rail to Swietelsky CPB Rail.

Right and Below: The conveyer system between two Sammps wagons. The operator stands on the frame and is strapped to the top of the ladder assembly to avoid falling. As the condition of the ballast is unknown until it is dug out the spoil has to be continually monitored while the ballast is being moved to prevent clogging or overloading of the conveyer belt. When a wagon is at the head of a wagon set the conveyer belt unit can be swung up to 45 degrees either side of the wagon for unloading onto the ground or other wagons. Photographed at East Greta Junction on Wednesday 14 December 2016.



Hunter Valley Fleet

Swietelsky CPB Rail has obtained track maintenance vehicles from the Swietelsky European fleet. The Australian fleet for working on ARTC's Hunter Valley railway in NSW is based at East Greta on the South Maitland Railway. These track machines were built by Plasser and Theurer in Austria except for DR 73113, a SSP 303 Ballast Regulator, which was built by Plasser Australia.

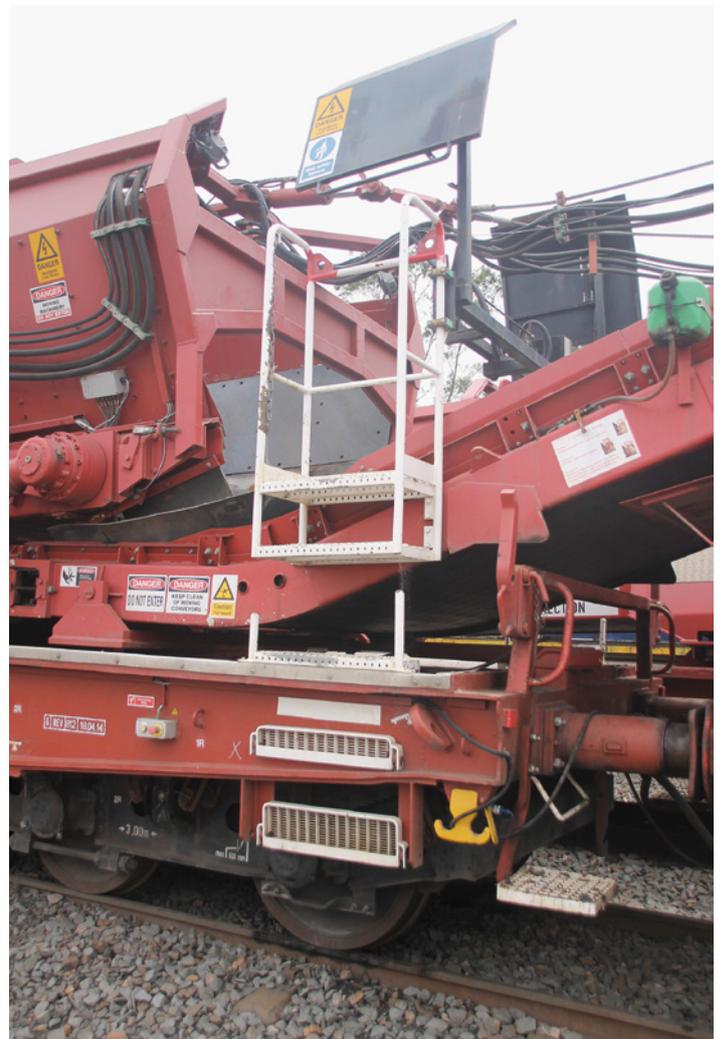
The RM80-UHR Ballast Cleaner (DR 73001) along with the eight Swietelsky MFC45 single line spoil and material handling wagons arrived in Australia during July 2014.

Track Machines

Swietelsky Code	Builders Type	Vehicle Description
DR 73001	RM 80-UHR	Ballast Cleaner
DR 73010	MFC-45	Single line spoil handling units Built & designed by Swietelsky
-73017		
DR 73112	09-3X DYN	Continuous Action Tamper
DR 73113	SSP 303	Ballast Regulator
DR 73114	08-275/3S	UNIMAT, Switch and Crossing Tamper

To work with the Swietelsky CPB Rail vehicles some container wagons have been obtained from Pacific National. These have containers fitted with a workshop or used for storage and the movement of small material or equipment.

Swietelsky CPB Rail also have a Holland H1200 Container based Flash Butt Welder unit (DR 73100) which can be used while mounted on a Road Semi-Trailer. A recent programme carried out by this unit was the welding of the rails on the Epping to Showground section of the Northwest Rapid Transit project in Sydney. For the second stage of Flash Butt Welding the container was lowered by crane at Showground station box before the station concourse work was completed with the container placed on a specially manufactured frame to perform the welding work.



Spoil Wagons

In Australia, the use of six-wheel bogies was common on passenger cars but only approximately 40 wagons prior to these Swietelsky wagons had six-wheel bogies. The Swietelsky wagons were originally built for the conveyance of military equipment including Army Tanks. The rebuilding work carried out by Swietelsky involved the removal of the strengthened deck and the fitting of three container twist locks along each side of the wagon. The wagon body has a mass of approximately 20 tonnes and can be easily lifted off the wagon for maintenance.

As well as a general overhaul these wagons received some structural modifications to the wagon main frame to meet the Australian loading gauge along with the removal of the screw couplers and buffers on one end each of four of the wagons and their replacement with automatic couplers. This enables the wagons to operate as two, four-wagon sets or one eight-wagon set. The entire brake system and all brake valves were also modified and the wheel-sets were overhauled with the wheels re-profiled to Australian standards. This work was carried out at the Swietelsky depot in Fischamend, Austria.

The RM 80 UHR Ballast Cleaner and the eight Ballast-Spoil wagons were mounted on road trailers and departed Germany on the Wallenius-Wilhelmsen Roll on-Roll off MV *Titania*. On arrival at Carrington in Newcastle in July 2014 the vehicles were assembled on rail and the nine vehicles were hauled to East Greta by Southern Shorthaul Railway locomotive 44204.

The first use of these wagons in Australia was during September 2014

working with the RM 80 UHR Ballast Cleaner and towards the end of 2016 over 110 kilometres of track had been cleaned on the ARTC Hunter Valley railway. Further work will continue on other sections of the Hunter Valley lines.

The fuel tank on the RM 80 UHR Ballast Cleaner has a capacity of 1800 Litres while the fuel tank on each Sammps wagon can hold 850 Litres. As this is more fuel than the wagon requires to power its conveyer belt and refuelling the ballast cleaner at many locations is not possible, Swietelsky CPB Rail have developed a system of in-line refuelling of the ballast cleaner from the wagons.

Wagon Data

Type	MFC 45
Length	17.14 m
Width	3.04 m
Height	4.18 m
Capacity	49 t
Tare	50 t
Conveyer Engine	Deutz 353 kw
Road Numbers	DR 73010-17
RIC Code	Sammps
RIC Registration Numbers	99 81 9353 0xx-x
Built	2009-2011

The assistance of Swietelsky CPB Rail Australia Pty Ltd is acknowledged for the preparation of this article.



Left: The Deutz 353 kilowatt engine on wagon DR 73015 (Sammps 99 81 9353 037-0 A-RTS) under the conveyer belt of an adjacent wagon at East Greta Junction in Maitland on Wednesday 14 December 2016.

Right: The heavy duty six-wheel bogie of DR 73010 (Sammps 99 81 9353 020-6 A-RTS) at East Greta Junction in Maitland on Wednesday 14 December 2016.



Gauge mm	Qty	Class	Description	Builder/Location	Oct 16	Nov 16	Dec 16	Total
LOCOMOTIVES								
Asciano Pacific National								
1435	3	93	C44ACi 3246kW Locomotives 9318-9320	UGL Rail Broadmeadow	-	-	-	-
1067	3	PH	PH37AC 2600 kW Locomotives 001-003	UGL Rail Broadmeadow	-	-	-	-
Aurizon								
1435	2	CF	C44ACi 3246kW Locomotives CF 4401, CF 4409	Purchased from CFCLA		2	-	2
Electro-Motive Diesels								
1435	3		GT46C-ACe Phase II 3200 kW Locomotives	Electro-Motive USA		No Advice		-
Rio Tinto								
1435	51		ES44ACi 3280 kW locomotives #9115-9165	GE Erie PA USA	-	-	-	5
South Maitland Railways								
1435	2		Orenstein & Koppel 110kw Locomotive #32 (Plus 1 for spare parts)	Purchased from Abigroup		Completed		1
Specialised Container Transport								
1435	2	CSR	SDA-1 3000 kW locomotives CSR011, CSR012 ex BK 001, BK 002	Purchased from Bradken	-	-	2	2
Watco								
1435	2	FL/HL	J26C 1500 kW locomotives HL 203 and FL 220	Purchased from CFCLA		1		1
INTERCITY PASSENGER CARS								
QueenslandRail								
1067	2		Refurbish four three-car EMU Tilt Trains sets 301-304	Downer - Rail Division Qld	-	-	-	1
INTERURBAN PASSENGER CARS								
Rail Connect (NSW TrainLink)								
1435	512		Double Deck Interurban EMU Cars	Hyundai Rotem ROK - UGL Rail	-	-	-	-
V/Line								
1600	14	DM(D)	V'locity DMU (a/c) # 1160-1175	Bombardier Transportation Vic	1	-	-	1
1600	14	TM	V'locity DMU (a/c) # 1360-1375	Bombardier Transportation Vic	1	-	-	1
1600	14	DM	V'locity DMU (a/c) # 1260-1275	Bombardier Transportation Vic	1	-	-	1
SUBURBAN PASSENGER CARS								
Adelaide Metro								
1435	3		Flexity Swift Trams #I116-119	Bombardier Trans Bautzen, Germany	-	-	-	-
Canberra Metro								
1435	14		Urbos 3 Trams	Construccion y Auxillar Ferrocarriles, Spain	-	-	-	-
GoldlinQ Gold Coast Rapid Transit								
1435	4		Flexity 2 Trams #015-019	Bombardier Transportation, Germany	-	-	-	-
KDR Yarra Trams (PTV)								
1435	50	E	Flexity Swift Trams # 6001-6050	Bombardier Transportation Vic	1	1	1	45
1435	20	E	Flexity Swift Trams # 6051-6070	Bombardier Transportation Vic	-	-	-	-
1435	2	W8	Rebuilt W6 Trams #	Bendigo Tramway Workshop	-	-	-	-
Metro Trains Melbourne (PTV)								
1600	20	M	EMU X'trapolis Driving Motor (a/c) #213-232	Alstom Ltd (Poland - Ballarat Vic)	8	-	-	8
1600	10	T	EMU X'trapolis Trailer (a/c) #1407-1416	Alstom Ltd (Poland - Ballarat Vic)	4	-	-	4
1600	20	M	EMU X'trapolis Driving Motor (a/c) #233-252	Alstom Ltd (Poland - Ballarat Vic)	-	-	-	-
1600	10	T	EMU X'trapolis Trailer (a/c) #1417-1426	Alstom Ltd (Poland - Ballarat Vic)	-	-	-	-
Evolution Rail (PTV)								
1600	65		EMU Seven Car Trains	Downer Rail - CRRC PRC	-	-	-	-
Newcastle Light Rail								
1435	6		Urbos 3 Trams	Construccion y Auxillar Ferrocarriles, Spain	-	-	-	-
PTA Transperth								
1067	15	BEA	EMU Driving motor cars (a/c) # 4095-4099, 4000-4109	Downer- Rail Division -Bombardier JV Qld	-	-	-	14
1067	15	BEB	EMU Driving motor car (a/c) # 5095-5099, 5000-5109	Downer- Rail Division -Bombardier JV Qld	-	-	-	14
1067	15	BET	EMU Trailer car (a/c) # 6095-6099,6100-6109	Downer- Rail Division -Bombardier JV Qld	-	-	-	14
1067	10	BEA	EMU Driving motor cars (a/c) # 4117-4126	Downer- Rail Division -Bombardier JV Qld	-	-	-	-
1067	10	BEB	EMU Driving motor car (a/c) # 5117-5126	Downer- Rail Division -Bombardier JV Qld	-	-	-	-
1067	10	BET	EMU Trailer car (a/c) # 6117-6126	Downer- Rail Division -Bombardier JV Qld	-	-	-	-
QueenslandRail								
1067	75	DMA	MU Driving Motor Car #3701-3775	Bombardier Savli, India	-	-	-	-
1067	75	DMB	MU Driving Motor Car #8701-8775	Bombardier Savli, India	-	-	-	-
1067	75	MA	MU Intermediate Motor Car #5701-5775	Bombardier Savli, India	-	-	-	-
1067	75	MB	MU Intermediate Motor Car with toilet #6701-6775	Bombardier Savli, India	-	-	-	-
1067	75	TA	MU Trailer Car (Pantograph) #4701-4775	Bombardier Savli, India	-	-	-	-
1067	75	TB	MU Trailer Car (Pantograph) #7701-7775	Bombardier Savli, India	-	-	-	-
Sydney Metro (Transport for NSW)								
1435	44		Terminal trailer cars for driverless Metropolis EMU Trains	Alstom Sri City Andhra Pradesh, India	-	-	-	-
1435	88		Intermediate motor cars for driverless Metropolis EMU Trains	Alstom Sri City Andhra Pradesh, India	-	-	-	-

Gauge mm	Qty	Class	Description	Builder/Location	Oct 16	Nov 16	Dec 16	Total
SUBURBAN PASSENGER CARS (continued)								
South East Light Rail (Transport for NSW)								
1435	60		Citadis X05 Trams #2125-2184	Alstom	-	-	-	-
Sydney Trains (Transport for NSW)								
1435	96	N	EMU Motor(a/c) #5381-53104; 5481-54104; 5581-55104; 5681-56104	Hitachi-CRRC CNR Changchun RSW PRC	-	-	-	-
1435	48	T	EMU trailer (a/c) #6581-65104, 6681-66104	Hitachi-CRRC CNR Changchun RSW PRC	-	-	-	-
1435	48	D	EMU Driving Trailer (a/c) #6381-63105, 6481-64105	Hitachi-CRRC CNR Changchun RSW PRC	-	-	-	-
FREIGHT WAGONS								
Freightliner								
1435	41	PGSY	Grain Hopper Wagon	CIMC – South Huiton, PRC	-	-	-	-
Qube								
1600	21	TQXY	2 TEU container wagon #10001-10021	Purchased new from Transvolution		Complete		21
Specialised Container Transport								
1435	30	PBHY	High Volume Box Vans #105-134	CRRC		Complete		30
Southern Shorthaul Railroad								
1435	64	BGKF	Fit roofs and loading hatches for grain traffic to former PN NHKF 1101-1164	TBA	-	-	-	-
RUNNING GEAR AND ANCILLARY EQUIPMENT								
Downer - Rail Division – Bombardier								
1067	18	-	Five-year contract for TransWA EMU Bogies and Wheelset Maintenance	GEMCO Rail WA		Ongoing		
PTA Transperth								
1435		-	Three-year contract for DMU Prospector Bogies overhaul	GEMCO Rail WA		Ongoing		
Queensland Rail								
1067	72	-	Overhaul Motor Bogies on IMU 160 and SMU 260 Sets	Downer- Rail Division Qld	-	-	-	64
1067	36	-	Overhaul Trailer Bogies on IMU 160 and SMU 260 Sets	Downer- Rail Division Qld	-	-	-	32
1067	71	-	Overhaul Motor Bogies on EMU Sets	Downer- Rail Division Qld	-	-	-	50
1067	49	-	Overhaul Trailer Bogies on EMU Sets	Downer- Rail Division Qld	-	-	-	28
1067		-	EMU cars High Voltage earth fault modification Programme	Downer- Rail Division Qld	-	-	-	67
1067		-	Overhaul Wheel Sets for EMU and Locomotive-hauled cars	Downer- Rail Division Qld		Ongoing		
1067	19	160/SMU	Miscellaneous Pneumatic Equipment Overhaul - 16 Sets + 3 Spares	Downer- Rail Division Qld	-	-	-	4
1067	19	160-260	Inverter Cooling Unit Overhaul - 16 Car Sets + 3 Spares	Downer- Rail Division Qld	-	-	-	10
Ski Tube								
1435	11	-	Refurbish control and monitoring facilities	Stadler Switzerland		Ongoing		
Southern Shorthaul Railroad								
1435	50		Fit roofs and loading hatches for grain traffic to former PN NHKF	TBA	-	-	-	-
TRACK MAINTENANCE EQUIPMENT								
Aurizon Infrastructure Services Group								
1435	1	SLM	Track Layer # 4	Aurizon Workshops Redbank Qld		No advice		-
1067	3	MMA	09-2X Dynamic Track Tamper with stabiliser #502-504	Plasser Australia NSW		Completed		3
1067	5	MMB	SSP 302 Ballast Regulator #501-505	Plasser Australia NSW		Completed		5
1067	2	MMA	Refurbish Ballast Tamper Mk III # 49	QR Workshops Maryborough Qld		No advice		-
1067	2		Gen III Scissor Lift ENP	Techniplan Qld	-	-	-	-
1067	1	MMY	Ballast Cleaner RM 802 #520	Plasser Australia NSW	-	-	-	-
1067	1	MMY	Ballast Cleaner Unit FRM 802	Plasser Australia NSW	-	-	-	-
1067	1	MMY	Ballast Cleaner Hopper Wagons (MFS 40)	Plasser Australia NSW	-	-	-	-
ENSCO Inc.								
1435	1		Track Geometry Vehicle	Harsco Rail Brendale Qld		No advice		-
John Holland								
Dual	20	JHAY	Ballast Hopper Wagons	CIMC – Tonglingshenwang PRC		No advice		-
KDR Yarra Trams								
1435	2		ACM 105SP Hi-rail Overhead Wiring vehicle	Aust Crane & Machine Vic		No advice		-
MacMahon Rail								
1435	1		VMACAR K 355 Flash Butt Welder	VMACAR Italy		No advice		-
Queensland Rail								
1067	2		Refurbish TR-10 Sleeper Inserter/Extractor	Harsco Rail Brendale Qld		No advice		-
1067	1	MMY	Track Recorder Vehicle VMB 2214 #	Geisner GEMCO WA (Donelli)	-	1	-	1
1067	1	MMB	Ballast Tamper MMB 63 (altered from 1435mm gauge)	Harsco Rail Brendale Qld		No advice		-
1067	6	MMD	Two vehicle Track trolley set LEM 101-106, PEM 201-206	Engenco GEMCO WA		No advice		-
PTA Transperth								
1067	1		Track Recording Car	Mermec Italy	-	-	-	-
Sydney Trains								
1435		-	One-year contract for supply of Tamping tools.	Engenco WA		Ongoing		
1435	4	-	Hirail Overhead Wiring vehicles	France		No advice		
1435	2	NDZF	Track Carrier Wagon # 40051-40052	Bluebird Rail Operations SA		No advice		

E&OE



HL203 and FL220 on 2371N approach Glenroy Lane near Wallendbeen, between Harden and Cootamundra NSW, on Saturday 17 September 2016. The two former NSW Railways 422 Class Clyde/EMD units were enroute to Western Australia, having been sold by CFCLA to Watco for use on track maintenance trains. Rhys Harrison



On Wednesday 30 November 2016, EDI/EMD unit LDP016 hauls two newly-built sleeper wagons from Maryborough to Maryborough West yard for transfer to Brisbane. The building on the right is the old Silver Spray Flour Mill (The Dominion Milling Company). John Scott



Preserved Goodwin/Alco locomotive 4464 is seen hauling Lachlan Valley Railway's Australia Day special to Kiama NSW, using the *Blue Zephyr* cars, as it passes Scarborough on Thursday 26 January. The headboard on the locomotive is a tribute to the late Michael Muter who, together with the late Roy Miles, was a founding member of Lachlan Valley Railway. Nathan Medcalf

Close call at Rothbury

At approximately 1400 on Monday 30 January a bushfire broke out in the bushland located to the South West of the Hunter Valley Railway Workshops (HVRW) site at Rothbury.

Thanks to the hard work of RFS crews from Rothbury, North Rothbury, Greta and Lochinvar property was protected and back burning undertaken to preserve the site. By 1800 hours the fire was contained.

On site at Rothbury during the fire was the HVRW ex West Coast Railway R Class 4-6-4 R766 (converted to standard gauge), privately-owned ex SRA diesel/electric unit 4472 and electric 4627, Lachlan Valley Railway's diesel/electric units 4903 and 4703, steam locomotive 5917, a six-car DEB Railcar Set, currently under restoration, and a range of S Type and timber-bodied passenger cars, including the Dynamometer car DMC1902. Also on site were four ex-South Maitland Railways 10 Class 2-8-2T locomotives owned by the Dorrigo Steam Railway & Museum.

The fire came close to destroying equipment, with a large tract of bushland a few metres from the DEB Set burnt out.

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Three charges follow SteamRanger graffiti attack

Police arrested and charged two men, both 38, and a woman, 25, after they were seen running from the SteamRanger depot at Dutton Road Mount Barker just after 9.30pm on Monday 2 January. Frustrated SteamRanger Tourist Railway volunteer Damian Dunn said the trio defaced two Redhen railmotors. It was the second time they had been attacked by graffiti vandals in as many months. Mr Dunn said senselessly defacing the historic railmotors was an insult to the volunteers. "A lot of people have spent their time doing the carriages up and now they have to do it all over again," Mr Dunn said. "It's hard to restore something and for someone to come along and just wreck it, is an insult to the volunteers."

The vandals cut through a wire fence to enter the depot but police soon blocked off the exits, a South Australian Police spokesman said. "Police patrols, including a police dog patrol, set up cordons around the area and then approached the suspects who attempted to run from the scene," he said. "But they only ran into the arms of waiting officers on cordon points."

A Kensington Park man, a Yatala Vale man and an Adelaide Hills woman were charged with property damage, marking graffiti, possessing articles of disguise and being unlawfully on premises.

All were bailed to appear in the Mount Barker Magistrates Court at a later date.



Veteran Clyde/EMD units B74 and T357, both in original Victorian Railways livery, head Train No.8395, the Seymour Railway Heritage Centre *Santa's Express To Tocumwal*, at Nagambie on Saturday 10 December 2016. Ewan MacLean



For well over sixty years, a sign marking the highest point on the Main Southern Line was positioned on the Down side of the Main Southern line a couple of hundred metres west of the former Cullerin platform, between Goulburn and Gunning, near the public level crossing. It was a sturdy sign with letters welded to a heavy steel backing plate. The sign was there in March 2016, but by the following November had disappeared, leaving only the post. ARTC has confirmed that the sign was stolen, and has appealed for any information leading to its return. Interestingly, this was not the point where the line crossed The Great Dividing Range, that being located further east, near Cooks Cutting. Neville Pollard





Above: On its first tour for 2017, on Australia Day 26 January, Queensland's Southern Downs Steam Railway used diesel power, in the form of Walkers 1966-built ex-QR unit DH45, previously at Gympie's Valley Rattler railway, and acquired by SDSR in 2015. James Chuang photographed the short tourist train crossing the Condamine River Bridge on the outskirts of Warwick, returning from a run to Clifton. The top hatch on DH45 is open for improved ventilation in the hot weather.

Left (page 54): Steamranger's ex-SAR Pacific 621 snakes it's way through shrubbery along South Australia's beautiful south coast just after departing Victor Harbour for Goolwa on the *Cockle Train* on Saturday 28 January. Scott Mitchell

Below: On Monday 6 February, Peter Neve OAM is on the footplate of Hunslet 0-4-2T *Torpedo* (ex-Inkerman Sugar Mill, Queensland) as it slowly pulls up behind the four-wheeled Sheffield pump trike *Torpedo 2*, powered by Lenny Stewart. The occasion was to celebrate Peter's 75th Birthday, and the opening of his private railway (*Pete's Hobby Railway*) on his property at Junee. More than 50 guests were in attendance as *Torpedo*, with Peter at the helm, broke through the ceremonial ribbon. Rhys Harrison



Grant funds support Pingelly Station redevelopment

In November 2016 the Friends of Pingelly Railway Station Inc. received a Lotterywest grant for \$24,285 to assist in the “preservation and community activation of Pingelly Railway Station, an important feature of the district’s local heritage”. (Pingelly is 158km by road from Perth via the Brookton Highway and is on the Great Southern Railway to Albany.)

Plans are in place to create a visitor centre, and new arts and cultural hub in the station building. A museum display will also be incorporated into the facility covering Pingelly’s history.

Pingelly’s station master was withdrawn in 1985 and soon after closure it was proposed to move the building 50 kilometres south to Narrogin’s Allen Shepherd Memorial Park (located near Narrogin Railway Station) where steam locomotive Pm 706 and some rolling stock were displayed. (Pm 706 was later leased to the Hotham Valley Railway in 1988 for restoration and diesel-electric locomotive XA 1415 substituted in its place.)

The movement of Pingelly Station never occurred and the building has been largely been vacant since, although one of WA’s last Rural Youth clubs used it in the early 2000s. The present station building was officially opened on Friday 27 June 1930 (replacing an earlier structure).

While the building is on the opposite side of the main line from the town, the Friends plan to improve road access to the site and include facilities for caravans and other large vehicles.

The Lotterywest grant will provide much needed funds to re-roof the building with the original Bristile Marseilles tiles. Modern manufacturing techniques and products have advanced to eliminate problems that are prevalent in this roof cover. Modern clay tiles are kilned at twice the temperature of the original tiles installed on this building. Therefore, salt attack is no longer an issue.

Work on the roof began in January, by contractors from Bristile Roofing. The purchase of gutters and downpipes and two rainwater tanks for the south end of the building has also been funded through the Lotterywest grant.

David Whiteford



Work proceeds on the mainline platform at Pingelly, WA, on Tuesday 31 January. David Whiteford



Former Commonwealth Railways locomotive NT 76, the only survivor of this class, built by Tulloch Limited, is seen here with a plant train near the site of the Pichi Richi township, South Australia, on a hot Australia Day, Thursday 26 January. David Campbell

Driver Only Operation (DOO)

Re: the letter from D O'Brien, Cootamundra NSW concerning Driver Only Operations on the new Intercity trains in NSW. Just cast your sight due south to Melbourne, where DOO suburban trains have been operating for a number of years. Through many unattended stations too, I might add. Then your questions will be answered.

DOO is coming, and will be implemented on NSW electric trains. It's only a matter of when. The Waratah suburban sets in Sydney can easily be adapted to DOO when the time comes, too. They already have the technology for DOO built in, lying there and waiting to be activated.

*Dave Haden
Mount Victoria, NSW*

Fishermans Bend transport

Could I, a past Victorian resident, make some suggestions on the problem of transport into Fishermans Bend?

The problem has been created by short-sighted polities who have allowed development without suitable transport requirements. Waiting for the super-high cost Newport to Clifton Hill metro is unacceptable. The only realistic alternative is for a light-rail connection into the existing system. Perhaps the best way of doing this is to use the existing closed freight-rail reservation along the river side of much of Lorimer Street. Most likely, rather than run the double light-rail tracks along this old right of way is to widen Lorimer Street along the northern river side in this reservation and place the light-rail tracks along a centre reservation. Double track could leave Collins Street west of the Docklands track intersection, curve south and use the closed standard gauge rail freight bridge over the Yarra, pass through a small tram/pedestrian plaza (with a slow speed restriction for the trams here) on the south side, and then curve west into the median of Lorimer St. The pedestrian/bicycle track using the old rail

bridge would be removed and replaced with double light-rail track using cantilever transverse bearers carrying new combined bicycle/pedestrian decking on the south/east side. The bridge span approach on the south side would need rebuilding. The load upon this reused bridge would still be well within the freight train load it was designed to carry.

The light-rail tracks would follow the closed freight rail reservation from Lorimer Street, then Todd and Wharf Roads, through Fishermans Bend then along Howe Parade through Garden City and connect with the Port Melbourne light-rail tracks at Graham. A light-rail spur could connect to Webb Dock. Tram route 31 could be redirected off Collins Street, along this new route to the Fishermans Bend loop via Lorimer Street Tram route 11 could be rerouted off Collins Street onto Spencer Street, follow the Port Melbourne route to Graham and Howe Parade to Fishermans Bend via Garden City. Hence routes 11 and 31 could be linked in a loop through Fishermans Bend. Protests against light-rail in their backyard (really front-yard for some!), by car-driving only residents is going to happen and a responsible government will have to answer them rationally.

Provision of a rail-freight link into Webb Dock is more problematic and probably will draw more protests than light-rail. Perhaps one solution could be to build a low-level rail-only bridge (with two raised side-leaves) from the western end (pier B) of Appleton Dock across to pier 31 on the south wharves, then follow the old rail reservation into Webb Dock alongside the light rail tracks—it is assumed the reservation is wide enough for the three tracks in this section. The biggest cost and challenge is the construction of the Yarra River low-level bridge. Rather than attempting to construct the bridge in situ using coffer dams across the Yarra it may be better for many reasons to build the bridge as a floating caisson (in one of the docks), perhaps about 120m long by

8m wide by 7m deep, with 12m high towers at each end. The concrete caisson would carry service conduits and a walkway with a stairwell each end, steel reinforcing and concrete ballast. The caisson would be floated into position across the river and sunk, by filling with concrete, into a 7m deep dredged trench across the river. The channel between the towers carrying the two raised rail-track deck leaves could be about 100m wide with a channel depth of 10m. The rail-track leaves would remain in the raised position each side unless a freight train needed to cross. The visual intrusion from the 50m raised bridge leaves would be no worse than the Westgate and City Link bridges.

If development of freight shipping through Webb Dock is to continue, then to just depend on road transport without a rail connection will be a disaster for the road system.

*Kerry Hortop
Morisset, NSW*

Transferring Leigh Creek coal wagons

Ewan McLean's article on the transfer of disused coal wagons out of the Leigh Creek operation made interesting reading, especially his sharp photography as usual. The two-page spread on pages 46-47 is a particular gem.

Given the article covered the relocation of the wagons as a consequence of the closure of the coal-fired Northern Power station, it might be timely, rather than to mourn its closure, to celebrate the fact that its steam and coal driven technology is now redundant. Exactly as steam and coal gave way in the 1950s to the diesels featured in the article, so too will these types of power stations give way to newer technologies today.

Sure, in the short term there will be dislocation as jobs in the old sector give way to those in the new. And those jobs may be elsewhere than in the Port Augusta region.

But one thing is certain, and that is the renewable energy sector will create more and new jobs in South Australia and all over Australia to compensate for the losses elsewhere.

I find it frustrating that the resistance to introducing renewable power generation is hamstrung by government inertia born of too close an association with the big donors at big coal and big power seeking to maintain the status quo.

So Ewan, I think I would never see a sight less forlorn than a closed coal fired power station!

*Stephen Ballantine
via email*

In praise of water

I wish to acknowledge with appreciation the article 'In Praise of Water' by Max Mitchell in the February issue, because the descriptive paragraphs making up the article are so well written. Those who have never had the good fortune to travel along this section of the main Northern Line will now be able to visualize the journey and conjure up in their minds how such a trip would be for themselves to experience.

To travel in an air-conditioned train is wonderful enough but to travel on a "heritage" train tour with the opportunity to open a window and hear the sounds, or lack of, and breathe in the odours of the waterways and surrounding bushland only adds to the already idyllic picturesque surroundings of this beautiful stretch of railway. Thank you.

*James Whitfield
Tahmoor, NSW*

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In praise of water

Wondabyne, yes, a beautiful place on a very busy rail corridor.

From 1966 we lived in Berowra. About 33 years ago my women folk were out for mother and daughter shopping. The day was overcast and raining, so the boys, father and son decided on a morning train trip, Cowan to Gosford. Back then in single-deck interurbans with windows that could be opened if required.

The run to Gosford is always a delightful trip, fabulous scenery, you can take in the panorama of the valley as you descend the Cowan Bank then, if possible, change sides at Hawkesbury River, take in the view as you travel across the bridge then the peaceful vista of Mullet Creek before the climb into the depths of the Woy Woy Tunnel. Once through the tunnel it was back into the daylight, a long horn blast for the level crossing on the brisk run to Woy Woy. Then all to Gosford where our train terminated.

So far a very pleasant train trip, our driver changed ends for the return journey, so did we.

Before departure, the Station Attendant handed our driver a grocery bag that included fresh milk and bread. We were soon away, all stations. Through the Woy Woy Tunnel to Mullet Creek. Approaching Wondabyne there were a couple of strident horn blasts by our driver and we slowed to a stop. On the platform was a lady, still wearing an apron and clutching a basket. In exchange for the groceries, the driver left with a freshly baked slice of fruit cake on a plate and a Thermos of Hot Coffee. With smiles all round, an appreciative wave, and a quick toot on the horn, we continued our journey. Now that was service with a smile.

Adjacent to the station was a well kept caretaker's residence that I believe was associated with the sandstone quarry.

Speaking of Cowan, my son Peter and I would often drive to Cowan to view the passing Friday evening rail activity. In winter the signalman would often invite us into the signal box by his modest heater, a

single bar radiator. On more than one occasion we scored a return trip to 'The River' on the 46 Class on bank engine duties.

The years have passed and we still occasionally reflect on those simple railway outings.

In later years I assembled a 16ft steam launch. Launching into the Hawkesbury at Brooklyn we could steam around the foundations of the old and current bridges. A quiet steam up Mullet Creek was always a relaxing trip. To the quiet beat of the engine we could view the marine and birdlife, the passing parade of trains while I made a cup of tea or coffee and toasted Raison bread or crumpets in the firebox. Try that with an outboard!

Steamfeast weekends was always a favourite for such activity.

*Bob Quinn
Launceston, Tas*

New intercity trains

I wish to express my concerns and suggestions about these new intercity trains that Transport for NSW plans to bring into service in the near future.

Firstly, I understand that these trains will be built in South Korea. The existing V Sets were built here in Australia and this gave people jobs. I have read in the media that the trains could be built in Wollongong and provide up to 600 jobs. Wouldn't it be so much better to give employment to people in our country?

It would also make it so much easier and convenient for testing these trains in one of the designated areas of future travel. Including the Central Coast & Newcastle and Blue Mountains lines.

When trains were successfully built here in Australia, they were built very well - for example the V Sets, and even going back as far as the good old single-deck 'U boats'. The current V Sets don't look like a whole lot of plastic and glass running on wheels. They look like a proper distinguishable train with their stainless steel construction.

The seats in a V Set train are very comfortable. There's

no need to apply pressure with your feet on the foot rests as opposed to the newer intercity Oscar H Sets in current operation. The seats in those newer trains are very uncomfortable. I always get a sore back after thirty minutes of sitting and my trip takes two hours. So I really hope there's an improvement on seating design to meet the needs of all different sized commuters.

Secondly, I have seen images of these new intercity trains on the internet. The outside overall appearance looks so similar to the existing newest Waratah trains running on the suburban lines. Particularly a train pictured in red showing Wickham on its destination display. Why not have a completely different distinguishing appearance for these intercity trains? So that passengers at certain stations can identify the differences between intercity and suburban trains. For example, Central, Strathfield, Hornsby, Blacktown, Parramatta and Sutherland stations. Where commuters have travelled by suburban train to one of these stations and then need to change to an intercity destination of travel.

Thirdly, I have seen that there are wheel chair accessible toilets shown in the new intercity trains. How many are going to be available on an eight-car set? It certainly needs to be more than two that are available on the current Oscar H Sets. Why not also include smaller toilet areas to increase passenger comfort?

Fourthly, I have seen an image inside on the top deck showing red luggage racks above seats. They don't look very safe at all. I hope that idea gets rejected as it also makes the carriage inside look very cheap.

The carriage floors would certainly look much nicer with carpet laid, too. It would cut

down on the air conditioning heating having to be used as much in periods of colder weather, particularly for the Blue Mountains line.

Throughout the whole design concept of these trains from the outside and inside, they shouldn't look like big pieces of plastic and glass on wheels. They need to look a lot more sophisticated. After all, they are to provide an intercity service.

I also feel that there should be employment given to people to work at most stations on the three main intercity lines, to provide passenger service. By passenger service, I mean having someone help disabled and elderly people and other passengers onto trains and baggage.

*Craig Aungle
Morisset Park, NSW*

Forrestfield Airport Link

In reference to construction of the Forrestfield Airport Link (*Railway Digest*, January 2017); I believe it is very hypocritical. It is being built due to public demand that has been there for years, not because the Barnett Government wanted to build it. The WA Liberals hate railways. Over 500km of grain lines in the wheat belt have been closed by Liberal Governments. The community in the North Eastern fringes of the Metro area have been asking for a rail line for years and the current government has no intention of extending the suburban line from Midland. The Perth Freight Link known as ROE 8, currently being built, shows that the current government would rather see containers carried by trucks, rather than rail from Forrestfield to Fremantle Port.

*Frank Cherry
Southlake, WA*

Catchpoints

On page 41 of the February issue, the first caption should refer to 'Page 40'. On page 42, on the seventh line of the right-hand column, the text should have read 'see lower photo, page 44'. We apologise for any confusion this may have caused.

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p page/pages

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' mins (eg 60'=60 MINS)

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