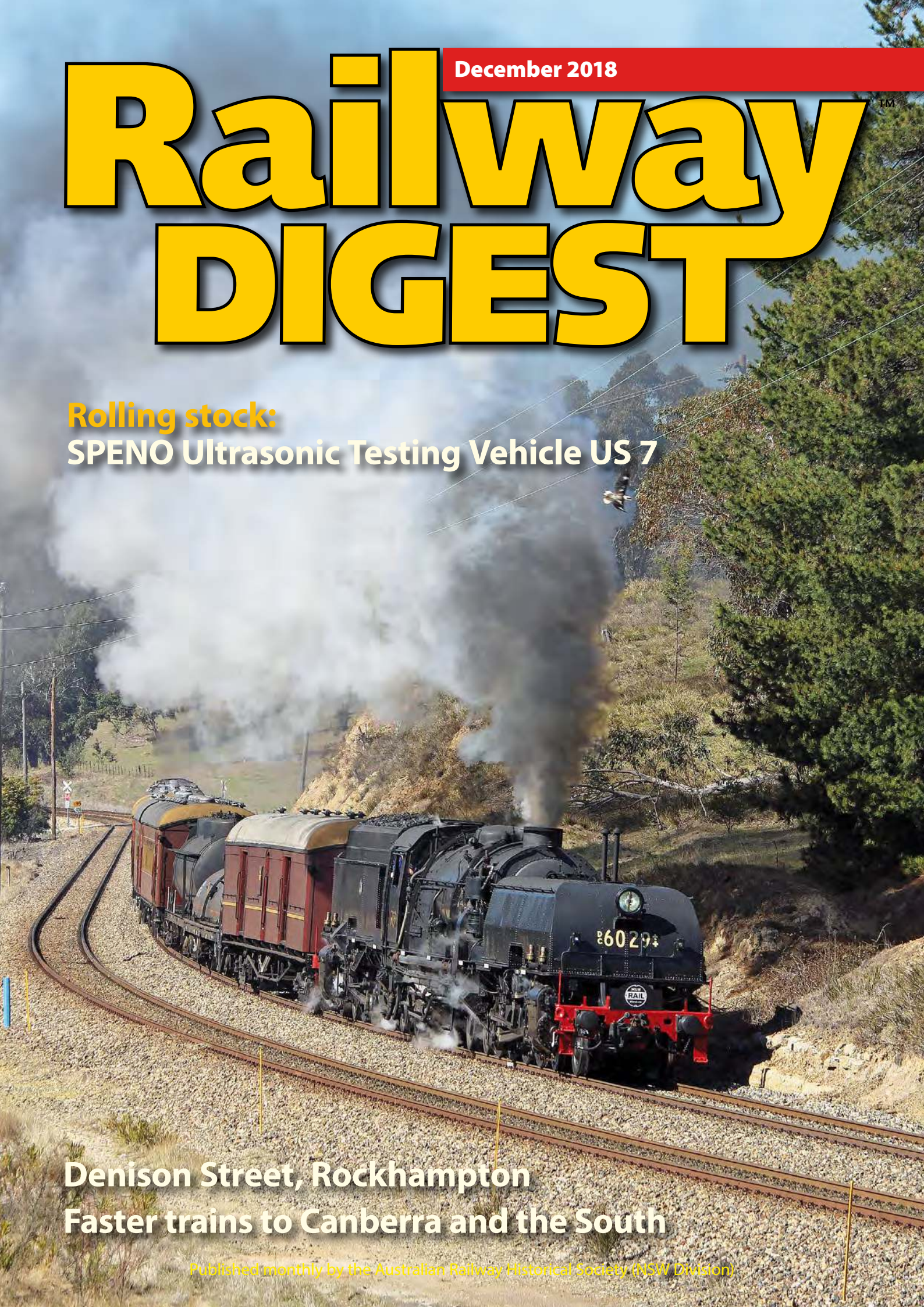
December 2018

Railway DIGEST



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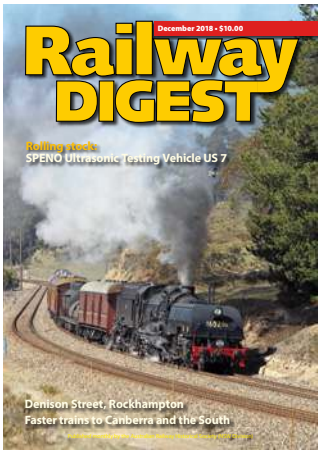

Features

Regulars

Cover: On Sunday 30 September, Beyer-Garratt 6029 is just west of Bowenfells heading for Bathurst to work local shuttle trains between there and Tarana. Scott Mitchell

Opposite: At CFCLA's Maintenance facility at Goulburn on Sunday 4 November, MotivePower/Cummins locomotive CM3307 is joining in to the Christmas Spirit. Jamie Fisher

Back cover upper: On Sunday 22 July, having just shunted off a '5 pack', GWA's 6AD1 Adelaide–Darwin intermodal freight powers out of Katherine and under the Victoria Highway overpass, as it resumes its journey behind GWA06 and ALF22. Gail Pattenden

Back cover lower: Pacific National PN 012 heads a southbound intermodal freight from Townsville to Brisbane, between Milman and The Caves, approximately 25km north of Rockhampton, shortly after 11am on Saturday 8 September. Mike Martin

Freight on Rail Group attacks trucking industry policies and rail's obsession with 'perceived safety risks'

Rail freight lobby group, Freight on Rail Group (FORG), says governments are starting to get it right on rail infrastructure but other policy settings were holding rail back in the steam age. FORG chair and Pacific National CEO, Dean Dalla Valle, said at a time when Australians want safer roads, less traffic congestion during their daily commute and lower carbon emissions, government policies were largely geared to rolling out heavier and longer trucks. Mr Dalla Valle said that as a case in point, the National Heavy Vehicle Regulator recently approved the roll-out of a 105 tonne 36.5 metre B-Quad truck on select routes between Victorian and Queensland. He said, "Don't get me wrong: I see obvious freight productivity benefits, but how much bigger and heavier do we want trucks on our roads to get?"

Mr Dalla Valle said the trucking industry must be congratulated for the strength and intensity of its advocacy and he admired how truckies make no apologies for being single-minded in their pursuit of extracting from governments major concessions in efficiency, productivity and road access. "Unfortunately, rail freight has become tangled in nests of technical jargon and jumping at perceived safety risks that modern day technology has largely eliminated," said Mr Dalla Valle.

FORG gave an example of how a NSW freight train driver with more than 25-years' experience can be subjected to up to 18 months of extra training to operate on a similarly configured rail corridor in another state or territory. In stark contrast, a NSW truck driver can move from operating a semi-trailer to handling a B-Double or road train in just two days at minimal cost with immediate access to thousands of kilometres across every jurisdiction in the country.

The rail freight lobby group called on the Transport and Infrastructure Council (TIC) of Australia to urgently consider initiatives to get rail freight policy back on track. These include streamlining federal and state regulations to allow the proven benefits of rail freight to be fully utilised throughout Australia's transport supply chain. FORG also wants the Office of National Rail Safety Regulator(ONRSR) refashioned to not just maintain a focus on safety compliance and enforcement, but also be involved in the timely advancement of much-needed efficiency and productivity initiatives in the rail freight sector.

Mr Dalla Valle said ONRSR had demonstrated strong commitment and leadership to improving rail safety but FORG would like to see TIC broaden the vision of the ONRSR to help the rail industry enhance efficiency and productivity. *"The vision of the National Heavy Vehicle Regulator is to have 'a safe, efficient and productive heavy vehicle industry serving the needs of Australia"*. Why doesn't the rail freight sector enjoy the same level of ingrained institutional support?" he said.

He also stressed the importance of other federal and state government agencies involved in the regulation of rail freight to work closer with industry. "The emergence of dedicated freight divisions within government transport agencies in recent years has been encouraging, but deeper engagement with private rail freight operators is needed," said Mr Dalla Valle.

FORG also called for the harmonisation of operating procedures and training requirements for freight train drivers and crews across state and territory borders by 2021. Mr Dalla Valle said outside of the busy shared rail networks of Sydney, Melbourne and Brisbane, there are very few major variations or surprises to how a freight train operates on a railway line.

"In the last decade, advances in communication and signalling technologies like sophisticated global positioning systems and state-of-the-art network control systems can now be deployed to help dramatically improve the safe running of trains," said Mr Dalla Valle.

He gave the example of how more than 600 rail routes across Australia require a myriad of different operating codes and standards for running a freight train. "During long-haul interstate or trans-continental trips, train drivers will travel on multiple rail networks, each having a raft of different codes, standards and communication protocols that must be adhered to. This is an area in our industry ripe for simplification, modernisation and harmonisation," said Mr Dalla Valle.

He said the rail freight sector needs to be regulated to actual risk, not perceived risk and certainly not outdated historical risks. "To improve rail freight productivity in this country – which directly impacts the cost of transporting goods and commodities to domestic and global markets – it's time to consign outdated and contradictory cross-border rules to the dust-bin of history," said Mr Dalla Valle.

FORG also called for the Productivity Commission to investigate and quantify the impacts of mandated train driver hours in the rail freight sector, notably in Queensland and NSW. Mr Dalla Valle said the trucking and aviation sectors in Australia have shifted towards greater use of risk-based approaches to fatigue management, but rail continues to be subjected to overly-prescriptive and complex rules which often produce perverse safety outcomes.

"For example, changing over train crews when outer limits of service are reached, irrespective of the location of a train on the network, results in staff driving back and forth on roads between depots and locomotives; creating needless road safety risks and added operating costs," said Mr Dalla Valle.

He said at times freight trains can be suddenly delayed on the network because of problems beyond the control of operators, resulting in locomotives being 'parked-up' in odd locations at odd times. "Mandated hours for train drivers are inflexible; removing the ability for freight operators to deal with these unforeseen events with any degree of agility,"he said.

FORG also called for recognition of the rail freight sector's significant contribution to reducing both accident costs and carbon emissions in Australia's transport supply chain.

Mr Dalla Valle said a 2017 Deloitte Access Economics report found that for every tonne of freight hauled, road freight produces 14 times greater accident costs than rail freight and 16 times as much carbon pollution. "I don't see any of these factors being adequately built into charging models for transport; indeed, long-overdue and much-needed reforms in the critical policy area of heavy vehicle road usage pricing have largely come to a grinding halt," he said.

He said meanwhile regulators continue to be preoccupied with targeting diesel emissions from freight locomotives. "I suspect it's a lot easier for regulators to pursue the nation's small locomotive freight fleet, which operates within closed corridors, as opposed to making the effort to monitor hundreds of thousands of trucks running on Australia's massive open road network," said Mr Dalla Valle.

FORG said a 2017 federal government report found freight and passenger rail transport accounted for a mere four per cent of total transport sector greenhouse gas emissions. "In comparison, the report found heavy vehicles in 2017 accounted for more than 20 per cent of total transport emissions in Australia; growing to almost 30 per cent by 2035," said Mr Dalla Valle. He said such 'policy prejudice' against rail will result in added regulatory burdens for freight operators, needlessly driving up operating and compliance costs in the sector. "This will have the deleterious effect of forcing freight from rail to road, generating even higher volumes of emissions in Australia's transport supply chain," said Mr Dalla Valle.

He said Australia's rail freight operators had worked hard over the last two years to develop a detailed and comprehensive national code of practice for diesel emissions for existing and new locomotives.

"The code has been endorsed by the Rail Industry Safety and Standards Board and is set to be rolled out in December this year – I sincerely hope governments across the country recognise the efforts of industry, as opposed to reinventing the wheel," said Mr Dalla Valle.

He said a 2017 Deloitte Access Economics report found moving nine tonnes of freight by rail instead of road between Melbourne and Brisbane saves approximately $250 in accident and emission costs. FORG said a single 1,800-metre freight train hauling containers is equivalent to removing 70 B-Double trucks from our roads. These compelling facts put rail freight firmly on the right side of every debate the group said.

"It's disappointing the benefits of rail freight are not fully recognised or embedded in government policies. More worrying, policies aren't keeping pace with the delivery of upgraded rail infrastructure or the range of new and improved technologies available to the sector," said Mr Dalla Valle.

FORG's membership comprises ARTC, Aurizon, Arc Infrastructure, Genesee & Wyoming Australia, Pacific National, Qube and SCT.

Rabobank forecasts smallest winter grain crop in 10 years

In a forecast that will have significant implications for rail operators, specialist agribusiness bank, Rabobank, says that the extreme dry weather and damaging frost will deliver Australia's smallest winter grain crop in 10 years. The bank's *Australian 2018/19 Winter Crop Production Outlook: Running on Empty* forecasts a national grain harvest of just 29.3 million tonnes, down 23 per cent on last year. This total would be 31 per cent below the five-year average and would be Australia's fourth lowest in the past 20 seasons – with lows exceeded only in previous years of severe drought – 2002/03, 2006/07 and 2007/08. Rabobank says the 2018/19 winter crop season 'will go down as one of the worst in eastern Australian history' and were it not for the better harvest prospects in Western Australia – the only state where grain production is forecast to increase – the country would be facing its lowest winter crop in the past 20 years. The report says that the reduced 2018/19 harvest will see WA, for the first time in 20 years, contributing more than half (52 per cent) of the national winter crop.

Rabobank's outlook says that for vast regions of the eastern states, there will be no harvest, and where there is a harvest, yields will be anywhere between 30 per cent and 50 per cent down on average. "Late, to no, season-opening rains, below-average to lowest-on-average rainfall and above-average temperatures during the growing season have been coupled with damaging frost to reduce harvest volumes and affect grain quality," says the forecast.

The bank forecast total Australian grain exports to be down approximately 50 per cent on last year, at 13.9 million tonnes. Wheat exports are predicted to decline almost 50 per cent on last year, to 8.6 million tonnes – the lowest export volume since 2007. Barley exports are set to be down 48 per cent on last year at 3.0 million tonnes, while Australia looks set to export just 1.5 million tonnes of canola, 41 per cent lower than 2017/18.

Rabobank agricultural analyst, Wes Lefroy, said WA grain production was expected to be up three per cent on last year's harvest to reach 15 million tonnes. The biggest production declines are forecast for New South Wales and Queensland – both expected to fall by 51 per cent on last season to land at 3.2 million tonnes and 0.7 million tonnes respectively. He said Victoria was not far behind, with total grain production predicted to fall 42 per cent from last season to 4.4 million tonnes, while South Australia has fared relatively better, with its 2018/19 winter crop estimated to be down 16 per cent to 5.8 million tonnes.

The forecast says Victoria's overall grain production has been the victim of inconsistent rainfall as well as severe frost during September and October that has downgraded prospects. Mr Lefroy said that for South Australia, it has been a variable story in the 2018 growing season. Growers have also faced adverse weather, with production in a number of regions limited by dry weather, frost or a combination of both. However, he said pockets of the central and southern Eyre Peninsula, the Yorke Peninsula and the south east managed to escape weather challenges and above-average yields in these areas were expected.

The large WA harvest is expected to see continued shipments of grain to the east coast for ongoing forwarding, in many cases by rail, to destinations such as Moree, normally a big grain growing area. Depending on final harvest size and price factors further rail movement of grain from Victoria and South Australia is also likely during the remainder of this year and early next year when the winter crop harvest is completed. Both Pacific National and Southern Shorthaul Railroad have been prominent in operating interstate grain trains and moving grain from Port Kembla and Newcastle that has arrived from WA by ship.

Federal government enquires into the automation of mass transport

The House of Representatives Infrastructure, Transport and Cities Committee has commenced a new inquiry into automated mass transit, focusing on developments in the use of automation and new energy sources for land-based mass transit.

Committee Chair John Alexander MP said that automation would make our mass transit systems "better, stronger and faster", by making them safer, more efficient and more reliable than they are today. "International experience of automated metro systems shows what they could do to improve connectivity within our rapidly growing cities," he said.

"Automation and platooning (grouping autonomous road vehicles into convoys) present real opportunities to make bus networks more reliable and responsive, as well as more efficient, creating real competition between different modes of transport". "In addition, new fuel sources—such as electricity and hydrogen power—have the potential to make mass transit cheaper, reduce our carbon footprint, and reduce our reliance on the importation of fossil fuels".

The Committee will inquire into and report upon current and future developments in the use of automation and new energy sources in land-based mass transit, including:

- Rail mass transit,
- Road mass transit,
- Point-to-point transport using automated vehicles; and
- The Commonwealth's roles and responsibilities in the development of these technologies.

Submissions are open until Friday 7 December 2018.

The inquiry's full terms of reference are available at the Australian Parliament House website.

Preliminary work to begin on Tamworth's Rail Freight Intermodal Terminal

Almost 12 months after being announced, NSW Government funding for the first phase of Tamworth's Rail Freight Intermodal Terminal (TRFIT) project has been released, with work to start on repair and reinstatement of the six-kilometre West Tamworth to Westdale section of the currently disused Barraba branchline before the end of 2018.

The TRFIT is the catalyst piece of infrastructure for the city's new enterprise area. The TRFIT will enable suppliers, businesses, and producers to have competitive access to ports for exports, opening Tamworth up to the rest of the world. It will also serve as a regional hub and be the destination for inbound freight.

On Tuesday 30 October Tamworth Regional Council Mayor Col Murray said; "Today is an exciting day for Tamworth. The project funding is on its way and this announcement is the trigger for the railway to be reinstated. This means our project partner Qube Holdings can now start its work on what the terminal will look like and we can start to visualise the future of Tamworth through this project.

"It is also important to understand that the rail line and the intermodal are the critical pieces of infrastructure which will trigger the development of the new 246 hectare enterprise area which forms part of the city's freight vision which also incorporates our airport," Cr Murray said.

Since 2014, Tamworth Regional Council has been the driving force behind the TRFIT with identified opportunity and future demand the foundations upon which the project was envisaged. Extensive stakeholder engagement across a network of potential users such as the Forestry Corporation of NSW and food producers, as well as key stakeholders such as Transport for NSW and John Holland has brought this project to life.

Transport for NSW will now be engaged to reinstate the Barraba branchline from West Tamworth to Westdale and construct a siding on the intermodal site.

"The Barraba Spur Line is the critical link which opens the freight corridor to and from Port Botany and potentially Newcastle in the future," Cr Murray said. "The reactivation of this line means that Council is continuing with its mission to drive Tamworth forward through the establishment of new infrastructure and the creation of an environment which attracts new industry and business and opportunity for those already here contributing to the regional economy".

The TRFIT development will be located along Wallamore Road and Goddard Lane in the western Tamworth suburb of Westdale, and will address two strategically important drivers of Tamworth's economic prosperity:

- Access and Infrastructure; and
- Agriculture, Food Process and Agribusiness.

The TRFIT will be a multi-user, commercially competitive facility, to benefit both the operators and the users by reducing costs and to grow the region's freight movements. The project is set to be a staged development, to keep costs to a minimum and allowing for growth as demand dictates.

As owner of the land where the facility will sit, Tamworth Regional Council will work with Qube Holdings to realise Tamworth's vision of becoming a major freight and logistics hub.

For more information about the Tamworth Rail Freight Intermodal Terminal visit www.tamworth.nsw.gov.au

Outer suburbs left behind by lack of public transport access

Growing communities on the outskirts of our major cities are being left behind by a lack of access to public transport, according to a new report from Infrastructure Australia, the nation's independent infrastructure advisor.

The newest release in Infrastructure Australia's Reform Series, *Outer Urban Public Transport: Improving accessibility in lower-density areas*, assesses the frequency and accessibility of public transport services in our major cities as we prepare for unprecedented population growth in coming years.

Infrastructure Australia Executive Director of Policy and Research, Peter Colacino said; "With the release of this new report, *Outer Urban Public Transport*, Infrastructure Australia is calling on state governments to improve the efficiency of existing transport networks and consider new models to service communities in the growing outer suburbs.

"While existing transport infrastructure serves inner city areas well, people living on the outskirts of our major cities are being disadvantaged by a lack of access to frequent public transport services. This impacts their ability to access jobs, education and other opportunities to improve their quality of life".

Close to half the population of our five largest cities – Sydney, Melbourne, Brisbane, Perth and Adelaide – live in the outer suburbs. However, Infrastructure Australia research shows that people living in these areas experience lower levels of service and accessibility to public transport, poor service frequencies and longer travel times compared to inner city residents.

Across all five cities, a substantial number of people living in the outer suburbs do not have frequent public transport services within walking distance of their home. In Melbourne more than 1.4 million people fall into this category, with more than 1 million in Sydney and Brisbane, half a million people in Perth and 200,000 people in Adelaide.

While costs of housing can be cheaper in outer suburbs, often they are less well-served by public transport. Without access to reasonable public transport services, people living or working in outer suburbs are more reliant on their cars – meaning they shoulder the burden of additional vehicle operating costs, leaving less money for other household expenses compared to commuters in inner suburbs.

In the past, it has been very costly to deliver public transport in lower density, outer suburban areas where houses and employment centres are typically spread over large distances. As a result, people prefer to take the most direct route by driving, rather than taking a train or bus – adding to congestion in our growing cities.

Traditional public transport models are most efficient and effective in areas of high demand, often requiring higher density. However, new technology and delivery models, such as on-demand buses, offer an immediate opportunity to confront these challenges by increasing the flexibility and reach of the network and therefore serving a more diverse range of destinations.

"This report makes a clear case for governments to consider new models such as on-demand buses and ride-sharing to complement more traditional modes, like bus and rail," Mr Colacino said. "We also want governments and transport operators to do more to encourage people to transfer between public transport services, which helps to increase the flexibility and reach of the network".

"This includes investing in well-designed interchanges, extending integrated ticketing systems to new modes, and introducing fare incentives that actively encourage people to transfer between modes to get to their destination".

A copy of *Outer Urban Public Transport: Improving accessibility in lower-density areas* is available on the Infrastructure Australia website: http://infrastructureaustralia.gov.au/

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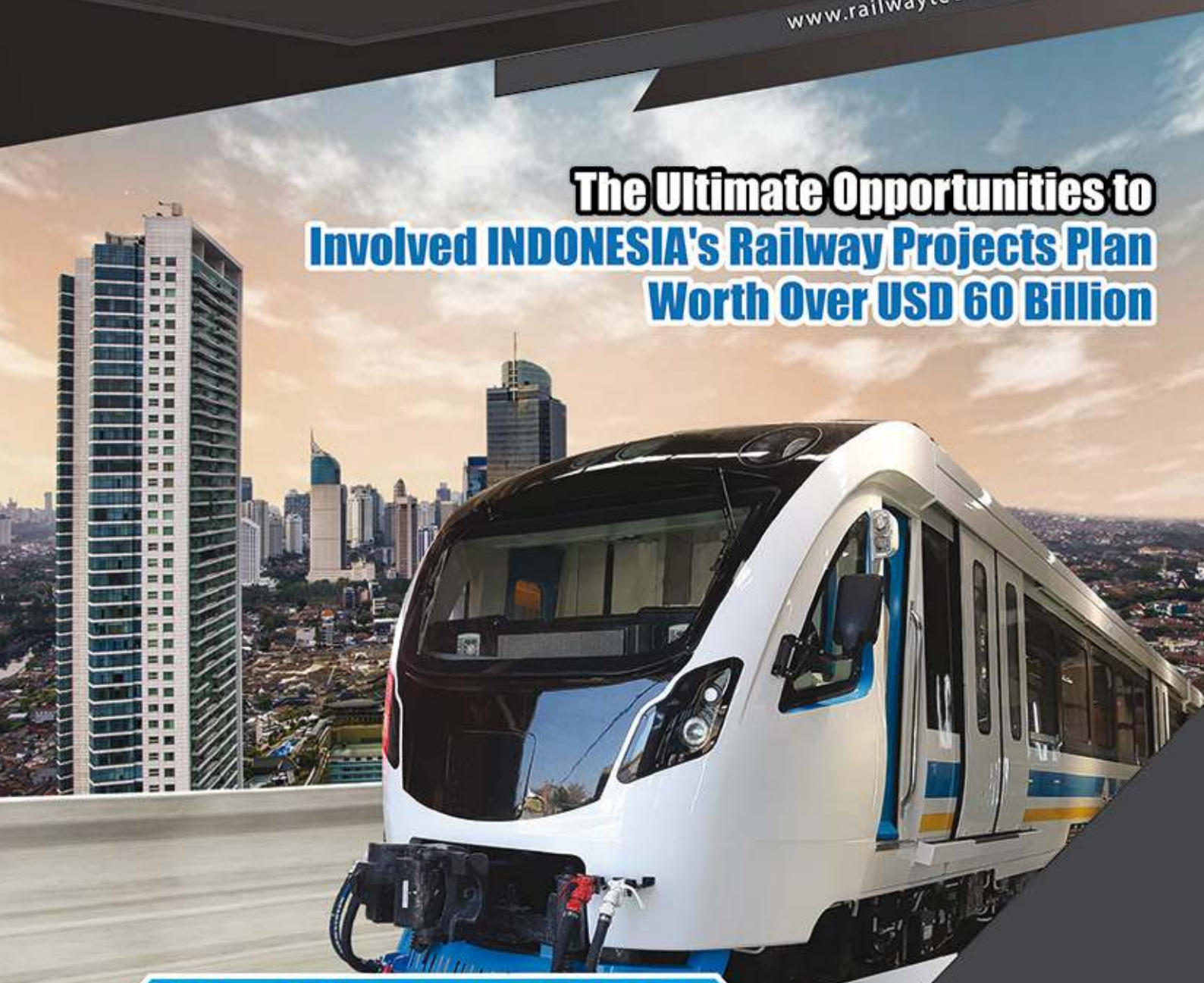

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Queensland Supreme Court dismisses Aurizon's claim of QCA Chairman's bias

Aurizon Network's bid to prove that it was the victim of bias by the Queensland Competition Authority (QCA) was dismissed by Queensland Supreme Court's Justice David Jackson on 30 October. The judge ordered Aurizon to pay the QCA's costs. Aurizon had requested the Court conduct a judicial review into the QCA's draft of an access undertaking for the Central Queensland Coal Network (CQCN). The draft undertaking would have limited Aurizon Network's track access revenue from the network to $3.9 billion over four years. Aurizon has expressed the view that it should earn around $1 billion more than the QCA's figure and, in response, Aurizon has cut its maintenance program, reducing capacity of the network by around 20 million tonnes a year. The move has angered Central Queensland coal miners, ten of which appeared as second respondents with the QCA at the court hearing. The miners were BHP Billiton Mitsui Coal, Glencore Coal, Idemitsu Australia, Anglo American, BM Alliance Coal, Coronado Curragh, Jellinbah Mining, Lake Vermont Resources, Yarrabee Coal and Peabody Energy. Aurizon was ordered to pay 75 per cent of the second respondent's costs.

As part of its dispute with the QCA Aurizon alleged that the QCA's former chairman, Roy Green, was in a position of conflict of interest when the draft undertaking was being formulated in that he later became the chairman of the Port of Newcastle. Aurizon had claimed that Professor Green had met with the Port of Newcastle and discussed the impact of Adani's proposed mine on the Hunter Valley coal network. Aurizon said Professor Green had then played a 'material part' in the QCA's draft decision to limit CQCN capacity. Aurizon's legal team said limiting CQCN capacity would benefit the Port of Newcastle by making the Hunter Valley mines, which feed into Newcastle, a more attractive place for investment.

However, Justice Jackson said a 'fair minded lay observer' would be unlikely to believe Professor Green showed bias and influenced the QCA's draft undertaking. He said the connections alleged by Aurizon were too tenuous or theoretical. Following the court decision Professor Green launched an attack in the media on Aurizon CEO, Andrew Harding. Professor Green said Mr Harding had shown a lack of judgement and commercial acumen by taking the matter to court. He said that instead of addressing the substance of the QCA's draft decision Aurizon had pursued a time-wasting judicial review application whose grounds had changed on an almost daily basis and, in the process, the company had alienated its customers, let down its shareholders and caused significant damage to its reputation. Professor Green said that Aurizon, through its actions, had amplified the problems of a vertically-integrated monopoly that, when privatised, enabled an above-rail operator to own the below-rail network.

First major contract signed for Inland Railway

In a significant step forward for the Melbourne – Brisbane inland railway, the first major contract for the project was announced on 16 October – covering the reconstruction of the Parkes – Narromine line in western New South Wales. INLink, a joint venture of New Zealand headquartered Fulton Hogan and Brisbane-based BMD Constructions, has won the contract which is valued at more than $300 million. INLink had been announced as the preferred construction contractor last July (see September 2018 *RD*, page seven).

The existing 98.4 kilometre rail corridor between Parkes and Narwonah, eight kilometres south of Narromine will be rebuilt and 5.3 kilometre of new track will be constructed to provide a direct western connection between the Parkes – Narromine line and the Western Line to Broken Hill and Perth. Pacific National is planning to construct a freight terminal on this connecting line. The existing mix of timber and steel sleepers will be replaced with concrete sleepers, new 60 kg/m rail will be installed, the existing formation will be raised and culverts will be replaced or upgraded. New signalling will be installed and three new 2.2 kilometre long crossing loops will be constructed – between Goonumbla and Alectown West, north of Peak Hill and Timjelly, north of Wyanga (see April 2018 *RD*, from page 28).

Deliveries of the 60 kg/m rail from Liberty OneSteel's Whyalla plant commenced last January and are currently still in progress using Genesee & Wyoming locomotives (mainly G 535) hauling ARTC rail wagons. The Parkes (Goobang Junction) to Narromine line will require 14,000 tonnes of new rail. The 200,000 concrete sleepers required for the project are being manufactured by Rocla's Mittagong plant and Pacific National has commenced delivering the sleepers to work sites along the line. Reconstruction works commenced in November near Goobang Junction (Parkes) and will then progress north to Narwonah. The ARTC is currently planning the corridor for the Narromine to Narrabri section of the Inland Railway and preliminary planning suggests the railway will bypass Narromine on an alignment to the east of the town – hence the termination of the current works at Narwonah.

Inland Rail Chief Executive Officer Richard Wankmuller said the ARTC and INLink were determined to work hand-in-hand with local communities and in partnership with the private sector to deliver a project that was faster, straighter and safer to the benefit of regions and the national economy. INLink Project Director Steve Emery said one of the key aims for the project was to maximise participation for local companies, businesses and job seekers in the region. Following local industry briefings in August that were attended by nearly 400 local businesses and workers hoping to benefit from the project, INLink has been scoping out suppliers in the market who have registered their expression of interest (EOI) to be involved in the project. Mr Emery said there had been more than 200 expressions of interest registrations from local companies to be involved in the project. He said INLink had already begun engaging with local businesses and had recently purchased over $50,000 worth of furniture and office appliances from an office supples company in Parkes. The entire project is expected to generate more than 200 jobs. INLink has established a site office at Peak Hill while the ARTC has established an Inland Rail Parkes Community and Working Hub at 290 Clarinda Street, Parkes. Community forums will be held at this location.

In other Inland Railway news the ARTC has commenced community information sessions relating to the section between Gowrie (west of Toowoomba) and the Queensland/ New South Wales border. The sessions will inform the community of progress in refining the corridor from around two kilometres in width to around 40 to 60 metres. The sessions were scheduled to be held during November at Toowoomba, Kingsthorpe, Southbrook, Pittsworth, Brookstead, Millmerran, Yelarbon and Inglewood. The ARTC has also released its preliminary solution for the Inland Railway's crossing of the Condamine floodplain near Brookstead, between Toowoomba and Millmerran. The findings will be presented to the local community at the abovementioned information sessions. Farmers in the Brookstead area had expressed concern over the possible impact of the railway on flooding in the Condamine River – part of the Murray-Darling River system. Community information displays were also being held at Yamanto (Ipswich) and Gatton during November to outline details of the Inland Railway route between Kagaru (where the new railway will junction with the Sydney – Brisbane railway) and Gowrie.

Robert John 'Bob' Keogh

26/1/34~19/10/18

Past President and founding member of Southern Downs Steam Railway Robert 'Bob' Keogh has passed away in Warwick. He was 84 years old, and had been ill for some time.

Bob was a depression-era child, and was no stranger to overcoming difficulty. Born and raised in the depression and then the Second World War, Bob's casual regard to schooling was reflected in his record for absconding – which stood at one month – until order was restored and he returned to the classroom, freedom curtailed.

In the 1950s Warwick was still a railway town, so Bob joined and worked his way through the ranks including cleaner, fireman and was eventually promoted to driver where he demonstrated his skills on a variety of steam and diesel locomotives across the narrow gauge South West system. During these years, he had in parallel been training to fly light aircraft, beginning in 1950, until finally earning a Commercial Pilot's licence.

Bob Keogh poses with his grandson Vincent Carter at Clifton Station on Sunday 26 February 2012.
Kevin Farmer, *Warwick Daily News*

Taking a bold step, Bob eventually left the railways. With wife Kate's encouragement, he struck out from the security of the railway industry into general aviation, picking up work in the Cooper Basin and then with the Wagner family, more recently known for their establishment of the Wellcamp Airport, west of Toowoomba.

With more experience Bob progressed to attain a Flying Instructors rating and established his own flying school in Warwick, which he ran until retiring from the industry in 2008.

But despite these impressive feats, arguably Bob's greatest legacy was helping found a railway museum based on the old Warwick roundhouse. Initially intended to be a static display, in 2000 the group took a radical step and acquired long-defunct C17 971 from the Chinchilla Historical Society, for full restoration.

Bob was an integral member of the 'dad's army' that painstaking restored the locomotive, helping steer the group through a variety of painful intricacies including Commonwealth grant funding, part fabrication and eventual re-assembly. First fired in March 2007, main line accreditation delayed the group's first outing until the Australia Day weekend of 2009, with a series of sorties to Clifton. On that proud weekend, SDSR President Bob Keogh welcomed guests to the first of many main line tours, which continue today.

With his health in decline, Bob still managed to complete a written history of his life, which was published as 'Around the Circle'. In it he describes his railway career and progression up the ranks to driver, his aviation career and then his journey in helping create the fledgling SDSR, including the battles with bureaucracy that were overcome to make the group the viable entity it is today.

Bob was a man of persistence, vision and practicality who will be keenly missed by wife Kate, his three daughters and four grandchildren. His achievements in life and his role in establishing the Southern Downs Steam Railway are a fine measure of his talents and dogged perseverance in the face of adversity.

Darren Tulk

Interim chair appointed to Queensland Rail

Queensland Rail board member David Marchant AM has been appointed as the organisation's interim chair. Mr Marchant was the inaugural Chief Executive Officer (CEO) for the Australian Rail Track Corporation (ARTC), a position he held for 13 years.

Queensland Transport and Main Roads Minister Mark Bailey said Mr Marchant possessed substantial rail experience matched with considerable knowledge of Queensland Rail's operations and recent challenges. "Mr Marchant has served on Queensland Rail's board since 2015 and was recently reappointed to the board for another three years," Mr Bailey said. "He received an Order of Australia in 2013 for service to the rail industry and has also occupied leadership roles with the Australian Railway Association and Rail Industry Safety and Standards Board".

Mr Bailey said recruitment was underway for other board vacancies, including the permanent chair.

David Marchant

Infrastructure SA chair appointed

The South Australian government has appointed Mr Tony Shepherd AO as the inaugural Chair of Infrastructure SA.

Infrastructure SA is an independent body that will combine the expertise of the private and public sectors to develop a 20-year state infrastructure strategy and 5-year infrastructure plans.

"The establishment of Infrastructure SA was a key election commitment, and I'm delighted that we've secured the services of Mr Tony Shepherd in this important role for our state," said South Australian Premier Steven Marshall. "Planning and building infrastructure according to the geography of marginal seats and the timelines of electoral cycles has ended – Infrastructure SA will ensure we have better planning to support long term economic growth, more jobs, and better, more affordable services".

Mr Marshall said that Tony Shepherd's experience in the infrastructure sphere made him a logical choice for the new body. Mr Shepherd was formerly chairman of the WestConnex Delivery Authority and is a past president of the Business Council of Australia.

SA Minister for Transport, Infrastructure and Local Government Stephan Knoll said that Infrastructure SA would help build a strong pipeline of productive infrastructure projects in South Australia.

"Infrastructure SA will help us build on this pipeline of works and ensure South Australia has a long term infrastructure plan for the coming decades," Mr Knoll said.

Tony Shepherd

At 11.30am on Monday 22 October, *Xplorer* cars 2521/2507 sit at Canberra's Kingston Station. At exactly 12 noon the train will depart Canberra for Sydney Central, arriving over four hours later. Mike Martin

Final section of track installed on Canberra Light Rail – Stage 1

Canberra Metro Light Rail project has reached a significant milestone with the last section of rail being installed along the Stage 1 – Gungahlin to the City corridor on Friday 26 October.

To coincide with completion of track laying ACT Minister for Transport and City Services Meegan Fitzharris confirmed that services on Canberra's first light rail project will commence in early 2019 with construction still on track to finish later this year. Previously the ACT Government had maintained that the line would be opening in 'late 2018'.

"Just over a year after the rail installation began on the project in Gungahlin, this significant milestone today brings Canberra's light rail system one step closer to reality," said Minister Fitzharris.

"The final installation of rail is a very significant moment in any rail project. From here we expect to see more of the light rail vehicles being tested along the alignment over the coming weeks.

"The ACT Government, in conjunction with Canberra Metro, would like to thank the community for their continued patience and understanding as we get closer to the completion of construction".

Minister Fitzharris said it was clear to everyone who travels along the route that significant progress is being made on the project. All the light rail vehicles are now in Canberra, the track slab has been laid and landscaping is being done across the project.

Following completion of construction, Canberra Metro will need to obtain third party rail accreditation from the Office of National Rail Safety Regulator and the Independent Certifier before the system begins operations.

"While this means we don't yet have an exact date, I can confirm we are expecting the first services to begin in early 2019, which is really exciting," Ms Fitzharris said. "We're also working on a plan to design a launch weekend that will give as many Canberrans as possible the chance to ride light rail on the first weekend, and we'll have more to say about this soon.

"As with any complex infrastructure project, there are also risks that affect timing such as weather, the testing and commissioning of rail and signalling systems, and finalising of the stops.

"It is clear to all that significant progress is being made on the project, and I look forward to updating the community on a start date as soon as possible," she said.

Entire Camurra – Weemelah line booked out of service

A John Holland Country Regional Network SAFE Notice, issued on 25 October, has indicated that the entire 83 km Camurra West to Weemelah line in north western NSW has been booked out of service from 1 November 2018. Track patrols on the line have been suspended and train operators wishing to operate train services on the line are required to lodge a request with the John Holland CRN planning team. Camurra West, 11 kilometres north of Moree, is the interface point between the ARTC's North Star line and John Holland's Weemelah branch.

The Weemelah branch had previously been booked out of use on 8 March 2018 from Bengerang to Weemelah, a distance of 22 kilometres because of the poor condition of the timber bridge over Gil Gil Creek, near Bengerang (see page 8, April 2018 *RD*). The bridge was subjected to a 10 kilometre speed restriction. Another timber bridge near Ashley (10 kilometres from Camurra) which crosses Marshalls Pond Creek, also had a 10 kilometre speed limit. Both bridges had some concrete piers inserted in previous years but the majority of the piers and all the decking are of timber construction.

The last train on the Weemelah line, a Southern Shorthaul Railroad grain service, operated in February this year and the very poor grain harvest across most of eastern Australia (see report, page 5, this issue) makes it unlikely that the Weemelah line will be required during the forthcoming grain harvest season. It is not known at this stage whether any repairs (or complete replacement) will be carried out on the two bridges.

NSW government commits to two staff on new intercity trains

The New South Wales government has sought to dismiss fears that the state's new intercity train fleet will be driver-only by vowing to always have two staff on board each train.

With the Rail, Tram and Bus Union (RTBU) threatening to escalate its campaign against any move to remove guards, NSW Transport Minister Andrew Constance said on Sunday 21 October that he would guarantee that each new train would have someone in a guard and customer service role accompanying the driver.

In ruling out driver-only trains, Mr Constance said the exact responsibilities and title of the second staff role on the trains would be decided in talks with the RTBU. "There should be two staff on trains. I want the rules and responsibility (for the guard and customer service role) agreed with the union," he said.

At present, the intercity rail network in NSW has 380 guards.

The rail union took the government to the Fair Work Commission in August to force it to clarify its plans for the staffing of the new South Korean-built Electric Multiple Unit (EMU) trains, which are capable of operating with only drivers.

Mr Constance said one of his biggest concerns was ensuring that train staff were on hand to help people with disabilities, parents with prams or the elderly to get on and off at stations. He also said that there was a possibility that the drivers and guards of the new trains would receive higher pay if there was change in their roles due to the new train technology.

Rail Tram and Bus Union state secretary Alex Claassens said he would welcome any announcement that ensured the safe operation of the rail network. "It is definitely a step in the right direction," he said.

The new 512 carriage fleet will replace the aging V-set EMUs on long distance, intercity services from Sydney to the Central Coast, Newcastle, the Blue Mountains and the South Coast.

The new trains feature:

- Wider, more spacious two-by-two seating for extra room and comfort with arm rests, tray tables, and high seat backs,
- Charging ports for mobile devices, and dedicated spaces for luggage, prams and bicycles,
- Improved accessibility including wheelchair access and accessible toilets; and
- Improved customer information through digital information screens and announcements, CCTV and help points, and modern heating, ventilation and air conditioning.

The first trains in the New Intercity Fleet will begin testing and commissioning in early 2019. They will begin passenger service late next year on the Central Coast and Newcastle lines, with the rest of the fleet progressively rolled-out by 2021.

On Saturday 13 October, Pacific National freight trains 6BA6 and 6BM4 were diverted on their journeys and travelled via Ulan,Merrygoen and Dubbo. Here, NR39, AN8 and NR10 lead 6BM4 (Brisbane–Melbourne intermodal freight) past the abandoned station at Dunedoo on Saturday afternoon 13 October. Ross McClelland

In late very bright sunlight, 6BM9 container train from Brisbane to Melbourne, roars through Gunning at 6.15pm on Friday 19 October. The locomotives are CSR Ziyang/MTU units CSR 010 and CSR 009 with CFCLA's Avteq/EMD VLs 354, 359 and 362 dead-attached, having been added at Goulburn. Mike Martin

Right (page 13): The SSR ballast train, powered by 44204, B61 and 8049, crosses the Queanbeyan River leaving Queanbeyan on Sunday 11 November heading for the Molongolo Gorge, on the third and final day of ballasting work on the Canberra Branch. Dennis Forbes

Below right (page 13): A very dirty EDI/EMD unit TT113, with equally filthy TT114 on the rear, work a loaded limestone train through the curves just North of Tallong on Thursday 1 November. Steve Munro

Newcastle light rail testing successful

Australia's first catenary-free light rail system passed its initial test overnight on Monday 22 and Tuesday 23 October when CAF *Urbos 100* tram 2151 was driven along Hunter Street in Newcastle under its own power.

The NSW Minister for Transport and Infrastructure Andrew Constance said the first powered test was a significant milestone. "Testing started the moment Newcastle's first light rail vehicle arrived in the depot last month, and after completing a series of safety checks we can now power up and start driving," Minister Constance said. "Powered testing allows us to check things like the brakes, onboard energy storage and charging systems, while at the same time provides valuable training for crews in the new light rail system".

Newcastle's light rail vehicles have on-board energy storage instead of relying on overhead wires, with vehicles charging at each stop in the time it takes for passengers to get on and off. The inclusion of wire-free technology is part of a $35 million NSW Government improvement to the Light Rail project, making for a more attractive city centre.

Parts of Hunter Street were closed to traffic for six hours while the tests, which focussed on speed control, braking and charging at the Honeysuckle and Civic light rail stops were completed.

Daytime testing, which commenced in November, involved simulating timetables and further driver training.

The Newcastle light rail is expected to begin operation in early 2019.

Snowy Fund could help support Canberra very fast train

Part of the Snowy Hydro Legacy Fund could be spent on funding a new corridor for a "very fast train" between Canberra and Sydney.

On Wednesday 24 October the NSW Government revealed the plan, which potentially could use part of the $4.2 billion fund set aside for "transformational projects" in regional New South Wales.

Deputy Premier and Minister for Regional NSW John Barilaro said every cent of the $4.2-billion fund would be invested across five areas:

- Providing water security in priority catchments: recognising the Hunter, Gwydir, Macquarie, Lachlan, Richmond and Bega as the highest priority areas for water security improvements through policy and infrastructure solutions.
- Improving rail and road passenger transport connections: exploring opportunities to invest in infrastructure that makes travel between regional centres and to metropolitan areas faster and easier.
- Improving freight linkages: improving regional freight networks to global gateways and the development of an air freight hub in regional NSW that will allow producers to deliver meat, dairy, fruit, nuts and seafood around Australia and the world as quickly as possible.
- Improving digital connectivity across regional NSW: exploring infrastructure to provide faster and more reliable digital connectivity across regional NSW, improving liveability, productivity and innovation in regional NSW. Business cases will explore regional data hubs, high-capacity 'backbone' data links to Sydney, and improved connectivity and data access for businesses.
- Activating regional locations for increased business investment: providing attractive locations and conditions for targeted industries to invest in regional NSW. Work is already underway to build an inland port in Parkes as a Special Activation Precinct that will leverage investment in Inland Rail.

"This fund will ensure regional NSW continues to receive the investment it needs to ensure our regions are a great place to live, raise a family, study, start a business or visit," Mr Barilaro said.

The fund was set up in June 2018 after the Federal Government purchased the state's share of the Snowy Hydro Scheme.

Mr Barilaro said the Government would pump money into improving rail safety and speed by upgrading existing regional rail lines and identifying a new corridor for a "very fast train" between Canberra and Sydney. Currently the rail journey between the two capitals takes four and a half hours.

"Part of the big problem is the alignment of the rail lines, the tracks themselves need realignment, straightening and new technology," he said.


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Around Sydney

Sydney Trains report reveals inadequate emergency systems

Sydney Trains' ability to handle emergencies on its network needs "significant improvement", according to an internal report.
The July report, obtained by Fairfax Media under freedom of information laws and posted online, highlighted several shortcomings, including difficulties in responding to incidents on the network.

Rail network meltdowns that resulted in "excessive business disruption", such as those that occurred earlier in January, saw "indefinite delays" and severe overcrowding on platforms. At the start of 2018, major delays and train cancellations lasted for days and sparked mass anger from commuters and public transport unions (see March 2018 *RD*, page 10).

The report said the January incident was a demonstration of how current frameworks used by Sydney Trains were slow to recover from "unplanned incidents".

The report also found Sydney Trains had conflicting definitions of what constituted a major incident.

It found "limited governance" in processes for handling major incidents, meaning responses could be inconsistent.

It also found a lack of communication between Sydney Trains' staff could slow the recovery from major disruptions.

Sydney Trains Chief Executive Howard Collins said the report was commissioned because the organisation wanted to understand its weaknesses.

"We reacted to that weakness," he said. "We now have recruited seven new managers to actually be the key people who ensure that these incidents are managed in the correct way.

"I feel that our team would be able to respond and working alongside all the other emergency services to deal with our railway and to deal with it in a safe way for our customers".

The report also questioned the decision to centralise Sydney Trains' new multi-million-dollar management centre at Green Square in Sydney's inner-south. It raised the prospect of a major disruption to the Sydney rail system if the centre had to be evacuated in an emergency.

"If in the event we have to leave the building, we have contingency plans which allows us to continue to operate from an alternative location," Mr Collins said. "That's all been factored in and dealt with following the recommendations of the report".

Sydney Metro tunnelling begins under CBD

Tunnelling began in October to deliver new twin metro railway tunnels below the centre of Sydney and deep under Sydney Harbour as part of the Sydney Metro project.

On Wednesday 17 October NSW Premier Gladys Berejiklian and NSW Minister for Transport and Infrastructure Andrew Constance officially launched tunnel boring machine (TBM) *Nancy* – one of the five borers that will build 31 kilometres of tunnels between Marrickville and Chatswood.

"Sydney Metro is at the centre of the NSW Government's transformation of public transport which will give people more choice in how they get around Sydney," Ms Berejiklian said. "Today marks the start of the huge task of digging twin tunnels under the city, delivering Sydney's new world-class metro railway and building a stronger, better future for the people of NSW".

The TBM has been named *Nancy* in honour of transport pioneer Nancy Bird Walton OBE. *Nancy* and another TBM will tunnel 8.1 kilometres from Marrickville to the new Sydney Metro station sites at Waterloo, Central, Pitt Street, Martin Place and on to Barangaroo, where they will be removed from deep underground.

Together the five TBMs will excavate 5.9 million tonnes of rock. This is the first time in Australian history that five TBMs have worked on a transport infrastructure project.

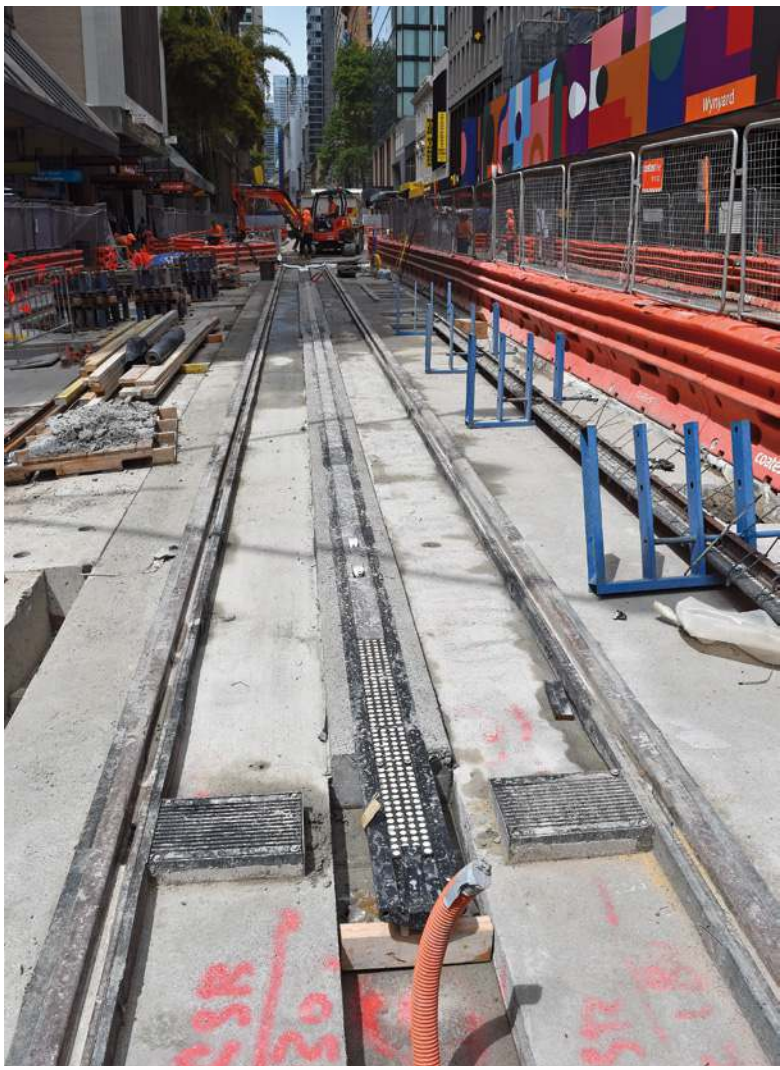
Two TBMs will also dig 6.2 kilometres from Chatswood to the edge of Sydney Harbour. A fifth machine has been specially designed to deliver the twin tunnels under Sydney Harbour.

It is traditional to give a female name to all machines that work underground, because workers look to Saint Barbara for protection.

Nancy Bird Walton OBE was an Australian pioneer aviator, the first female pilot in the Commonwealth to carry passengers and the founder of the Australian Women Pilots' Association.

Sydney Metro opens between Tallawong station and Chatswood in the city's north west in the second quarter of next year – with 13 metro stations, 4000 commuter car parking spaces and 36 kilometres of new metro rail lines.

Metro rail is being extended into the Sydney CBD and beyond to Bankstown. In 2024, Sydney will have 31 metro stations and a 66-kilometre automated rapid transport metro railway system.



On George Street, Sydney adjacent to Hunter Street on the left and Wynyard on the right, a section of the South East Light Railway, looking south, that has only recently had track laid, complete with the partially-completed power supply in the centre of the track clearly visible on Sunday 4 November. Shane O'Neil

Comeng electric unit 8606 stops briefly at Sydney Central Station Platform 16 on Monday night 29 October with Maintenance Train No. E702 to North Sydney. It was conveying a load of new rails for relaying purposes. Diesel locomotive 8134 had accompanied the train as a trailing unit to Central, but did not accompany 8606 to North Sydney. The 86 class was re-activated after being transferred from Junee several months ago and, after a trial run from Lithgow to Mt Victoria and return, it was deemed ready for its Light Engine transfer from Lithgow to Clyde for the commencement of the maintenance tasks. The 86 is PN's solution to dangerous fumes in the City Underground, as experienced when diesel locomotives are used. Dominik Giemza

Waratah Set A31 passes glimpses of the Sydney skyline and the platforms of Stanmore railway station as it heads west on Thursday 29 March. Dominik Giemza

On Friday 3 August, GWA002 and GWA003 thunder across the Elizabeth River at Archer, just south of Darwin, with GWA's 4AD1 Intermodal service from Adelaide. The train is only 10 minutes from its destination at Darwin's Berrimah Freight Terminal. Rob Cook

Queensland public transport patronage continues to rise

More people are catching public transport in south east Queensland in 2018 than did last year. The latest TransLink SEQ data, released on Monday 6 October, revealed 3.1 million more trips were taken between April to June 2018 when compared with the same period last year. The data showed 47.52 million public transport trips were taken during the most recent reported quarter, increasing from the 44.42 million trips in the April to June 2017 quarter.

Queensland Transport and Main Roads Minister Mark Bailey said the increase in patronage had been supported by the government's action on fare prices. "We are seeing the numbers of people using public transport continue to build and those numbers have gained momentum since the introduction of Fairer Fares in late 2016," Mr Bailey said. "By reducing the average adult fare by about 13.5 per cent compared to January 2014 levels, Fairer Fares has encouraged more people to give public transport a go and saved families more than $117 million".

"We've also seen the opening of the Redcliffe Peninsula Line and Gold Coast Light Rail Stage 2 drive patronage higher too. "These latest figures are especially positive given they do not include the extra 5.3 million event trips taken during the 2018 Gold Coast Commonwealth Games".

Mr Bailey said the patronage figures from April to June capped off an outstanding 2017-18 financial year for patronage on the TransLink SEQ network, with 182.83 million journeys taken. "Comparing full-year numbers, this was an increase of 5.41 million trips, or 3.1 per cent, on the 2016-17 patronage figures," he said. "Buses, trains, ferries and trams all showed an increase in patronage".

Mr Bailey said measures such as concession and discount schemes for asylum seekers, job seekers and veterans' concessions, also supported passengers across the region.

Watco selects Warwick for its Queensland operations centre

USA-based short line operator and Western Australian rail operator, Watco Transportation Services, has announced that it has selected Warwick as the location of its operations facility when it takes over GrainCorp's Queensland grain contract from Aurizon in 2019 (see August 2018 *RD*, page 7). Watco will partner with the Southern Downs Steam Railway tourist rail group who are based in part of Warwick's station yard. The GrainCorp contract runs for seven years.

Watco Executive Chairman, Rick Webb, said the level of positivity from the Southern Downs Steam Rail group and the Southern Downs Regional Council was great and certainly influenced Watco's decision to establish a new facility in Warwick rather than in another location in Queensland. Watco said it was eager to attract locomotive drivers to the region as the business starts operations in 2019. The centre will create around 20 locomotive operations and maintenance jobs in the Southern Downs city that, apart from a small Queensland Rail track maintenance team, has seen little permanent commercial rail-related employment for many years. Warwick's current population is just over 12,000.

Seaway to build and operate intermodal terminal on InterLinkSQ's Toowoomba site – rail service to Brisbane planned

Seaway Group has been selected to construct and operate an intermodal terminal on the 200-hectare InterLinkSQ site at Charlton, 13 kilometres west of Toowoomba. The open access terminal, located adjacent to Queensland Rail's Western Line and the Australian Rail Track Corporation's proposed Brisbane – Melbourne Inland Railway, will provide the platform for container freight customers to gain direct rail access to the Port of Brisbane.

Seaway CEO, Craig McElvany, said that through InterLinqSQ his company would bring its knowledge and expertise of regional rail and logistics to Toowoomba and provide solutions for customers in the Darling Downs and other areas of Western Queensland. Seaway has had a small presence in Toowoomba for a number of years, including being a major sponsor of the Toowoomba and Surat Basin Enterprise promoting business development and employment opportunities across the Darling Downs and south west Queensland.

Final planning for the terminal is expected to be concluded by the end of the year and construction of the site, including a hard-standing area and sidings, will commence early in 2019. It is expected that the site will be operational in 12-18 months at which point Seaway plans to operate a daily rail shuttle to the Port of Brisbane. Seaway plans to move over 20,000 TEUs (twenty-foot equivalent containers) by rail to the Port of Brisbane, saving up to 10,000 truck movements per annum. No rail operator has as yet been selected for the rail service although InterLinkSQ has welcomed the arrival of Watco Transportation Services in Queensland and the selection of Warwick as their operational headquarters (see separate news item, on page 16). InterLinkSQ said that Watco had a proven ability to win major contracts and provide competition which was the key to development of rail freight. InterLinkSQ says that while the existing line down the Toowoomba Range is not the most efficient rail route it does carry around six million tonnes of coal and it is adequate for the proposed port shuttle. The company says the completion of the Brisbane – Toowoomba section of the Inland Railway should cut rail delivery times by about half between the two cities.

InterLinkSQ is a Toowoomba-based company formed to develop its 200-hectare site at the northern end of the Toowoomba Enterprise Hub at Charlton. The company has been progressively acquiring land since 2004. The site will host two components – the InterLink Industrial Park and the 60 hectare InterLink Global Logistics Centre. The latter will include a three kilometre frontage along the Western Line and future Inland Rail route. There will be provision for rail vehicle maintenance and provisioning facilities.

Seaway is a Melbourne-based company that specialises in providing transport services and consultancy ranging from containers, general freight, warehousing, storage and specialised contract services to shipping lines, freight forwarders and logistical companies. The company is already involved in regional rail freight through its operation of the Merbein (Mildura) freight terminal in Victoria. Through that site Seaway facilitates the movement of around 15,000 containers per annum on Pacific National rail services to the Port of Melbourne carrying fresh produce, grains, pulses, cotton and wine. Seaway says similar commodities will be railed from Toowoomba to Brisbane. The Merbein terminal was previously owned and operated by Wakefield Transport Group. In March 2009 Seaway purchased 57 per cent of the company shares from the Wakefield family and in July 2018 Seaway took 100 per cent ownership of Wakefield Transport. The poor delivery of the first stage of the Murray Basin gauge standardisation project caused significant financial difficulties for Wakefield Transport and led to the decision to sell the entire business to Seaway.

Aurizon Clyde/EMD unit 2366 leads a westbound coal train through Wacol, between Brisbane and Ipswich, on a quiet Wednesday morning 26 September. Luka Ruckels

Above: EDI/EMD unit PN009 *Rob Weston*, on 82P7 Down Brisbane-Townsville intermodal freight at Elimbah on Sunday 21 October. John Scott
Below: EM Baldwin B-B DH *Fairydale* approaches Millaquin Mill, Bundaberg, with a rake of loaded cane bins on Wednesday 10 October. Peter Sansom

Aurizon restarts Townsville – Mount Isa freight service

Aurizon has recommenced operating a freight service between Townsville and Mount Isa under contract to Mount Isa mining company, Glencore. The first service (6M54) operated from Townsville on 30 October with Goninan/GE units 2848 and 2832 hauling a 2,400-tonne train. Following the takeover of the Glencore mineral contract by Pacific National, Aurizon decided to cease operating its service from February last year (see November 2017 *RD*, page 38).

That service had carried general freight for a variety of customers, as well as Glencore's mineral output. Following the loss of the Glencore contract Aurizon claimed that the remaining freight volume was too small to support the cost of the service.

However, an Aurizon spokesperson told *Railway Digest* that the company has now successfully secured a new rail haulage and terminal services agreement with Glencore to run a freighter service twice a week from Townsville to Mt Isa.

The freighter services will see Aurizon's Bulk business haul lead, copper, cement, electrolytes, grinding media and coke. Some of these commodities had been lost to road transport when Pacific National took over the primary mineral contract with Glencore.

The restarting of the Aurizon service is understood to have not affected the two Pacific National trains that operate for Glencore between Townsville and Mount Isa with Glencore placing mineral output that cannot be accommodated on the Pacific National trains on to the Aurizon service.

New coal mine for Goonyella rail network

Another coal mine will be using Aurizon's Goonyella coal rail network following the Queensland Government's 1 November approval for the development of Fitzroy Australia Resources' Ironbark No. 1 mine, located 35 kilometres north-east of Moranbah in North Queensland. The underground longwall operation is expected to produce up to six million tonnes per annum of mainly low-ash hard coking coal for steel production with the first coal scheduled to be railed from the first quarter of 2020. Queensland Mines Minister, Anthony Lynham, said the new mine would support around 20 years of jobs with 160 contractors during the construction phase and up to 350 operational staff.

Fitzroy Australia Resources acquired the Ironbark No.1 lease area, neighbouring Carborough Downs mine and the Broadlea mine from Brazilian mining company Vale in November 2016. Vale had planned to place the Carborough Downs mine in a 'care and maintenance' status but Fitzroy Resources has decided to keep it open for another five to 10 years. Broadlea mine had been mothballed since 2009 but Fitzroy reopened it in 2017. The Ironbark mine will share major infrastructure with Carborough Downs mine, including the rail balloon loop. Carborough Downs is 160 kilometres from the Dalrymple Bay export terminal used by Fitzroy Resources. Broadlea mine is 157 kilometres from Dalrymple Bay.

Fitzroy's assets include some 98,000 hectares of tenement holding in the central Bowen Basin that may be developed for metallurgical coal production. Fitzroy Australia Resources is owned by two USA-based investors with experience in coal mining, AMCI and Riverstone.

On-call medics trial at Brisbane stations

A trial posting of on-call medics at four major inner-city Brisbane railway stations began on Monday 29 October.

Queensland Minister for Transport and Main Roads Mark Bailey said the three-month trial would see trained medics stationed at Roma Street (Brisbane CBD), Central (Brisbane CBD), Fortitude Valley (North Coast line – 1.33 kilometres from Central) and Bowen Hills (North Coast and Ferny Grove line – 2.66 kilometres from Central) stations during the morning peak to provide timely assistance to customers in the event of medical incidents.

"With more than 53 million customer movements through South East Queensland train stations yearly, we often see customers experience illness, medical conditions or a slip, trip or fall injuries while travelling with Queensland Rail," Mr Bailey said.

In 2017, Queensland Rail recorded 400 medical incidents at its South East Queensland stations. At CBD stations alone, medical incidents over this period resulted in approximately 1500 minutes in delays while staff organised medical assistance for the customer involved.

To help reduce medical related delays and improve customer safety throughout the 12-days of the Gold Coast 2018 Commonwealth Games, Queensland Rail contracted medical services to its inner-city, Beenleigh and Gold Coast line stations. This exercise proved extremely beneficial during the major event, with several medical incidents able to be addressed within three minutes.

Queensland Rail subsequently identified Roma Street, Central, Fortitude Valley and Bowen Hills as the stations that have been most impacted by medical incidents in the past year.

Over the course of the trial, medics may be reallocated to other stations, such as Eagle Junction (6.5 kilometres from the Brisbane CBD on the North Coast, Pinkenba and Airport lines) and Park Road (5 kilometres from Central on the Gold Coast and Cleveland lines) to assess the concept at other network locations.

"If a medical incident occurs, station-based medics will be able to safely and quickly provide first aid and assist Queensland Ambulance Service and other emergency services when they arrive, streamlining the handover process'" Mr Bailey continued. "This will complement Queensland Rail's existing first aid protocols.

Minister Bailey said Queensland Rail had appointed Queensland-based specialist medical services 1300 Medics to deliver the trial.

"1300 Medics have a proven track record providing medical staff for large-scale events across the state, including the Commonwealth Games, where their trained medics provided critical first aid for games patrons in a variety of scenarios," Mr Bailey said. "It's an exciting and valuable trial for rail customers, and it's great to be able to partner with a Queensland business to help deliver it."This trial will not only help provide important medical treatment for injured customers, but it will also address any potential delays, with medics on-hand to look after ill or injured commuters, while allowing services to resume".

Queensland Rail will monitor and evaluate the trial over the three-month period and medical staff will be fully trained and familiarised with the rail environment.

Federal Government confirms $112m for Gold Coast light rail extension

Federal Minister for Cities, Urban Infrastructure and Population, Alan Tudge, confirmed on 5 November that the Commonwealth will contribute $112 million towards construction of the 6.4 kilometre extension of the Gold Coast light rail line from Broadbeach South to Burleigh Heads. Known as stage 3A of the Gold Coast light rail line, it will include eight new light rail stations, upgraded pedestrian and cycling facilities and an upgraded bus interchange at Burleigh Heads. A detailed business case for the extension is being prepared by the Queensland Government and Gold Coast City Council. It is expected to be finished by the end of this year. The target date for opening the extension is 2023.

Mr Tudge said the light rail extension would cut travel times between the two centres to around 16 minutes and it was a vital step in supporting a growing city like the Gold Coast. He said the Commonwealth funding was 'locked in' and it was now up to the Queensland Government to commit its contribution. A future extension (stage 3B) covering the section from Burleigh Heads to Coolangatta and possibly across the state border to Tweed Heads is being planned. More than 5.2 million trips on the light rail line have been made since the opening of Gold Coast Light Rail Stage 2, from Gold Coast University Hospital to Helensvale, in December 2017.

Left: Aurizon Goninan/GE unit 2830 approaches Virginia, in Brisbane's northern suburbs, with No.YU55 Acacia Ridge, Brisbane to Mackay intermodal freight on Sunday 21 October. Rod Milne

Right (page 21): On Wednesday 15 August, during the Royal Queensland Show (aka 'The Ekka'), SMU285 is at Bowen Hills working TFX1 Ekka Loop service through the sharp curve and cutting known as 'The Hole in the Wall' by railway people. The track allows a direct connection between the north coast line and the Exhibition Loop for trains operating in an anti-clockwise direction on Exhibition services. John Scott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QueenslandRail
285

Above: Genesee & Wyoming Australia gypsum train 5DD4 from Kevin hauled by 1606, 902, 850 and 873 is approaching Thevenard, to unload, on Friday 14 September. Damien Butler

Below: On Friday, 5 October NR98 and NR30 haul Pacific National Train 6MP1 (Melbourne–Perth intermodal freight) around the curves at Ballyarta, the site of an old crossing loop at the 66km mark on the main south line. Bob Grant

Above: Empty GWA Ore train 1911S, bound for Wirrida, hauled by G533, GWA009 and 2207 is captured passing SCT Logistics' depot at Penfield on Sunday 28 October. David C Peters

Below: A busy Saturday morning 15 October in North Terrace, Adelaide, with Bombardier *Flexity* 111 at Frome Street approaching the Botanic Gardens terminus (behind camera) while 114 heads for the Entertainment Centre. Ian Hammond

Remote control failed to respond prior to Devonport derailment, interim report finds

A driverless train that had to be forcibly derailed when it got out of control would not respond to attempts to stop it leaving the yard, the interim report has found. (See November 2018 *RD*, page 23.)

The Australian Transport Safety Bureau (ATSB) has outlined the measures taken by TasRail and Tasmania Police to protect the public as the freight train sped towards Devonport in the state's north-west.

Two people were struck by debris from a fence and suffered minor injuries when the train carrying cement was deliberately routed into a dead-end siding opposite the *Spirit of Tasmania* ferry terminal.

The ATSB's executive director of Transport Safety, Nat Nagy, said the train was being remotely loaded at a rail yard in Railton at about 8:42 am when it stopped responding to commands from the driver, who was outside the locomotive.

"The ATSB's investigation has so far found that while loading, the last two wagons of the train were misaligned with the loading chute," he said. "The driver attempted to realign the wagons by selecting reverse on the remote control. However, the train was unresponsive."

The driver tried unsuccessfully to reset the remote control equipment, and was about to walk to the lead locomotive when the train began rolling away towards Devonport.

Mr Nagy said the operator tried to activate the emergency stop command of the remote system. "The ATSB's investigation has also determined the train did not respond to emergency stop commands through the removal of power to the transmitter," he said.

At 8:48am the driver made an emergency call to operators at TasRail's control centre, to tell them the train was out of control. TasRail controllers were able to monitor the progress of the train using the real-time locomotive performance monitoring system and conveyed this information to Tasmania Police, who then focused on stopping vehicles and pedestrians around the rail tracks and at level crossings ahead of the train.

TasRail operators decided to route the train into a dead end siding on Devonport's waterfront, where it came to a stop at 9:09am.

TasRail's bulk cement service between Railton and Devonport was the only service that used a locomotive remote control system, and TasRail has suspended all use of the system until further notice.

Mr Nagy said the ATSB was present as TasRail conducted a number of tests on the locomotive involved in the derailment. "ATSB investigators have interviewed a number of witnesses and also collected documentation about the train, the remote control system and also the train network," he said. "The investigation is continuing and investigators will be looking at a range of factors including runaway protections, systems compatibility, and emergency response procedures."

TasRail welcomed the ATSB's preliminary report and said it was continuing to cooperate with the investigation. It says the locomotive in the derailment (TR11) also remains quarantined from service and will not return to operations until it is cleared by the ATSB.

The ATSB's preliminary report does not contain any analysis or findings of the investigation. A final report is expected late in 2019.

A late-running Train No.135 hauled by ProgressRail/Caterpillar units TR17, TR05, TR08 and TR12 is seen from the off-ramp of the Brighton by-pass as it approaches the Brighton Transport Hub on Monday afternoon 22 October. Bruce Tilley

Melton may appear to be a typical old Victorian country station with an old building and wooden shelters but looks can be deceiving; come evening peak hour a continuous succession of trains each disgorge literally hundreds of passengers at this rapidly growing dormitory suburb. Served by a mix of N-powered head-end trains and 6-car V/locity sets, the service is restricted by single track and limited crossing opportunities in the Caroline Springs – Melton – Ballarat corridor. Here, N465 *City of Ballarat* and a 6-car Harris Set takes the loop on the 16.35 from Melbourne Southern Cross to Melton service. Here it will wait for an express V/locity set to race through towards Ballarat on the 16.54 ex Southern Cross before it continues empty to Bacchus Marsh, where it will terminate and stable. (The H sets are now being repainted in the current purple/white V/line livery but this set still has the old colours.) More services will be possible when the current track works west of Caroline Springs are completed; at mid-October the duplication of the Caroline Springs to Melton section was well under way with new track being laid on the northern side of the existing line. This work includes the Rockbank Station upgrade and a new rail bridge across Toolern Creek. Works are also underway on the new Ballan passing loop between Ingliston Road and Old Melbourne Road, and on the new Millbrook passing loop. At Bacchus Marsh a second platform and the new Maddingley stabling facility are under way. Ian Hammond

More trains with more space for Victorian regional passengers

Victorian regional passengers will soon see the first of the new VLocity carriages. Premier Daniel Andrews and the Minister for Public Transport Jacinta Allan visited train manufacturer Bombardier in Dandenong on Monday 15 October to inspect the first of 39 new VLocity carriages which will begin to enter passenger service before the end of 2018.

Bombardier is also set to commence the VLocity Refresh Project, which will deliver upgraded regional trains that will improve capacity (at the expense of one of two toilets per three car train), comfort and reliability for passengers.

Modifications will pave the way for nine-car VLocity trains, that can carry more people on the busiest routes. Investigations are also underway to determine what works will need to be carried out at V/Line stations to deliver nine-car trains.

The project upgrades the existing fleet of 75 VLocity regional trains to make them more comfortable and accessible, bringing the oldest of the regional train fleet up to the best standard. The carriages will improve the travel experience for all passengers with wider toilet doors for wheelchair access, hearing loop technology, automatic announcements, and new floor markings and handrails.

Works are expected to start in mid-2019 and be completed in 2021.

The first of the 39 new improved VLocity carriages includes more seating in each carriage, along with accessibility improvements, and mobile signal boosters to improve mobile phone coverage for passengers on the Bendigo, Geelong, Ballarat, Gippsland and Seymour lines.

Bombardier is also delivering the next stages of the design work for the new standard-gauge VLocity trains for the North East Line. Earlier this year work commenced to design standard-gauge bogies for the new VLocity trains that will be delivered once the $235 million upgrade of the track is complete.

Design works are also underway to include facilities for food and drink options, sufficient luggage space and room for bikes within the new long-haul VLocity trains.

PTV records strong performance results in peak sporting season

Public Transport Victoria (PTV) performance results for September 2018 were released on Wednesday 10 October.

PTV CEO Jeroen Weimar said September saw performance improvements across the network, whilst also delivering almost 2,000 additional services to get hundreds of thousands of fans to a month of AFL and NRL finals, and thousands more visitors to the Royal Melbourne Show.

"September was a busy month for public transport as we put on hundreds of extra train and tram services, transporting almost half a million passengers from across metropolitan and regional Victoria, to the footy finals and the Royal Melbourne Show," said Mr Weimar. "The first full month of the newly extended Mernda line and the new timetable changes, also demonstrates our capacity to introduce more stations, carry more passengers, run more services and still deliver punctuality improvements".

In September;

- Melbourne Metro Trains delivered 92.4 per cent of services on time,
- Yarra Trams delivered 86.3 per cent of services on time; and
- V/Line delivered 88.2 per cent of services on time.

During the month performance showed improvements across the train and tram network with regional train services delivering their highest on-time performance result in almost two years.

V/Line continued its upward trend, which has seen punctuality improve almost nine per cent since May to 88.2 per cent, with the regional operator delivering 97.5 per cent reliability.

The Geelong (91.5 per cent) and Ballarat (89.6 per cent) lines were among the strongest performers, with Ballarat recording its highest punctuality result since December 2016. Ten of the 11 regional lines returned reliability results higher than, or equal to, the 12-month average.

"We've been putting a lot of work into improving regional services for our passengers, and that effort is starting to pay off," said Mr Weimar.

In September, Yarra Trams exceeded their punctuality and reliability targets with 86.3 per cent of trams arriving on time and 99.2 per cent reliability. "This is the ninth successive month the reliability target has been exceeded on our tram network which reflects the added investment going into maintaining and upgrading our fleet", said Mr Weimar.

Metro Trains' punctuality result of 92.4 per cent, and 98.9 per cent for reliability, also exceeded both their targets, with reliability improvements on 14 of the 16 metropolitan train lines.

Patronage on Victoria's public transport network increased by 8.4 million in 2017-18, with almost 600 million journeys across the train, tram and bus network.

September performance results are available on the PTV website at operational performance.

Shepparton station stabling construction underway

Construction of the stabling upgrade at Shepparton station has commenced with Victorian Minister for Public Transport Jacinta Allan inspecting the recently established works site on Tuesday 23 October. The stabling works are part of stage one of the $356 million Shepparton Line Upgrade.

The works include signalling and track upgrades, building safer access for train crews and improving lighting to assist train maintenance. These upgrades will allow an additional passenger train to be stabled overnight at Shepparton station, making it possible for an extra daily return rail service between Shepparton and Melbourne to be introduced in early 2019.

NR 85, 9312, NR 6 and NR 73 work the steel coil (or 'doughnut') train 5WM2 from Port Kembla to Melbourne through Glenrowan on Thursday afternoon 11 October. Mike Martin

In late afternoon sunlight, on Thursday 11 October, N 457 departs Benalla station with train service 8630 from Albury to Melbourne. Mike Martin

Construction will continue until the end of 2018 and is being delivered by V/Line on behalf of Rail Projects Victoria (RPV).

Stage one of the Shepparton Corridor Upgrade also funded the addition of 29 coach services per week between Shepparton and Seymour to fill gaps in the timetable and give passengers more choice when to travel.

The Government announced an additional $313 million for stage two of the Shepparton Corridor Upgrade in the 2018/19 Victorian Budget. Stage two of the project will transform the line between Seymour and Shepparton, with upgrades to level crossings, signalling and track, as well as platform extensions and a new stabling facility enabling faster VLocity trains to run on the line for the first time.

The Government is also progressing the business case to finalise the scope and costs for stage three of the project, which will deliver nine return services a day between Shepparton and Melbourne. The delivery timelines for both stages two and three are yet to be confirmed.

Early works have also started on a new waiting room at Shepparton Station, under the Government's Road and Rail Minor Works Program. The waiting room and modernised customer service area will provide a safe and weather proof place to wait for the growing number of people using the train and coach services at the station.

The Shepparton Corridor Upgrade is part of the $1.75 billion Regional Rail Revival, which will upgrade every regional passenger carrying line in Victoria.

Alstom to design new X'Trapolis 2.0

The Victorian Government is engaging Ballarat-based Alstom to design a new X'Trapolis 2.0 Melbourne suburban train with higher local content.

The announcement retains Alstom's Ballarat manufacturing workforce until the start of production in April 2019 of the five new six-carriage X'Trapolis trains ordered in the Victorian Budget 2018/19.

Completion of the five new X'Trapolis electric multiple units will expand Transport for Victoria's fleet to 106 trains (636 cars) delivered from Alstom's manufacturing facility in Ballarat since 2002.

Approximately 65 people are employed at Alstom's Ballarat workshop for X'Trapolis fit-outs and necessary modifications, including four apprentices and trainees.

Designs released for new Cobblebank station

The Victorian Government has released designs for the new station at Cobblebank, to service Melbourne's booming outer western suburbs. (Cobblebank – originally called Toolern, is a proposed station to be located approximately 34.4 kilometres from Southern Cross station on the Ballarat line.)

On Friday 26 October Victorian Minister for Public Transport Jacinta Allan unveiled designs at the site of the new station, which will include an accessible pedestrian overpass, secure bike parking, a bus interchange and car park. The station, to be delivered as part of the half a billion-dollar Ballarat Line Upgrade, will eventually service a community of 55,000 people, a massive increase from the area's current population of around 1,000.

The new station will be near Ferris Road in the suburb of Cobblebank, between Rockbank and Melton, and will be a central feature of a planned town centre that will include community facilities and retail shops. Once complete, the Government will also fund a new bus route to provide locals with more travel options and better access to key destinations and services, including the new station (see photo caption, page 25).

Work is continuing on the Ballarat Line Upgrade, which includes duplicating 18 kilometres of track between Deer Park West and Melton, delivering extra services and boosting reliability on the line.

The project will be complete in late 2019 and includes station upgrades at Ballan, Bacchus Marsh and Wendouree, the rebuilding of Rockbank Station, new passing loops at Millbrook and Ballan and new stabling at Maddingley. Crews have worked more than 400,000 hours on the project so far, with Maddingley stabling and the Toolern Creek rail bridge progressing well, track duplication underway and the Ballan and Rockbank station upgrades taking shape.

Cobblebank station is being funded by the Government's Growth Area Infrastructure Contribution (GAIC) and will be ready to take passengers when the Ballarat Line Upgrade is complete. Construction is scheduled to start later this year, with preparatory works already underway.

For further information, see http://regionalrailrevival.vic.gov.au/ballarat/stations/new-station-cobblebank

Two chapters closing on Warrnambool Line

The Princes Highway (A1) stretches from Port Augusta in South Australia to Sydney New South Wales, a distance of 1941 kilometres.

Along its length it is crossed by only four level crossings, one on the standard-gauge Maroona to Portland line at Heathmere in south west Victoria and three on the broad gauge on the Warrnambool line at Warncoort in south west Victoria as well as at Stratford and Bairnsdale on the Bairnsdale line in Gippsland Victoria.

Within a few months, the crossing at Warncoort will be gone, replaced by a duplicated road overbridge. Warncoort is the last remaining level crossing on the Princes Highway between Melbourne Southern Cross station and Warrnambool, a distance of almost 280 kilometres.

Warncoort was a manual-gated crossing from March 1877 and remained so until 1915, when the gates were removed by the Victorian Railways (VR). The gates were originally closed from sunset every night until 6.00am, so travellers arriving after sunset on the dirt road between Colac and Winchelsea had to make their way in the pitch black to another crossing two kilometres to the east (if they even knew it was there!) or wait until the gates were re-opened. Pressure was applied to VR from 1907 to have the gates attended through the night, but this was denied due to the cost of employing additional gatekeepers. 1915 saw the gates finally removed. An active crossing has been at Warncoort for decades. In recent times the crossing was upgraded with boom barriers and early warning amber lights for motorists.

The duplication of the Princes Highway between Geelong and Colac has seen the construction of a bridge over the line at Warncoort that will soon eliminate the 141-year-old level crossing.

Another chapter will close on the Warrnambool line in the near future when N class-hauled passenger trains will be replaced by VLocity DMU Sets. Upgrades to level crossings and tracks on the line are currently being undertaken to allow this transition to occur, allowing faster and more frequent services between Warrnambool and Melbourne. The future of the Warrnambool line is looking bright, a far cry from when it was threatened with closure in the mid 1990s.

Brian Brady

Above: On Sunday afternoon, 28 October, Clyde/EMD unit N 469 *City of Morwell* rolls across the Princes Highway at Warncoort with the 11:47am passenger train from Warrnambool to Southern Cross, Melbourne. Brian Brady

Right: Looking south-east, across the Princes Highway level crossing, at the new overbridge under construction. Brian Brady

Around Melbourne

PTV and Guide Dogs Victoria to install wayfinding technology at six new locations

People with low vision or blindness will have better access to Victoria's public transport network following the installation of innovative navigational technology at six of Melbourne's major rail interchanges. This comes in addition to Southern Cross Station, where the pilot program took place in 2017.

Public Transport Victoria (PTV) CEO Jeroen Weimar joined Guide Dogs Victoria (GDV) CEO Karen Hayes at Flinders Street Station on International White Cane Day – Monday 15 October - to announce the installation of the beacon wayfinding technology at:

- Flinders Street,
- Flagstaff (Melbourne City Loop),
- Parliament (Melbourne City Loop),
- Melbourne Central (Melbourne City Loop),
- Richmond (3.8 kilometres from Southern Cross adjacent to the Melbourne sporting precinct); and
- Footscray (5.62 from Southern Cross on the Sunbury, Werribee and Williamstown lines).

"This new technology will improve independent access to Melbourne's train network for people with low vision or blindness and make it easier for them to navigate these busy stations," said Mr Weimar.

"The roll-out of beacon technology is a great example of our ongoing commitment to improving access to Victoria's public transport network for all passengers," he said.

The beacons, located around the station concourses, send signals to the app *BlindSquare* which translates the signal into navigational content. The app then communicates this information to the user, giving directions to food outlets, toilets and lifts or escalators.

PTV and Guide Dogs Victoria have recently agreed to a three-year extension of their partnership to further improve accessibility on the public transport network.

Melbourne Art Trams return for 2018

The first 2018 Melbourne Art Tram entered service on Thursday 4 October, one of eight trams that will be seen on the Melbourne network until early 2019. The trams are part of the Melbourne International Arts Festival and will serve as a travelling exhibition space for artwork by established and emerging artists.

Each of the eight trams will be operated from one of Melbourne's eight suburban tram depots, giving people across the city the opportunity to see the mobile artworks.

Images of the 2018 Melbourne Art Trams can be found on the Yarra Trams website at: www.yarratrams.com.au/art-trams/or 2018 .

Wyndham Vale stabling facility contract awarded

Building of a new stabling facility north of Wyndham Vale station will soon begin following the signing of the works contract in late-October. (Wyndham Vale is located 40.3 kilometres from Southern Cross station on the Deer Park – West Werribee line. The station opened in June 2015 as part of the Regional Rail Link project.)

As announced in September, the stabling facility project is being delivered by the Level Crossing Removal Authority (LXRA) on behalf of Transport for Victoria.

The new facility is essential to meet interpeak stabling needs for V/Line trains operating on the regional rail network, while also ensuring there is capacity to house additional trains in the future. It involves the creation of a stabling yard that can house up to six V/Line trains, driver facilities and a bypass track connected to the Geelong rail line.

The design of the facility – housing up to six V/Line 'VLocity' trains – also caters for a further stabling expansion and a maintenance facility if needed in the future.

Together with LXRA, V/Line and Metro Trains Melbourne, the facility will be delivered by the Western Program Alliance comprising McConnell Dowell, Arup and Mott MacDonald.

Port rail shuttle projects to take trucks off local roads

Major rail freight hubs in Melbourne's north and west will be able to improve their rail infrastructure and move more containers by rail to and from the Port of Melbourne, with a $25.7 million investment under the Federal and State Government's Port Rail Shuttle Network funding program. The funding will see more than 70,000 containers moved on rail instead of on local roads. In 2017, expressions-of-interest were invited from private industry to deliver a series of rail freight shuttle initiatives on the existing rail network by connecting the Port of Melbourne to major freight hubs and businesses (see August 2018 *RD*, page 24).

Victorian and Commonwealth Government funding of up to $58 million has now been made available to support successful projects.

On Friday 26 October Victorian Minister for Ports Luke Donnellan announced that the first two funding allocations under the program are:

- $16.2 million to upgrade Austrak's rail facilities at Somerton; and
- $9.5 million to upgrade the SCT Logistics facility at Altona.

The funding for the Austrak terminal will allow:

- works to repair/upgrade the tracks in the terminal,
- installation of a southerly dual gauge turnout to Austrak's terminal, and
- upgrade of Somerton Yard to 23 tonne axle loads to enable heavier trains to use the yard and terminal.

Austrak intends working with DP World to provide shuttles to the Port of Melbourne, a distance of around 23 kilomtres. A train operator has yet to be selected. The Austrak Business Park at Somerton is a joint venture between Austrak AFM and General Property Trust. The joint venture is developing a multi-modal freight terminal on a 129 hectare site.

SCT has not as yet revealed its plans for expenditure of its funding but the company had already planned to enlarge its Altona site to cope with a significant expansion in container business following Aurizon's exit from interstate intermodal services. Container traffic has risen from eight per cent to 30 per cent of SCT's business since Aurizon's departure.

Freight Victoria is currently assessing a proposal put forward by the Port of Melbourne Ltd which will deliver a 'full on-dock' rail solution by integrating the stevedore and rail terminals at the port. As a result, funding allocated for port-side improvements will be placed on hold while the government considers the Port of Melbourne proposal to deliver the port side stage of a Port Rail Shuttle Network.

The government investment will be supported by an additional $46 million in private-sector funded upgrades. The projects will help maintain the Port of Melbourne's position as the largest volume container port in Australia and help deliver a reduction in transport costs.

This project team has already successfully removed level crossings at Koroit Creek Road in Williamstown North and Abbotts Road in Dandenong South (see September 2018 RD, page 29) and is now building a new road bridge to remove the level crossing at Aviation Road in Laverton (located on the Werribee line 21 kilometres from Southern Cross station).

The new stabling facility will be completed by early 2020 to help replace existing stabling at E-Gate near Footscray, which will make way for an extension of Wurundjeri Way as part of the West Gate Tunnel Project.

LXRA prioritising future level crossing removals

Victoria's Level Crossing Removal Authority (LXRA) has prioritised a further 25 level crossings for removal, using the Victorian Government's new Site Prioritisation Framework.

There are a range of different factors which may warrant removal of a level crossing. Over the past 18 months, LXRA and Transport for Victoria have worked to develop and apply a framework to prioritise future removal locations.

The *Prioritising Future Level Crossing Removals: Site Prioritisation Framework* logically navigates the complexity of the prioritisation task.

The framework is underpinned by four key principles:

- **Safety:** prioritise sites with a record of incidents or a high risk of incidents.
- **Movement:** prioritise sites where excessive delays caused by high train frequencies and high traffic volumes cause delay and unreliable journeys.
- **Place:** prioritise sites where the level crossing divides communities and impedes access to important facilities.
- **Delivery:** prioritise sites where there is an opportunity to increase investment efficiency and minimise disruption by delivering jointly with other projects.

Victoria is in an unprecedented transport construction boom with $38 billion of projects in delivery, so selection of future level crossings must seek to realise investment efficiencies and minimise disruption impacts by leveraging concurrent projects across the network.

The following level crossings have been prioritised for removal using the new prioritisation framework:

Sunbury Line:	Gap Road – Sunbury
Mernda Line:	Cramer Street – Preston
	Murray Road – Preston
	Oakover Road – Preston
Werribee Line:	Old Geelong Road – Hoppers Crossing
Frankston Line:	Glen Huntly Road – Glen Huntly,
	Neerim Road – Glen Huntly
	Chelsea Road – Chelsea
	Argyle Avenue – Chelsea
	Swanpool Avenue – Chelsea
Upfield Line:	Munro Street – Coburg,
	Reynard Street - Coburg
Belgrave/Lilydale Line:	Union Road – Surrey Hills
	Mont Albert Road – Mont Albert

A copy of *Prioritising Future Level Crossing Removals: Site Prioritisation Framework* can be downloaded at www. levelcrossings.vic.gov.au .

Oakleigh Station upgrade

Upgrade works at Oakleigh Station are set to commence in the coming months. (Oakleigh is located in south east Melbourne, 16.6 kilometres from Southern Cross station on the Pakenham and Cranbourne lines.)

A key feature of the upgrade will be the construction of a new landscaped forecourt and the reconfiguration of tracks on the southern side. This will give passengers direct access to city-bound trains from Haughton Road.

Lighting and CCTV will be added throughout the station – including the new forecourt, platforms and the station's underpass, which will also be made deeper. Lifts will be installed, while ramps will also be re-designed to meet Australian disability standards.

More myki gates will be added to speed up passenger flow, while other improvements will include improved canopies over north and south side ramps, and a refreshed waiting room. The upgrade will also allow for the restoration of an original station building facade on the north side.

The Oakleigh Station upgrade is expected to take around 12 months to complete.

Clyde/EMD unit G532 heads Qube Logistics' APEX empty stone train towards Kilmore East on Friday 5 October. Dennis Forbes

High Capacity Metro Train test train unveiled

In a media event at Newport Workshops on Tuesday, 30 October the first of 65 seven-car suburban High Capacity Metro Trains (HCMT) being built by the Evolution Rail consortium for the Melbourne suburban network was unveiled. Attending the event was Victorian Premier, Daniel Andrews, and Minister for Public Transport and Major Projects, Jacinta Allan, together with much of the HCMT project leadership and production team involved in the commissioning of the trains at Newport. More than 175 workers are employed in the HCMT project at Newport, including fifteen workers who were made redundant when Toyota closed its Altona (Melbourne) plant. The first train, which is not completely fitted out internally, is to undergo initial testing at Newport, including car levelling adjustments for the suspension, water tightness tests, car level electrical tests and a range of component and sub-system tests. After completion of this test phase the first train will be hauled to the purpose-built maintenance facility at Pakenham East for further trials before commencing mainline testing in 2019. Two train simulators are being provided for driver training.

The first HCMT is expected to be in revenue service from around mid-2019, initially working on the Cranbourne and Pakenham lines and the 455-car order is scheduled for completion by 2023. The trains will eventually operate through to Sunbury via Melbourne's $11 billion, nine-kilometre Metro tunnel now under-construction between North Melbourne and South Yarra via the CBD. The new railway will incorporate five new stations. Each HCMT will provide 20 per cent more passenger capacity than any train in the current Metro Trains Melbourne fleet.

The Evolution Rail consortium has been contracted by the Victorian Government, as part of a Public Private Partnership (PPP) to deliver the $2.3 billion HCMT project. As part of the project Evolution Rail will finance, design, build and maintain the trains for 35 years. Construction of a HCMT maintenance facility at Pakenham East and a light service facility at Calder Park is also part of the project. The Evolution Rail consortium comprises Downer, CRRC (Changchung) and Plenary. CRRC is manufacturing the body shells while Downer will oversee the fit-out and commissioning at Newport and provide long-term maintenance. Downer has spent $16 million to upgrade part of Newport Workshops. Plenary, an independent long-term investor and manager of infrastructure, is arranging the finance for the project while Public Transport Victoria is overseeing the PPP.

Above: On Tuesday, 30 October, Minister for Public Transport and Major Projects, Jacinta Allan, join members of the HCMT project leadership and production team for a group photo at the works. Downer
Left: The first of Melbourne's HCMT seven-car trains awaits commencement of testing, at Newport Workshops. Downer

BHP Iron Ore Train derailed

On the morning of Monday 5 November, BHP iron ore train M02712 from Mining Area C consisting of 268 wagons and four locomotives (recent information suggests 4420 and 4434 leading and 4472 and 4440 at the midpoint of the train as distributed power) stopped at the 211km point at about 04.40 on a falling 1 in 66 gradient after an inter-car ECP connector disconnected, triggering a 120% ECP brake application. While the driver was still on the ground trying to locate the disconnection, the train moved away when the brake application automatically released after an hour and the train was finally derailed intentionally near the 120km point.

Looking at the official curve and gradient diagram book that was in use during 1976, the derailment location at 120km is called 'Turner' after the nearby (112km) Turner River. This was a 2km long passing siding in 1976, but is now just a location on the double track line. The points may have given access to a short siding for track machines or damaged wagons or may have been a crossover between East and West lines.

The train was stopped at 211km on a falling 1 in 66 grade (the steepest on the line) at an elevation of 450 metres. The line is almost continuously falling gradients to Turner, at an elevation of 210 metres. Between 165km and 155km, the line climbs from 260 m to 280 m at about 1 in 180, the only significant climb for loaded trains on this section. Reports suggest the train exceeded 110km/h despite the lack of power applied.

It is possible that neither the train driver nor train control were aware of the feature of the 120% emergency application that released the brakes after one hour. Had a conventional air brake application been made, this would have overridden the ECP application and held the train until the driver returned and recharged the main train pipe.

However, it appears that BHP expected that the Automatic Train Protection System would have stopped the train, at the next signal location at Garden South, one kilometre from the point at which the train stopped, but it appears that the ATP system did not operate as expected with the train as configured, after the runaway.

It was very difficult to judge how many wagons were damaged from the aerial photographs, but only around twenty wagons remained on the track. The two mid-train locomotives were badly damaged (identified as 4472 and 4440) but the leading units could not easily be identified from the aerial photos.

Peter Clark

Above: One of the locomotives damaged in the derailment, 4472 is seen leading a train on 14 June 2015 at 212km on the East line on the 1 in 66 falling grade, on which train M02712 was stopped on Monday 5 November. The train involved stopped almost exactly one kilometre closer to Port Hedland, then ran away while the driver was inspecting the train. Peter Clark
Right: Locomotive 4472 is seen amongst the wreckage of the train at Turner following the derailment. This is reported to be one of the mid –train locomotives. The wreckage was cleared and trains were running again within a week. Supplied

NR 86 with train 5AP *Indian Pacific* from Adelaide to Perth passes Julimar Road, West Toodyay with a lengthy 29 cars + 1 motorail carrier, fully loaded with another crowd of tourists ready to visit the West Australian wildflowers on Saturday 20 October. The wildflower season will soon be over and it will be followed be the Christmas/New Year holiday season and hopefully more long trains. Graham P Barnes

P2509, P2508 and P2513 on 1725 loaded Mount Gibson iron ore train just north of Wilroy (south of Mullewa) on Sunday 16 September. The line in the foreground was the original railway, replaced by a new line on a better alignment but still in-situ at a number of locations. Phil Melling

Clyde/EMD unit DBZ2310 *Shire of Manjimup* sits at Albany station ready to depart with 3604 empty woodchip train for Redmond on Tuesday 16 October. Evan Jasper

Rio Tinto running 34 autonomous trains a day

Rio Tinto is scaling up its use of autonomous trains in the Pilbara following regulatory approval in late May (see July 2018 *RD*, page 5), with the driverless trains now covering 290,000 kilometres a day.

The miner has been steadily ramping up its use of the AutoHaul technology since the National Rail Safety Regulator approved fully autonomous train operations.

The first solo pit-to-port journey in full autonomous mode only took place on Tuesday 10 July (see September 2018 *RD*, page 7) but the company is keen to have the technology operating across its 1700 kilometre rail network by the end of the year.

In a production update, issued on Tuesday 16 October, Rio Tinto said that "autonomous mode operations have increased to an average of 34 trains per day, equating to 290,000km or 45 percent of daily kilometres completed in this mode".

By the end of the project, about 200 locomotives and 50 trains a day will be run in autonomous mode.

The project had initially been expected to be finished in 2015, but it proved a far more difficult prospect than the miner's other automated systems projects for trucks and drills, and was beset by software problems, forcing a revised completion date of the end of 2018.

The total cost of the project is expected to be up to US$940 million, about 80 percent above the initial budget.

A Rio Tinto train with fully loaded fines iron ore seen at Roebourne heading towards Cape Lambert Iron Ore Port, on Monday 5 November, featured four locomotives at the front, instead of the usual two. Michael Pervu

Faster Trains to Canberra and the South

Text and images by Peter Clark

The NSW Government recently announced that it would spend the $4.2 billion dollars it received from the Commonwealth as payment for its share of the Snowy Mountains Hydro Electric Scheme on improving regional infrastructure, both road and rail. One of the stated aims was to reduce the rail travel time to Canberra to below three hours.

Some of the discussion on this subject tends to draw a chorus of 'Follow the Hume Highway', sounding rather like the Munchkin chorus in *The Wizard of Oz* of 'Follow the yellow brick road'. Sydney has often been likened to 'The Emerald City', but the grades on the current Hume Highway are often much greater than would be acceptable for rail. The cost would be high and the time saving might not justify that high cost. Certainly, with 4.2 billion dollars being split between modes and locations across the state, we must anticipate less than one billion being available for Canberra and the South.

Presently, trains take just over four hours between Sydney and Canberra, but there is not much potential for reducing running times on much of the present track alignment, particularly between Picton and Mittagong on the 1917 deviated main line, which relies on numerous curves to keep the gradient down to an acceptable level. I recall having breakfast in the dining car of the *Sydney Express* on this section years ago, and my coffee cup sliding across the table, first in one direction, then the other as we took the curves at speed.

Two possibilities stand out:

- Returning passenger trains to the former Picton Mittagong Line
- Building a new line connecting Canberra to Goulburn

The first would be relatively inexpensive, and would eliminate the very sharply curved current main line between Picton and Mittagong, allowing higher speeds on the steeply graded but relatively straight original main line. A couple of problems come to mind: the NSW Rail Museum currently uses the loop line as far as Buxton, and the residents of Thirlmere would not appreciate high speed passenger trains running through their township. While there are significant time savings by using this route, they are of the order of ten to fifteen minutes, not enough to justify it on its own.

The second option outlined would be to build a new line from Goulburn to Canberra, following the Very High Speed alignment outlined in the Federal Government's report of some years ago. The alignment recommended in that report ran from Goulburn Airport, south of the town, pretty much parallel to the present Hume Highway, crossing the Hume just east of Chain of Ponds road where it passes over the existing line at Jerrawa Creek, just east of Jerrawa itself. The connection to Canberra was made by a spur line branching from the main line to Melbourne just east of Gundaroo Road, a few kilometres south of Gunning.

Building a new line on this alignment would not be cheap.

It could be promoted as a test of the practicality of building the Brisbane –Melbourne high speed line, and the main line section as a useful deviation to the present Main Southern Line. A connection to the present main line could be made at or near Joppa Junction (The proposed alignment crosses the present line to Canberra just south of Joppa Junction, and the connection at the south end could be made just east of the Jerrawa Creek bridge, where the proposed and current alignments cross.)

Sadly, the published drawings of the High Speed Alignment did not give any gradient profiles. If the gradients are no more severe than 1 in 66, the current ruling grade for the Main South on in the Up direction, (or if the alignment could be adjusted, with deeper cuttings and taller embankments, to give these grades without increased curvature) all traffic could be diverted on to the new alignment. This would bypass the present line over the Cullerin range, which combines very steep grades and sharp curves, reducing the speed of all trains.

A careful study of the current curve and gradient diagrams and the distances indicated on the HS alignment suggest that the new alignment would be ten kilometres shorter than the present line. If the alignment allowed 160km/h speeds, there would be a significant time saving between Goulburn and Yass for the XPT, and significant time savings for intermodal trains (assuming the grades can be made suitable). Even grain trains would be spared the long slow climb from Fish River to Cullerin, although care would be needed to avoid such trains delaying passenger services. If passenger trains were assumed to average 70km/h on the present section through the Cullerin range compared to 160km/h on the new alignment, more than 40 minutes would be saved by this deviation alone.

But we are only discussing the Main South here. The spur line to Canberra would run pretty much due south parallel to Gundaroo Road past Gundaroo and Sutton, cross the Federal Highway just north of the Monaro Highway interchange and run parallel to that road, probably to a new terminal at Canberra Airport. (The HS report envisages a three kilometre tunnel under Mount Ainslie with an underground station on Ainslie Avenue adjacent to the shopping centre. This might be a useful addition in future but would increase the cost for the present proposal.)

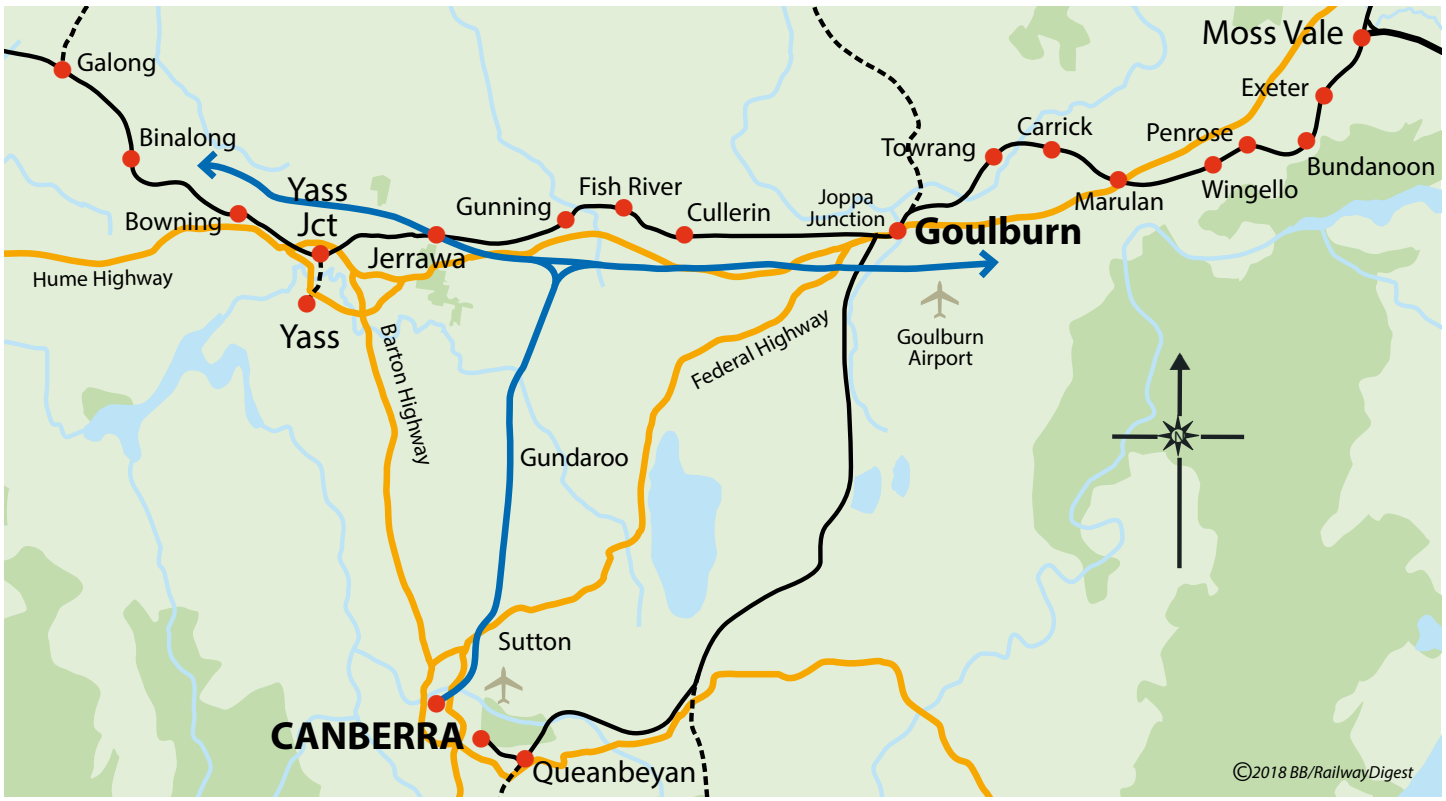
The new Canberra line would be 80 kilometres long from Joppa Junction, compared to 90 kilometres for the present line. However, it would permit speeds of 200km/h or more. In the case of the present *Xplorer* trains, they would be allowed 140km/h, so would reach Goulburn in about 35 to 40 minutes. As I write this, SP34 is on its way from Canberra to Goulburn, on time, departing at 12.00 due at Goulburn at 13.28. With the new alignment, a saving of about an hour could be made with existing trains just between Canberra and Goulburn. Any new trains could be allowed 200km/h on such an alignment.

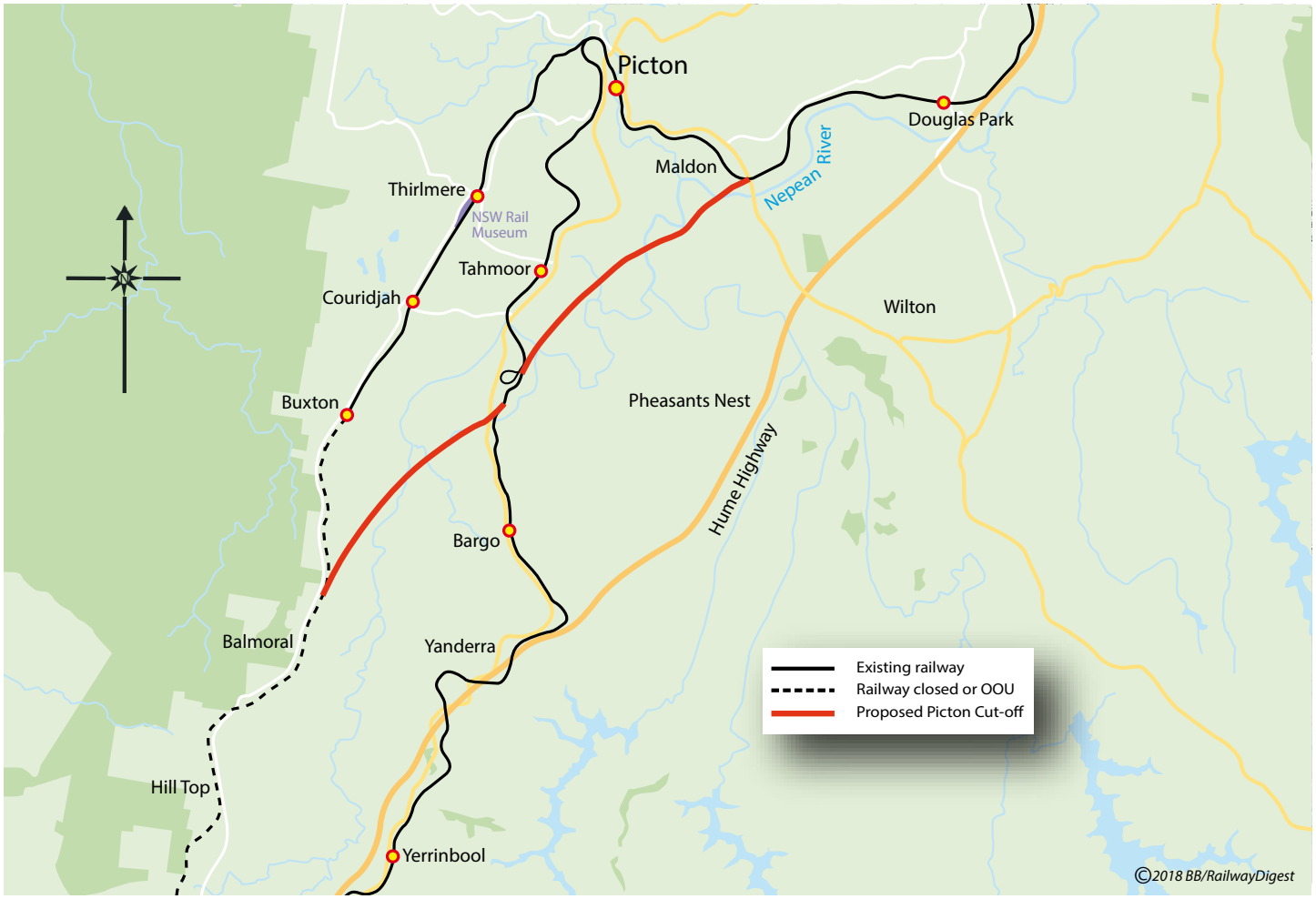
To spread the cost, the Joppa Junction to Jerrawa deviation could be built initially as single track, perhaps with a passing loop between Gunning and Joppa Junction, but the earthworks and bridges should be built for the final double track. Since the old line remains in place, heavy grain trains and steel trains could continue to use the old line whenever conflicts with passenger services could arise.

If the High Speed line were to be completed, the existing trains on this Joppa Junction to Jerrawa section could revert to a single line with bi-directional signalling with similar arrangements for high speed trains.

Left (page 36): Train SP34, led by EC2521, joins the Main South from the Canberra line on Saturday 28 July 2018. This is a convenient location to link the High Speed alignment with the present main line. The connection would probably head south-west in the middle background, rather than follow the Canberra line south. If the alignment was used as a deviation of the main south it would be double track. Below: Train 4PS6 rounds the sharp curve near the lower bridge on Saturday 10 March 2018, led by locomotives NR2, NR85 and AN3, climbing towards the highest point on the Southern Line at Cullerin. These curves reduce the grade and increase train loads by lengthening the climb but restrict speed for trains both climbing and descending the grade.

Above: A QUBE loaded grain train led by RL309, 1431 and CM3315 passes under the Armour's Road bridge on the east side of the horseshoe curve between Oolong and Jerrawa on 5 May 2018. The high speed alignment passes just west of here and could link with the existing main line on the south side of the horseshoe near the Jerrawa Creek bridge.
Below: The prefered alignment (shown in dark blue) for the Goulburn/Yass/Canberra deviations, from the HSR Phase 2 Report.





Initially there would be no need for the triangle junction near Gunning, and this could be a simple junction as first built. There might be interest in running the overnight XPTs via Canberra, since the new section would save about half of the extra time required for diversion through Canberra. Overnight services might be better received if 'Business Class' seating with partitions and relatively flat 'beds' could be provided in the XL car or its replacement, at least for Canberra–Melbourne and Canberra–Sydney.

However, there is a political problem with the new line. While all but the last twelve kilometres or so are in NSW, the line will no longer serve Queanbeyan, the largest NSW city in the area, and in Deputy Premier John Barilaro's electorate. Providing a greatly improved service to Canberra but only indirectly to the voters in your own electorate might be a problem. The line could be extended to Queanbeyan from Canberra Airport fairly easily but it is doubtful that that cost could be justified.

A Picton Cut-Off

However, avoiding the doubling back that occurs at Picton has some merit. A line from just north of Maldon directly to just south of Tahmoor Colliery would avoid much of this slow and indirect alignment. This would not be cheap either, sadly. The line would start on a bridge similar to, but at 90 degrees to that on the proposed Maldon–Dombarton line. It would have at least two more bridges, another over the Nepean River again as it curves to the east, and at least one over the Bargo River. This would be about ten kilometres long and (as far as I can tell from the curve and gradient book) would rise about 150 metres to the existing main line alignment. If this was carried out in a single gradient, it would be about 1 in 66, and would be acceptable for freight trains. This should be built to double track and would divert freight and long distance passenger trains from the line through Picton. The local passenger trains should continue to provide a service to Tahmoor and Picton, which would otherwise lose their services.

This, again according to my reading of the diagrams, would reduce the existing distance by ten kilometres. Assuming passenger trains could run at 120 km/h over the new line compared to 70 km/h over the old line, this would save nearly ten minutes on this section alone (and the removal of freight trains through town should be popular in Picton.)

But suppose we could combine this with a further time saving alignment. If a line were built from the junction point near Tahmoor Colliery to Balmoral on the loop line, again about ten kilometres, passenger trains could avoid the heavily curved main line north of Mittagong Junction, trading it for the straight but very steep (1 in 33 to 1 in 30) grades of the former main line. The grades on this line should not be as steep as those from Maldon to Tahmoor, but since this line would mainly carry only passenger trains, the grades are less significant. This line would combine the potential time savings of the loop line route with the time savings of a route avoiding Picton, perhaps as much as 25 minutes in all, while avoiding upsetting the rural quiet of Buxton and Thirlmere. Hill Top would not be so lucky, however...

The loop line would require complete rebuilding on the original 1860s alignment, eased where possible on the curves, to the highest present standard, to allow speeds of up to 160km/h where possible. It will not be practical to use double track, but since this line would be restricted to passenger traffic, this might not be a problem over the relatively short distance. Concrete sleepers could be sourced from Braemar, giving the shortest possible delivery journey.

The present effectively unfenced loop line would need fencing to current standards and gates and bells at any level crossings if fast trains are to run on this line. It may be worth building road over or underpasses if this is to be a permanent arrangement, and the proposed high speed line is not constructed.

But the NSW Rail Museum's line could be extended to connect with the new line near Balmoral, and the more powerful locomotives could be used to run trains via Hill Top to Bowral and Moss Vale, so the sound of steam could be heard again in the deep rock cutting north of Hill Top. The reduction in traffic at Picton would simplify the connection between heritage trains and regular services at Picton.

Denison Street, Rockhampton

Mike Martin

You'll sometimes hear visitors or tourists say that "Rockhampton is the town where the railway line runs down the middle of the main street". Denison Street, however, is not actually the main street of Rockhampton.

Up until August 1980 – when the new Albert Street bridge over the Fitzroy River opened – traffic using the highway and travelling north through Rockhampton would travel west along Denison Street until Fitzroy Street and then right into Fitzroy Street, and cross the old Fitzroy bridge over the Fitzroy River (still in use today.). Today, road traffic from the south travels along George Street (effectively part of Highway One) until Albert Street and then turns right and crosses the river, via the Albert Street bridge, to North Rockhampton where it joins the former – and now the main – Bruce Highway. In fact you can now no longer travel along the full length of Denison Street without a diversion before continuing your journey by road.

The railway line in Denison Street was constructed in the late 1890s to get railway traffic across the Fitzroy River – via the Alexandra Bridge, opened in 1899 – to North Rockhampton to take sightseers to the seaside at Yeppoon and Emu Park, and it also later formed part of the North Coast line between Brisbane and Cairns, completed in 1924.

Essentially Denison Street, starts at the northern end of the Rockhampton railway station in Stanley Street and runs west for about 1.5 kilometres before turning right at North Street where the line then runs across the single track Alexandra bridge. In Denison Street, the line crosses several busy intersections, the main ones being Stanley Street, Fitzroy Street and Albert Street but also including several other intersections like Archer Street (near the old Archer Park station), Derby Street, William Street, Denham Street and Cambridge Street.

For many years there was much talk and rumour about moving the railway line from Denison Street and, instead, building a new bridge at the northern end of Stanley Street, but nothing has happened or is likely to happen in the near future. Since the new Bruce Highway along George Street has been opened, there have been fewer road/train crashes at the various intersections; interestingly, the blame for these incidents seemed to be usually levelled at the railway, despite the vast majority of

crashes being caused by motor vehicles failing to give way to trains at the various 'Stop' signs.

In the early 1990s the Alexandra bridge was converted to a single track to enable the bridge to take the heavier axle loads of modern diesel locomotives – presumably the 116.7-tonne 2800 class GE units.

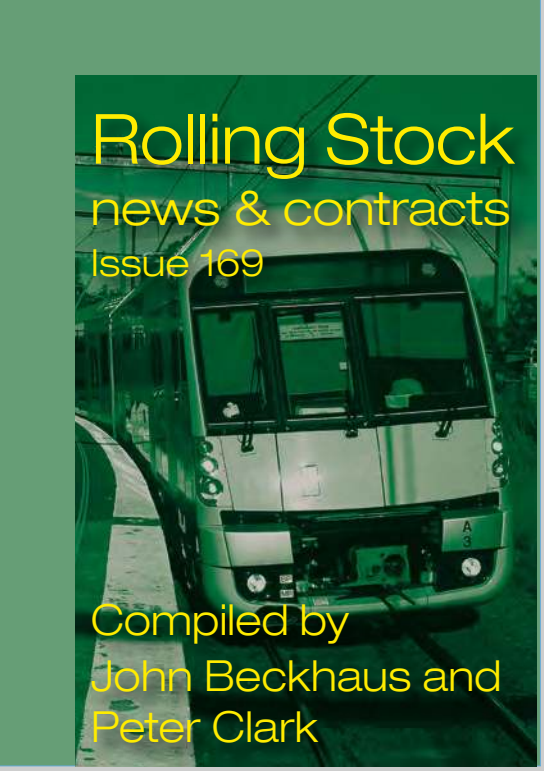
About the same time, Denison Street was converted from a dual-track 25km/h railway to single line working at 15km/h, with the aim to reduce the number of rail/road incidents at the nine intersections along the road/rail section.

Based on a recent visit to Rockhampton – where the writer spent about 10 days – it appears that current workings involve about a total of 8 to 10 trains along Denison Street in daylight hours. The trains appear to be fairly evenly split between Pacific National PN class and Aurizon 2800 class hauled intermodal traffic, although the occasional Queensland rail ballast train or similar may also use the line on occasions.

One particularly interesting aspect of the Denison Street line is that near Archer Street, the old Archer Park station still stands and houses the – unique to Australia – preserved Purrey Steam tram; this tram operates from 10am to 1pm on the first Sunday of every month.

So, for over 100 years, trains have traversed Denison Street and look likely to continue to do so, much to the curiosity and interest of tourists and railway aficionados.

Left (page 40): Just before 8am on Saturday 8 September, Goninan/GE 2800 class locomotive 2834 – along with dead-attached units 2390 and 2200F – trundles southbound along Denison Street, approaching Cambridge Street. Remnants of the previous additional track can be seen in the foreground. The line into the old Archer Park Station, where the Purrey Steam tram is housed, can also be seen curving away to the right (see November 2018 *RD*, page 54). Mike Martin
Above: Early on Saturday morning 28 July, Pacific National EDI/EMD unit PN003 is northbound between Denham and Fitzroy Streets with a lengthy intermodal freight train. Malcolm Holdsworth
Right: On Tuesday morning 8 December 2015, Aurizon locomotive 2807 hauls a freight train north along Denison Street between William Street and Denham Street. James Chuang



SPENO Ultrasonic Testing Vehicle US 7

John Beckhaus and Peter Clark

SPENO International was founded by Frank Speno in 1960 and is headquartered in Switzerland. The current name Speno International SA was adopted in 1965 and also in that year the company's first track inspection train was built.

SPENO's involvement in Australia commenced in 1969 when a rail grinding train was supplied to Hamersley Iron in the Pilbara region of northern West Australia. The company has consolidated its rail grinding activities since then, expanded into ultrasonic rail flaw testing and track geometry, with contracts in rail testing and grinding extending to companies such as BHP, Rio Tinto, FMG, PTA, Sydney Trains, and Australian Rail Track Corporation. The company headquarters in Australia is in Cloverdale in Perth.

SPENO has developed a new approach to equipment design for ultrasonic rail testing. The new system uses a multi-element phased array unit that replaces the traditional approximately ten probes that inspected the rail at fixed angles. Phased-array units have been used for non-destructive testing but have been mainly limited to semi-static hand scanning of wheels and axles etc. The new SPENO system enables the ultrasonic testing of the rails at speeds up to 80 km/h. The second innovation by SPENO is designing a carrier trolley that protects the

Above and above right (page 47): Two views showing opposite sides of the SPENO Ultrasonic Measuring car US7 operating in the Cullerin Range in southern New South Wales on Saturday 8 September 2018. Peter Clark
Right: This view in Goulburn on Saturday 8 September 2018 shows the measuring unit under US7 in the raised position for normal travel. The protective belt is around the rollers at each end of the testing unit with the testing sensors mounted along the unit above the lower section of the belt. Peter Clark

phased-array unit from mechanical shocks. The testing unit is enclosed in a continuous belt that isolated the transmitter-receiver units from any rough rail or rail joints and while passing through point work or crossings while ensuring the constant contact that is necessary for ultrasonic testing. The closed-loop coupling belt running around two return pulleys provides this protection. The external surface of the belt between the two rollers adapts to the top of the rail whilst the shoe probe slides on the internal surface of the belt. In this way the probe is never in direct contact with the rail. Belt thickness and material quality have been chosen to assure acoustic coupling and minimal signal attenuation while affording adequate mechanical resistance to friction with the rail. Probe life is generally improved compared to the conventional sliding directly on the rough rail surface. The device allows the use of high-tech piezo-electric transducers giving best quality for standard recording or the use of a phased-array probe.

The multi-element phased array provides the flexibility for inspections. A single array can generate the same orientations of the ultrasonic beams as those produced by several mono-crystal probes used on previous testing vehicles. In these earlier systems the rail is scanned at +45 degrees, 0 degrees and -45 degrees. The industrial applications of phased-array technology are usually limited because of the need for a low speed during testing. A conventional phased array works sequentially doing only one angle of attack at a time. In a high speed pass the time is not available to do two or more consecutive sampling transmissions. Ultrasonic testing vehicles at 80 km/h using conventional probes usually sample the rails every four millimetres.

SPENO have developed this system, which reduces the time taken for sequentially testing. The multi-element phased array tests at the preferred angles of +70 degrees, -70 degrees, +35 degrees, -35 degrees and 0 degrees although the new equipment can be set up for different detection angles if required. The vehicle speed can go above 80 km/h with a sampling frequency of 6 kHz.

The principle of operation consists of sending an array of ultrasonic pulses into the area where defects are assumed to be and to look for the peaks of maximum energy reflected back to the transducer. The unit reviews the position and amplitude coherence of the peaks according to the shape of the emission and surmises the possible defects in the rail. The summation of the amplitude of the electrical signals arriving in a coherent gate represents the energy reflected by a defect. The angle and the position of the defect are deduced from this information. The process allows one-shot emission of an ultrasonic wave into the rail from a multi-element probe according to various beam directions and focal points. The reception of all the returning reflections and the treatment of the numerical signals is in real time. The sliding maximum of a set number of samples of the energy curve is used to determine the level of dynamic noise above which the energy peaks are retained. The next step tests for a variation in the energy curve that corresponds to the slope, and therefore the time of the rise of an echo. If the test is positive the sliding detector of the dynamic noise is blocked and a gate is opened. From this gate it is possible to detect the highest value of the signal amplitude and locate its position. Finally, the gate is closed and the sliding detector of dynamic noise is re-enabled.

The US 7 vehicle was assembled by SPENO in Perth during 2018, but was carried by road low loader to Sydney.

Ultrasonic Test Car US7

Length	16.4 m (over body)
Height	4.0m
Width	2.56m (over body)
Bogie Wheelbase	1.8m

Acknowledgment is made to SPENO and R. Alaix's paper *"High Speed Rail Testing with Phased Array Probes".*

Rolling Stock contracts and deliveries

Gauge mm	Qty	Class	Description	Builder - Location	Jul 18	Aug 18	Sep 18	Total
LOCOMOTIVES								
Aurizon								
1435	3	6040	C44ACi 3246kW Locomotives 6043-6045	UGL Rail Broadmeadow	-	-	-	-
Linx Rail								
1435	2	G	JT26C-2SS 2240 kW Locomotives 516, 534	Purchased from Aurizon		Completed		2
Manildra Group								
1435	2	442	DL500G Locomotives 44208, 44209	Purchased from CFCLA		Completed		2
Progress Rail								
1435	3		GT46C-ACe Phase II 3200 kW locomotives #EMD 101- EMD 103	Muncie USA	-	-	3	3
Roy Hil								
1435	5	RHA	ES44 ACi 3200 kW Locomotives 1022 to 1026 (Pink)	GE Fort Worth Texas	-	-	5	5
Watco								
1067	8		1680 kW Diesel Locomotives (Queensland Grain Traffic)	NRE Mt Vernon Illinois	-	-	-	-
INTERURBAN PASSENGER CARS								
Rail Connect (NSW TrainLink)								
1435	222	OD	Double Deck Interurban EMU Driving Tlr Cars	Hyundai Rotem ROK - UGL Rail	-	-	-	-
1435	111	ON	Double Deck Interurban EMU Intermediate Motor Cars	Hyundai Rotem ROK - UGL Rail	-	-	-	-
1435	111	ONL	Double Deck Interurban EMU Intermediate Motor Cars (PWD tlt)	Hyundai Rotem ROK - UGL Rail	-	-	-	-
1435	34	ONL	Double Deck Interurban EMU Intermediate Motor Cars (tlt)	Hyundai Rotem ROK - UGL Rail	-	-	-	-
1435	34	OT	Double Deck Interurban EMU Trailer Cars	Hyundai Rotem ROK - UGL Rail	-	-	-	-
V/Line								
1600	4	DM(D)	*V'locity* DMU (a/c) # 1176-1179	Bombardier Transportation Vic	-	-	-	-
1600	4	TM	*V'locity* DMU (a/c) # 1376-1379	Bombardier Transportation Vic	-	-	-	-
1600	4	DM	*V'locity* DMU (a/c) # 1276-1279	Bombardier Transportation Vic	-	-	-	-
1600	9	DM(D)	*V'locity* DMU (a/c) # 1180-1188	Bombardier Transportation Vic	-	-	-	-
1600	9	TM	*V'locity* DMU (a/c) # 1380-1388	Bombardier Transportation Vic	-	-	-	-
1600	9	DM	*V'locity* DMU (a/c) # 1280-1288	Bombardier Transportation Vic	-	-	-	-
SUBURBAN PASSENGER CARS								
QueenslandRail								
1067	75	DMA	MU Driving Motor Car #3701-3775	Bombardier Savli, India	4	2	-	-
1067	75	DMB	MU Driving Motor Car #8701-8775	Bombardier Savli, India	4	2	-	-
1067	75	MA	MU Intermediate Motor Car #5701-5775	Bombardier Savli, India	4	2	-	-
1067	75	MB	MU Intermediate Motor Car with toilet #6701-6775	Bombardier Savli, India	4	2	-	-
1067	75	TA	MU Trailer Car (Pantograph) #4701-4775	Bombardier Savli, India	4	2	-	-
1067	75	TB	MU Trailer Car (Pantograph) #7701-7775	Bombardier Savli, India	4	2	-	-
Canberra Metro								
1435	14		*Urbos 3* Trams #201-214	Construcciones y Auxillar Ferrocarriles, Spain		Completed		14
KDR Yarra Trams (PTV)								
1435	30	E2	*Flexity Swift Trams # 6051-6080*	Bombardier Transportation Vic	1	2	1	19
1435	10	E2	Flexity Swift Trams # 6081-6090	Bombardier Transportation Vic	-	-	-	-
1435	2	W8	Rebuilt W6 Trams # 981, 983	Bendigo Tramway Workshop		Complete		2
1435	3	W8	Rebuilt W6 Trams # 856, 928, 961	Bendigo Tramway Workshop	-	-	-	-
1435	3	W8	Rebuilt W6 Trams #	Bendigo Tramway Workshop	-	-	-	-
Metro Trains Melbourne (PTV)								
1600	36	M	EMU X'trapolis Driving Motor (a/c) #253-288	Alstom Ltd (Poland - Ballarat Vic)	4	4	4	32
1600	18	T	EMU X'trapolis Trailer (a/c) #1427-1444	Alstom Ltd (Poland - Ballarat Vic)	2	2	2	16
1600	20	M	EMU X'trapolis Driving Motor (a/c) #289-308	Alstom Ltd (Poland - Ballarat Vic)	-	-	-	-
1600	10	T	EMU X'trapolis Trailer (a/c) #1445-1454	Alstom Ltd (Poland - Ballarat Vic)	-	-	-	-
1600	20	M	EMU X'trapolis Driving Motor (a/c) #309-328	Alstom Ltd (Poland - Ballarat Vic)	-	-	-	-
1600	10	T	EMU X'trapolis Trailer (a/c) #1455-1464	Alstom Ltd (Poland - Ballarat Vic)	-	-	-	-
Evolution Rail (PTV)								
1600	130	D	HCMT EMU Driving Trailer 9001-9065, 9901-9965	Downer Rail - CRRC, PRC	-	-	-	-
1600	65	M	HCMT EMU Motor 9201-9265	Downer Rail - CRRC, PRC	-	-	-	-
1600	130	M	HCMT EMU Motor 9101-9165, 9801-9865	Downer Rail - CRRC, PRC	-	-	-	-
1600	65	M	HCMT EMU Motor 9701-9765	Downer Rail - CRRC, PRC	-	-	-	-
1600	65	T	HCMT EMU Trailer 9301-9365	Downer Rail - CRRC, PRC	-	-	-	-
PTA Transperth								
1067	10	BEA	EMU Driving motor cars (a/c) # 4117-4126	Downer- Rail Division -Bombardier JV Qld	1	2	1	4
1067	10	BEB	EMU Driving motor car (a/c) # 5117-5126	Downer- Rail Division -Bombardier JV Qld	1	2	1	4
1067	10	BET	EMU Trailer car (a/c) # 6117-6126	Downer- Rail Division -Bombardier JV Qld	1	2	1	4
Sydney Trains (Transport for NSW)								
1435	96	N	EMU Motor (a/c) #1601-1624,1701-1724; 1801-1824,1901-1924	Hitachi-CRRC CNR Changchun RSW, PRC		No advice		48
1435	48	T	EMU trailer (a/c) #1301-1324, 1401-1424	Hitachi-CRRC CNR Changchun RSW, PRC		No advice		24
1435	48	D	EMU Driving Trailer (a/c) #1101-1124; 1201-1224	Hitachi-CRRC CNR Changchun RSW, PRC		No advice		24
Sydney Metro (Transport for NSW)								
1435	44	DTC	Terminal trailers for driverless *Metropolis* EMU #0101~2201, 0102~2202	Alstom Sri City Andhra Pradesh, India		No advice		
1435	44	MPC	Intermediate pantograph motor cars for *Metropolis* EMU #0103~2203, 0104~2204	Alstom Sri City Andhra Pradesh, India		No advice		
1435	44	MC	Intermediate motor cars for *Metropolis* EMU #0105~2205, 0106~2206	Alstom Sri City Andhra Pradesh, India		No advice		

Gauge mm	Qty	Class	Description	Builder - Location	Jul 18	Aug 18	Sep 18	Total
South East Light Rail (Transport for NSW)								
1435	60		*Citadis* X05 Trams #001-060	Alstom		No advice		
Newcastle Light Rail (Transport for NSW)								
1435	6		*Urbos 100* Trams #2151-2156	Construcciones y Auxiiar Ferrocarriles, Spain	-	-	1	1
FREIGHT WAGONS								
Aurizon								
1435	284	QHCH	Coal Hopper Wagon #57178 –	CRRC CSR PRC	32	No advice	-	-
Genesee and Wyoming Australia								
1435	180	AHAH	Coal Hopper wagons	CRRC	-	Complete	-	180
Roy Hill								
1435	130	GA	160 t gross Iron Ore Wagon (pink) 319x to 33xx	CRRC PRC	-	Complete	-	130
Watco								
1067	128		Two-unit Grain Hopper Wagons (Queensland Grain Traffic)	UGL/BFCY PRC	-	-	-	-
ROLLING STOCK MAINTENANCE								
Downer-Rail Division--Bombardier								
1067	18	-	Five-year contract for TransWA EMU Bogies and Wheelset Maintenance	GEMCO Rail WA		Ongoing		
John Holland								
1435	10		Rail Guidance System for 10 Trucks	HMA Techniplan Qld	-	-	-	-
PTA Transperth								
1435		-	Three-year contract for DMU *Prospector* Bogies overhaul	GEMCO Rail WA		Ongoing		
QueenslandRail								
1067	26	-	Overhaul Motor Bogies on SMU 220 Sets	Downer- Rail Division Qld	8	-	-	13
1067	20	-	Overhaul Motor Bogies on IMU 120 Sets	Downer- Rail Division Qld	-	-	4	8
1067	10	-	Overhaul Trailer Bogies on IMU 120 Sets	Downer- Rail Division Qld		-	2	4
1067	52	-	Overhaul Motor Bogies on SMU 200 Sets	Downer- Rail Division Qld	-	4	4	20
1067	26	-	Overhaul Trailer Bogies on IMU 200 Sets	Downer- Rail Division Qld	-	2	2	10
1067	19	160-260	Miscellaneous Pneumatic Equipment Overhaul – 16 Sets + 3 Spares	Downer - Rail Division Qld		-	-	19
1067	33	160-260	Overhaul Transformer	Downer - Rail Division Qld	2	3	1	17
1067	32	160-260	Overhaul Heating, ventilation, airconditioning	Downer - Rail Division Qld	2	2	2	17
1067	72	-	Overhaul Motor Bogies on 160/260 Sets	Downer - Rail Division Qld	4	8	8	24
1067	36	-	Overhaul Trailer Bogies on 160/260 Sets	Downer - Rail Division Qld	2	4	4	12
1067	6	1720	Locomotive Overhaul and upgrade	Downer - Rail Division Qld	-	-	-	-
1067	10	2400	Locomotive Overhaul and upgrade	Downer - Rail Division Qld	-	-	-	-
1067	2	SMU	Repair 3 Car Set SMU 202, 210	Downer - Rail Division Qld	1	-	-	1
1067	21	-	Overhaul L Series '*Lander* Cars	Downer - Rail Division Qld	-	-	-	-
TRACK MAINTENANCE EQUIPMENT								
Aurizon Infrastructure Services Group								
1435	1	SLM	Track Layer #4	Aurizon Workshops Redbank Qld		No Advice		
1067	2	MMA	Refurbish Ballast Tamper Mk III # 49	QR Workshops Maryborough Qld		No Advice		
1067	1	MMY	Ballast Cleaner RM 902 #520	Plasser Australia NSW		No Advice		
1067	1	MMY	Ballast Cleaner Unit FRM 902	Plasser Australia NSW		No Advice		
1067	1	MMY	Ballast Cleaner Hopper Wagon (MFS 40)	Plasser Australia NSW		No Advice		
ENSCO Inc.								
1435	1		Track Geometry Vehicle	HARSCO Rail Brendale Qld		No Advice		
KDR Yarra Tram								
1435	2		ACM 105SP Hi-rail Overhead Wiring vehicle	Aust Crane & Machine Vic		No Advice		
Laing O'Rouke								
1435	1		REG012X - Plasser Theurer SSP303 Ballast Regulator	Select Plant Hire (Laing O'Rourke) - Maitland	-	-	-	-
1435	1		TAMP009 - Plasser Cat Line Tamper 09-32	Select Plant Hire (Laing O'Rourke) - Maitland	-	-	-	-
1435	1		REG010X - Kershaw 0925 Ballast Regulator	Select Plant Hire (Laing O'Rourke) - Maitland	-	-	-	-
1435	1		TAMP030 - TrussType Switch & Prod Turnout Tamper	Select Plant Hire (Laing O'Rourke) - Maitland	-	-	-	-
1435	1		REG006X - Kershaw KBR-875 Ballast Regulator	Select Plant Hire (Laing O'Rourke) - Maitland	-	-	-	-
1435	1		TAMP031 - TrussType Switch & Prod Turnout Tamper	Select Plant Hire (Laing O'Rourke) - Maitland	-	-	-	-
1435	1		REG007X - Kershaw KBR-875 Ballast Regulator	Select Plant Hire (Laing O'Rourke) - Maitland	-	-	-	-
1600	1		TAMP044 - Pandrol Jackson 6700 Turnout Tamper (MTM)	Select Plant Hire (Laing O'Rourke) - Maitland	1	-	-	1
1600	1		REG013 - Kershaw KBR-0925 Ballast Regulator (MTM)	Select Plant Hire (Laing O'Rourke) - Maitland	1	-	-	1
1600	1		TAMP015 - Pandrol Jackson 6700 Turnout Tamper (MTM)	Select Plant Hire (Laing O'Rourke) - Maitland	1	-	-	1
1600	1		REG011 - Kershaw KBR-0925 Ballast Regulator (MTM)	Select Plant Hire (Laing O'Rourke) - Maitland	1	-	-	1
Queensland Rail								
1067	2		Refurbish TR-10 Sleeper Inserter/Extractor	HARSCO Rail Brendale Qld		No Advice		
1067	2	MMA	09-16/32 CAT Tamper #MMA 081, 082	Plasser Australia NSW	-	-	-	-
1067	4	MMB	SSP 302 Ballast Regulator #MMB 064-067	Plasser Australia NSW	-	-	-	-
1067	2	MMA	Unimat 08-457 4S Switch Tamper #MMA 083, 084	Plasser Australia NSW	-	-	-	-
1067	2	MMB	PBR 500 Ballast Regulator #MMB 068-069	Plasser Australia NSW	-	-	-	-
1067	2	MMA	08-12 Split Head Tamper #MMA 085, 086	Plasser Australia NSW	-	-	-	-
PTA Transperth								
1067	1		Track Recording Car	Mermec Italy	-	-	-	-
Swietelsky CPB Rail Australia								
830 to 3530	1		Robel 43.32 Rail Threader	Robel - Austria		Completed		1
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

Above: At Muswellbrook, NSW, on Saturday 23 June an empty coal train passes through, consisting of new Genesee & Wyoming AHAH coal wagons, including coupled set 02481 to 02484. Robert Rouse
Below: CAF *Urbos 100* tram 2151 rests in the Newcastle Light Rail depot yard on Friday 9 November, taking a break from test running (see report on page 12, this issue). Robert Rouse

Above: Aurizon's new UGL/GE C44ACi unit 6045, in company with fellow C44ACi unit CEY003, leaves Maitland heading back to the UGL works at Broadmeadow following a trial run on Tuesday 23 October. Robert Rouse
Right: On Tuesday 6 November, LINX Cargo Care Group unveiled the new livery for its Clyde/EMD G Class locomotives (G516 and G534) operating out of the LINX Intermodal Terminal at Enfield in Western Sydney. The two Gs, purchased from Aurizon, are crewed by SSR. LINX
Below: Three days later, on Friday 9 November, G516 was seen passing through Pagewood, on Port Shuttle train No. T171 from Botany to Enfield. Scott Mitchell

Armidale Council considers positive rail trail study

A rail trail on the disused New England rail corridor has the scenery and historic features to be a major attraction for visiting and local users and could be expected to pay for itself within a few years, according to a feasibility study considered by Armidale Regional Council at its Wednesday 24 October meeting at Guyra.

Based on the findings of the New England Rail Trail plan, Council resolved to endorse the development of a rail trail on the disused Armidale to Glen Innes section of the NSW Main Northern rail line, subject to securing funding (including funding for a more detailed business study with a cost-benefit analysis and investigation into operating costs).

"The consultant's feasibility report gives us confidence a rail trail on the New England corridor could be financially viable and a significant drawcard for this region, as well as a recreation and health asset for our residents," Armidale Regional Council Mayor Simon Murray said. "Its favourable findings give us a solid platform to pursue government funding and to take our investigations to the next step.

"That will include a detailed business case study and consultation with the community, now we have a much clearer picture of the proposed project, its estimated costs and potential benefits for the region".

The New England Rail Trail plan presented options for a full 103 kilometre trail from Armidale to Glen Innes and a shorter trail between Ben Lomond and Black Mountain. It says both options could conservatively be expected to pay off their projected costs – construction and maintenance – in around six years, based on the corridor's scenic beauty and historic features and the user numbers experienced by existing comparable rail trails.

The report estimated the full Armidale to Glen Innes trail would cost $24 million, including around $13 million for the section within the Armidale Region, and based on conservative projections could generate $4.5 million each year in tourism and local patronage.

A Ben Lomond to Black Mountain trail was estimated to cost $6.5 million and inject about $1.2 million into the local economy annually.

"While further steps must be taken before Council could fully commit to establishing the rail trail, investigations so far indicate the project would be a great way to utilise a corridor that has sat unused and idle for approximately three decades," Councillor Murray said.

"It's important to note this is not a choice between trains or a rail trail. In the approximately 30 years since rail services operated in the corridor, there has been no viable proposition to restore rail operations on that line and the State Government has firmly indicated it was highly unlikely any train services would be viable in the foreseeable future".

The consultant's plan states the NSW Government "has clearly indicated that" the railway corridor would remain in public ownership if it was converted to a rail trail. "Reinstatement of a railway line will remain possible as the land will stay as public land," the report says. "Given that a railway service has not been in operation for over 30 years, it is hard to envisage circumstances under which it would return".

Cr Murray said: "Given that scenario, the responsible action by Council is to explore alternative uses for the incredibly scenic corridor and the wonderful assets along its route.

"That alternative should provide widespread benefit to our community and from what we have seen so far, a rail trail certainly promises to bring those benefits for many years.

"If circumstances - such as technology, population distribution or commuter habits - changed enough for a train service to be viable again in the future, the land would still be there for that purpose".

At the council meeting, Cr Margaret O'Connor moved an amendment that would have seen the Rail Trail Study placed on public exhibition for public submissions. Speaking in support of Cr O'Connor's amendment, Cr Debra O'Brien said she had heard many wonderful suggestions for the use of the rail line over a number of years.

"It doesn't have to be rail trail or train, it can be a mixture of things. I think by not allowing people to make submissions we would miss out on some incredible suggestions and ideas," she said.

Councillors voted five-all on Cr O'Connor's amendment and it was lost on the mayor's deciding vote.

In his right of reply, Cr Bailey said he didn't think it would ever be possible to reopen the railway line north for some kind of tourist train because of the large amounts of money involved.

"The Rail Trail issue has soldiered on for a long time. I think we are all aware of the opinion of both sides of the argument," he said.

"This is a "now" project. This is a retail measure we can move forward with to revitalise Guyra. We can hopefully get some more cafes, some more B&B's happening here.

"And that's the sort of initiative I think we need to follow, not sit on the fence for another 12-months. We've got to begin to move forward and make some decisions".

The final resolution adopted by council read:

a) That Council acknowledges the completion of the Rail Trail Study;

b) That Armidale Regional Council endorse the development of the Rail Trail Project subject to external funding and that Armidale Regional Council does not commit any further funds to a Rail Trail project at this stage.

c) That when appropriate external funding is available, ARC will commission a business case that details financial and economic modelling for the Rail Trail project.

d) That the State Government be advised of Council's endorsement of the Rail Trail Project and be provided with a copy of the Study;

e) That Council seeks Government grant funding for its implementation;

f) That Armidale Regional Council commence discussions with Glen Innes Severn Council to:

Confirm Glen Innes Severn Council's commitment to the development of the broader Armidale to Glen Innes Rail Trail in partnership with Armidale Regional Council; and

Determine a plan for the development of the Rail Trail and the prioritisation of each of the stages.

The Save the Great Northern Rail Line Group, who support reintroduction of rail services, engaged Brian Fisher, a former Rail Infrastructure Corporation track manager to inspect the full length of the disused Armidale to Wallangarra section of the Main Northern line, and to prepare a scope of works for its reinstatement.

Mr Fisher estimates that reinstatement of the line would cost approximately $45 million with another $2-$5 million each for the construction or upgrade of freight terminals at Tamworth, Armidale, Glen Innes, Tenterfield and Wallangarra.

"I have performed walking inspections for the full length, from Armidale to Wallangarra ... taking digital images and documenting repairs required," Mr Fisher said. "There is no logic in pulling the line up. The cost to remove the line alone is more than the cost of repair".

Mr Fisher said if the track itself had to be dismantled, the job would be labour intensive because the rails would have to be removed from the sleepers using dog pullers.

"Especially because the track is in good, almost new, condition in places, such as from Armidale to Dumaresq," he said.

"Then you have to pick up all the rail scrap metal, dogs, plates, pins and anchors, that's tipper truck loads of scrap metal. Front end loaders and tip trucks to remove all the ballast at the rate of 4,000 ton per kilometre, or 200 bogie axle tipper loads per kilometre, that then has to be disposed of somewhere.

"On top of that, you have the expense of building the rail trail. That cost alone is more per kilometre than simply reopening the line, and the line between Armidale and Glen Innes could easily be recommissioned".

Armistice Day at Richmond Main

The Richmond Vale Railway Museum celebrated the Centenary of the First World War Armistice with a ceremony involving J&A Brown No 23, now restored as Railway Operating Company (ROD) steam locomotive No 2004, (Great Central Railway Gorton Works 1918). Cosmetic restoration of ROD 2004 to its original War Department condition began in July 2014, and on completion in June 2017 the locomotive was moved to its present display location. (See August 2017 *RD*, page 56.)

National flags and poppies were placed with ROD 2004, while on the adjacent track stood ex- John Lysaghts 0-4-0ST *Marjorie*, (Clyde Engineering B/N 462 of 1938). *Marjorie* had been specially fitted with a restored ROD whistle, which announced the start and the finish of the two minutes silence.

The last time that an ROD whistle would have been heard in the Hunter Valley was in June 1973, when the last remaining ROD locomotives Nos 23 and 24 were in steam at Hexham.

Along with RVRM members and the general public, a number of former Richmond Vale Railway employees attended the ceremony and were very surprised and pleased when they heard the ROD whistle. Several stated later that it brought back many happy memories for them of working with or observing the RODs hauling coal from the Stockrington Colliery to Hexham.

All agreed it was a fitting tribute to the Australian Railwaymen who served in the Railway Operating Companies in France during the First World War.

Graham Black

Above: ROD 2-8-0 No.2004 and 0-4-0ST *Marjorie* await the commencement of the ceremony. The ROD is decorated with the traditional red poppies, while on the adjacent fence are displayed the national flags of Australia, Great Britain and France, plus the 'Red Ensign', that saw widespread use during WWI and for many years after. Finally, the Flag Act 1953 declared it the flag of the mercantile marine. RVRM

Right: The ROD whistle, temporarily fitted to *Marjorie*, is sounded to announce the start of the two minutes silence. RVRM

Chasing 'Grandma' through the Cullerin's

Text and images by Ewan McLean

Over this year's October long weekend, Lachlan Valley Railway (LVR) ran the *Cruise Express to Griffith* Tour to coincide with the annual running of the Griffith Cup, with veteran Clyde/EMD 'Streamliner' 4204 (affectionately known as 'Grandma' by its present-day owners) and Goninan/Caterpillar unit 4716 providing the motive power.

Friday 28 September

Friday 28 September had sunny breaks in between the cloud cover but the seemingly imminent rain held off. I waited near the Biscuit Bridge (also known as the Bottom Bridge) on the old Hume Highway for 4204 and 4716 to arrive with LVR's *Cruise Express to Griffith* Tour, running as train No. 8L33. The EMD chant of 4204 wasn't under load as, in company with 4716, it drifted down the grade under a speed restriction through an S curve. I had an easy drive along the old Hume Highway back down to Gunning with 8L33 passing by at 09.27.

Upon entering the Hume Freeway, as I headed west, it soon became apparent that many people had the same idea of making the long weekend an extra long weekend, with many caravans, 4WDs and cars heading west to their different holiday destinations. The dual carriageway enabled passing manoeuvrers without any trouble but turning onto the (single lane in both directions) Burley Griffin Way provided more of a challenge passing vehicles that didn't seem to be in much of a hurry. I turned into Goondah and waited by the Goondah Road crossing for '*Grandma*' and her train that rolled by me at 10.24.

The traffic hadn't improved as I rejoined the Burley Griffin Way and it was hard going to hopefully get to the Linden Road Bridge at Cunningah before 8L33. I only had a couple of minutes to wait before 4204 and 4716 rolled around a right-hand curve and disappeared under the bridge and around a left-hand curve at 10.55 as 8L33 continued heading west towards Cootamundra. The traffic was now very heavy so I bailed out and headed back towards Gunning. At Cootamundra '*Grandma*' would be detached and 4716 would continue onto Griffith solo, via Junee and Narrandera.

It soon became apparent that many people had the same idea...

Monday 1 October

Monday was a beautiful spring day with plenty of sunshine and there was no need to wear a jumper. My mate Andrew and I went down to Binalong, with little traffic to hinder our progress – in stark contrast to last Friday! The old station at Binalong had an island platform with a footbridge at the western end. The steps leading down to the platform from this footbridge have been barricaded to prevent access to the island platform. The old water tank still sits up on the hill and two water columns still stand beside the Down main south line.

Soon we heard the EMD chant of 4204 as '*Grandma*' was now working up the grade towards us, going through Binalong at 14.39. Back out onto the Burley Griffin Way with the traffic heading home relatively light as we arrived at Goondah with a little time up our sleeve with 8L34 still working up that grade going by us at 14.52. We made a detour through Yass out onto the Coolalie Road making our way to Oolong.

The ruling grade was constant now all the way to the Top Bridge at Cullerin as the EMD chant of 'Grandma' was heard, as she was really getting into her stride, with black diesel exhaust billowing out as she maintained the momentum coming around a left-hand curve then a right-hand curve approaching the Armours Road Bridge, Oolong, at 15.29.

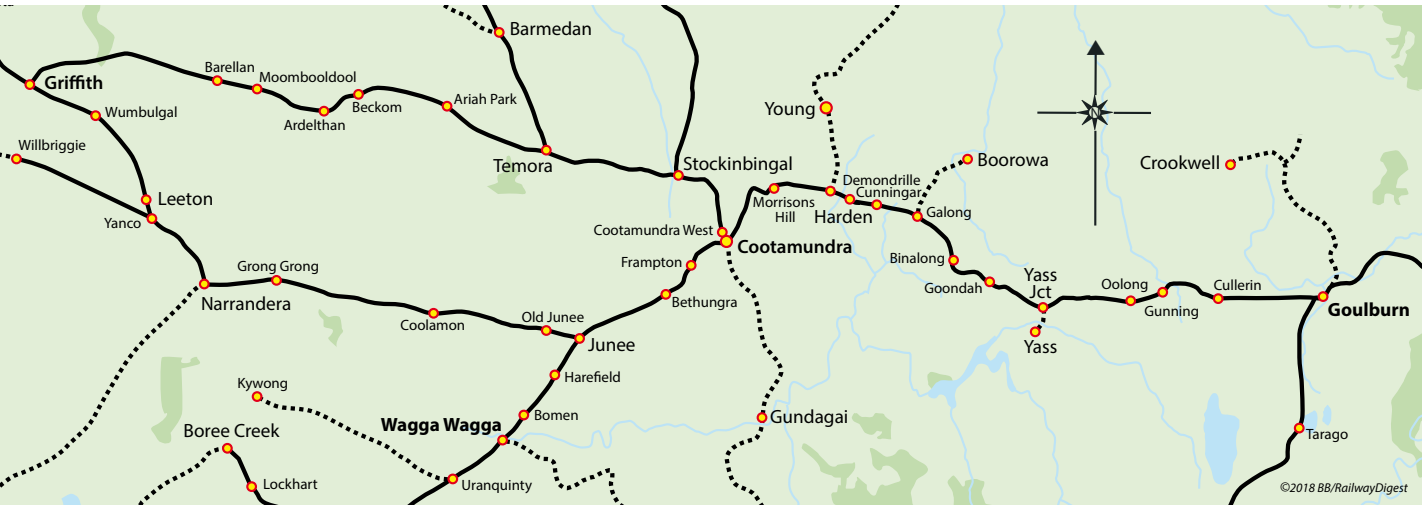
We arrived at the Biscuit Bridge on the old Hume Highway as the

Above left (page 50): On Friday morning 29 September, Lachlan Valley Railway's *Cruise Express to Griffith* tour train passes through open country with rolling hills near Gunning, on its way to Griffith via Junee.
Above: Three days later, the train is seen approaching the Top Bridge at Cullerin, on the return to Sydney, with 4204 in the lead. The six members of the 42 Class were built by Clyde Engineering, Granville, for the New South Wales Government Railways in 1955/56. Clyde Engineering held the Australian licence to build General Motors Electro-Motive Division (EMD) products, and the 42 Class was based on the US F9 Model. Fitted with an EMD 16-567C engine rated at 1750hp (1305kW) they were the first 'Streamliners' in NSW.

pinch of that ruling grade was now starting to make its mark! That distinctive EMD chant was now echoing off the Cullerin Ranges around us as 4204 and 4716 came around the right-hand curve with 8L34 and under the Biscuit Bridge at 15.53 with about a further seven kilometres to go before conquering the ruling grade!

Onto the Top Bridge at Cullerin where a few train enthusiasts had gathered as we waited for '*Grandma*' and 4716 to arrive with the *Cruise Express to Griffith*.

The ruling grade was now conquered as 4204 and 4716 enjoyed some respite as 8L34 rolled on towards Goulburn and beyond.



Above: On Monday afternoon 1 October, 4204 and 4716 bring the *Cruise Express to Griffith* tour train through Binalong, on the return journey. In the steam era, the two water columns served double-headed trains on both the Down main line and Down loop line (long since removed).
Below: On the return journey to Sydney, the train approaches the 'Biscuit Bridge' near Cullerin. The bridge supposedly acquired its nickname in the aftermath of an accident there, many years ago, involving a biscuit truck!

Above: Over the past 12 months, Puffing Billy's Engineering team have been converting locomotive 14A from coal burning to a light oil (diesel) firing system, aimed at minimising the risk of fire and allowing the railway to safely use steam locomotives on the Lakeside to Gembrook section of the line all year round. Following several months of testing and crew familiarisation, the loco was officially reintroduced to traffic as an oil burner on Thursday 18 October, the 20th anniversary of the re-opening of the Lakeside to Gembrook line. The commemorative train is seen arriving at Gembrook Heritage Station behind 14A. The oil conversion is the first of its kind outside of Europe. Developed in Switzerland by Dampflokomotiv und Maschinenfabrik (DLM AG), the conversion project has been a collaboration between DLM and Puffing Billy's engineering team, using burner technology developed on a series of brand new steam locomotives built by DLM's predecessor, SLM, for the Swiss and Austrian Mountain Railways. Val Rees

Below: Lithgow Railway Workshop is refurbishing a number of former *Southern Aurora* carriages acquired from the moribund ARHS ACT Division by 'G'Day Rail'. The first to be completed, Comeng-built twinette sleeping car NAM 2341, is seen at the Coal Stage end of Lithgow Yard on Saturday 27 October, coupled to SSR Clyde/EMD unit 4917 *Hugh Morris*. Effie Kelly

It has been a long time (60 years at least) since an A2 Class 4-6-0 worked a train to Echuca, but on Saturday 13 October Steamrail Victoria's annual *Echuca Explorer* trip this year featured R 761 and A2 986 double-heading from Melbourne to Seymour, with the A2 continuing solo to Echuca via Toolamba, where it is seen arriving at 11.21. Steve Ban

Colonial Tramcar Restaurant services halted

The iconic Melbourne Colonial Tramcar Restaurant service temporarily ground to a halt in mid-October after failing safety assessments due to "badly weathered" underlying structures.

The Colonial Tramcar Restaurant trams, regularly seen circling the Melbourne city's CBD and surrounding suburbs such as Albert Park, St Kilda and South Melbourne, have been suspended from service until they are compliant with Yarra Tram safety requirements and will temporarily operate as a "stationary dining experience".

In a memo circulated to staff, the tramcar operator said its fleet of W-Class trams failed safety tests because the structure of the trams was not up to modern standards. The memo said the condition assessment found the "wooden structural elements of these vintage trams are badly weathered, compromising their integrity in a collision".

Nicolas Gindt, CEO of Yarra Trams, said the operator would continue to support the tramcar restaurants, but that concerns for the safety of patrons and employees was its primary concern.

"While we appreciate that this decision is difficult for the restaurant tram patrons and employees, we cannot allow trams to run on the network that do not meet safety standards," he said.

Yarra Trams entered discussions with the tramcar restaurant providers in early 2016 about the need to upgrade the trams to meet current standards to remain on the network.

The tramcar restaurants are known for their elegant lunch and dinner tours.

After 35 years, and more than 3 million customers, the tram restaurants had not had any events that resulted in a serious injury to an employee or customer.

A sign of the times. Former Commonwealth Railways BRC&W/Sultzer 1067mm gauge DE locomotive NSU62, built in 1954 to replace steam power on the line, now stands on display by the side of the Stuart Highway at Adelaide River, Northern Territory, with the old station building in the background and the standard-gauge Darwin to Tarcoola line in between, on Wednesday 25 July. Rob Cook

On Saturday 10 November at the Alexandra Timber Tramway and Museum in north-east Victoria, a two-car tourist train is seen leaving the former Victorian Railway Alexandra Railway Station. The locomotive, No.1091, was built in 1943, as one of ninety-two 2ft gauge 4wPM locomotives fitted with Ford V8 engines, designed and constructed for the Australian Army during WWII by Malcolm Moore Ltd, Port Melbourne. It was reportedly not used by the army and was subsequently sold to the State Rivers and Water Supply Commission for use at the Rubicon Hydroelectric Scheme (now AGL Energy) 20 kilometres east of Alexandra, where it was renumbered 26C/4 and fitted with a snow plow – which it still carries. Following several years in storage, it was donated to the Museum in 2010. The larger of the two cars was built specifically for the museum and was funded by the former Apex Club of Alexandra. The doors in this car are from the toilets of a standard-gauge NSWGR carriage. The smaller of the two cars was built for the now defunct privately-owned Yangardook Tramway at Toolern Vale, where it was painted red and named *The Dustlander*. It was purchased by Alexandra Tramways museum in the late 1980s and repainted green. This car is fitted with seats from a former Melbourne cable-tram trailer. Both cars ride on 4-wheel bogies formerly used on the Rubicon to Alexandra Tramway The museum was established in the former Victorian Railways Alexandra station yard with the station building retained, with collections of light railway rolling stock from around Australia and locally from the Rubicon Hydroelectric Scheme tramway, Rubicon Lumber and Tramway company that used to share the southern end of the rail yard with Victoria Railway at Alexandra station. James Chuang

Inquiry into tourism opportunities for Tasmania's North-East rail corridor

A Tasmanian Legislative Council committee examining potential tourism opportunities for the North-East rail corridor has called for public input into the inquiry.

The inquiry is set to specifically look at the feasibility of the proposed Scottsdale-Lilydale Falls rail trail, the feasibility of the proposed Lilydale-Turners Marsh tourism railway, and funding and management of any other tourism developments along the railway corridor.

The Inquiry into the North-East Railway Corridor's terms of reference are:

To inquire into and report upon tourism opportunities provided by the Strategic Infrastructure Corridors (Strategic and Recreational Use) Act 2016 in relation to Tasmania's North East Railway Corridor with particular reference to:

1. the feasibility of the proposed Scottsdale-Lilydale Falls rail trail;
2. the feasibility of the proposed Lilydale-Turners Marsh tourism railway;
3. the feasibility, funding, future management and maintenance of any tourism developments on the North East Railway Corridor; and
4. any other matters incidental thereto.

There has been disagreement over the past two years over uses for the line.

The Launceston and North East Railway wants to restore the track to make a heritage passenger rail service while the Dorset Council, based at Scottsdale in far north-eastern Tasmania, wants the infrastructure removed to create a cycleway to link with other trails in the region.

The state government has expressed support for both proposals (see September 2018 *RD*, page 50).

Under legislation passed in 2016, changed use of a railway needs parliamentary approval.

Promised federal government National Stronger Regions Fund support of $1.47 million for the cycleway proposal expires in 2019.

Inquiry submissions closed Friday 2 November.

NSW Railways' 13 Class 4-4-2T locomotives operated the 5km Yass Junction to Yass Town 'tramway' for most of its existence, and today, 1307 can be seen on display at the Yass Railway Museum. Built in 1877 by Peacock, Peacock & Co as a 4-4-0 main line passenger locomotive, it was converted to a tank engine in 1902 for suburban and branch line work (which included a stint on the Yass Tramway). In its later years, it found useful employment at Sydney's Clyde Wagon Works and was not retired from service until 1972, after a working life of 94 years. Following many years of storage with the NSWRTM at Thirlmere, it was transfered to Yass Railway Museum in 1999. Mike Martin

Big move for Victorian Goldfields Railway

The Victorian Goldfields Railway says it be better able to meet growing demand with the support of a $500,000 state government grant to relocate its train stabling and servicing facilities to Castlemaine.

Member for Bendigo West Maree Edwards was in Castlemaine on Monday 22 October and said that relocating from Maldon would enable double the amount of tourist trips so that more people could experience the historic charm of the volunteer-run service. "Relocating the Victorian Goldfield's Railway base to Castlemaine provides the best opportunity to meet the growing demand for the historic rail service through Victoria's Goldfields," she said.

A business case, completed in 2017, identified that relocating to Castlemaine would enable Victorian Goldfields Railway to increase its visitor numbers from 20,000 to 40,000 patrons per year within five years. The business case found that two thirds of passengers on board the historic railway service at Castlemaine with most of those passengers travelling from Melbourne on V/Line services.

Currently, trains run with few or no passengers from Maldon to collect passengers from Castlemaine and this puts wear and tear on the trains and requires more time from volunteers. With the base relocated to Castlemaine, the railway will be able to run three times per operating day with more passengers on each service.

Any increase in tourism in the goldfields region will also have flow-on benefits to local cafes, shops and accommodation providers.

The Victorian Goldfields Railway is a not-for-profit organisation that would not be able to take on this project without the support of the Victorian Government through the Regional Tourism Infrastructure Fund.

On Saturday 22 October, the *Thru Runners* tour hauled by SSR's Clyde/EMD units C504 and C507 passes through Talong heading for Goulburn. Andrew Cobble

Level crossing upgrades on the SteamRanger Heritage Railway

Works to upgrade two level crossings on the Mount Barker to Victor Harbor railway line at Currency Creek, operated by SteamRanger, commenced in mid-October.

The existing passive 'Give Way' controls on the Goolwa Road (Mt Compass – Goolwa Road) railway level crossing and the Alexandrina Road (Main Goolwa – Strathalbyn Road) level crossing will be replaced with flashing light and bell assemblies to improve safety for road and rail users.

Due to the curves of the Alexandrina Road on the approaches to the crossing, Active Advance Warning Signs (signs with flashing lights that are activated by approaching trains to alert motorists) will also be installed.

Speed restrictions will be in place during construction, with works, undertaken by SteamRanger Heritage Railway, expected to be completed in December 2018, weather permitting. The upgrades are not expected to impact planned heritage rail services.

Funding of $585,200 has been provided for the project from the South Australian Government's Railway Crossing Safety Improvement Program.

SteamRanger Heritage Railway operates several different heritage steam and diesel hauled tourist trains between Mt Barker in the Adelaide Hills, up over the crest of the southern Mt Lofty Ranges, down to Strathalbyn and on through the coastal holiday towns of Goolwa and Port Elliot to the tourist resort town of Victor Harbor (see April 2018 *RD*, page 48). Trains operate on up to 140 days a year and are manned by volunteers from the Australian Railway Historical Society, who are also responsible for maintenance of the rail line and the heritage locomotives and carriages.

Railway Digest – rail industry/people coverage and advertising

Stephen Miller's letter in last month's *Railway Digest* regarding some aspects of content in the magazine raised some interesting issues. I think he is right in saying that the coverage in Railway People is not of interest to all readers. However, given the ageing of the traditional rail enthusiast readership, the move to embrace at least some 'industry' readers (who are younger and in paid employment and therefore might have more disposable income to purchase magazines) has, I think, been a prudent move and I gather it has captured a new reader market.

Railway Digest's presence at some railway conferences, particularly AusRAIL, has exposed the magazine to a new potential audience. It should be mentioned that Railway People does not exclusively cover industry appointments. For example, last month's Railway People included a fitting tribute to ARHS Life Member Tony Bailey.

Stephen mentions the role that advertising in a magazine can play in providing a fascinating glimpse in to railway culture and activities of the day. Indeed, a perusal of former magazines like *Railway Transportation* reveals advertisements from railway companies that no longer exist such as AE Goodwin and Commonwealth Engineering as well as ones that are still active today like Plasser & Theurer. However, there is a far more compelling reason for carrying advertising in *Railway Digest* and that of course is to provide an income stream for the magazine – especially important in the challenging climate in which print magazines exist.

While I would, like most readers I suspect, not want to see *Railway Digest* 'swamped' with advertising I believe it does need more advertising to help buffer it from future challenges. This much-needed additional advertising will not come if the ARHS NSW Division sits back and hopes it will appear. The latest ARHS NSW annual report supports this view by indicating

that advertising revenue has fallen from $14,659 in 2017 to $9,240 in the 2018 report year.

Several years ago there was a move to appoint an advertising manager who would 'chase' advertising on a commission basis for *Railway Digest* but the appointment never eventuated. With a 'reformist' ARHS Board and management now in place the time is ripe to revisit this issue and at least investigate whether it would be worthwhile. Such additional revenue might assist in holding the current cover price at $10.00 for as long as possible – important in the current era of low wage growth and a growing segment of the readership retiring from full time paid employment and moving on to an age pension.

It may well be that advertising revenue might also allow the magazine to reduce its dependence on unpaid voluntary article contributors – a model which is far from ideal in producing articles that require in-depth research, field trips and liaison with rail industry companies and track managers. More advertising may not be the 'silver bullet' for *Railway Digest's* finances but I think it is an area that at least needs further investigation.

John Hoyle
via email

Trackwork

It never ceases to amaze me the amount of trackwork that takes place each month by Sydney Trains and ARTC where lines are closed for two or three days or longer to do this so-called trackwork, but you cannot see any result. This greatly inconveniences the travelling public to no end with these regular shutdowns and how much is this costing the taxpayer where trains must be replaced by numerous buses and in some cases, taxis.

Unless it's really urgent to travel on these particular shutdowns, the public will not travel and chose another time that is more convenient for them. At present there are 389 speed restrictions throughout the state railway network ranging from 10 to 80 km/h for various reasons being, bridge works, defective crossings/ turnouts, geotechnical, overhead wiring, faulty rail, sighting distances for obscured signals, hot weather track speeds, track geometry and worksite protections. When all the trackwork shutdowns are re-opened again you often cannot see exactly what work has been done and all the speed restrictions are more or less at the same amount.

In the heyday of the railways when they were run more efficiently last century the travelling public were never inconvenienced like they are today by trackwork shutdowns and if there happened to be a shutdown it was either due to a major derailment or mother nature with her forces at work, closing the line. In either case the line was opened as soon as possible. The line over the Blue Mountains now has to be closed down on a regular basis for months to modify the line, so the new intercity trains can fit the line as some bright spark ordered the trains from South Korea before checking to see if they would fit over the Blue Mountains. How many extra millions of dollars is this going to cost the taxpayer?

Barry Seghers
Old Bar, NSW

Western Australian preservation

Having been away, I am a little slow catching up reading *Railway Digest*, and in the September issue a picture of G123 at Pinjarra is a picture of sadness. This beautiful locomotive ran many rail tours out of Bunbury to Dwellingup and Etmilyn, until a serious malfunction ended its operating life. Then it was stabled for over four years at Pinjarra awaiting repairs, that sadly have never been performed. It is a sad end to a beautiful locomotive.

Frank Cherry
Southlake, WA

Station 'bathrooms'

I wholeheartedly agree with Bob Schroeder and the inane term "bathrooms", probably the stupidest import yet from America. When I was a kid we only had lavatories or dunnies. Then in the 1960s that was apparently not genteel enough so they were all gradually converted to toilets. Somewhere along the line we did have public conveniences. All these terms were fair enough but a bathroom is something entirely different. If I go to a bathroom it's not for the same reason that I would go to a toilet!

Ken Mitchell
via email

Indian Pacific and *The Canadian*

The articles regarding the pro's and cons experienced while travelling on the *Indian Pacific* reminded me of the experience my wife and I had when travelling on VIA Rail Canada in May 2015 from Vancouver to Toronto.

It took four days and events that took place during the journey demonstrates that the best laid plans can go wrong. Like the *Indian Pacific*, the train was standing at two platforms in Vancouver and was coupled just before departure at 8.15pm. The trip to Jasper, where we spent a very pleasant half day, was uneventful. However, for the rest of the trip we were shunted onto loop lines on several occasions to make way for what seemed to be never ending freight trains. This was of great interest to me but not my wife.

On one occasion we were held up at a scheduled stop so that the locomotives could be refueled. On another occasion we were shunted onto a loop in the middle of nowhere because the engineers had completed their 12-hour shift and were not allowed to drive any further. It took VIARAIL 3 hours to find and deliver a fresh crew. The staff who were looking after us were very good but didn't know what was happening or when we would arrive in Toronto. They had no advice from their head office.

There was a further hold up when some passengers were disembarked at Sudbury in complete darkness aided only by car headlights. And of course there were further delays for freight trains.

So, the scheduled arrival time at Union Station, Toronto was 9.30am Saturday 30 May. The actual arrival was after midnight on Sunday 31, some 17 hours late. It was quite an experience which I enjoyed but my wife had other ideas.

John Holmes
Croydon, Vic

Greenbushes line

I noticed in this months *RD* that the line between Bunbury and Greenbushes MAY reopen?

I have been staying in Bunbury with family for the last three weeks. I usually go for a drive along this line while here as we do come over two or three times a year. I do have some history in rail infrastructure.

This line is in care and maintainance and highrail trucks do weed kill and clear obstructions and do inspections regularly. Just looking at the line and my opinion "and I'm not an expert " it is fit for purpose, 75 percent of the sleepers are as new 15 percent are rotten and the rest are in between, that's very good for a line that has not seen a train for 15 years the rails are straight and no wobbles the rail is all welded.

Rumours are that it would take $50 million to reopen the line – that, I believe, is garbage. Yes, some sleepers need replacing and the "F" type crossings need to be reenergised, some flashing lights are missing and would have to replaced.

When the mine at Greenbushes is at full production at 2.5 million tonnes, if rail is not utilised, 50 thousand tonnes a week would have to be moved by road in a five-day week. On a ten-hour day, say daylight, that's about one semitrailer every two to three minutes going up the Southwest Highway through townships like Donnybrook and the suburbs of Bunbury, and half those trucks will go to Kwinana, adding hundreds of trucks per day to the Kwinana Freeway, which for most of the morning is a parking lot.

Rail must be reinstated. Sadly the WA Government flogged off their rail system to a private company, so it may well be a commercial decision.

Pete Macfarlane
via email

Everything you ever wanted to know!

If the subject is Australian Railways, then the place to find out more is the ARHSnsw Railway Resource Centre. Located at 67 Renwick Street, Redfern NSW, not far from CityRail's Redfern Railway Station, the centre is open for research every Tuesday between 12.00 midday and 4.00pm, and every Saturday between 10.00am and 3.00pm (public holidays excepted).

The Railway Resource Centre holds a large collection of:

- Photographs and transparencies
- Drawings
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- Historic records
- Books
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The wide range of items in the collection relate not only to the railways of New South Wales, but to all other states and territories of both Australia and New Zealand.

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

- Locomotives
- Rolling stock
- Buildings
- Track and signalling
- Timetables
- Line histories

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

email: resources@arhsnsw.com.au

NB: Research requests should be sent via email and are not taken over the phone

Railway Resource Centre

67 Renwick Street, Redfern, NSW 2016 — phone (02) 9699 2736

Visit our website at: www.arhsnsw.com.au

Please note: ARHSnsw *is a non-profit organisation and* Railway Resource Centre *research services will attract a moderate fee to cover costs.*

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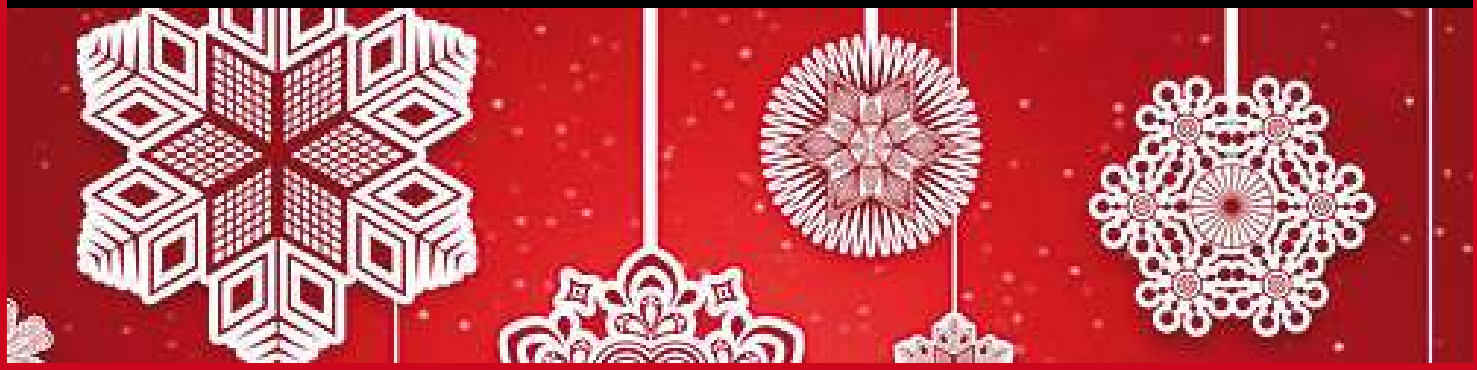

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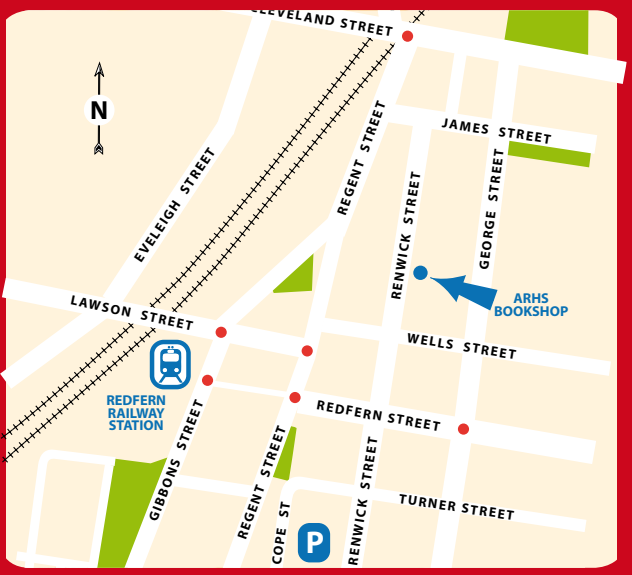

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Bill Phippen OAM

Bill Phippen was the manager of the Railway Resource Centre within the Australian Railway Historical Society (NSW) from 2010 until his retirement in 2017. His qualifications in civil engineering led him to a special appreciation of the RRC's collection of construction photographs and other records. He contributed several articles on bridges to the Society's monthly magazine and early in 2018 his book 'The Hawkesbury River Railway Bridges' was published. He had always had a fascination with the underground railway in Sydney and has guided tours through the abandoned tunnels at St James for many years. The chance discovery of a long missing album of construction photographs from the 1920s and ready access to the rest of the series of which it formed a part, prompted the present work, and gave birth to this beautiful book, By Muscle of Man & Horse.

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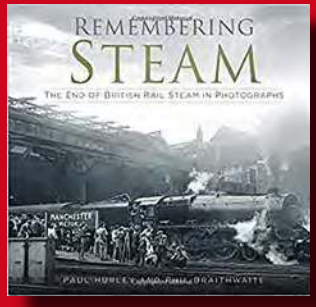

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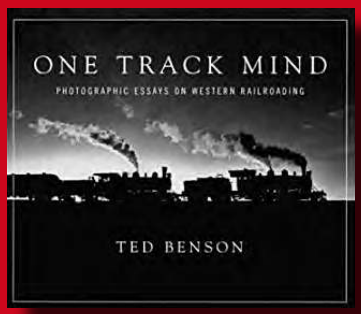

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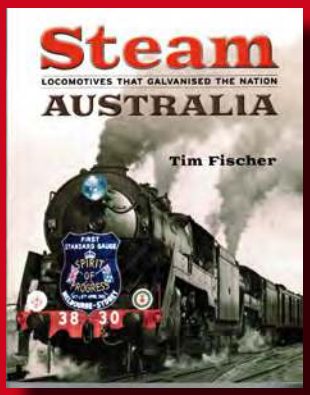

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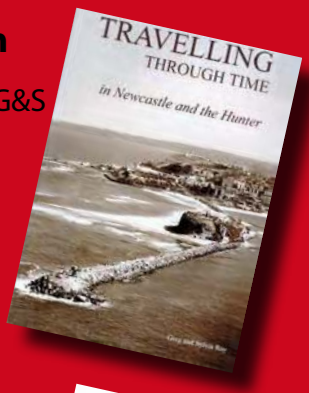

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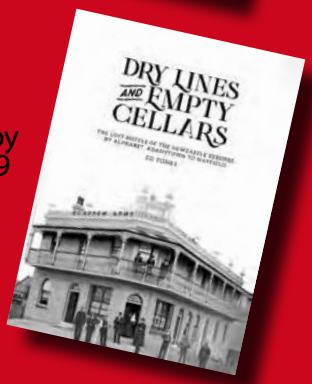

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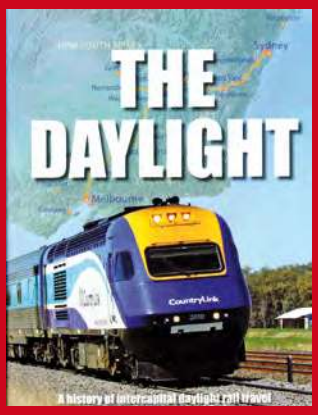

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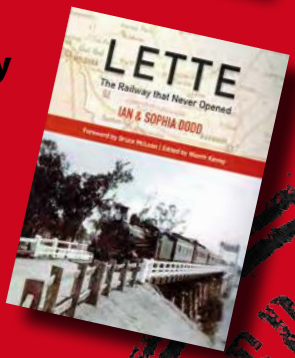

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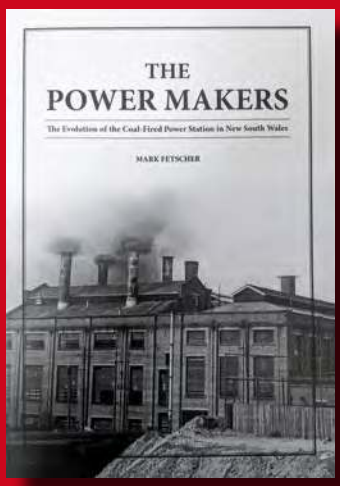

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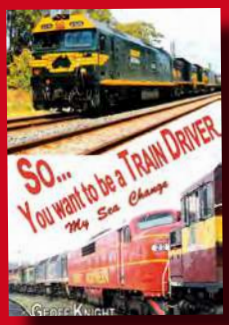

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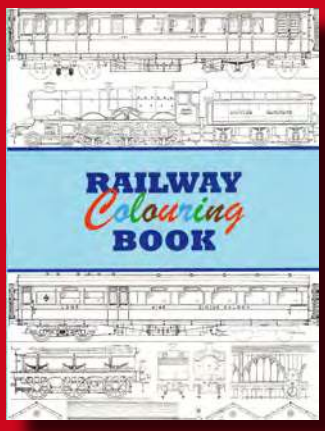

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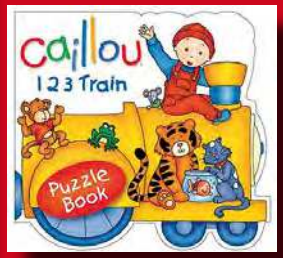

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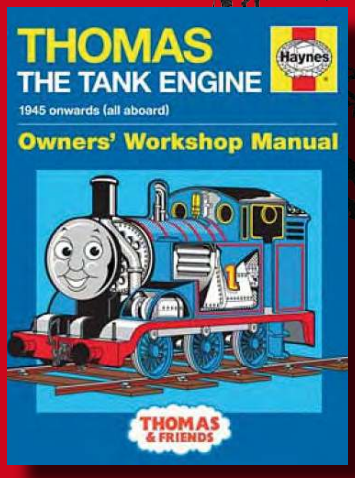

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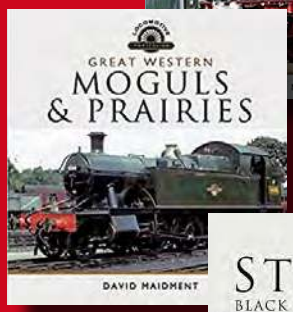

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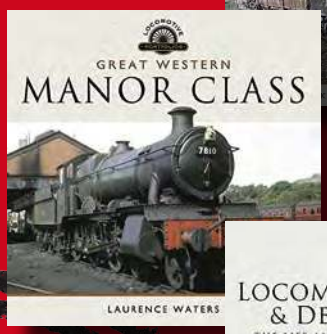

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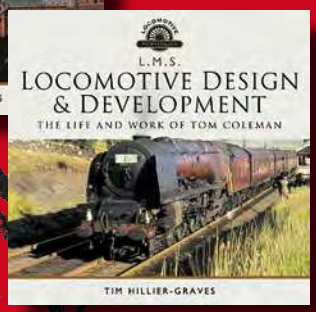

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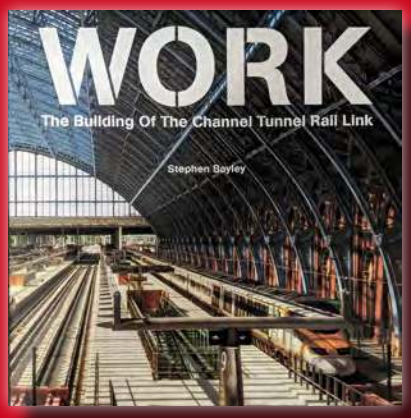

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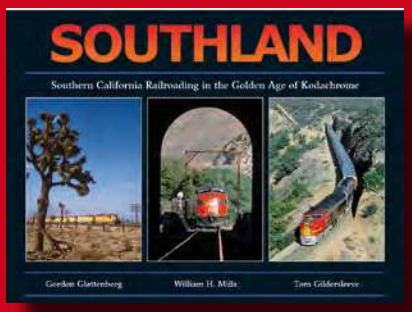

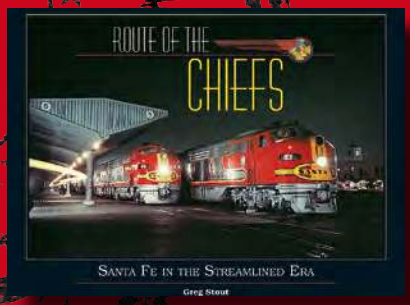

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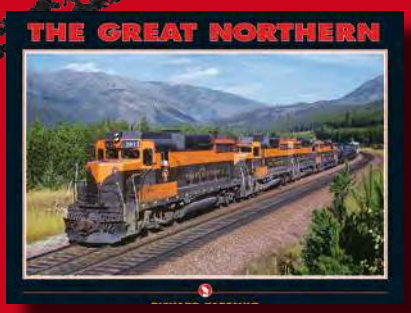

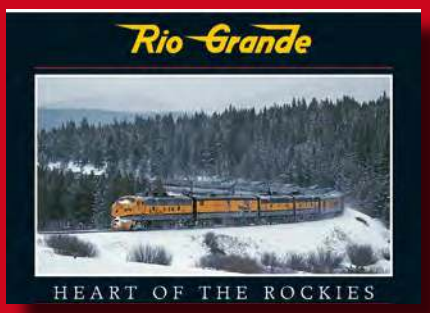


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