VICROADS ASSOCIATION NEWSLETTER NO. 284 September 2026

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A beautiful Spring display of tulips in Bendigo's Rossalind Park

While winter 2026 was at times gloomy, cold and wet, it did begin and end with unseasonal warmth. Spring effectively started in mid-August this year. Those of us whose knees are still young enough to enjoy skiing, might have already seen the best of this year's natural snowfalls. Major forecasting bodies are predicting a very warm Spring and Victoria's hottest summer on record.

On Monday 7th and Tuesday 8th September Rosslyn and I had the pleasure of attending the Association's excellent events at Shepparton, Tatura and Avenal (see later in this Newsletter), which involved travelling on the Hume, Goulburn and Midland Highways and parts of the main road system. Mindful of Clive Mottram's recent bad experience with a wrecked tyre, we both kept a watchful eye out for potholes.

On the way to Shepparton it looked like the privatised road maintenance people had lifted their game. We saw many repaired potholes and short, repaved sections, and wondered if our government had lifted its game in response to the approaching State election.

On the Midland Highway just west of Shepparton, we were fortunate to avoid our first major pothole. Further along, we noted the poor condition of the central wire rope safety barrier that had been installed to prevent head-on collisions. There were many areas where vehicles had obviously hit it and broken the supporting posts.

These impacts had clearly happened over a period of time and we were disappointed to see that no effort had been made to repair/replace the damaged upright posts.

Our journey along the main road between Tatura and Murchison was frankly terrifying. There were many deep potholes on the failing, sealed pavement and some of them were quite deep. Our choice would have been to slow down to see and avoid them. However, we were closely followed by a road train, whose driver was determined to maintain 100 km/hr. Unable to pull over, slow down or brake, I felt like Dennis Weaver's character in Stephen Spielberg's 1971 movie *Duel*, desperately trying to keep ahead of a homicidal truck. Thankfully, we were able to dodge the worst potholes and reach Murchison intact.

Returning home from Avenal along the Hume Freeway, we noticed that its southbound carriageway had many more unrepaired potholes than the northbound one.

It was perhaps appropriate that the 7 September edition of *The Age* Newspaper published a letter on the subject of road maintenance from our Member, Norm Butler, PSM. The text below is the content of Norm's submission to the Age.

Norm later commented to me: '*There has been some editing by The Age, but this should be a good start. It is a pity that they left out the last sentence, still, one cannot have everything'.*

VICTORIA'S DEEPENING POTHOLE CRISIS

I write in response to the article by Angela Snowden in The Age of 5 September 26 regarding "Victoria's Deepening Pothole Crisis". My comments are based on 40 years of experience as an Engineer working in road maintenance, construction design and testing. I have seen this situation develop over the past 20 years

The issue which was not canvassed in Ms Snowden's article was "why is it that the roads in the 1990s and 2000s did not suffer the same pothole problem" From a practitioners point of view, there are two items which stand out as different in the management of the roadways – privatised maintenance by contract (at the lowest price) and neglect of resealing of aggregate seal pavements as a cost saving measure.

The lack of rapid response to repair potholes can be squarely laid at the feet of the contractors, and probably poorly written contracts. Large potholes sufficient to damage tyres and wheels do not happen overnight. Rapid response is essential to prevent small holes from becoming wheel busting holes.

The neglect of resealing of bitumen seal pavements over many years has compromised the waterproofness of our sealed roads. What is not apparently appreciated by those who should know, is that bitumen hardens with time, in 6 to 10 years depending on the situation When the bitumen loses its ductility the surface will crack, water then penetrates the underlying material leading to potholing.

Unfortunately, these penny-pinching approaches to management of our State's roads (once the best in Australia) have been carried out without thought of the cost to the road user. It will be some years before this neglect can be corrected. Pothole filling by rapid response is essential, however in the longer term a large scale program of bitumen resealing of all State Arterial Roads will be paramount.

Norman Butler

Former VicRoads Regional Manager

WHATS COMING UP?

In this edition

In this edition we look at progress on the demolition of the Kew H.O; present the highlights of our recent outing to Shepparton; view Clive Mottram's before and after pics of the works at Watsonia; provide David Jellie's recollection of building embankments on the Lower Yarra Freeway, and view John Rebecchi's story on the paving of the West Gate Bridge.

We also present the history of correcting Australia's mismatched rail gauges and a further instalment of David Jellie's *Lest We Forget* series describing how a CRB driver, Bill Miles managed to enlist in the Army in 1940 with a prosthetic foot. David also recounts the military career of one of the CRB's more colourful individuals in the Estates Section – Merton Morgan.

Our 2026 event calendar

Date	Event	Contact Person
Monday 5 October	12 noon for 12.30 pm Occasional Lunch, Doncaster Shoppingtown Hotel	Just turn up
Friday 30 October	Annual Golf Day at Green Acres Golf Club, Kew East	Jim Webber jameswebber1717@gmail.com
Monday 9 November	12 noon for 12.30 pm Occasional Lunch, Doncaster Shoppingtown Hotel	Just turn up
Tuesday 8 December (Note date change)	11.30 am for 12.15 pm Christmas lunch. We have secured a great venue at the Matthew Flinders Hotel in Chadstone.	Ken Vickery kenvickery@tpg.com.au

WHAT'S BEEN HAPPENING

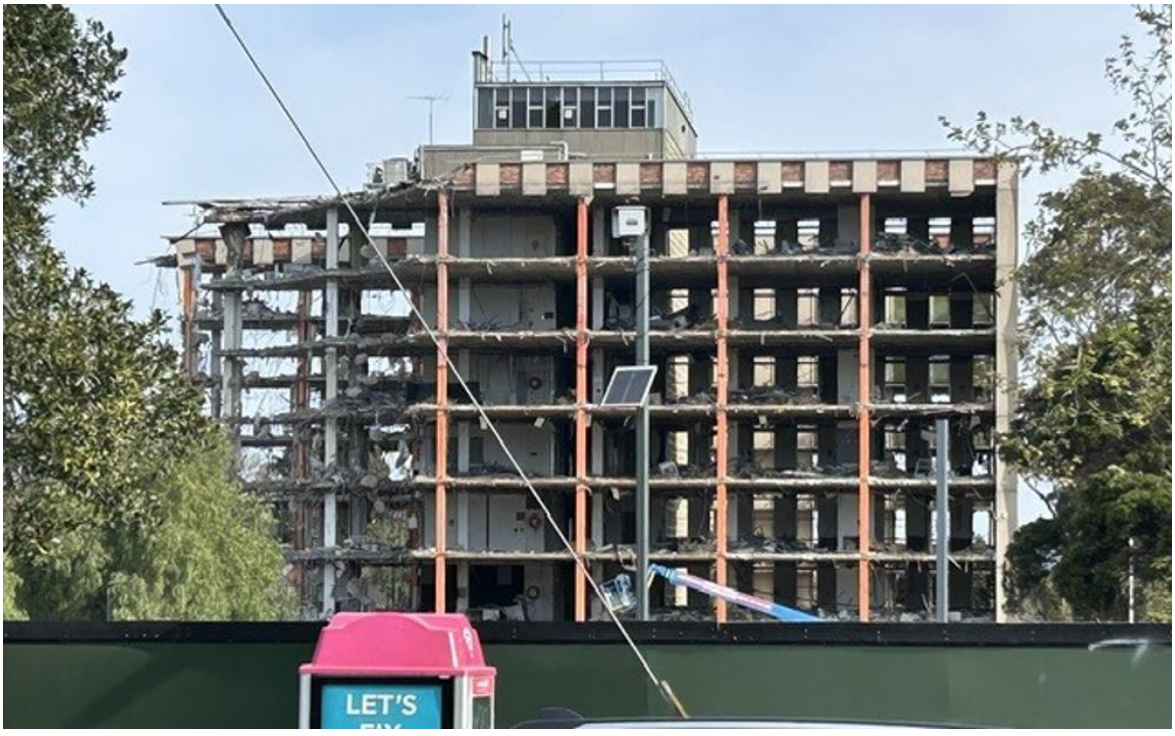
Demolition of the Kew H.O

In the last week of August, the demolition of our former headquarters in Denmark Street, Kew progressed beyond the removal of the old building's interior fittings (and all the external aircon units) to a more visible process commencing with removal of the southern and northern facades using specialised wrecking equipment.

By the beginning of the second week of September, all of the northern and southern facades had been removed and work was proceeding on the inner facades of the 'H' shaped building. The activities have understandably attracted much interest from the building's previous occupants, who have been providing regular updates and comments to the *Country Roads Board (CRB)/ RCA /VicRoads History* Facebook page. The website contains an interesting video of the demolition work, taken on 1 September 2026.

Those of us who were hoping to witness a spectacular, controlled demolition of the remaining shell are likely to be disappointed, as all indications suggest that it will be demolished in a manner similar to the Northern building.

This picture of the building’s northern face was taken on 2 September. It shows a specialised wrecking machine plucking off the aluminium sunshades. The same machine was used to remove the concrete panels at the left of the picture.



Iris Whittaker took this picture on 18 September

Shepparton Art Museum visit – by Jill Earnshaw

[Editor's note: On behalf of all who attended, including myself and Rosslyn, I would like to thank Jim Webber and Jill Earnshaw for their terrific work in organising this outstanding regional visit.]

Well, North East Victoria certainly turned on beautiful blue skies and sunshine for our recent visit to Shepparton on Monday 7th and Tuesday 8th September.

Whilst most of our group of 30 Members and friends[1] travelled to the Shepparton Art Museum (SAM) on the Monday morning, several others even took the opportunity to enjoy an extra night away, arriving on the Sunday for further exploring. For those in the group who joined the Association's November 2022 visit to Benalla and Shepparton, it was a welcome opportunity to revisit SAM. I can assure you it will not be the last. I have already offered to return with a family member who had to withdraw from our visit.

If you couldn't make the trip this time but are considering visiting in the future, do yourself a favour and book a table at *Lunch at Elsewhere*, the SAM Cafe. It is a lovely venue with inside and outside dining spaces and the breadth and quality of the food and the level of service far exceeded expectations.

The Shepparton Art Museum (SAM), opened in November 2021, includes an art museum, a visitors' information centre, an Aboriginal community arts centre and a 150 person event space. Its facades comprise four thin floating L-shaped plates suspended in the landscape. They group together, at different heights and contrasting materiality, to form a composition at a scale comparable to the adjacent red river gums. You can't see into the Gallery from the outside but you look out at magnificent local landscape views.

SAM was designed by the internationally renowned Australian architecture firm *Denton Corker Marshall,* which was also responsible for the 'Cheese sticks' at the end of the Tullamarine Freeway and the Stonehenge Visitor Centre in the UK.

Having worked in Benalla for three years (as the Business Services Manager and then the Manager Development) it was a lovely surprise to catch up with Gary Macdonald

[1] The group included six guests of David Jellie from the Elgin Art Group in Hawthorn.

who I recall managed the Transport Safety Services team for a while before taking on Business Services. Garry volunteers at SAM.

Following lunch at the SAM Café, the group was then given a half hour, highly informative talk by Barb, who is a Friend of SAM and our volunteer guide on the day. Barb introduced the *Facing Modernity: Degas to Picasso* exhibition from the Auckland Art Gallery. It is the only place in Australia to host this exhibition.

Barb guided us through the exhibition providing amazing insights on a large number of the paintings and sculptures. At the end of the talk we were free to wander back through the exhibition and then into the 2026 *Archibald Prize* exhibition as well as the *Young Archie*[2] *Shepparton* exhibition in the Children's Gallery.

That evening, the Group met for dinner in Shepparton's spacious GV Hotel

[2] Celebrating the creativity, imagination, and unique perspectives of young people across the region, *Young Archie Shepparton* presents 26 portraits created by local students aged between 5 years and 18 years of someone near and dear to them.

On Tuesday morning, some of the Group travelled to Tatura to see the *Tatura Irrigation and Wartime Camps Museum,* which houses a unique collection comprised of the History of Irrigation in Victoria's Goulburn Valley, the Local and Family History of Tatura and District since settlement and the history of the seven WW2 Prisoner of War and Internment Camps which were established in the surrounding area.

We were fortunate to have had the museum opened just for our group by a local volunteer, George Fergusson, who provided us with a wonderful presentation and gave us a privileged look at some of the art created by the Dunera internees.

The Museum also contained one of Australia's largest collections of art and artifacts associated with the infamous Dunera incident[3]. David Jellie told George and the Group about Ernst Renz, who was the Specifications Engineer in the CRB Bridge Branch in the 1960s. His nationality was stateless (formerly Germany) and he arrived in Melbourne on 3 September 1940 aboard the SS Dunera. He was declared an alien and was interned at No. 2 Internment Camp Tatura. He was released in 1946.

The Tatura Group, which included members of the Elgin Art Group. Our guide, George Fergusson is standing below the 'Exit' sign between David Jellie and Iris Whittaker.

Members who didn't visit Tatura headed south to our lunch venue, Fowles Winery at Avalon, for a jovial wine tasting before our fabulous lunch. If you haven't visited this venue with its wonderful setting, great food and wine and excellent staff and customer service, I'd highly recommend it.

[3] On 10 July 1940, 2,542 detainees, all classified as "enemy aliens", embarked aboard Dunera at Liverpool and a few others joined them from African ports. While the detainees included 200 Italian and 251 German prisoners of war, as well as several dozen Nazi sympathizers, the majority were 2,036 Italian and German civilians who were anti-Nazi, most of them Jewish refugees. They were treated appallingly by the British troops on the ship. Many were interned at Tatura.

The Group rejoined for lunch at Fowles Winery at Avenal. David and Chris Challman from Benalla also joined us for lunch.

MEMBER COMMENTS AND NEWS

From John Scully

John,

Just read the latest newsletter. And it was as always, very interesting and in some places amusing.

Your analysis about older drivers across Australia was very appropriate for members of the VicRoads Association! As an editor you know your readers.

I know I am getting old - 79 in November, when I read an item like that and find it interesting and relevant. Clive Mottram's update was good and I was reminded how braking charges the battery in an electric car.

And David Jellie, the long suffering and bewildered Essendon supporter, makes road construction, sprinkled occasionally with humour, interesting. No disrespect to all the writers, but the photos are the high point of the newsletter!

Thanks to you and everyone who contributed, John.

Max Lay's 90th Birthday

Our Member Nick Szwed is organising a birthday luncheon celebration at Bulleen for Max. It is tentatively planned for late October 2026. Members who would like to attend should email Nick on nszwed@bigpond.net.au.

From Nick Szwed

John, I had a thought after reading your article *Hurdles for Older Drivers*: which States have the lowest road toll and is there any correlation with the way they treat older drivers?

If you look at the two table below you can see that we have the lowest toll in Victoria despite having the lightest touch on older drivers.

When I was working in road safety about 30 years ago I recall the discussions about stricter controls on older drivers every time an older person caused a serious crash. David South (a psychologist working for VicRoads) insisted that there was absolutely no hard scientific evidence, worldwide, to support such action. He also pointed out that male drivers under 25 were much more highly involved in serious crashes but no one was proposing stricter conditions for them.

So I believe that we have here another example of ageism. Every time an older person has a notable crash, the press pick it up and play up the common belief that older people become less competent and more dangerous. Not true. They or their families, regulate driving as you said.

How often have you heard that a young person who has caused a fatal crash has handed in their licence or was urged by family to do so?

Nick

Here is the table showing Australian states and territories with their annual road deaths and per capita fatality rates (based on the latest complete 12-month data reported by the Australian Automobile Association for the period ending December 2025). [1]

State / Territory	Annual Road Deaths (2025)	Fatality Rate per 100,000 Population
New South Wales (NSW)	355	4.10
Victoria (VIC)	290	4.10
Queensland (QLD)	308	5.40
Western Australia (WA)	183	7.60
South Australia (SA)	87	6.00
Tasmania (TAS)	44	7.60
Northern Territory (NT)	38	14.40
Australian Capital Territory (ACT)	9	1.90
Australia (Total/Average)	**1,314**	**4.80**

In Australia, road exposure metrics are measured by the **National Road Safety Data Hub** using the standard unit of **fatality rate per 100 million Vehicle Kilometres Travelled (VKT)**. Measuring fatalities this way accounts for how much driving actually occurs, revealing that despite its small population, the Northern Territory remains the highest-risk driving environment per kilometre driven. [1, 2]

The table below breaks down the exposure-based road trauma rates for each Australian state and territory using the latest baseline benchmarking data: [1]

State / Territory	Fatality Rate per 100 Million VKT	Risk Context Relative to Distance Driven
Northern Territory (NT)	**1.4**	**Highest risk.** Exceptionally high per-kilometre fatality rate, driven by vast remote distances, highway speeds, and unsealed infrastructure.
South Australia (SA)	**0.7**	**Elevated risk.** Higher reliance on rural transit routes increases exposure per kilometre.
Tasmania (TAS)	**0.7**	**Elevated risk.** Challenging terrain and winding roads contribute to a higher rate per VKT despite short travel distances.
Western Australia (WA)	**0.5**	**National average.** Highly polarised between safe urban driving and high-risk remote mining/interstate routes.
Queensland (QLD)	**0.5**	**National average.** High decentralisation balanced by heavy infrastructure investments on major coastal highways.
New South Wales (NSW)	**0.5**	**National average.** Heavy traffic volume in metropolitan corridors dilutes the rate, though gross numbers are high.
Victoria (VIC)	**0.5**	**National average.** Dense freeway networks and extensive urban driving keep kilometres high and fatality rates lower per VKT.
Australian Capital Territory (ACT)	**0.1**	**Lowest risk.** A highly compact, mostly urban road network with low maximum speed limits results in minimal fatal outcomes per VKT.
Australia (National Average)	**0.5**	Across all states, an average of **0.5 people die for every 100 million kilometres** driven nationally.

From Kel York

Kelvin forwarded me the following link to an interesting article on the ABC Website, which quotes ex-VicRoads staff (Jeff Moran, Gary Rusmand and John Lambert) who blame privatisation for Victoria's crumbling roads.

https://www.abc.net.au/news/2026-09-10/former-vicroads-workers-privatisation-pothole-problems/107128578

From Clive Mottram

[Editor: Clive has kindly provided these further offerings from his collection of 'now' and 'then' photographs of Victoria's major projects].

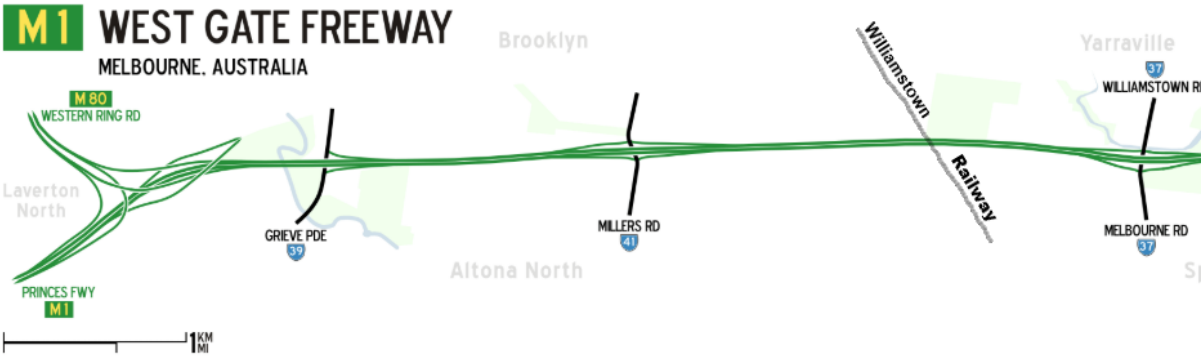
Below is a photograph I took, on 24 July 2026, of an Alston *X'Trapolis 1* train bound for Hurstbridge and approaching the Grimshaw Street overbridge. It had just exited the extended rail tunnel, constructed as part of the North East Link project.

I took the picture below on 14 March 1977, which shows a Harris train bound for Hurstbridge approaching the Grimshaw Street level crossing. The train is on a temporary track passing excavation works to lower the railway under Grimshaw Street, that was a previous generation of major works at this location.

Construction of basaltic clay fills on the Lower Yarra Freeway

- by David Jellie

There was a particular challenge on the Lower Yarra Freeway regarding the construction of the high embankments at the overpass structures at Miller's Road and the railway line east of Miller's Road. Kelvin York provided these details, and because the design and investigation of the embankments were carried out before metrication, I have retained imperial units in this explanation.



The approach embankments, with maximum heights of around 24 feet above natural surface and base widths of 240 ft, have volumes of 100,000 cubic yards each. The total volume of earth fill required for the main contract was 439,000 cubic yards and as the cuts provided only 154,000 cubic yards the balance of 285,000 cubic yards had to be imported from off the site.

The CRB had no specification relating to the quality of materials to be used as earth fill. The British Ministry of Transport suggested that earth fill should have a liquid limit[4] not greater than 80% and a plasticity index[5] not greater than 55, but there was little, if any, natural soil which would satisfy these requirements within a reasonable hauling distance of the Lower Yarra site. The cost of suitable quarry by-products was prohibitive.

The cheapest and most abundant material was found to be the basaltic clay overburden from two disused local quarries – Footscray Council Quarry and Standard Quarry. This clay occurred in a 10 - 20 ft deep layer and had the following properties.

Liquid Limit	77% - 100%
Plasticity Index	60 - 77
Passing No. 200 sieve	97% - 99%
Standard optimum moisture content	28% - 38%
Standard maximum dry density	79 to 90 pounds per cubic foot

[4] The liquid limit is the water content at which a fine-grained soil (like clay) changes from a plastic state to a liquid state. At this moisture level, the soil loses its shear strength and begins to flow like a viscous liquid.

[5] The plasticity index is the range of water content where fine soil acts like a plastic material. It equals the liquid limit minus the plastic limit (PI = LL - PL). Higher values mean more clay content and greater shrinking or swelling. PL is the water content where soil becomes too dry and crumbles when rolled.

David in the day

The specification required the clay to be compacted at a moisture content within the range of 85% - 125% of the Standard optimum, and by good fortune, the natural moisture contents of the clay were within this range.

Compaction was achieved by means of a Hyster 40-ton static tamping roller drawn by a Caterpillar D8 bulldozer. This unit satisfactorily compacted up to 2000 cubic yards solid per day when the clay was spread in 8" - 12" loose layers and given six passes with the roller.

Field density tests were performed on each compacted layer and generally results ranged between 94% and 110% of the Standard maximum dry density, with the most common value around 102%. The specification required a minimum of 95%. On average, each cubic yard of material after compaction contained around 73 gallons of water and therefore each embankment contained nearly 7.3 million gallons.

It was thought at the time that the behaviour of the embankments would be determined by whether or not this quantity of water remained constant. Changes in the moisture content would result in either shrinkage or swelling of the clay, which in turn produce a poor riding surface on the freeway or even damage the pavement and disrupt underground drainage.

As the CRB had never before constructed such large embankments using highly plastic basaltic clay, it was decided to invite the Soil Mechanics Division of C.S.I.R.O to take part with the Materials Research Division in a joint project to study the behaviour of two of the embankments over a period of years.

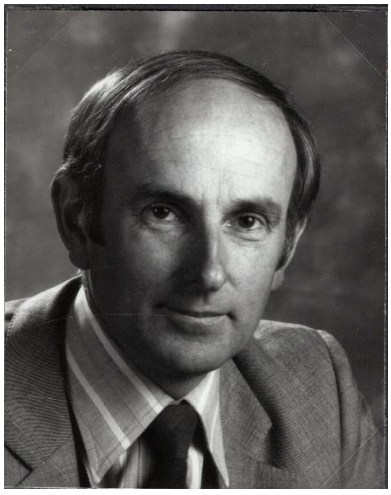
By examining samples of clay taken from the embankments during construction, as well as undisturbed samples from the borrow areas and areas beneath the embankments, C.S.I.R.O. hoped to be able to predict the moisture content that the clay would ultimately attain. C.S.I.R.O. installed sensing devices in the embankments so that the actual moisture content (or more precisely the soil suction) could be measured from time to time. The CRB installed a number of settlement markers at various depths in the embankments and these were periodically levelled to detect any movements.

This monitoring continued for fourteen years and the results were presented in a paper by Dr Jim Holden (Road Construction Authority) and B. G. Richards (CSIRO) at the Australian Road Research Board conference in Canberra (1988). The results indicated that, using the correct construction methods and controlling the placement soil suction, it is possible to construct a high embankment of an expansive basaltic clay that will remain stable (i.e. deform less than 10 mm) for at least 14 years.

The knowledge gained from this project was key to developing construction methods later used in construction of large embankments using expansive clays which are common in the areas to the north and west of Melbourne.

David Jellie

West Gate Bridge Surfacing – by John Rebbechi



John as Assistant Asphalt Engineer in 1979

The report by Peter Balfe in the July 2026 Newsletter, on the redesign and construction of the West Gate Bridge, has prompted me to prepare an account of my own role in the Project.

In his report, Peter refers to the role of Bruce Phillips in the testing and design of the epoxy asphalt surfacing.

In 1973, Bruce was seconded to the West Gate Bridge Authority to undertake an overseas study tour of orthotropic steel plate deck surfacing systems. Bruce concluded that the types of surfacing most likely to provide satisfactory levels of adhesion, waterproofing and flexibility necessary for steel deck surfacing, were either mastic asphalt or an epoxy resin or polymer modified system.

Mastic asphalt is a mixture of bitumen, filler and fine aggregate that is applied as a liquid at high temperatures, and which solidifies to a hard surface with excellent waterproofing properties. At that time, it was the most widely used surfacing of steel deck bridges in Europe although considered unlikely to be suitable for the higher temperatures in Melbourne.

The Batman Bridge over the Tamar River in Tasmania, which opened in 1969, was the first cable stayed bridge in Australia and is the only other orthotropic steel deck bridge in Australia. It was surfaced with mastic asphalt and provided many years of satisfactory service, but in a cooler climate and a much less demanding traffic situation than Melbourne.

Batman Bridge, Tasmania

Further testing of alternative materials in the CRB laboratories resulted in the final recommendation to adopt the epoxy asphalt system.

In 1974, I had returned to the CRB for a specialist role in the Asphalt Division after 6 years establishing and managing the asphalt operations of Readymix in Victoria. I was immediately handed the role of finalising specifications and supervision of the placing of the bridge surfacing.

Tenders were called in 1977. The successful tender was Pioneer Asphalts using the binder system that had been originally developed by Shell in the USA and implemented under licence to Adhesive Engineering in California, which had successfully applied it in a number of projects in the USA, Canada and South America. The bitumen extended epoxy system used by Pioneer Asphalts had been further developed by Shell UK and manufactured by Shell in Australia.

The Authority engaged the services of personnel from Adhesive Engineering, and one or two personnel were present during most of the work. Given the proprietary nature of the product, it was also necessary to accept technical advice from the Shell company.

West Gate Bridge surfacing 1978

The contract was managed by the Engineering Directorate of the Authority with services provided by various CRB personnel. I was seconded from May to November 1978 to assist in the overall supervision. Two Clerks of Works were seconded to assist in supervision of placing of asphalt and a further two Clerks of Works stationed at the asphalt mixing plant. Mix design and testing of asphalt materials was undertaken by the CRB laboratories at Kew.

In preparation for surfacing, the steel deck was grit blasted the back to bare steel and applied with two coats of zinc in silicate. A similar zinc in silicate coating had been applied to deck plates during manufacture but construction activities had resulted in damage and contamination of the surface, making it necessary to completely remove and replace the rust preventive coating.

The asphalt mix comprised aggregates conforming a standard 10mm dense graded asphalt, and bitumen extended epoxy binder. The binder system has two components. Component A is an epoxy resin. Component B is a blend of epoxy hardener and bitumen binder. The two components are combined in a ratio of A to B of approximately one to seven by volume (1:5.9 by mass). It is mixed hot. After mixing full cure takes place in around 4 hours at 120^{0}C. Higher temperatures cause more rapid curing, lower temperatures slower curing.

On some other projects, a bond coat incorporating a stone chip was applied prior to asphalt surfacing. Adhesive Engineering advised that maximum bond would be achieved by tack coating with the same bitumen extended epoxy binder and placing the asphalt before curing. Control of tack coating operations and the curing time required to avoid pick-up, created a few problems for the contractor but did not affect outcomes.

An overhead view of the 1978 surfacing operation

Asphalt mixing was undertaken in a conventional asphalt batch plant mixer located 8 km west of the bridge. Control of mixing temperature to allow adequate workable for placing the asphalt was critical.

With bridge construction works still under way on the western approach, it was necessary to commence placing on the eastern approach which involved a delivery lead time of some 30-40 minutes. After some difficulties with loads being rejected through high temperatures and premature curing, or poor workability from lower temperatures, the contractor was able to strike the right balance between mixing temperature and placing time. This became easier as work progressed with improved weather conditions and shorter delivery lead times to the western approach.

All surfacing works were completed successfully, without any significant incident in time for the official opening in November 1978. An interesting and challenging project, and credit to all those organisations and individuals involved.

The original epoxy asphalt surfacing gave more than 14 years of largely trouble-free performance with only minor cracking requiring crack filling. In 1992, a section of lane one was found to have started to become detached from the underlying surface and requiring to be replaced. Subsequent repairs and progressive replacement with alternative systems is another story as well as the application of the learnings from the West Gate Bridge project to various other bridge surfacing projects.

John Rebbechi

Still inspecting bridges in 2026

Australia's greatest transport reform – by John Wright

The need to fix our discontinuous railway system and the trade barriers it created was one of the major driving forces behind Federation in 1901 and arguably Australia's most important and longest running transport reform.

When the First Fleet arrived in 1788, Australia, which was then known as *New Holland*, was divided in half at the 135th[6] meridian.

The eastern half became the colony of New South Wales (NSW), later to be divided into the separate colonies of Tasmania, South Australia, Victoria and Queensland.

The un-named western half later became the colony of Swan River (Western Australia).

The colonies were effectively six separate countries. Each had its own government and laws, its own defence force, issued its own stamps and collected tariffs on goods that crossed its borders.

Inward-looking, the colonies built railways using different gauges, which suited their immediate needs but later complicated the transport of people and goods across their borders.

The colonies' tariffs generated much needed revenue but restricted trade and movement between colonies, increasing the cost of goods and making it hard for manufacturers in other colonies to compete with local producers. The trade restrictions also complicated travel between colonies. One example was rail travellers between Melbourne and Sydney being delayed in Albury while customs officials searched their luggage.

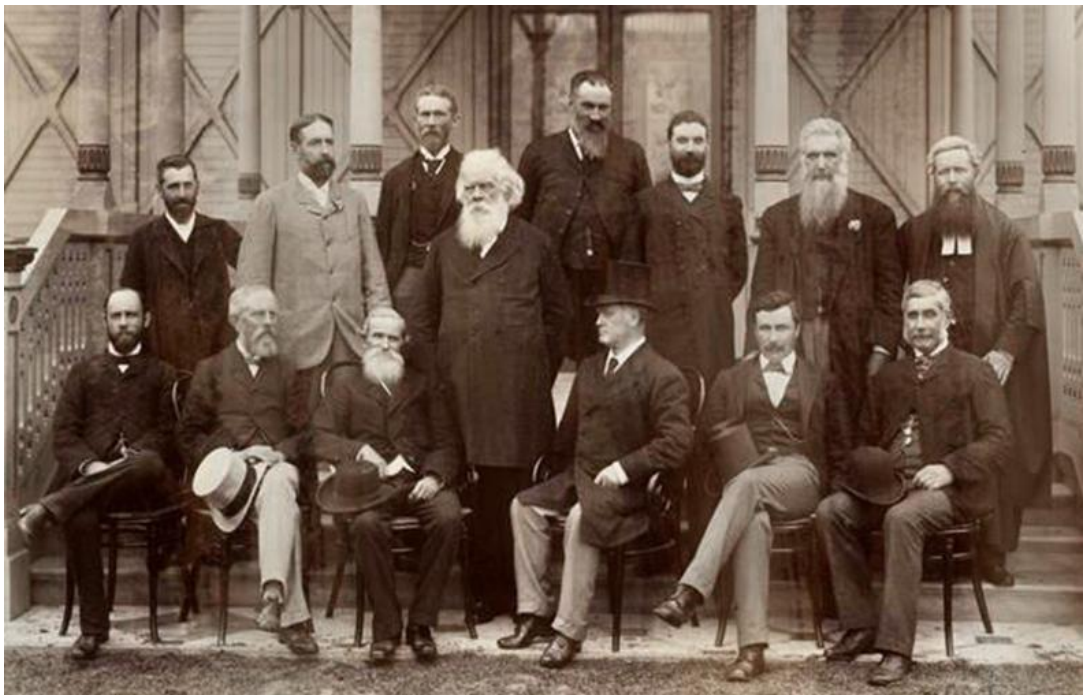
'Free traders', as they became known, were vocal supporters of Federation, arguing that abolishing tariffs and creating a single market would strengthen the economy of each colony. Others argued the need for a mutual defence force; controlling immigration from 'undesirable countries' (nothing new there); and the desirability of having a 'real' Australian identity - that could only come from a population united in a federation.

[6] In 1825 the NSW western boundary was temporarily shifted westward to 129° east longitude to include a settlement on Melville Island, and this later remained as the boundary when the Swan River colony (Western Australia) was established in 1829.

In the eleven year lead-up to Federation, delegates from the colonies attended many conventions at which draft constitutions were discussed and frequently modified. Australia was the first nation to take a proposed constitution to the people for approval.

Initial referendums were held in all colonies, and when the NSW referendum failed to gather sufficient support[7] for federation, a majority of delegates from other colonies conceded that the new Federal capital could be located in NSW (albeit at least 100 miles from Sydney) to encourage NSW back into the fold.

Queensland, worried about losing its Pacific Islander labour force, waited to see if NSW would join before holding its second referendum. In March 1890, with Western



The Australasian Federation Conference in Melbourne in 1890. These 14 men were delegates from the six Australian colonies and the colony of New Zealand. Henry Parkes is standing fourth from left, and Alfred Deakin (later to become Prime Minister of Australia)

Australia (WA) being the only colony refusing to join the Federation, a delegation of colony representatives travelled to England, where *The Commonwealth of Australia Constitution Act 1900* was passed by the British Parliament and signed by Queen Victoria in July 1900.

Three weeks later, the WA Parliament reversed its opposition to Federation and held a referendum, which overwhelmingly supported joining the Federation. The colony's Parliament was strongly influenced by a verbal promise from the other Premiers of a federally funded transcontinental railway to connect Kalgoorlie to Port Augusta, a 'deal' that was not dissimilar to British Columbia's agreement to join the rest of Canada[8].

[7] Although a majority of voters in New South Wales voted 'yes' in the referendum, it did not attract the 80,000 'yes' votes set by the New South Wales colonial parliament as the minimum needed for it to agree to Federation.

[8] To persuade British Columbia to join the Canadian Union, Canada promised to build a railway across the Rocky Mountains connecting it to Eastern Canada within 10 years, which broke the region's geographical isolation.

When the Constitution of Australia came into force, on 1 January 1901, the colonies collectively became states of the Commonwealth of Australia.

Fifty-six years earlier, Australia's rail system had actually got off to a promising start after an 1845 British Royal Commission recommended that Britain and its developing colonies adopt a common standard gauge of 4 ft 8½ inches. In 1848, both South Australia (SA) and NSW (which then included Victoria) had taken note and adopted the recommended British standard gauge.

Unfortunately, in 1850, the Sydney Railway Company's Irish-born Chief Engineer, Francis Webb Shields managed to convince the NSW Parliament to change to the 5 ft 3 inch Irish broad gauge, a decision subsequently approved by the British government. The bordering colony of South Australia obligingly followed suit.

Incredibly, in 1853, a new Scottish-born Chief Engineer, James Wallace, who had replaced Shields[9], convinced NSW to revert back to standard gauge. SA and the new colony of Victoria, the latter now separated from NSW, protested to no avail. By this time, SA had already invested in broad-gauge track, locomotives and rolling stock, and it continued to construct its broad gauge network.

In Victoria, the two major, private railway companies asked the Victorian government what they should do, as there was still time to change. They were told to go ahead with their broad gauge plans. The colonies of Queensland, WA and SA[10], faced with funding new tracks over great distances, were more concerned with cost than uniformity, and chose the 3 ft 6 inch narrow gauge, which was much cheaper to construct. Tasmania, with no land borders to concern it, also adopted narrow gauge.

Early attempts to link the capitals

In June 1883, Melbourne and Sydney became the first interstate capitals to be connected by rail. However, due to the different gauges, goods and passengers were forced to endure a change of trains at Albury. The American writer Mark Twain, in his book *Following the Equator, a Journey Around the World* commented:

'Now comes a singular thing: the oddest thing, the strangest thing, the most baffling and unaccountable marvel that Australasia can show. At the frontier between New South Wales and Victoria our multitude of passengers were routed out of their snug beds by lantern-light in the morning in the biting-cold of a high altitude to change cars on a road that has no break in it from Sydney to Melbourne! Think of the paralysis of intellect that gave that idea birth; imagine the boulder it emerged from on some petrified legislator's shoulders.'

In 1887, 14 years before Federation, Victoria and South Australia became the only colonies to have a rail link between their capitals without a break of gauge. In 1888, NSW constructed a rail link between Brisbane and Sydney using a circuitous, inland

[9] Shields had resigned over a pay dispute.

[10] Many of the SA lines were 5 ft 3 inches, but the line from Port Augusta to Alice Springs, and the Broken Hill line to Port Pirie, were both constructed at the 3 ft 6 inch narrow gauge.

route via Armidale in NSW to Wallangarra on the Queensland border, where there was a change of gauge. In Queensland, the route traversed the city of Toowoomba.

The Commonwealth gets into the railway business

In 1917, the new Commonwealth Government delivered on its 1901 promise by completing the rail link between Port Augusta and Kalgoorlie using standard gauge. It also created the *Commonwealth Railways* to administer both the new line and the Port Augusta to Darwin railway, which had passed to Commonwealth control when the Northern Territory was created in 1911. Nevertheless, passengers and goods between the eastern States and Perth were faced with multiple changes of gauge at remote places like Broken Hill, Port Augusta and Kalgoorlie[11].

Although the Prime Minister and State Premiers agreed in 1921 that 4 ft 8½ inches should be the country's universal gauge, little happened until 1930 when the standard gauge Sydney–Brisbane railway was completed, using a more direct coastal route to South Brisbane via Grafton and Kyogle. In 1937, the Commonwealth extended the transcontinental line south from Port Augusta to Port Pirie, shortening the trip to Adelaide by replacing an indirect, 290-kilometre narrow-gauge connection that ran via Terowie, Peterborough and Quorn, and eliminating one change of gauge.

The logistical demands of World War 2 highlighted the urgent need for a single gauge rail link to Darwin. In its absence, the CRB and other State road authorities were recruited to build new, all-weather roads between the railheads of Alice Springs and Birdum, and between Camooweal and Tenant Creek.

In 1944, the Prime Minister, Ben Chifley commissioned Sir Harold Clapp, then his Director-General of Land Transport, to investigate feasible solutions to the rail gauge problems. Melbourne-born Harold Clapp, a Brisbane tramway executive, moved to the USA in 1900, where he worked in railways and eventually became the Vice President of the Southern Pacific Railway Corporation. He later became Commissioner of the Victorian Railways in 1920 and introduced electrification to the suburban rail system. Clapp was one of the country's highest paid public servants and was knighted in 1941.

In 1944 Sir Harold recommended the conversion to standard gauge of all the broad-gauge lines of Victoria and South Australia. He also recommended the conversion of the narrow gauge lines from Port Pirie to Broken Hill, and from Kalgoorlie to Perth to provide a single gauge link between Sydney and Perth incorporating the Transcontinental railway.

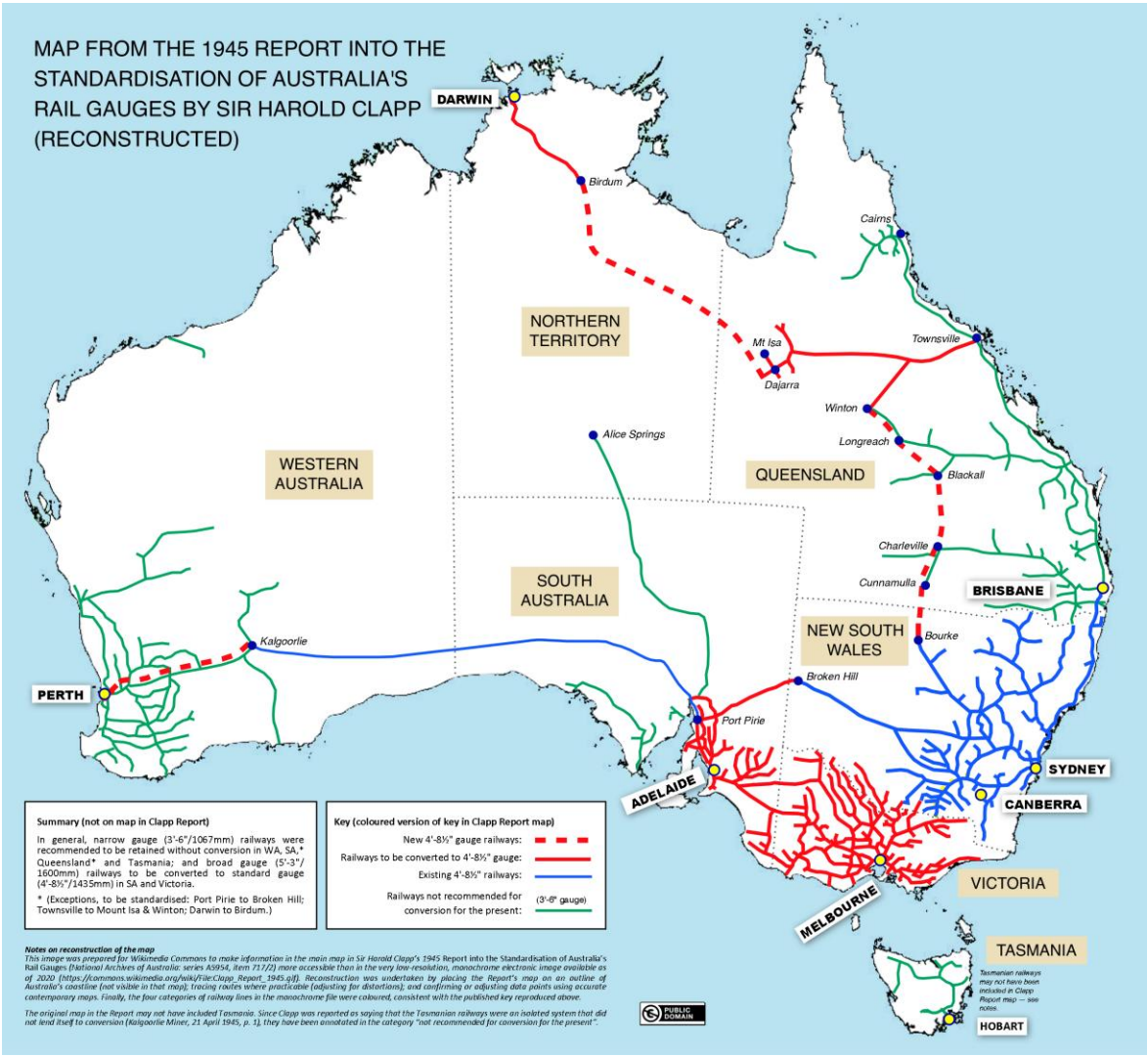
To connect Darwin to the rest of Australia, Sir Harold proposed a new standard-gauge line via Birdum through Cloncurry in Queensland and then into NSW via Bourke. Sir Harold favoured this route as he believed it would generate more cattle traffic than the Alice Springs option. His plan was not well received. SA was outraged and Queensland and NSW, seeing no benefit in Clapp's suggestion, withdrew from the negotiations.

Due in part to the indifference of State Premiers, who were preoccupied with other post-depression and post-war infrastructure needs, gauge standardisation was not seen as a pressing issue, and very little happened with Clapp's other recommendations until 1952,

[11] In the late 1960's a CRB personality, (Jack Ross, I recall), took long-service leave, purchased a new Holden sedan, and had it loaded onto the Transcontinental train at Port Pirie to avoid driving it across the Nullabor. Watching his immaculate car being unloaded in Kalgoorlie, Jack saw his holiday plans disrupted when a lifting sling failed. His new car did not survive the impact with the ground.

when the Commonwealth and the States agreed to construct a standard-gauge line between Melbourne and Albury.

The map from the Clapp report is shown below. The solid lines are the railways that existed in 1945. Blue for standard gauge, red for broad gauge and green for narrow gauge. The dashed red lines are Clapp's standard gauge solutions for intercapital links. Note that the Port Pirie to Broken Hill narrow gauge link is incorrectly shown as broad gauge. It should be a green line with a dashed red line above it. In 1957 the



Harold Clapp's 1945 plan to link Australia's capitals

Commonwealth Government built what some hoped might be the first stage[12] of a standard gauge link to Alice Springs. It replaced the narrow gauge *Ghan* line between Port Augusta and Maree, and while it then formed part of the Alice Springs route, one of its main purposes was to carry coal from the open cut mine at Leigh Creek to the Sir Thomas Playford power station at Port Augusta. On a visit to Maree in 1961, I met workers from a large, mainly migrant work force, who were transhipping freight to and from trains on the narrow gauge line to Alice Springs.

[12] While federal transport officials initially favoured extending standard gauge all the way from Maree to Alice Springs in the early 1950s, the idea was ruled out as "out of the question" by 1954 due to cost and poor terrain.

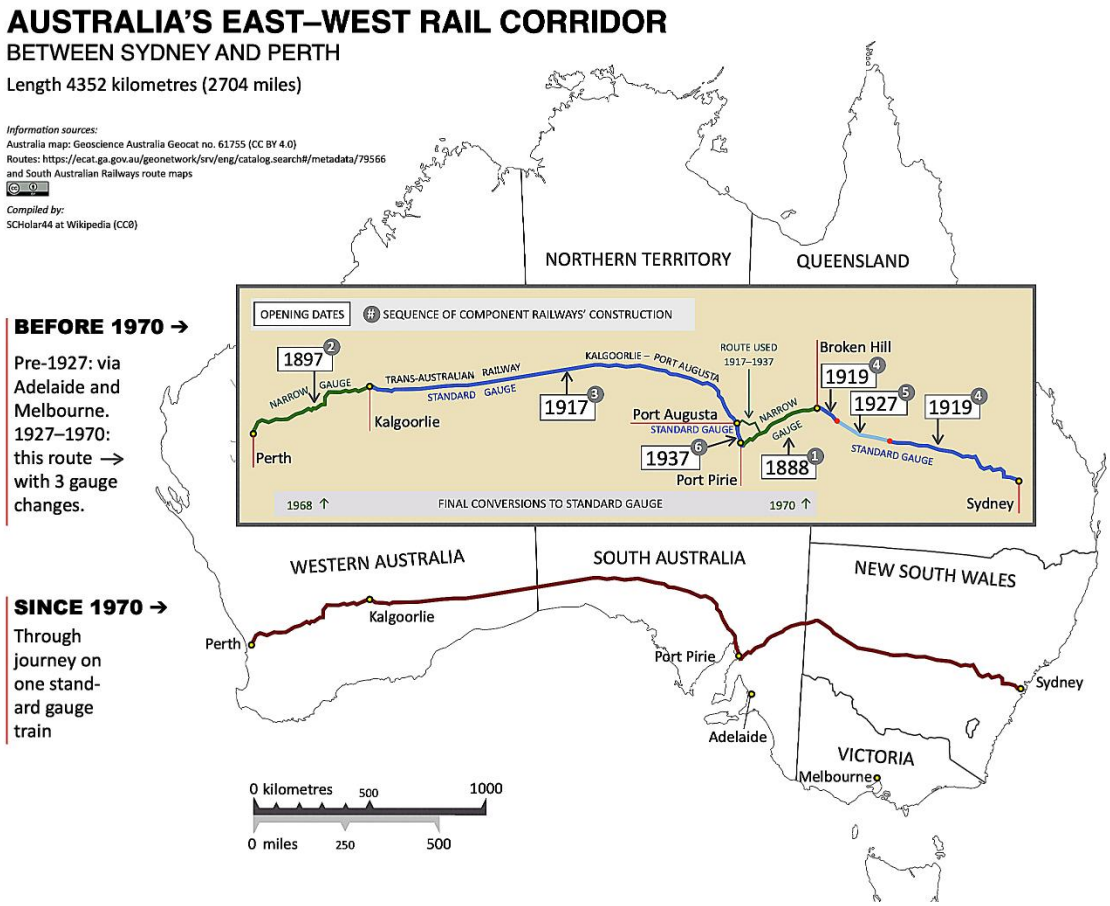
The transfer platform at Albury Station. The standard gauge is on the left; broad gauge on the right

The Melbourne to Albury rail standardisation in 1962 was a huge improvement for interstate travellers and freight companies. Before the conversion, I'd made several trips to Sydney - once on the utilitarian *Sydney Limited* and later on the magnificent *Spirit of Progress*[13], which still looked wonderful in its Royal blue livery.

Seated in *Spirit's* plush dining car and sipping a fine Victorian pilsner (that was only available on that train), I felt very special indeed.

At the time, I was almost convinced that the NSW government had a vindictive seat selection system to ensure that Victorian passengers changing trains at Albury had to walk the maximum distance along the platform to their seats on the NSW train.

Between 1968 and 1969, Clapp's vision of east-west national gauge standardisation became a reality, with the completion of standard gauge lines from Kalgoorlie to Perth and from Port Augusta to Port Pirie. In January 1970 the first freight train crossed Australia from coast to coast without a break of gauge and in March of that year, the *Indian Pacific* service began.



[13] This name was coined by Gertrude Clapp, the wife of Sir Harold Clapp at the 1937 launch of the service

Between 1972 and 1975, the Whitlam Government focused on transferring fragmented, debt-ridden state railway systems to the Commonwealth to build a unified national network[14] - and established the Australian National Railways Commission. In terms of gauge standardisation, the Whitlam government's most significant act, in 1974, was to initiate and pass legislation for the Tarcoola[15] to Alice Springs standard-gauge railway. The 1,001 km line, which was officially opened on October 9, 1980, replaced the flood-prone narrow-gauge Central Australia Railway (the old "Ghan" line) via Port Augusta labelled (A), Marree (B), and Oodnadatta (C) on the map below.

Facing an election in 1983, the Fraser Government announced its intention to extend the standard gauge line from Alice Springs to Darwin to complete the Adelaide–Darwin rail corridor. It was planned to open in 1988, Australia's Bicentenary year.

However, following its election in March 1983, the Hawke Government cancelled the project, stating that the Hill Report on Transport Services in the Northern Territory had concluded that future growth could not justify the massive investment required.

[14] Only South Australia (non-urban) and Tasmania transferred their systems.

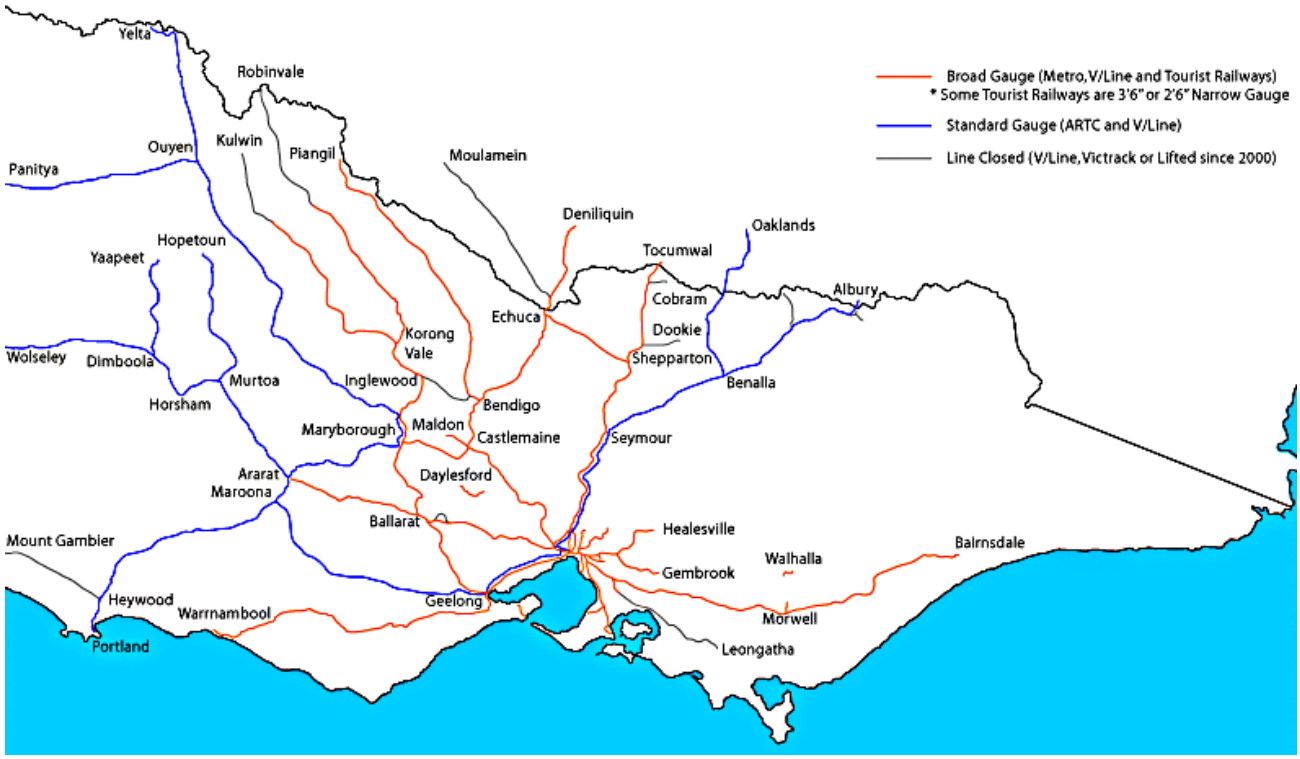
[15] Interestingly, the Tarcoola starting point chosen for the 1980 route had been an option considered by the original planners in 1910. However, they chose a cheaper route commencing from the railway's then terminus at Oodnadatta, which had been reached from Port Augusta in 1891.

By the 1990s, with Adelaide to Melbourne being the only interstate link not converted, two main options were considered for gauge conversion:

- via Ballarat: a new track or dual gauge to Ballarat, then conversion of the line west
- via Geelong: a new track to Geelong, dual gauge to Gheringhap, then conversion of the line via Cressy, followed by conversion of the line from Ararat.

While the Geelong route was longer, it was chosen because it avoided the steep grades of the Ballarat route. When the standardisation was completed in 1995, it became possible to travel via rail from Brisbane to Perth via Melbourne without a break of gauge.

Other key rural Victorian lines were also standardised at the same time, including the Portland, Yaapeet and Hopetoun lines, and a dual-gauge link was provided to Maryborough to permit grain from the north-west to reach the port at Portland.



In the Northern Territory, the last great connection was about to be made. In 1997, the Howard Government agreed to provide $100 million from the Commonwealth's Federation Fund to assist in the construction of the Alice Springs to Darwin rail link. In June 1999, the AustralAsia Rail Corporation, a company owned by the Northern Territory and South Australian Governments, was awarded the contract to build and operate a 1420 km Alice Springs to Darwin line as a BOOT (Build, Own, Operate and Transfer) project to the Asia Pacific Transport Consortium (APTC).

The APTC contracted FreightLink to implement the project and to operate the railway, which cost $1.2 billion to build. Construction began in July 2001 and was completed in September 2003. In January 2004 the first freight train reached Darwin, followed by the first passenger train, which arrived from Adelaide on 17 January 2004, travelling 2,979 km in 47 hours.

The long held dream of a continuous, standard gauge rail network connecting all of Australia's capitals had finally been realised.

John Wright

LEST WE FORGET – by David Jellie

Driver William (Bill) Edward Miles, VX 30505

Bill Miles' enlistment photo.

Bill was born in Dunolly and at the age of 29 he enlisted in 1940. On his Attestation Form he described himself as a road foreman and then crossed it out and inserted 'Clerk". Bill worked in the CRB's South Melbourne store yard.

The remarkable thing about Bill's story is that before the war he had an accident and had his right foot amputated. He wore a prosthetic foot. It is alleged that he arranged for someone else to attend his medical for him and he was enlisted.

But reality must have caught up with him because his service and casualty form states under the heading of Distinctive Marks - 'Left leg amputated below knee'. It was claimed by people in Bairnsdale that Bill was the only Australian soldier with a wooden leg that was sent overseas. He belonged to the 2nd/2nd Pioneer Battalion and when it sailed for the Middle East, Bill was not permitted to go. However, he was the Regimental Aid Post orderly and he somehow persuaded the doctor to let him go.

He became a driver and was initially sent to the Middle East in January 1941. He suffered from two bouts of diarrhoea which required hospitalisation and in February 1942 he landed at Batavia (Jakarta) in Java. He was declared missing three weeks later and in August that year he was officially declared a Prisoner of War.

In August 1945, it was recorded in his archive - 'Alive in Siam Recovered from Japanese' - and in 1946 he was fitted with an artificial limb at Heidelberg Hospital. John Gibney Senior said that he had a tough time on the Thai-Burma Railway. He described how the Japanese beat him with bamboo staffs and with the butts of their rifles because they accused him of cutting his foot off to avoid working.

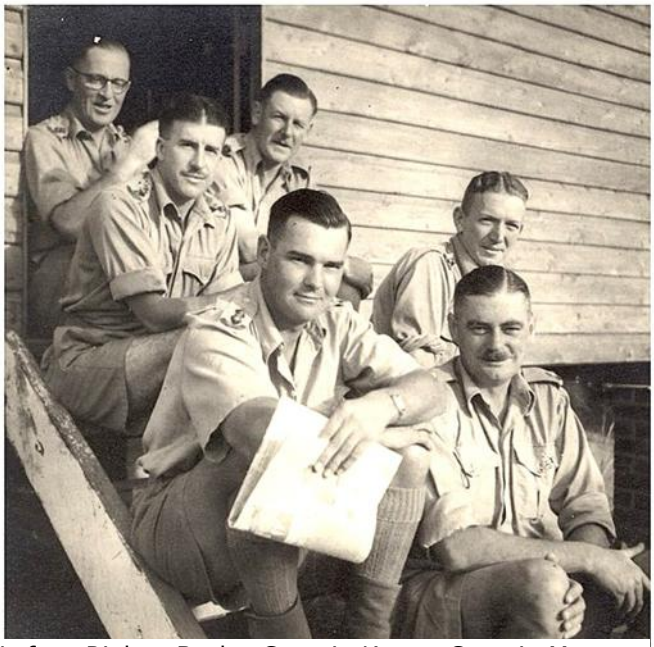
In April 1951, Bill was appointed Bairnsdale's Traffic Officer where he served for 37 years. Bill Dolamore – a fellow Prisoner of War of the Japanese – sent his best wishes and thanked him for his loyal service. Bill was a 'character' and very popular in the region – especially in the trucking community. There was a cartoon on the wall of the Cann River Hotel depicting an obviously overweight truck with springs flattened and tyres bulging. Beside the truck was the driver and a short, portly gentleman with a tape measure. The caption read, "Overweight by Miles".

John Gibney Senior recalled that he went down there to do some work and he stayed at the Marlo Pub with Bill. The pub had plywood walls so that you could hear people in adjacent rooms. That night, Bill was about three rooms away but he woke John up early in the morning with his screaming and thrashing around. He relived in his nightmares the horrors he went through at the hands of the Japanese. It took him about 20 years to get it out of his system.

Bill retired in September 1974 and he died in Bairnsdale in December 1995 at the age of 84.

Lieutenant Colonel Merton Conroy Morgan, 3166 (VX38985)

Circa 1941. Left to right: Captain Morgan, Major Lloyd, Lieutenant Wastell. Seated: Lt Colonel Robertson MC VD Commanding Officer. (Robertson was killed in action at the Battle of Muar)



Left to Right - Back - Captain Kemp, Captain Merton Morgan, Unknown Front – Captain Bowring, Captain Gibson, Major Oliff. Bathurst circa – 1941.

Merton was born in Merton, Tasmania, in April 1916. Merton was a small village in northern Tasmania, near Glenorchy. The site of the village was inundated after the construction of the Tolosa dam – to provide Glenorchy's freshwater supply.

He was the youngest son of a military family. His father was also a Lieutenant Colonel.

Merton attended the Royal Military College at Duntroon, graduating at 20 years of age as a Corporal in 1936. He was appointed to the Australian Staff Corps.

He continued to serve with the Australian Staff Corps in the pre-war period under the service number 3166 but with the outbreak of war, he formally enlisted as VX38985 and was appointed as Battalion Adjutant to the freshly formed 2nd/29th Infantry Battalion to work alongside its commander, Lieutenant Colonel J.C. Robertson.

The 2nd/29th Australian infantry battalion was formed in October 1940, mainly with volunteers recruited from Victoria.

The battalion spent the end of 1940, and most of 1941 undergoing rigorous training, first at Bonegilla and later Bathurst.

Amidst fears of a Japanese invasion of the Malayan peninsula, the 2nd/29th Battalion sailed from Sydney Harbour with 8th Division's 27th Brigade and arrived in Malaya on August 15th, 1941.

Left to Right: Captain Oliff, Lieutenant Wastell, Major Lloyd, Captain Brand, Captain Morgan. Taken on board troopship Marnix – August 1941.

The battalion fought several delaying actions along the west coast, including fighting around Bakri and Muar, and in Johore, before the Allied forces withdrew across the causeway linking the Malayan Peninsula to Singapore.

The Battle of Muar was the last major battle of the Malayan Campaign. It took place from 14–22 January 1942 around Gemensah Bridge and the Muar River.

The British withdrew 240 kilometres south to Johore to rest and regroup, leaving it to the 8th Australian Division to stop the Japanese advance.

The Australians inflicted severe losses on the Japanese at the Gemensah Bridge and in a second battle a few kilometres north of the town of Gemas. Members of the Australian 8th Division killed an estimated 600 personnel in the ambush at the bridge itself, whilst Australian anti-tank guns destroyed several Japanese tanks in the battle north of Gemas.

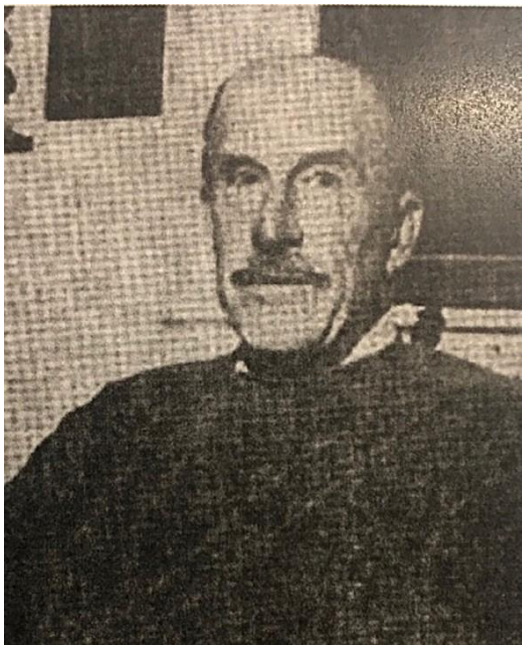
Although the ambush was successful for the Allies, the defence of Muar and Bakri on the west coast was a complete failure and heavy casualties were inflicted on its two Australian infantry battalions. The casualties of the Battalion in one week of fighting were 13 officers killed or wounded and 296 other ranks killed or wounded, or 58% of those who went into action on January 17th.

During the short Malayan Campaign, Merton distinguished himself during the Battle of Muar when a large portion of the 2nd/29th Battalion became cut-off by the Japanese. An unidentified source on the internet site – Reddit – stated:

‘Comprising seven officers and 150 others in several groups, including Jats (Indian Brigade), they were eventually gathered together by the battalion's adjutant, Captain Morgan. Finding themselves isolated, they set off across country towards Yong Peng. Most of them eventually fell into Japanese hands.’

Merton and his men were captured while attempting to make it toward allied lines. Initially, they were imprisoned at the overcrowded and unsanitary Pudu Gaol in Kuala Lumpur. They remained there until October 1942 when they were sent to Changi in Singapore to join the rest of the battalion. It was here that his family was made aware he was a POW and he was no longer considered ‘missing’.

Merton remained in Changi for the next three years and survived his Japanese captivity, but many from his battalion did not, with 582 dying in the Malayan Campaign and subsequent Japanese imprisonment.



Merton Morgan at the CRB – circa late 1960s.

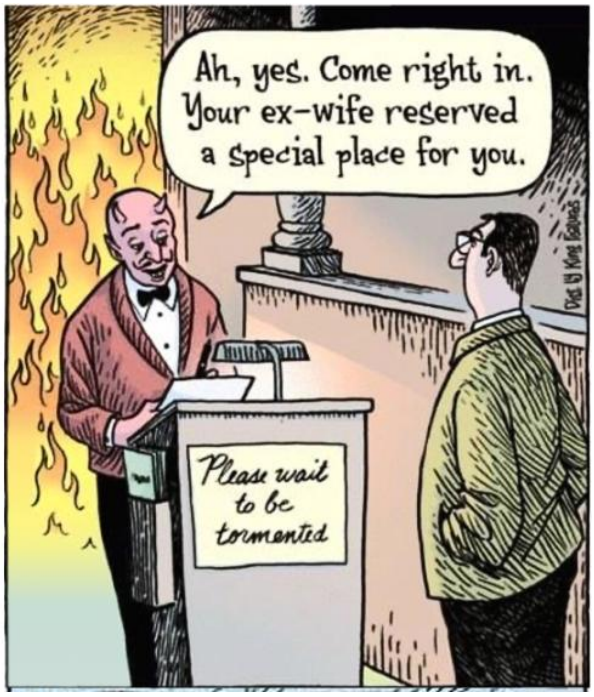
Merton's career in the army continued after the war. He was posted to Army Headquarters and remained in the military until 1967, when he retired aged 51 with the rank of Lieutenant Colonel.

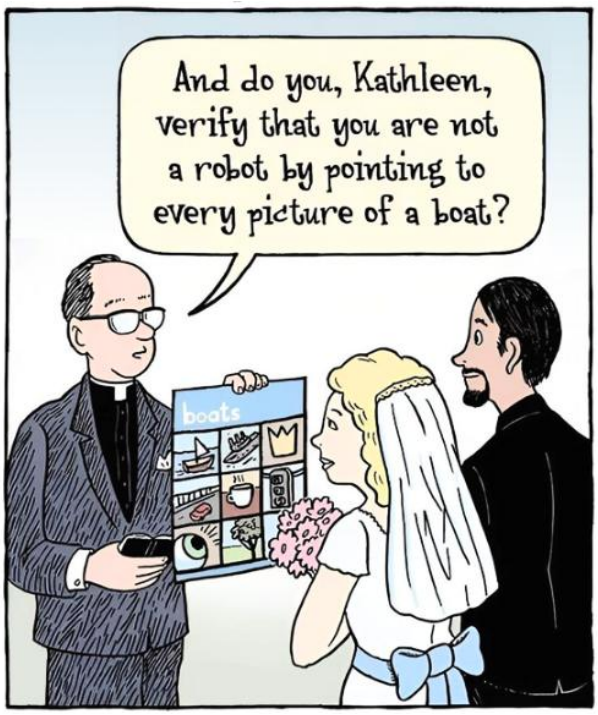
Merton joined the CRB in the late 1960s. He worked in the Estates Section and eventually became the Assistant Estates Officer.

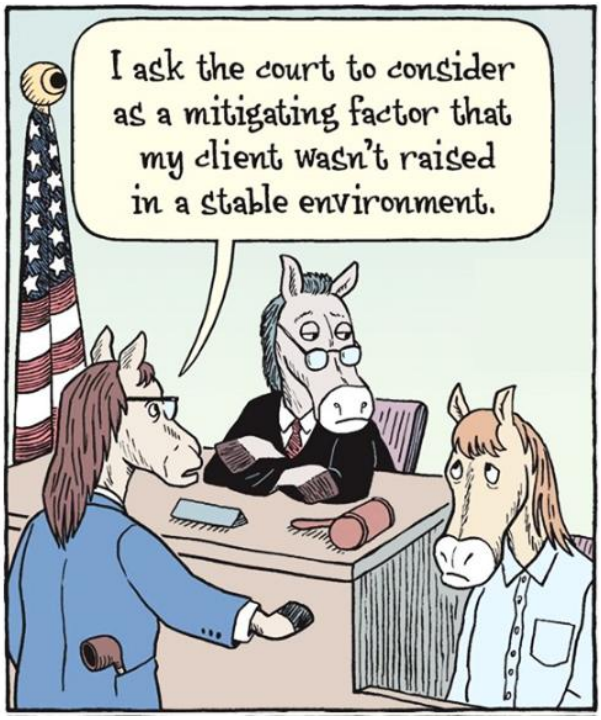
Merton brought his military training to the fore – diligence, punctuality and pride in performance – and he was highly respected by his 'troops'. He was still inclined to use army technology: a 'group' was never assigned to do a job, it was always a 'detail'.

Merton retired in the late 1970s and he died in Launceston, Tasmania, in May 1993 at the age of 77.

David Jellie


Ah, yes. Come right in. Your ex-wife reserved a special place for you.
Please wait to be tormented


And do you, Kathleen, verify that you are not a robot by pointing to every picture of a boat?
boats


I ask the court to consider as a mitigating factor that my client wasn't raised in a stable environment.


I DON'T KNOW THE FIRST THING ABOUT DELIVERING BABIES. HELP ME OB-GYN, YOU'RE MY ONLY HOPE!
NYA
USE THE FORCEPS, LUKE!