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LIGHT RAILWAYS

Australia's Magazine of Industrial & Narrow Gauge Railways

Light Railway Research Society of Australia Inc.

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1 inch (in)	25.40 millimetres
1 foot (ft)	0.30 metre
1 yard (yd)	0.91 metre
1 chain	20.11 metres
1 mile	1.60 kilometres
1 ton	1.01 tonnes
1 pound (lb)	0.454 kilogram
1 acre	0.4 hectare
1 horsepower (hp)	746 Watts
1 gallon	4.536 litres
1 cubic yard	0.765 cubic metres
1 super foot (sawn timber)	0.00236 cubic metre

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No 243 June 2015

Contents

Editorial

With winter fast approaching, my wife and I are heading off to warmer climates – and narrow gauge railways. No, not Queensland (lovely as it is), we're heading to France, land of high speed trains, Metre gauge department railways, and other distractions. Coincidentally, Associate Editor Richard Warwick and his wife have also packed their bags for Europe, we promise to come back in time for the next issue!

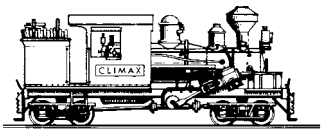
LR 243 features some great reading – starting with Bridget Jolly's 'Thin lines of transport' describing South Australia's fascination with early monorail systems. Andrew Becker records the work required to 'Resuscitate the Count', Coal Creek Museum's Bundaberg Fowler. In 'Research', Stuart discusses copyright, and how it can affect authors – hopefully dispelling some myths.

With some great Field Reports, and another tour report, this time from the South Australian group, it shows there's still plenty to be seen if you go looking!

H&T covers Puffing Billy's 60th anniversary, and the arrival of the new boiler for NG G16 129, an exciting project that will see a second Garratt on the railway.

It is now possible to receive *Light Railways* as a PDF when you renew or join as a member. This gives you the flexibility to read all the same excellent LR content on your preferred electronic device, as well as delivering the ability to search PDF documents - see page 31 for more details. *Scott Gould*

Front Cover: *Coal Creek, Korumburra, Victoria – Bundaberg Foundry 0-6-2T No.2 Count Strzelecki (7 of 1953) waits for departure from the top bush tramway station on 2 January 2006. Photo: John Browning*



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The Light Railway Research Society of Australia Inc. was formed in 1961 and caters for those interested in all facets of industrial, private, tourist and narrow gauge railways in this country and its offshore territories, past and present.

Members are actively involved in researching light railways in libraries and archives, interviewing knowledgeable first-hand participants and undertaking field work at industrial sites and in forests.

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Articles, letters and photographs of historical and current interest are welcome. Contributions should be double spaced if typed or written. Electronic formats accepted in the common standards.

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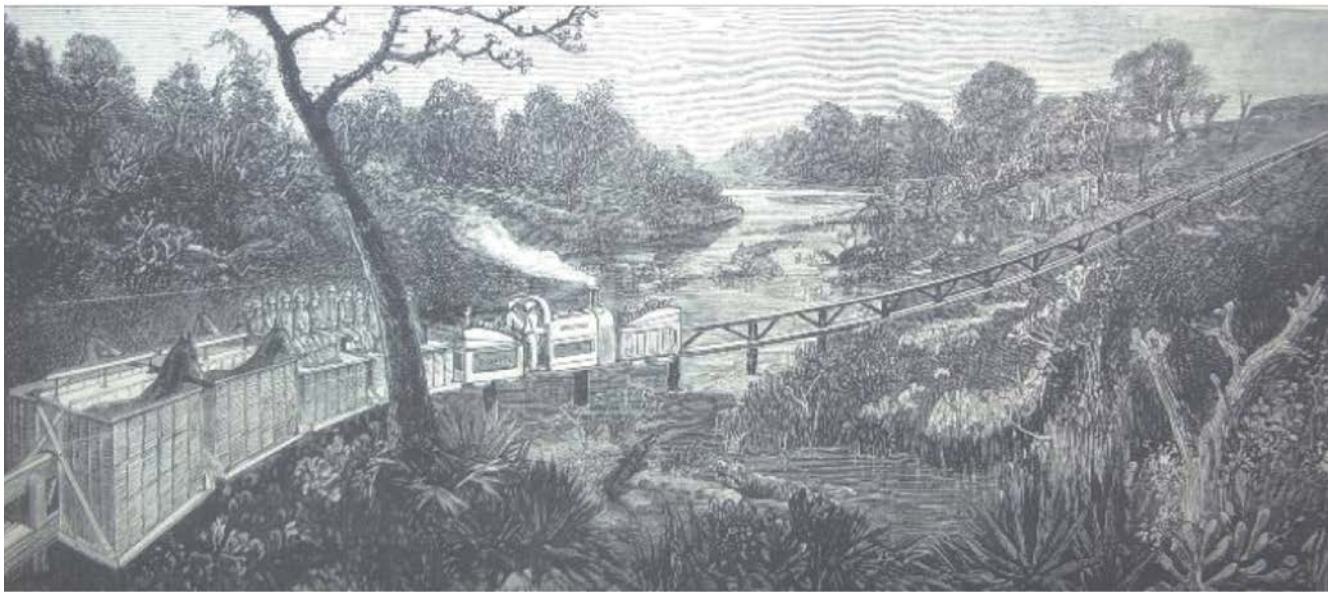


Figure 1 - An interesting sketch interpretation of Haddan's railway, from 'A Pioneer Railway' 1872.

Thin lines of transport:
the short life of the monorailway in early twentieth-century South Australia

by Bridget Jolly[1]

In the decades immediately before the Great War there was much discussion in the South Australian parliament of monorailway feeder lines to main conventional railways, and agitation across agricultural areas for their force in opening up and servicing settlement. It was hoped that the monorail would 'become a boon and a blessing to South Australian farmers',[2] many of whom saw one particular type, the French-designed Caillet monorailway, as an inexpensive and ready support to their endeavours. The monorailway was seen by many as an expedient addition to the agronomic benefits increasingly being bestowed by improved wheat varieties and the soil fertiliser superphosphate. Such branch lines would economically carry away the resultant increasing cereal tonnage.

While regional agricultural bureaus and government agricultural experiment stations were being established over the State in order to advance knowledge of district conditions and potential, and to advise on government policy, rural vigilance associations, private business enterprise, and local and State government investigated monorailways as auxiliary connections to aid agriculture and other primary industries.[3] Little of the technology was Australian.

Local knowledge of monorailways

News of a monorailway demonstrated near Paris in 1868 was made public in Australia by 1869; but further discussion of its possible applications does not appear to have followed this relatively widely-dispersed information.[4] In South Australia in 1874 the feasibility was noted of monorailways 'on the principle of Mr. Haddan's Pioneer Railway from Iskanderoon [now Iskenderun, Turkey] to Aleppo, or of the American "Prismoidal Railway" for a line from Adelaide to Mount Barker township.'[5] John Haddan designed his 'novel military or pioneer railway' for 'wild' country, for which he claimed that surveying and levelling were unnecessary (Figure 1). In this economy it shared premises with most early monorailways.[6] Haddon described his system as on the 'camel saddle principle'.[7] This was similar to the principle of the earliest British monorailway patent (1821), that of the civil engineer Henry Robinson Palmer whose horse-towed system was first built in 1824 (Figure 2).

Palmer, like Haddan, ran his single-rail on piles so that it was elevated away from obstacles, including the impediment of snows.[8] His line carried passengers, but first it carried bricks, and quarry metal, the purpose for which a Caillet monorail was used at the Unley Corporation's Glen Osmond stone quarry from 1912.

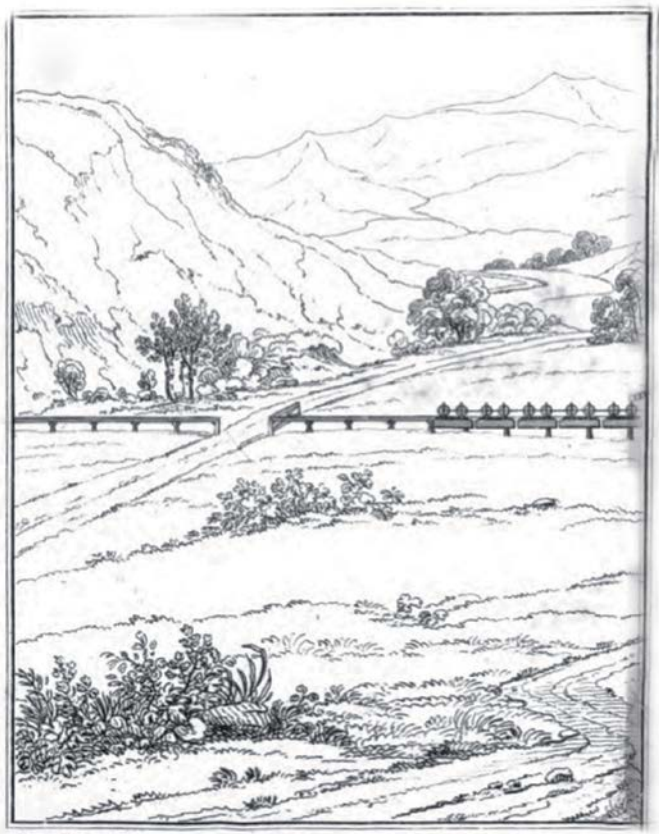


Figure 2 - HR Palmer's illustration of a road intersecting a monorailway of his design, published in 'Railways on a new principle.' Google Books

However, monorailways were more often seriously considered over 1902 to 1912 within schemes for South Australian agricultural expansion, particularly in the evidence given to railway Royal Commissions. These Commissions enquired into the establishment of conventional railways to serve primary production on Kangaroo Island and on the mainland: for Pinnaroo; for the Eudunda to Robertstown area; for Eyre Peninsula; and for the Murray Lands; and a Select Committee looked at a proposed railway from Brinkworth to Port Broughton. The Pinnaroo Railway Bill became an Act in 1903; the Eyre Peninsula Railway Bill was introduced in September 1909, and the Tailem Bend to Loxton line was offering in the same year.

The Loxton Farming Company and Caillet's monorailway

In February 1910, Arthur Scott of Northam, Western Australia, enquired expectantly from the Adelaide City Mayor about South Australian use of a 'Monoline Horse Tramway'. Farmers in his State wished to connect 12 miles of monoline to an existing rail system. Scott was told that the government had no knowledge of any such use in South Australia. A year or so later the reply would have been different. Caillet's system was applied by the Loxton Farming Company for wheat carting to Pike Creek, an anabranch of the River Murray, over a line from its property at Taldra, a few kilometres east of Loxton.[9] This private line was ultimately the only agricultural line based on Caillet's system laid in South Australia on which government assessments could be made (Figure 3).

Henry-Jules Caillet's system was known in Australia from the late 1890s, and soon after mainly through the illustrated catalogue for foreign countries, *Monorail Portatif. Système H.-J. Caillet* (Paris, [1900]) that noted Caillet's international awards from 1896. His was a simple system, intended as an intermediary between 'carts and the lightest of double rail systems',[10] having the flexibility that made his patented equipment truly portable.

Caillet was '*impressed with the necessity for a cheap, light, and inexpensive railway as a result of the slow and painful progress of the French troops*' during the Cochin-China War of 1881-1885.[11] He intended his system principally for colonial territories, and provided a number of truck designs for specific purposes: for example, for tea plantation and dairy work, for viticulture, and passenger transport. Caillet's trucks carried cotton bales at Shanghai, sawdust from a Rangoon mill, and rubble in side-tip trucks for prison embankment building in Egypt. They transported earth spoil, and rubber estate latex and manures; and logs, sugar cane, undried bricks (on removable shelves), and portable buildings. His cars had moveable and expanded-metal sides, wooden sides for salt mine work, pannier sides for bulky goods, and canted sides for carrying hay, cord-wood, ore, and sacks. Smaller cars were pushed by human power (hence the term 'trackbarrow' railway), others by beasts, some having double shafts for two draught animals.

Adelaide's importing agent, GT Lane, claimed that fewer horses were needed to draw loads than on a road; two unskilled men could lay one mile of track a day; and, with its establishment costs, Caillet's railway would yield a profit on one tenth the amount of traffic necessary to make the cheapest double railway pay.[12] The stock had from one to four tonnes carrying capacity, and by the late nineteenth century had been used in Brazil (where a 112 km line connected a mining district to the coast), France, Mexico, Nyasaland (now Malawi), Burma, and the East Indies (now Indonesia) before the system was recognised in South Australia. Caillet's patent was registered in Australia in 1899.[13]

In South Australia, a strong promotional point put by Lane was the farmer's ability to shift the rail line from one wheat stack to another without major disconnection, and:

> *if main lines were laid down along district roads over sandy wheat-growing lands to the steam railways, each farmer could have a siding of his own to his wheat heaps, and thus convey his produce direct from farm to railway*.[14]

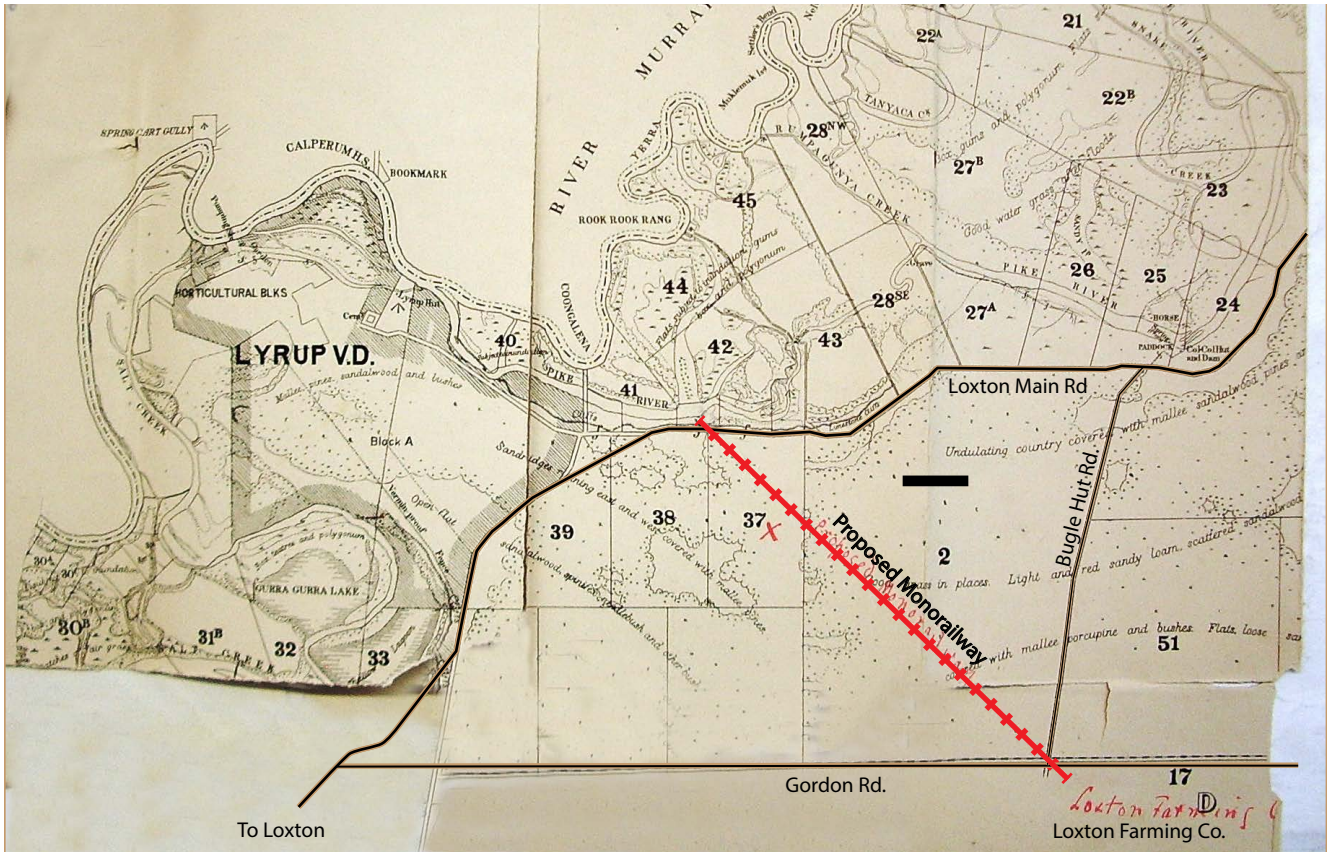


Figure 4. Possibly the illustration AO Ehmcke based the Loxton wagons on. Reproduced from Monorail Portatif.

Lines were simple to lay: no cutting or grading of the ground nor ballast nor sleepers were needed, it was claimed. The rails were supported by small sole plates hooked onto the inside of the rail; and scabbard fishplates easily joined the rail lengths for this highly flexible, demountable scheme.

Caillet's economical system was praised by pragmatists, and by progressive thinkers such as Owen Blacket (1851-1931), an architect and consulting mechanical engineer of Sydney. Blacket's attitude is not surprising given his wide-ranging interests, significantly in alternative railways, particularly experimental and minimalist types, in water supply and irrigation systems, and in profitable use of orchard windfalls for fermentation purposes. In early 1906 a Perth correspondent cited Blacket's familiarity with the Caillet system, perhaps from literature only, in Mexico, Brazil, New Zealand and other lands, and suggested that as it was no longer experimental, a practical trial from Manly to Newport could be tried.[15] In Tasmania, where probably no Caillet system was laid, it was acclaimed in the early 1900s as an inexpensive means for opening land and providing a useful connection for farmers, particularly potato growers, to conventional railway lines and roads.[16]

Figure 3. One of Loxton Farming Company's Caillet-type monorail trucks at Taldra in 1911 (from The Observer, *20 May 1911, p.13).*

TC Walker was a director of the Loxton Farming Company and of the Gem Navigation Company.[17] The farm held sections 17, 18, and 19, amounting to about 16,630 acres. Of those, two hundred and ninety six acres were in crop in 1909, and about 1,482 acres were intended for sowing in 1910.[18] In October 1910, Thomas Walker sought State government permission to lay a monorail line over government land and to have a landing place provided at the river bank.

The rails and fishplates were ordered from London, probably through GT Lane and Company of Adelaide, the sole Australian agent for the Monorail Portable Railway Company of London and Antwerp, which assiduously promoted Caillet's invention.[19] The mechanical engineer, AO Ehmcke of Hyde Street, Adelaide, built four cars for the company, using only a 'tiny picture' for a guide, one based perhaps on Caillet's type No. 159 (Figure 4).[20] Walker paid the government's fee of £3 to traverse Crown Lands blocks 37 and 38 of Paringa, held under lease, in November 1910. Eventually, the rail line probably crossed only one of these blocks. Its track was hewn through the scrub to the river bank; in all, seven miles of rail were put down.[21] In some places, instead of using sole plates, the company dogged rails to short (2ft) sleepers gained from the plentiful surrounding timber. The simplicity of Caillet's system endeared it to non-professional railway layers.

It was reported in local and interstate newspapers that by means of the monorail the Loxton Farming Company:

had shifted in one week 2,800 bags of wheat … It would have been quite impossible for the company to convey the wheat to the river in time for market by the ordinary methods and wagons.[22]

Not all the track was level (portions were on a gradient of 1 in 13), and to carry thirty bags of wheat each of the company's four trucks used two lead horses and an 'outrigger' horse. On the return journey the railway again proved its usefulness, bringing galvanised iron for sheds, domestic and stock water, and large quantities of superphosphate for the coming season.[23]

In 1911, the twenty-five Eyre Peninsula cereal growers based north-east of Streaky Bay at Petina, petitioned the government for twelve miles of monorail, to be laid on 'local titree sleepers', in order to cart their wheat over heavy roads from near Courilla vermin gate to Carawa Landing. They noted that a monorail was working very well at Loxton.[24] Similarly, when one of the Pinnaroo district vigilance committees weighed the benefits of a horse tram line, a road, or light railway it estimated that the 2000 sleepers needed per mile for a broad gauge line needed to be no 'larger than would be used for a strong fence'.[25] Farmers were more than willing to economise and adapt to obtain the extra assistance from rail haulage, and most put their faith in obtaining the more immediately available Caillet system.

Departmental opinion – and the Loxton Farming Company

The Dublin-born Alexander Moncrieff (1845-1928) was South Australian Railways Commissioner from 1906 to 1916. Earlier, when he was Engineer-in-Chief, Moncrieff noted that 'light lines' and 'cheap railways' were not always the same, and engineers everywhere, including in South Australia, were attending to the cheapening of railways.[26] This view formed in the late 1890s was the background to assessment of the appropriateness and usefulness of monorailway systems.

Moncrieff recommended John Mackay's *Light Railways for the United Kingdom, India, and the Colonies* … (London, 1896), a product of the Light Railways Conference held at London in 1894, and which contained statistics of eastern Australian colonies' railways. Although Mackay did not treat monorailways, he did enthuse that by means of the '*lightest of light railways, that is, a little steam-powered railway or tramway*', the farmer '*may be induced*' to make butter, raise poultry, and therefore prevent importation of products to the homeland; he will get better prices for his perishable commodities by their daily rather than weekly delivery, and he '*will be incited to greater exertions, and his mind will be strengthened and invigorated by being in daily contact with the outside world*'.[27] This tenor of patronising certainty, or prescription, part of the European origin of South Australia's closer settlement policy for agricultural development, assumed, in Bill Gammage's words, '*that using the land intensively maximised its value and civilised its occupants*'.[28] Added to such surety was Moncrieff's advice to the government in late August 1910, by which time monorailways had been carefully considered, that the '*light narrow-gauge Railway defies all competition*.'[29]

Debate in 1910 over the relative benefits of metalled roads, oil-engine locomotives, road haulage by the new traction engines, and the monorailway, Moncrieff said, '*is not to me a new question*'. Still, solutions to a multiplicity of needs were vexing and not easily won.[30] He thought the Loxton Farming Company's line would be '*an interesting experiment*', but in November 1910 he warned that it would be wise to prevent a monopoly that might compete with government railways, and possibly spread to other districts, and advised that the Loxton Farming Company and the Gem Navigation Company should be prevented from any likely '*injurious control over the business of other residents in the neighbourhood*'. He believed that this '*new departure*' in railways should be placed under control of the Commissioner. Arthur Searcy (1852-1935), president of the Marine Board, was more robust, not thinking Walker in any way intended a monopolising of trade – the apparent anxiety of Moncrieff – and indicated willingness to improve navigation of the branch river and erect a wharf or ramp. Indeed, improvement of the Pike River had been on file of the Public Works Department for some time, and in autumn 1911, Searcy noted that the '*Snagging Steamer*' was then in the locality and, if the state of the river allowed, would proceed.

Then, in a letter dated 12 December 1913, Walker succinctly stated that he had removed the monorailway from block 37. The government had begun a rail line to Paringa, and the company laid a two-foot gauge line on its property to access it.[31] The 22 miles of spur line from Alawoona to Loxton was authorised by Act in November 1912, and completed in February 1914.[32] The company's goods transport was thereby made far more expedient than the monorail route to the river terminus with its flying fox and steep chute to and from the water.[33] The company assured one newspaper that it '*would gladly abandon the line and all it has cost in favour of the asked-for State railway*'.[34]

The Unley Corporation's stone workings in the Glen

The quarry site of 24 acres at the first decisive bend in the Mount Barker Road at Glen Osmond, on section 1077, was sold by the solicitor Arthur Hardy (1817-1909) to the Unley Corporation in 1901.[35] It was operating at the first Mitcham assessment in 1853,[36] but probably eleven years earlier to provide for the Great Eastern Road. It was one of several proximate quarries. Eight sites were mapped by Thomas Gill in 1905.[37] Over the decades they supplied building and rockery stones, screenings for garden paths and for the tramways, and road, pavement, and other metal of various sizes and quality.

The Corporation bought '*Stonecrusher Gully*' for £500, in order to quarry stone for road-making. Half the area was solid stone,[38] some occasionally supplied for the Mitcham Council's repair to Mount Barker Road, which was badly affected mainly by this and Hardy's nearby Glen Osmond Quarry. By 1903 very few Glen Osmond quarries were working (Figure 5), yet the Unley Corporation's quarry consistently produced an average of 72 tons per day of crushed metal and

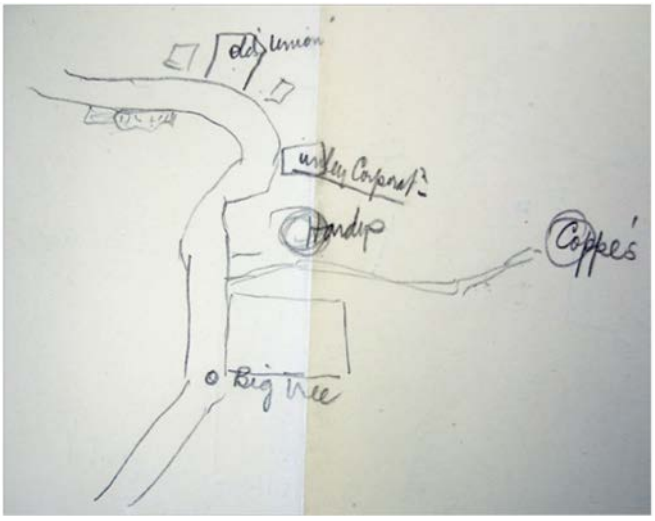


Figure 5. William Hargreaves' sketch map of quarries along the lower Mount Barker Road. 1903. State Records of SA

Figure 6. Unley Corporation Quarry, Mount Barker Road, Glen Osmond. 1930s. (Courtesy of Unley Museum P 2347).

screenings, its trolley drivers helping to wreak destruction on the Glen Osmond track as they left the Glen. Seven years on, '*heavy loads of chipping stone for road-mending … five horses to each load*' from the Corporation quarry continued to grind down the road.[39] '*Why should everyone's comfort be sacrificed to these quarries?*', it was asked in 1914;[40] and six years later it seemed:

> *like satire to declare that one of the worst stages of the Glen Osmond road lies between the two quarries where the best road metal is turned out. But so it is.*[41]

Unley councillors visiting the quarry in 1910 saw fourteen men engaged in work, two feeding stone from the 1½-ton dray loads into the maws of the gas-powered rock crushers. Labour was difficult to get and retain through the life of the workings (Figure 6), yet production was maintained at a high level and even with machinery breakages and lost production time profits were maintained.[42] In September 1911 the Corporation's Surveyor recommended a monorail tramline and trucks to help cope with quarry production.[43]

In November 1911, Unley councillors inspected the Caillet monorail then being exhibited at the Show Grounds on North Terrace (Figure 7), and were so impressed by its potential that they decided to install some 264 yards of rails '*forthwith*'.[44] The Corporation placed an order with G.T. Lane and Company for these and for fish and sole plates, two type 112 trucks with double brakes working from both ends, and two sets of shunting points and portable switches.

The equipment was shipped at Liverpool in February 1912, arriving without the rails in late March. These were sent by the next steamer, in April. The Corporation paid £131.8.5 for duty at Port Adelaide, freight, and delivery at the quarry, including installation.[45] By late May the monorail was laid and a horse track was being formed.

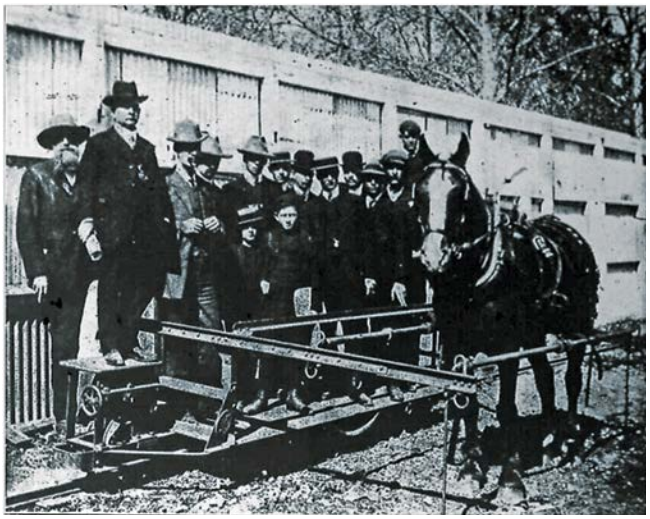


Figure 7. Caillet's monorailway, Showgrounds, Jubilee Oval, Adelaide. 1911 ('The Monorail Portable Railway', Adelaide Observer, *23 September 1911, p.6)*

The monorailway was to carry stone from the quarry faces to the rock breakers, with the intention to phase out cartage by horse and dray and to economise labour.[46] Certainly the difficulty in attracting labour, the increasing costs of dray cartage, and frequent requests for wages increases were believed to be good reasons for applying the modernising efficiency of the monorailway.[47]

Although by November 1912 the 'Monorail Tramway' remained in use, it needed some '*practice and a few minor alterations to make its working satisfactory*'. In early December the Quarry Advisory Committee asked for '*definite instructions*' from the City Surveyor on the working of the tramway during the coming fortnight.[48] He found that when drays were also in use the rails became an obstacle, moved out of place, and caused delay. In January 1913 it was decided that the monorail tramway was unsuitable for the '*steep grades and for other reasons*'; single horse drays gave better results.[49]

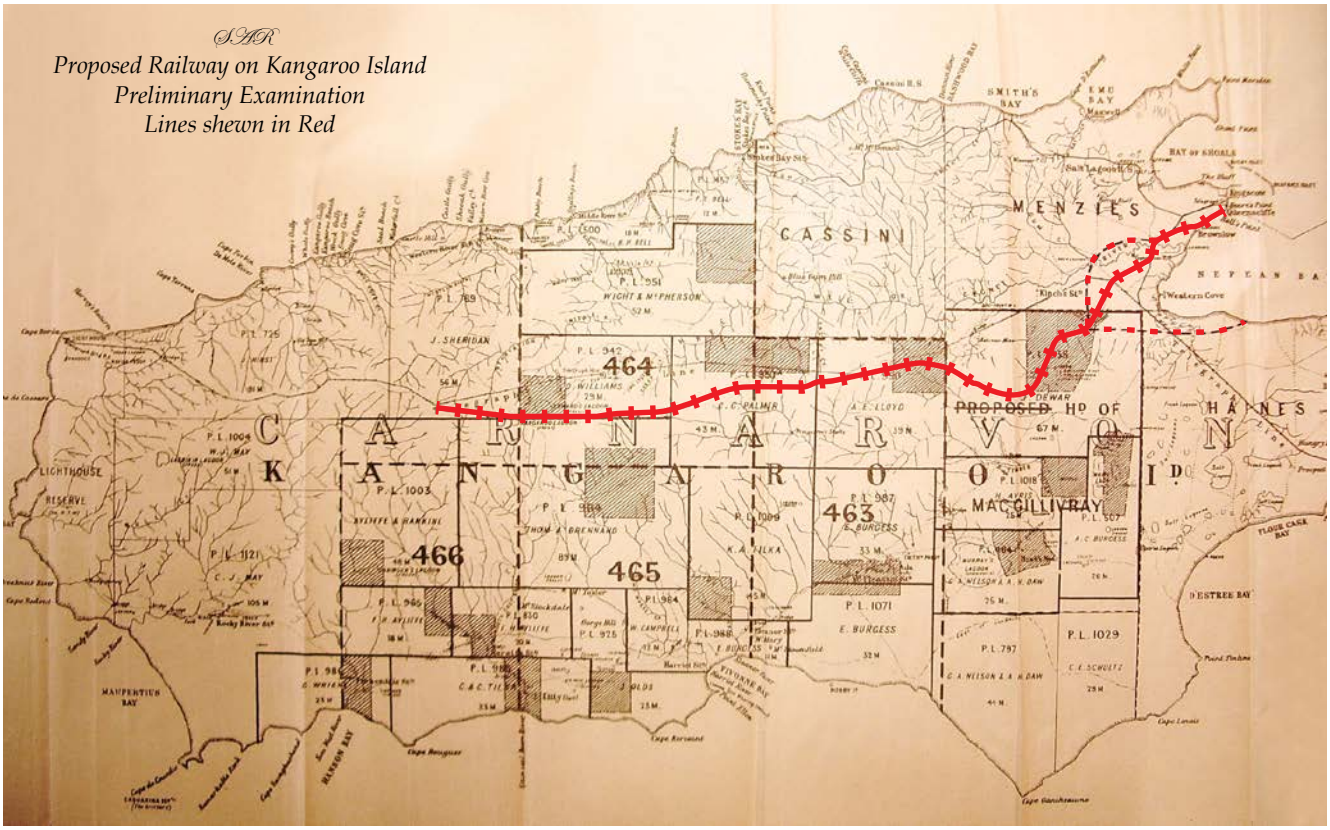
Short-lived indeed was this Caillet line, for in February 1914 the City Surveyor advertised for sale 'Monorail (Caillet's) plant': two trucks, rails and sole plates, in good order, could be inspected at the Unley Corporation quarries.[50] Possibly only one person was interested to buy: a Mr Tweedie made an offer.

A government railway across Kangaroo Island?

From 1909 to 1911, a Royal Commission enquired into the provision of a railway for Kangaroo Island. Conventional locomotive railway, animal-powered monorail, and even, though fleetingly, Louis Brennan's gyroscopic monorailway, were considered, but no line was recommended.[52]

During 1909-1910, the entrepreneurial Frederick L Duffield was preparing to establish himself on Kangaroo Island at Rocky River Station. When certain that a government island railway would not eventuate, Duffield, acting for an interstate syndicate, planned to lay thirty miles of Caillet monorailway from Rocky River to the new Vivonne Bay jetty in order to transport his and other farmers' produce. But the strengthening development of the Fauna and Flora Reserve (enacted as Flinders Chase in 1919, after many years of advocacy), with its objective of propagation and protection of native animals, dispelled any confidence that farming could be run profitably at Rocky River, surrounded as it would be by the Reserve, and Duffield abandoned his scheme.

The Kangaroo Island Commission's final view, given in early 1911, of the advantages of Caillet's railway to settlers who were dependent on very bad roads, such as on the Island, allowed only that the Island's '*sandy roads … are not so bad nor is the traffic on them so heavy as to warrant*' its adoption.[53] Most Islanders viewed this observation as unsympathetic and unfair; and in late 1911 the *Kangaroo Island Courier* office displayed an illustrated booklet on the Caillet monorail.[54] This was after the first Kangaroo Island agricultural show, held at Kingscote in November, that had firmly advanced Islanders' self-confidence. The booklet was part of the documentation



used by the Kingscote monorail committee, a group of never-say-die proponents that met in April that year to discuss the geographical claims of the Fauna and Flora Reserve, the Island's railway, the successes or otherwise of the Department of Agriculture's experimental agricultural plots, the recognised need for long-term experimental sowing and crop-dressing on the ironstone plateau, and the tightly interconnected, often emotional, interests that arose around these issues.[55]

Disappointed but undaunted by the Royal Commission's recommendations, the committee claimed to have collected much information that showed how useful a monorail line would be,[56] especially in preventing the Hundred of Ritchie, where 30,000 acres could be utilised for settlement, from becoming part of the Reserve. The meeting emphasised that produce from the fertile Cygnet River network in particular needed a railway to port, agreeing in a kind of compromise that the rolling stock of the Commonwealth Salt Refining Company, that ran from Salt Lagoon to American River, would 'suit all purposes'.[57] Originally a horse-powered line, the then current engine took a 21-ton load over five and a half miles in twenty minutes. The line had cost £400-500 a mile to lay. It was calculated that 60 miles of line across the island's 'back country' would be £8,000 cheaper than a main road, that cost some £640 per mile; a horse-traction monorail cost about £200 per mile.[58] The way ahead was, theoretically, very clear. But the government was adamant in not advancing Caillet's or any other rail system for the island.

A South Australian-manufactured monorail wagon

In 1909, however, the Railway Commissioner estimated £96,000 for laying a monorail on Kangaroo Island.[59] A monorail truck made at the South Australian Government Railway Workshops at Islington was shown to parliamentary members on 1 December 1910 on the exhibition siding at the Adelaide Railway Station yard at the rear of Parliament House (Figures 8, 9 and 10). What became the universal monorail design for South Australia required at least a one yard-wide metalled road to carry the horse and flat-faced outrigger wheel.

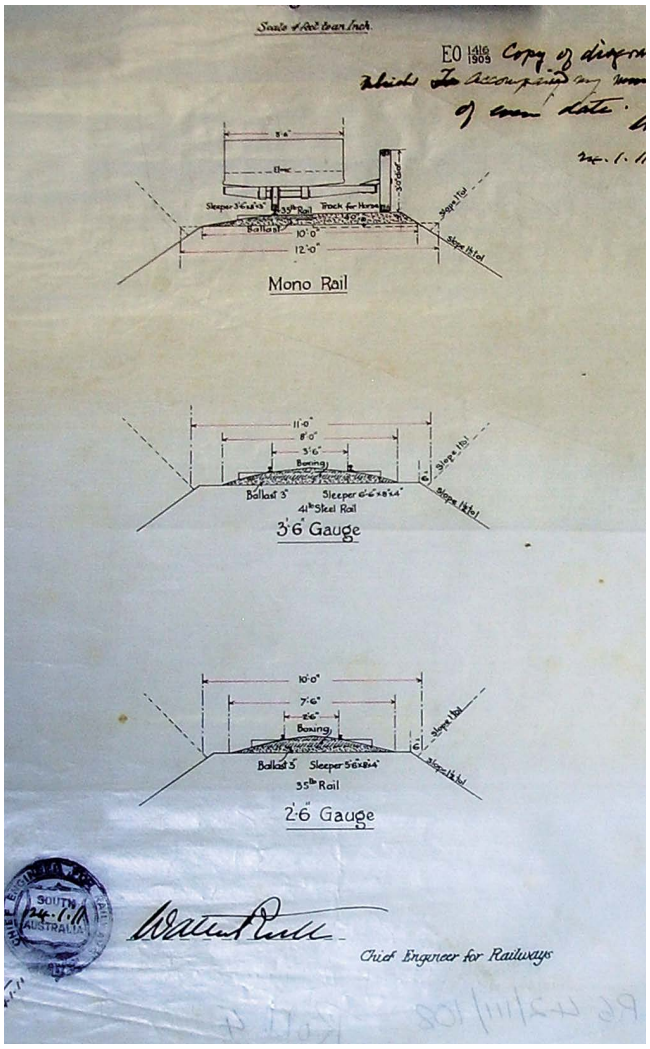


Figure 8. The South Australian Railways trackbed drawings, the top wagon is as drawn for Kangaroo Island. (GRG 42/111/108, SRSA).

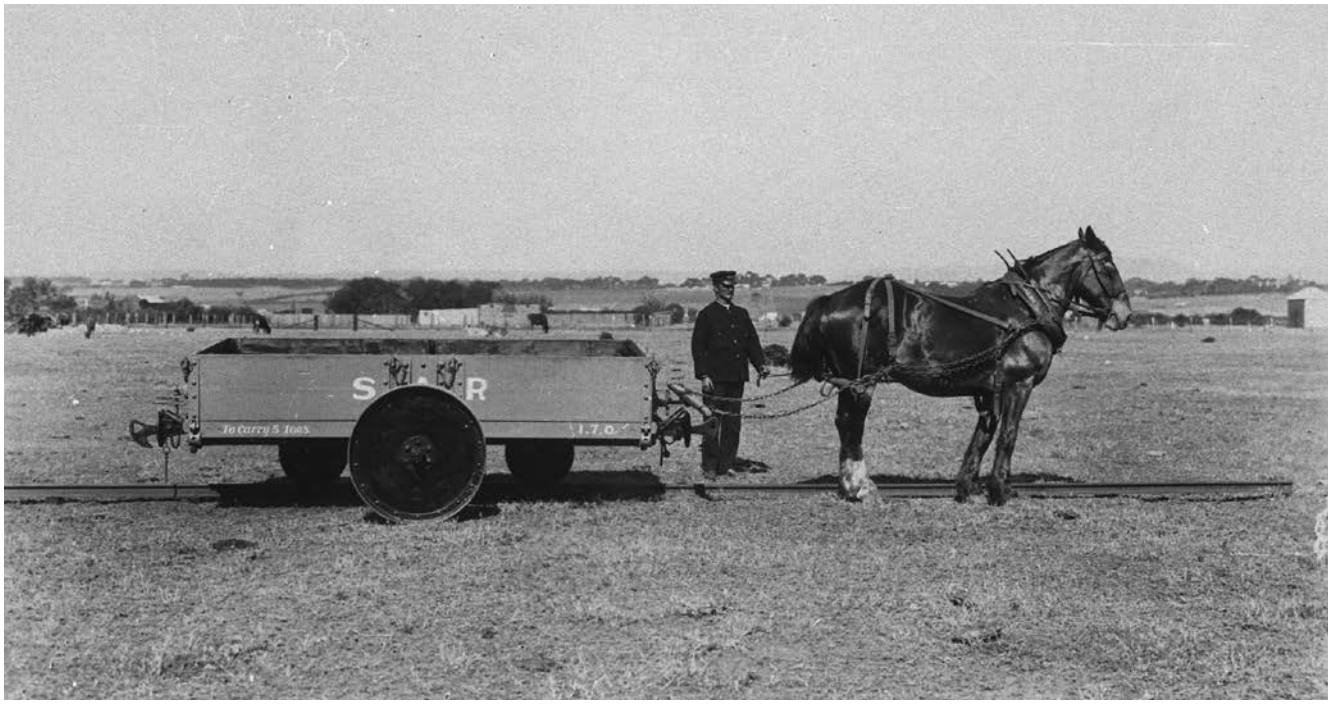


Figure 9. South Australian Railways monorail wagon. With the one outrigger wheel it could afford a much higher centre of gravity than Caillet's system. *Photo: History SA: GN03166*

The member for Alexandra, which district included Kangaroo Island, asked the Treasurer if this van was the type he proposed for '*his projected light railways*'. The Treasurer replied that the '*Railways Department had constructed that truck without instructions in regard to the kind of monorail vehicle to be built*'; he found it unsatisfactory, and unsuitable for sandy country which, '*he thought, required a vehicle which ran wholly on the rails*'.[60] Communications between department and ministry had apparently broken down, particularly, it seems, over the Pinnaroo experiment discussed below.

Usually the newspapers reported simply that the government-made monorail truck was to '*run on one rail*'.[61] This overlooked the large additional ground wheel that supplanted Caillet's animal shafts, and which gave greater perceived comfort and security to seekers of monorail stability. The result bore little resemblance to Caillet's light and efficient designs. It did, however, arise probably from not a little excess of South Australian Anglophilism in favouring an English monorailway design, that of WJ Ewing.

At the first European Tramways and Light Railways exhibition,

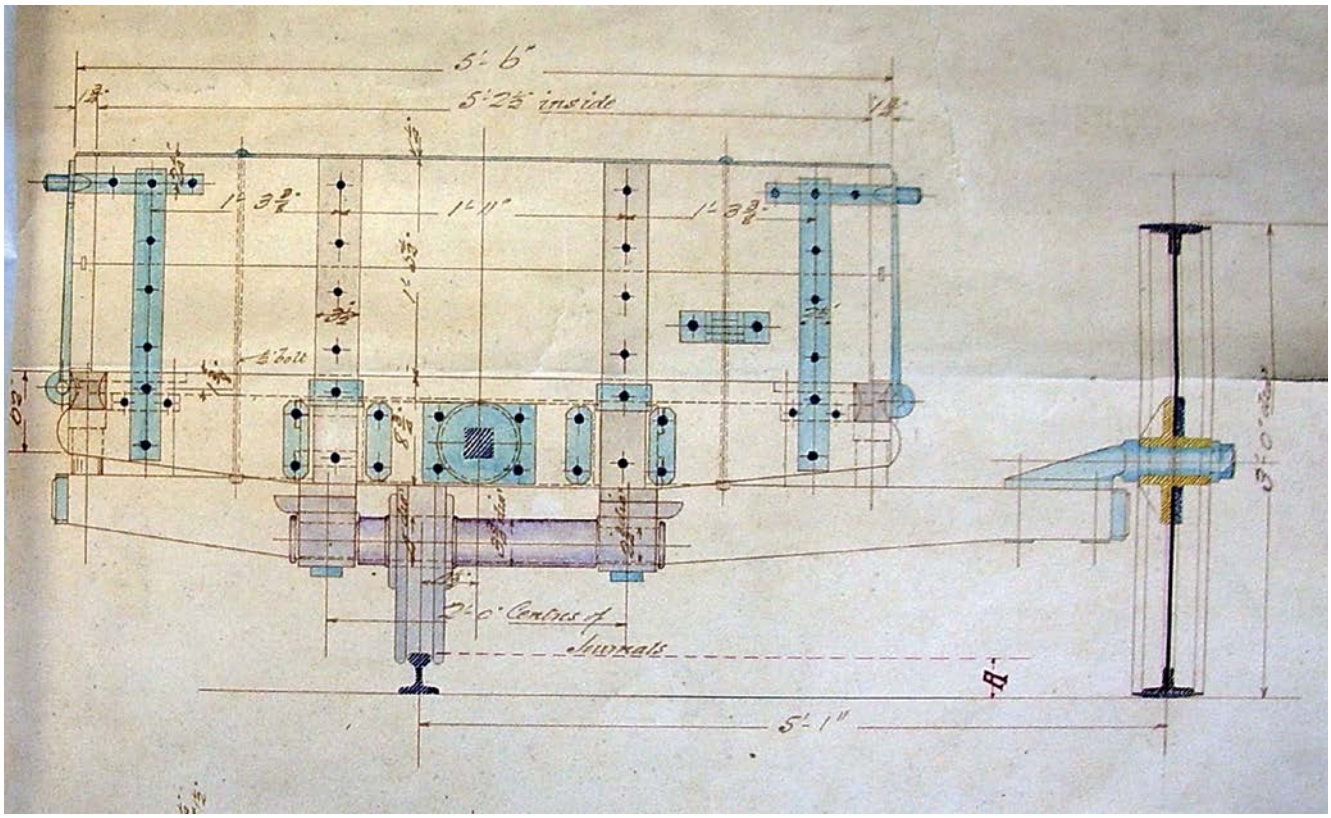


Figure 10. Rear view of the 'Experimental Mono-rail wagon to carry 5 Tons'. State Records of SA, GRG 42/111/106.

held at Islington, London, in 1900, both municipal and commercial interests exhibited with a view to future electrification. Parry and Company was reported in South Australia's *Advertiser* newspaper to have shown '*Swing's single-rail rolling stock*' which used an outrigger wheel; and the Monorail Portable Railway Company showed a non-motorised railway, which included '*special sleeping and living cars … for colonial purposes*'.[62] This last was Caillet's system. 'Swing's' was surely an error, and should have read 'Ewing's', the design adapted for experiment by the South Australian government.

The Ewing monorail system and William Thorold

In August 1911, the South Australian Commissioner of Crown Lands received a booklet from Veithardt and Hall of London with details of the wagons and motive power of Ewing's Patent Monorail System. The firm understood that the Commissioner was '*interested in cheap transport*'.[63] By this time Ewing's system had already struck a chord with the Railways Commissioner, whose source for its details lay elsewhere, possibly in the 1900 exposition if not the 1894 Light Railway Conference or from usual correspondence and connections to India, the land where Ewing's monorailway was used. Ewing's own design source lay even earlier, in the scheme of the Englishman William Thorold (1798-1878). Thorold had forty years experience as a turnpike road surveyor, and proposed a monorail system in his '*Auxiliary Railway for Turnpike Roads and Highways Passing through Towns*' which he read to the Mechanical Section of the British Association annual meeting in 1868.[64]

Among the monorail types and the uses for which they were considered in Australia, Ewing's and Caillet's ideas agreed in some essential respects, and both were considered by the South Australian authorities, wrestling, as they were, under financial strain to provide rural services. As Thorold may well be the ultimate ancestor of the experimental truck made by the South Australian Railways, it is worth quoting him. He proposed a single line of rails:

> *laid on one side of the road … [A]n arrangement of grooved wheels under the centre of the engine and carriages [is] capable of maintaining their grip upon curves of 20-feet radius …[T]he inventor thinks his principle peculiarly adapted to locomotion through new countries, and for passing through ravines, or up and down the sides of mountains, up any gradient not exceeding 1 in 12*.[65]

And the colonies were uppermost in Thorold's mind.

> *In India, such lines could be worked by elephants … In Australia, this system is peculiarly applicable, as their new set of roads are 60 feet wide and raised three feet in the centre, and by placing the single line of rail on the middle of this road, the traffic could follow with the least possible annoyance*.[66]

Thorold described his system as a '*pioneer line*'; and on English turnpike roads his rolling stock could '*act as lateral feeders to railways and … as branches to connect … with railway stations, mines, quarries, etc*'.[67] Significantly, to retain the load in a perpendicular position, Thorold used the '*surface of the turnpike roads as a base*' for the rail and employed an additional pair of non weight-bearing wheels running upon the road.[68]

The civil engineer, CW Bowles (later Colonel), applied Ewing's monorail system for passenger and grain freight for the Patiala State Monorail Trainways (now in Indian Punjab), that operated over 1907 to October 1927. idle when the State was not at war--and on a short line between Patiala and Mandi by German-made steam monorail locomotives from about 1908 to probably 1913. Another Ewing System monorailway in India, the Kundala Valley Railway, used bullock haulage over its life from 1902 to 1908.[69] The alleged advantages of the Ewing system – indeed, of Thorold's and most monorailways of this period – were material savings in having only one rail; there was no need to maintain two level rails to prevent derailment; and a much tighter turning curve than a conventional railway track is capable of was possible, a benefit in populous settlements, yet unremarkable for Australian rural conditions.

In 1900, Bowles had laid a Ewing System monorailway for the transport of construction materials during the laying of the Bengal-Nagpur Railway. Such application of a monorailway was suggested twelve years later by GT Lane when the government determined on laying an east-west trans-continental railway from Port Augusta to Kalgoorlie (rather than north to Darwin), and so encourage western development. In 1912, the year in which the line began, Lane promoted the Caillet '*trackbarrow*' system to take supplies and provisions ahead of the railway construction gangs and permanent way.[70] This vanguard work was but one of the abilities of Caillet's portable monorailway. Lane also entreated King O'Malley, then Minister of Home Affairs in the Federal government, to consider the Caillet system generally for temporary railway supply lines, but to no avail.[71]

A trial for the Pinnaroo mallee country

In September 1910, the Royal Commissioners had quizzed Alexander Moncrieff on the Eudunda to Robertstown railway: is there '*a cheaper method of giving them a railway? Have you considered the monorail scheme for spur lines?*' they asked. Moncrieff understood them to mean a monorail worked by horses, such as that which '*has been so much spoken of in the States [America], and which they are now thinking of in connection with the getting of firewood on the Pinnaroo line'*. This he thought would be well on a farm with good soil without the need to ballast the ground for a horse track, the horse attached to the cart '*with an outrigger like you see on canoes in the South Seas*'. Even so, Moncrieff dismissed Caillet's system for any public use, admitting the '*only alternative for … spur lines is … the De Cauville system [of two foot gauge with small trucks and engines]*'.[72] Elsewhere, Moncrieff argued that a light line powered by oil fuel, and requiring practically no water, was his 'ideal' for heavy, sandy country devoid of suitable water supplies such as that through which the main Pinnaroo line travelled.[73]

The government initially decided that monorailways of about five miles as feeders over the Pinnaroo sand hill barriers from farm to railway station should prove cheaper than road-making or a narrow gauge line. It instructed WM Stevens, Engineer of Roads and Bridges, who had recommended the monorail experiment, and had inspected the Caillet plant imported for the Unley Corporation, to draw a rail truck (Figures 11 and 12). Stevens did not draw an outrigger wheel. He kept true to Caillet's design except in laying the rail on timber sleepers, supposedly to provide a firmer bed on the sandy dune lands.[74] (For extempore mode, Caillet had allowed bundled sticks to be laid as a foundation on very soft ground). Enthusiastically, Stevens recommended that for little, if any, more than the cost of a single track of 2ft 6in gauge railway, a double track for '*up and down traffic*', running east-west following the flats, could be laid, and that the Caillet bogie truck with one moveable flap side and the long platform bogie truck would be the most suitable.[75]

Then, in the spring of 1910, a deputation to the government asked that a ten-mile Caillet line be laid to open the lands between Border Town and Pinnaroo.[76] The government arranged with GT Lane to import up to 50 miles of rail line, and thirty trucks of different type and capacity, that Lane understood were for the West Coast and Pinnaroo districts.

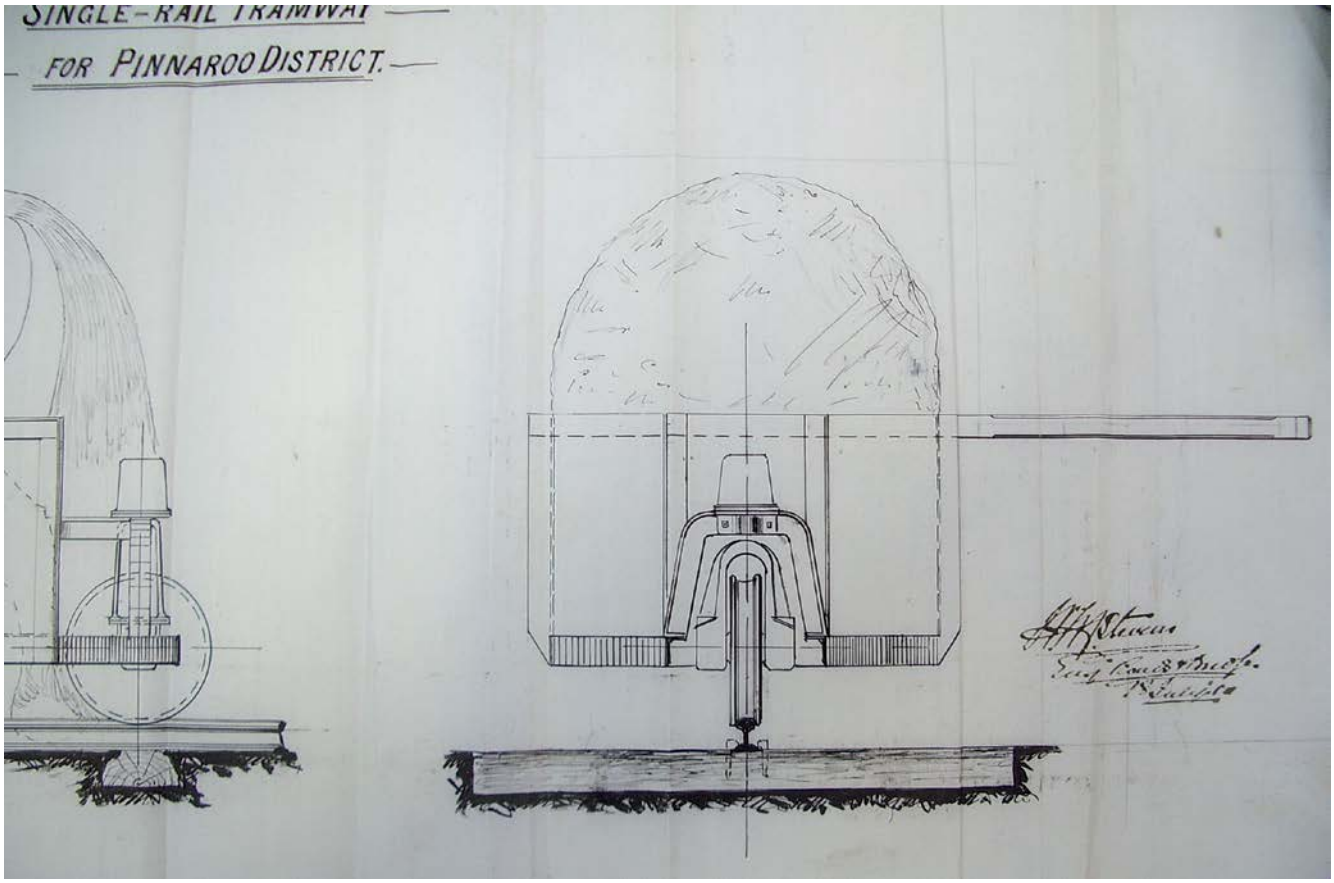


Figure 11. 'Single-Rail Tramway for Pinnaroo District' (State Records of SA, GRG 35/15/61, 1910)

Monorails planned for Roseworthy Agricultural College

Was it correct that '*trials have been made at Roseworthy of a horse-traction mono-rail truck built by the Railways Department*'?[77] While parliament debated the types of railways likely to help open agricultural lands, in early 1911 serious consideration was given to laying a passenger and freight monorailway along the three and a half mile-long government-owned road from Roseworthy Railway station to Roseworthy Agricultural College at Wasleys in the Lower North. Trials were to be made there of the truck built at the Islington Workshops, and four miles of rails were proposed to be laid in the College fields, intended mainly to reduce the number of horses used on the College farm.[78] GT Lane claimed that one horse and monorailway would do the work of six horses.[79] Presumably to test this claim, even with the substantially modified truck design, the government voted £2,000 for 1911-1912 for '*Monorail - Trial Lines on Government Farms*'.[80]

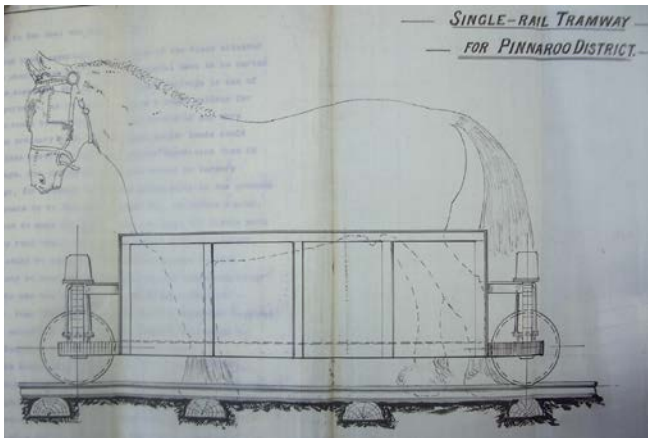


Figure 12. 'Single-Rail Tramway for Pinnaroo District' (State Records of SA, GRG 35/15/61, 1910).

Some adverse decisions

In September 1911 the Commissioner of Crown Lands had promised a deputation from the District Council of Tatiara that he would visit the monorail line at the Adelaide Show. This deputation principally asked that he consider the construction of a monorailway, '*the same as the system used at Loxton*', from Bordertown, Keith, and Cannawigra '*to open up the new Hundreds*'.[81] The Railways Commissioner thought the Caillet Show van might, under favourable conditions, be advantageous for a number of farmers as a temporary arrangement to reach a railway station '*if they were not in a hurry*', but he considered that its adoption as a public means of conveyance would only lead to disappointment.[82] Here the Commissioner made far too many cautionary qualifications to arouse any government advocacy of a Caillet public system for the mainland or for Kangaroo Island.

Further reason for lack of support was the Chief Engineer for Railways' argument that five monorail cars and five trucks would be needed to convey loads equal to one engine-hauled railway truck, a serious matter when drivers and maintenance men's wages were considered. Moncrieff agreed, and this reasoning influenced the government to draft a Bill in 1910 that became the District Railways Act, No.1067 of 1911.[83] Suggestions had arisen at the 1894 Light Railway Conference at London for the granting of powers to local councils to construct light railways. Seventeen years later, the District Railways Act aimed to give the power to construct light railways, including monorailways, to councils, trusts, and individuals.[84] This legislation, in certain respects based on the Queensland Local Authorities Act, 1902, was perhaps a governmental side-track, and no doubt was intended to close the book on public monorailway initiatives for agricultural expansion. Strangely, it did not energise immediate further private enterprise.

The Act was settled by July 1911, the month when Lane expressed his annoyance that the whole business of the government's Pinnaroo experiment 'seems to be hung up indefinitely'.[85] Yet, in autumn 1912 Stevens recommended, as requested, a ten-mile experiment to test wheat carting using five Caillet cars of three- to five-ton capacity; and in May 1912, Lane again quoted costs to the department, this time for ten miles of line and three types of bogie truck: one with a movable flap side, one with pannier sides, and one with a long platform.[86] The department claimed that Lane misunderstood its communications.

A new South Australian province in the making

Kangaroo Islanders were justified in feeling aggrieved over their railway affair. Given the departmental condemnation of their island's ironstone plateau and its virtually irredeemable '*infertility*', they must have judged as sorely hypocritical a departmental enthusiasm over the opening up of the Pinnaroo mallee country. Even before the Kangaroo Island Commissioners' final report, the Surveyor-General reported on the Pinnaroo Lands for 1909-1910. The '*wonderful change*' which has taken place in the value of the land which,

prior to the proposal to construct a railway, was almost nil, and now realising as much as £10 and £12 an acre . . . shows in a remarkable way the advantages of the system so often adopted in America of making railway lines of development in new country … [W]ith the use of phosphates or other manures and a scientific system of farming, hardly any class of land can be said to be valueless for agricultural purposes.[87]

In the same year, the Department's *Journal of Agriculture* similarly enthused about the district from Tailem Bend to Pinnaroo. Now served by the railway, its progress was '*little short of marvellous*'. Whereas five years ago '*many authorities doubted whether the district warranted*' the railway, now, and with a proposed railway to Brown's Well that is expected to open up some 1,500,000 acres, '*it will be recognised that in the development of the country east of the River Murray we have practically added a new province to South Australia*'.[88] How outrageous this claim must have appeared to Kangaroo Islanders; and how they must have wondered why the island was forced to bear the agriculture and lands departments' disagreements and unreasonable variance of opinion.

Questions were asked about the laying of monorails on behalf of infinitely patient rural electorates well into late 1912. By October 1912, the District Council of Pinnaroo urged the laying of a monorail from Lameroo to North Bore for the coming harvest. As the Butcher's Soak conventional line was to serve that country, it was asked if the government would '*without delay*' lay the line southwards where there were no railways. The Commissioner of Crown Lands replied that the experimental monorailway was being delayed as he awaited information about the considerable savings claimed for a motor engine.[89] The government probably knew of the attachment of petrol engines to Ewing monorail vans in India, but it is not known if this was the Commissioner's reference. Given the estimated likely carriage per day of 12 000 bags of wheat, an engine-powered dual-carriage railway jointly-operated by farmers seemed preferable.[90] The overly-prolonged and postponed Pinnaroo trial annoyed and inconvenienced both farmers and GT Lane, and soon the long-lived subject of government supply of monorail traction for the Pinnaroo, or other lands, was definitely closed.[91]

Conclusion

The Royal Commission on Kangaroo Island's railway dismissed Caillet's system as '*very primitive*';[92] and the Railway Commissioner considered a monorail unsuitable for Kangaroo Island's long-distance travelling.[93] The Pinnaroo experiment never materialised. It seems likely that the government's Ewing-type wagon was never tried in the field anywhere in South Australia. Over the decade or so of experiment with the monorailway, municipal enterprise, although perhaps less adventurous than private enterprise, was more decisive than the State government. However, the latter, endeavouring to provide a public service during the post-Federation period, when civil railways remained its responsibility, applied considerable knowledge of current railway designs and reasonable caution in considering their adoption for the State. One suspects that as many of Caillet's monorailways were a device of colonial exploitation, they also sat uncomfortably with the notions of Australian Federation and national determination.

This essay has been peer reviewed.

End Notes

1. This paper is an outcome of long-standing research into Kangaroo Island's social history, 1890-1950. Dr Bridget Jolly thanks Geoff Nowak of the Roseworthy College Agricultural Museum for discussion about the government's monorail truck, and the Historical Society of South Australia for permission to re-publish this essay, slightly revised since first published in *Journal of the Historical Society of South Australia*, no. 39, 2011, 78-94.
2. 'A Farm Mono Railway', *Observer*, 2 Jul 1910.
3. The Castle Salt Company used a Caillet-type monorail to harvest salt at Lochiel over 1910-c.1923; it used four trucks, the largest 4.1m x 1.5m (Norm Houghton, 'The Cheetham Chronicles Part I V – Lochiel Saltworks', *Light Railways*, no. 118, Oct 1992, p.19).
4. Information about the engineer Jean Larmanjat's system was conveyed by the Adelaide to London telegraph and reported from the *Evening Journal* in 'A Novel French Railway', Register, 28 Jun 1872, p.5; the *Brisbane Courier*, 4 Jan 1873, p.5 reported the same; and 'A New Railway System', *Queenslander,* 13 Feb 1869, p.3, had covered the same in more detail, as did the *Launceston Examiner* in 'New French Railroad – Cars running on One Rail', 13 Mar 1869, p.2.
5. 'Reports on Foreign Railways', SA Parliamentary Debates (SAPD), 28 Oct 1874, 2181ff; Advertiser 27 Oct 1874, p.2; *Register*, 29 Oct 1874, p.6. In 'A Stone Fence Railway', *Engineer*, 21 Jun 1872, p.409, it was admitted that Haddan's railway was considered 'ludicrous' until the editors read Consul Skene's official account and recommendation. A major example of the 'Safety Elevated' Prismoid one-rail railway was designed by General Le-Roy Stone of the USA and operated at the 1876 Philadelphia Centennial Exposition, two years after notice of the design was given to the South Australian parliament. *The Advertiser* noted that E. Crew held a patent for the 'Prismoid' railroad (10 Jul 1875, p.5).
6. 'A Pioneer Railway', the *Graphic*, 3 Aug 1878, p.110.
7. Le-Roy Stone, FB Behr and Charles Lartigue were well-known monorail designers who used pannier or saddle-bag arrangements of carriage and locomotive. In 1904 Behr's single rail supported on an A-frame (a succession of trestles), was explained in some detail in Queensland (for instance in 'Light Railways in Agricultural Districts', *Queenslander*, 16 Jan 1904, p.37); and the system had its special pleaders (Laura Bogue Luffman [c.1846-1929], a former president of the Women's Liberal League, was one; see correspondence in National Archives of Australia, NAA: B300, 6767 Part 1c).
8. Henry R Palmer (1795-1844), *Description of a Railway on a New Principle* … 2nd edn, rev., London, John Hill, Paternoster Row, 1824, p.35 (<http://books.google.com>, accessed 5 Jan 2011).
9. The Loxton Farming Company was incorporated in Apr 1909. The share-holders on 31 May 1910 were TC Walker, public accountant, GR Gliddon, merchant, Annie Witcomb, a restaurateur of Port Wakefield, HG Williams, dentist, WG Johnston, brewer of Oakbank, and Harry Taylor, sharebroker. A history of the Loxton monorail is given by Arnold Lockyer, 'The Loxton Farming Company Monorail and Light Railway, Taldra South Australia', *Light Railways*, no. 112, Apr 1991, pp.13-22.
10. National Archives of Australia: Commonwealth Railways; B300, 'Mono-Rail Propositions and Guideways Transport System', The Monorail Portable Railway Co., Ltd., 'Description', 6767 Part 1c.
11. 'The Man on the Land', Register, 2 Apr 1910, p.11. The battlefields of the Great War showed the advantage in speed and flexibility of prefabricated lengths of rails for monorail carriage and communications, and of trench mono-tramways and monorails over boggy, uneven ground otherwise impassable by conventional means (WJK Davies, *Light Railways of the First World War. A history of tactical rail communications on the British Fronts, 1914-18*, [UK], David & Charles, Newton Abbot, 1967, pp.52-53).
12. 'Wheelbarrow Railways', Kangaroo Island Courier, 25 Jul 1908, p.5.

13. In 1966, Frank Whitnall wrote that Frederick Hester's holiday resort on Canvey Island, Thames estuary, was equipped with a public passenger 'mono-metal tramway', the 'first of its kind in England', that operated from 1901-1902 ('The First Essex Monorail', <http://canveyisland.org/page_id__1020_path__0p39p138p.aspx>, accessed 23 Dec 2010). Another writer wrote that the tram lasted to 1904. 'The monorail design was Hester's own, built for him in local workshops.' It was intended as a showpiece. 'Hester hoped that his patent would catch on and be used in high streets across the country' (ecademy, <http://www.ecademy.com/node.php?id=56625>, accessed 23 Dec 2010). Which of his monorails Hester patented is not clear from these sites. Four photographs of Hester's monorail vans are at 'Trams & Trolleys' (<http://www.flickr.com/photos/fred_bear/sets/72157625217909798/detail>, accessed 23 Dec 2010): it is likely that Hester's carriage with a horse in side shafts, and even more so what is claimed to be the 'Canvey monorail covered carriage', are uncredited exploitations of Caillet's horse-drawn vans and chars à banc.
14. 'The Monorail Portable Railway', *Adelaide Observer*, 23 Sep 1911, p.6.
15. Letter from the politician J.A. Bronsdon of Perth ('Land and Railway Policy', *West Australian*, 5 May 1906, p.4). Bronsdon was a Venetian blind and cabinet maker of Bunbury, who stood in the Canterbury electorate and was one-time secretary of the National Liberal League.
16. 'Caillet's Monorail', *Examiner* (Launceston), 23 Nov 1905, p.4. 'The Caillet Railway System', *Mercury* (Hobart), 31 May 1911, p.3 is an excellent overview of the system.
17. Lockyer, p.14.
18. 'The Producer', *Advertiser*, 29 Jun 1909, p.5.
19. George Lane (born at Portsmouth in 1850), established his accountancy and mining agency business at Adelaide in 1879. GT Lane and Company combined the complementary interests of accountancy, land broking and valuation, and financial agency.
20. Agricola, 'The Man on the Land. Transit Problems. The Horse Monorailway', *Observer*, 20 May 1911, p.13; 'The Caillet Railway System', *Mercury* (Hobart), 31 May 1911, p.3. AO Ehmcke was an engineer who specialised in gas and oil engines, made aerated water and brewery machinery, hydraulic hand and power lifts, and pump and irrigation plants (Sands & McDougall's South Australian Directory for 1912, Adelaide, Sands and McDougall, 1912, p.671).
21. 'The Caillet Railway System. The Wheelbarrow Line. A Success in South Australia', *Mercury* (Hobart), 31 May 1911, p.3.
22. 'Mono Railways. Mr. Vaughan's Scheme', *Advertiser*, 17 May 1911, p.13.
23. 'The Caillet Railway System', *Mercury* (Hobart), 31 May 1911, p.3; *Advertiser*, 17 May 1911, p.13.
24. GRG 35/1/1537, 1911, State Records of SA (SRSA).
25. 'Light Railways v. Roads', *Pinnaroo Country News*, 10 Dec 1910, in GRG 35/1/561, 1910, SRSA.
26. Alex B Moncrieff, Memorandum of Engineer-in-Chief re Cheap Railways, no. 159, 1898-9, SAPP, vol. 3, 1899.
27. John Charles Mackay, *Light Railways for the United Kingdom, India, and the Colonies. A Practical Handbook*, London, Crosby Lockwood and Son, 1896, p.12.
28. Bill Gammage, 'Closer Settlement', *The Wakefield Companion to South Australian History*, ed. Wilfred Prest, Wakefield Press, Adelaide, 2001, p.111.
29. GRG 35/1/561, 1910, SRSA.
30. GRG 35/1/561, 1910, SRSA.
31. Lockyer, p.16.
32. 'New Wheat Province', *Advertiser,* 16 Feb 1914, p.18.
33. Lockyer, p.20.
34. 'Through Loxton Country', *Observer*, 15 June 1912, p.41.
35. Unley Review, comp. by EL Perry (and Ron Praite), unpub., p.52.
36. WG Norman, comp., History of the City of Mitcham, Corporation of the City of Mitcham, 1953, p.225.
37. Thomas Gill (1849-1923), in map of 'Glen Osmond and Surrounding Districts', The History and Topography of Glen Osmond, Adelaide, Vardon & Pritchard, Printers, 1905, p.v.
38. 'The Unley Council', *Advertiser,* 25 Jun 1901, p.4.
39. 'A Ramble at Glen Osmond', *Advertiser*, 27 Aug 1910, p.20.
40. 'Views and Comments. Mount Barker-Road', *Advertiser,* 11 Jul 1914, p.16.
41. 'A Rocky Road', Register, 21 February 1920; 'Accidents and Bad Roads', *Advertiser*, 8 Nov 1904, p.7; 'Mount Barker Road', *Observer*, 11 Sep 1920, p.29.
42. *Advertiser*, 4 May 1909, p.8; 'Corporation Quarry', Unley Review, p.42; 'Profitable Municipal Enterprise', Advertiser, 11 May 1910, p.12.
43. Quarry Advisory Committee, 18 Sep 1911, p.161.
44. City of Unley, 41st Annual Mayor's Report, 1911, p.20.
45. City of Unley, 42nd Annual Mayor's Report, 1912, pp.60, 61.
46. 'Municipal Elections', *Advertiser*, 24 Nov 1911, p.12.
47. At the time, a fortnight's output of crushed stone from the quarry was 479 tonnes. During 1911 to early 1912, this varied from 815 to 871 to about 602 tonnes (respectively, Quarry Advisory Committee, 6 Feb 1911, p.148; Sep 1911, p.161; 2 Oct 1911, p.163; 4 Mar 1912) (Courtesy of Unley Council).
48. Report of Quarry Committee, 25 Nov 1912; 9 Dec 1912.
49. Quarry Advisory Committee, special meeting, 29 Jan 1913.
50. *Advertiser*, 23 Feb 1914, p.2.
51. This may have been the Mr Tweedie who lived near the quarry, at Urrbrae, and whose house was built by Walter Torode, the owner of stone quarries, and Adelaide's master builder; and may have been the David Tweedie who developed the Highfield estate on Portrush Road in the 1920s as part of what became the suburb of St Georges.
52. Island farmers were aware of Caillet's system from 1908 ('Wheelbarrow Railways', *Kangaroo Island Courier*, 25 Jul 1908, p.5.)
53. Final Report of the Royal Commission upon the Necessity for a Railway through Kangaroo Island, SAPP, no. 26, 1911-12, vol. 2, 1912, p.xix.
54. 'Caillet's Monorail', *Kangaroo Island Courier*, 2 Dec 1911, p.5. The booklet carried descriptions of the types of rolling stock, means of propulsion, prices, measurements, weights and testimonials.
55. An invitation to all Kangaroo Island's residents to discuss this position was advertised in the *Kangaroo Island Courier*, 1 Apr 1911, p.4.
56. 'The Monorail for the Island', most likely from a mainland newspaper, was published in the *Kangaroo Island Courier*, 18 Mar 1911, p.5; it concluded optimistically that if Islanders were united and earnest, the system 'must be granted to them forthwith'.
57. *Kangaroo Island Courier*, 1 Apr 1911, p.4.
58. 'Monorail and Flora and Fauna Meeting', *Kangaroo Island Courier,* 8 Apr 1911, p.4.
59. Final Report of the Royal Commission upon the Necessity for a Railway through Kangaroo Island, SAPP, no. 26, 1911, vol. 2, 1911-12, p.xvi.
60. Final Report of the Royal Commission upon the Necessity for a Railway through Kangaroo Island, 1911, SAPP, no. 26, 1911-12, vol. 2, 1912, p.xvi; SAPD, 2 Dec 1910, 1281.
61. 'Experimental Monorailway', *Advertiser*, 6 Oct 1910, p.8.
62. 'Tramways and Light Railways', *Advertiser,* 3 Aug 1900, p.9.
63. GRG 35/1/1593, 1911, SRSA.
64. Thorold was as well a millwright, swamp-drainer, architect, and former practical farmer of Norfolk.
65. <http://www.archive.org/stream/reportannualmee13sciegoog/reportannualmee13sciegoog_djvu.txt>, accessed 24 Dec 2010.
66. 'Railways on Turnpike Roads', Bruce Herald, Rōrahi VI, Putanga 253, 3 Poutūterangi, 1869, p.7, PapersPast, National Library of New Zealand (<http://paperspast.natlib.govt.nz/cgi-bin/paperspast?a=d&d=BH18690303.2.26&l=mi&e=-------10--1----0--> (accessed 24 Dec 2010).
67. 'Railways on Turnpike Roads'.
68. W Thorold, 'Railways on Turnpike Roads', *Engineering*, vol. 6, 1868, p.204.
69. In 'An Indian "Might-Have-Been" ', *Railway Magazine*, Feb 1969, RH Ambler gives invaluable illustrated information about the State's monorailways. Ambler consulted Col. Bowles' papers and corresponded with him before Bowles died at the age of ninety ('An Indian "Might-Have-Been"', p.72. Full article is accessible online at <http://www.irfca.org/members/ddickens/PSMTArticle.html>, accessed 16 Dec 2010).
70. NAA: B300, 6767 Part 1c.
71. Letter dated 13 Mar 1912, in NAA: B300, 6767 Part 1c.
72. Report of the Royal Commission on the Proposed Railway from Eudunda to Robertstown, 1911, no. 23, SAPP, vol. 2, 1911-12, p.20.
73. Moncrieff, 29 May 1911, GRG 35/1/1675, 1911, SRSA.
74. 'Light Railways versus roads', GRG 35/1/561, 1910, SRSA.
75. Memorandum of 18 Jul 1910, GRG 35/1/561, 1910, SRSA.
76. 'Light Railways', *Advertiser*, 12 Aug 1910, p.10.
77. 'Proposed Mono-Railway at Roseworthy', *Advertiser*, 10 Mar 1911, p.6.
78. 'The Mono Rail for Farm Work', *Advertiser*, 16 Sept 1911, p.18.
79. 'The Monorail Portable Railway', *Advertiser*, 21 Oct 1911, p.8.
80. Minister of Industry and Agriculture, Miscellaneous, Estimates … Year ending June 30th, 1912, SAPP, no.9, 1911, 1911-12, p.65.
81. GRG 35/1/1675, 1911, SRSA.
82. 'Monorail at the Show', *Kangaroo Island Courier*, 4 Nov 1911, p.4.
83. The second reading of the Bill is reported in 'Light Railways. Substitutes for Roads', *Advertiser*, 3 Dec 1910, p.15. GT Lane responded that by no means was Caillet's monorailway intended to supplant roadways.
84. GRG 35/1/315, 1911, SRSA; 'District Railways Bill', SAPD, 30 Nov 1911, 1111-1116, 1912. By January 1913 its administration became the responsibility of the Commissioner of Public Works, and the business of monorailways left the hands of the Crown Lands department for those of the Engineer of Roads and Bridges. Moncrieff believed the State should own and control every railway save private ones laid on private property; he doubted local authorities' ability to maintain proper control under the Act (GRG 42/1/103, 1911, SRSA).
85. GRG 35/1/1675, 1911, SRSA.
86. Letters of 10 Oct 1911 and 31 May 1912, in GRG 35/1/1675, 1911, SRSA.
87. 'Pinnaroo Lands', Surveyor-General's Report for the Year 1909-10, no. 10, SAPP, vol. 2, 1911, p.12.
88. 'Points for Producers', *Journal of Agriculture*, vol. 13, Apr 1910, p.719.
89. *Advertiser*, 23 Oct 1912, p.14.
90. GRG 35/1/1675, 1911, SRSA.
91. GRG 35/1/1675, 1911, SRSA.
92. Final Report of the Royal Commission upon the necessity for a Railway through Kangaroo Island, 1911, no. 26, SAPP, vol. 2, 1911-12, p.vii.
93. 'Experimental Mono-Railway', *Advertiser*, 6 Oct 1910, p.8.

Doug Martin preparing 'The Count' for its hydrostatic boiler test 4 January, 2014. *Photo: Andrew Becker*

Resuscitating the Count

by Andrew Becker

I had only ever been to Coal Creek Community Park & Museum (Korumburra, Victoria) a handful of times and they were 20+ years ago. I remembered there were a few steam items there but hadn't heard anything about them for a long time. So while vacationing at Cape Paterson in early 2013 I took the kids on a short drive to Korumburra to see what was happening. Having looked around the site and visited the railway station (ex-Woodleigh from the Wonthaggi line) and broad gauge display, we wandered down to the bush tramway. After a ride behind the diesel I looked through the window of the loco shed and saw *Count Strzelecki* (ex *Kolan*, Bundaberg Foundry 7 of 1953) sitting a little forlorn in the shed. This locomotive had originally worked at Bingera Mill near Bundaberg and then from 1975 spent some time in Boyd's Antiquatorium (Bundaberg) before moving to Coal Creek in 1997 for restoration.[1]

I asked at the front desk if there was an opportunity to volunteer and after a few emails I headed down for my induction and a look in the shed. When the shed opened it was a bit like finding a lost engine. *Count Strzelecki* looked a bit unloved and filthy from a few years of possum activity in the rafters. Beyond the filth, I could see that the loco appeared to be in reasonable condition. There was nothing obviously missing but clearly the boiler was the big question mark. It was then that I decided to have a crack at getting BFC 7 back in operation. One of the first things I noticed was how modern the loco was – roller bearings, grease lubricated motion and some thought had clearly gone into the placement of items and access generally.

After discussions with Bill Reynolds (one of the park's permanent staff) and John O'Neill (one of the original Coal Creek Bush Tramway crew) it became clear that there wasn't any immediate plan to return *Count Strzelecki* to service – that meant I wouldn't be stepping on anyone's toes. So first to the boiler which was overdue for an inspection so I called the inspector (Max Burns) to see what we needed to do. Apparently the dome had been replaced a few years prior due to a substantial crack, but the new dome had never been examined. So the dome had to come off, washout plugs taken out, washout conducted, firebars removed and one of the gauge glasses needed to come off. With some help from some of the regulars at Coal Creek we managed to get the dome off and keep the gasket in pretty good shape so it could be used as a template for the new one.

One of the other hurdles was the air compressor. Rumour had it that some people had been hitting it rather hard to get it to work - but it refused. Knowing that the compressor had come from the Talyllyn Railway and was virtually identical to those used on the small engines at Puffing Billy, I spoke to Tony Horkings in the Puffing Billy workshops at Belgrave. As it happens Tony had built a magnificent 7¼ inch gauge BFC loco and had more than a passing interest in *Count Strzelecki*. We removed the compressor and delivered it to Belgrave for overhaul.

A myriad of other jobs had to be done and were progressed in between the major activities by Doug Martin and myself. Doug did many jobs during the resuscitation effort including flushing out the tanks and repainting the smokebox. Another person who assisted was Jim Harris (a work colleague) who is one of those annoying people that are just good at everything he puts his hand to. Jim fabricated the washout plug spanners used to prepare the boiler for inspection. One of the things that perplexed me at first was the seeming lack of a main wheel bearing lubrication point. Several of us looked but could not find any trace, and this bothered me. It wasn't until I emailed Mark Gough of ANGRMS that he pointed out there was a single grease nipple in a very inaccessible position. Mystery solved, thanks to Mark (he won the beer that I had offered to anyone capable of finding the lube point – I haven't forgotten, Mark).

In need of a clean, the loco's motion is in otherwise good condition. Photo: Andrew Becker

Finally on Saturday 4 January 2014, the Boiler Inspector arrived for the first phase of the inspection (internals). After the usual non-destructive testing of the welds and borescope inspection of the internals, the boiler was passed with no issues. The inspector even noted the very fine welding that had occurred on the replacement dome (before my time but I think it was done by or at least arranged by Puffing Billy). So the boxing up of the boiler was commenced shortly in preparation for a hydrostatic test. We also managed to refit the compressor on this day – if only every day was this productive. A few minor nip ups and suddenly a steam test didn't seem so far away. It had taken the better part of a year to get to this stage.

Plans were made for a preliminary low pressure steam test on Monday 14 April prior to the inspector coming back for phase two of the inspection. The boiler performed well and apart from breaking a gauge glass (which bought proceedings to an abrupt end) all went well. We reached and held 50 psi with no problem and the injectors even picked up! At this point I should explain the gauge glass issue a little: on normal boilers the gauge glass handles all point vertically down when in operation. I had noticed that these were vertically up early on but thought nothing more of it. Thinking that I knew best, I placed them vertically down for the steam test, only to be taught a swift lesson by 'The Count' when the firedoor fouled the gauge glass drain handle and subsequently broke the glass. Ah, now I know why the handles were vertically up! I needed some practice replacing glasses anyway and we now have a stock of spare gauge glasses.

Now for the final part of the boiler inspection – the operational test. This was conducted on Sunday 6 July 2014 and things went well. The boiler inspector was happy with the boiler and fittings in steam at full pressure so the ticket was issued. Although the diesel loco was running on this day, John O'Neill, Doug Martin and I couldn't resist going for a test run. So in between the regular trips we obtained the staff and did a few laps (we have a circular track). It was extremely pleasing to see the loco operating again. I also want to pay special thanks to Tony Horkings for his work on the compressor. Once we found the secret drain on the compressor steam line (thanks to Steve Thurlston) the compressor ticked over and just pumped beautifully; a real credit to Tony's skill.

A few minor things still had to be attended to (such as replacing all the trimmings and cleaning out the lubricators – someone in the past had used non-steam oil in the steam brake lubricator and managed to make a lovely long polymer that clogged it all up). Thanks to Graeme Daniel from Puffing Billy for his advice and provision of some worsted trimming material.

Finally on Sunday 10 August 2014 *Count Strzelecki* re-entered service. Weather was a typical South Gippsland winter's day, but we did get a few sunny breaks. John O'Neill was fireman that day and has been a great mentor and oracle when it comes to this locomotive. The locomotive performed well and despite only having a single carriage serviceable we ran seven trips (each trip takes about 15 to 20 minutes). John and I did notice that the compressor seemed to run virtually constantly during the day which indicated an air leak somewhere. A few weeks later I charged up the system and found the main reservoir drain fitting was loose and the air discharge line from the compressor hadn't been completely done up.

The plan at present is to operate *Count Strzelecki* on special occasions (approximately once every two months) with the specific dates appearing on the Coal Creek website. For the moment the lack of a spark arrestor means that steam will not operate between the end of December and the start of April due to the fire risk. Instead, we will use that period to progress the general maintenance activities. This might change as we grow but for now that's what we can reasonably sustain.

This job couldn't have been completed without the small team of contributors as well as Rowena Ashley (Coal Creek manager) who has been a staunch supporter from the outset of this project. I think it's also worth acknowledging the team who originally restored this locomotive back in the late 1990s. They clearly did an excellent job and the effort that went into creating the atmosphere of a bush tramway was significant and enduring.

1. Zelmer, A.C., Bundaberg Fowler Steam Locomotives CTN-05, 2005 http://www.zelmeroz.com/canesig

Back in steam! Sunday 10 August 2014, the team's hard work was completed, and Count Strezlecki *was returned to service. Photo: Philip Dobson*

Tramming Piles to Norfolk Bay for Admiralty Harbour Works, Dover, England. John W Beattie's photographic studio in Hobart has thoughtfully added some basic details in a fairly unobtrusive manner to this photograph. There are several schools of thought about the practice of inscribing photographs, however in this case it is invaluable – indeed one can imagine that without it it may well have joined the millions of photos in existence of which we know not where, when, who or why. In this case it answers almost all those questions. Gray Bros, sawmillers of Adventure Bay, South Bruny Island, had a contract to supply the British Admiralty with piles for harbour works at Dover in England. The year was 1900 or 1901. Another of the photos in this series tells us that Gray's were obtaining the 100ft-long blue gum piles from near Norfolk Bay, Forestier's Peninsula. Cut in the bush, adzed to size, ring cap fitted, trammed to the seashore, rolled across a temporary ramp onto pontons and lightered out to waiting vessels for the long journey to England. In the above picture, the gent with flat hat and elbows resting on the pile has a nautical "air"and makes one wonder if he may be the inspecting agent. Of note is the use of very primitive spar rails and "bell" wheels, unique to southern Tasmania.

Photo: State Library of Tasmania au-7-0016-125437210

Investigation reveals that a Mr William Heyn of the Timber Department, Admiralty – Dover Harbour Works, was in Tasmania in 1901 and read a paper at the April meeting of the Royal Society of Tasmania. Mr Heyn stated he had inspected blue gum piles procured by Grays, 100ft long and 18- to 20-inches square and found them magnificent – they were for use as piles to support the staging upon which the Titan crane operated, placing 40-ton concrete blocks for the Dover breakwaters. He illustrated his talk with 15 slides prepared by Mr Beattie, slides Nos.7 and 8 being "Tramming piles to beach (behind horses)". Further, Mr Heyn thanked the Tasmanian premier, Hon ME Lewis for assistance so we can be sure this was a prestigious contract for Gray Bros to obtain. Due to their success at Dover (England), Grays also obtained a contract for piles to the Simons Town naval base in South Africa.

Above right: Piles about to be sent via the rough tramway (background) to Norfolk Bay, 1901.

Below right: Piles and tram at Norfolk Bay. A steam tug waits offshore. Due to the length of the piles they were winched directly into the hold via special ports located each side of the ships' bows.

Photos: Archives Office of Tasmania PH30-1-4825 and SLT AUTAS0016125437269

Phil Rickard

References:

www.dover-kent.co.uk/transport/admiralty_harbour.htm
www.archive.org/stream/papersproceeding1890roya/papersproceeding1890roya_djvu.txt

Bruce Macdonald OAM

It was announced in the 2014 Queen's birthday honours list that a Medal (OAM) in the General Division was awarded to Bruce Macdonald for service to the preservation of engineering heritage.

Bruce has made a great difference in the saving for preservation of a vast array of steam machinery for the education and enjoyment of Australians of the future. This has been no mere intellectual exercise on his part; he has 'pulled on his boots', has spent large sums of his own money, and toiled for long hours on a voluntary basis to make sure that important items of steam machinery were saved from the scrap man's torch. Bruce saw with dismay many of the engineering items he admired as a boy falling to the scrap merchants during the Second World War. Following the war, he made his first acquisition in 1953, a Baldwin steam tram. This was almost singlehandedly restored in his back garden, and became the first operational item at the NSW Steam Tram and Railway Preservation Society site in Parramatta Park. This was followed by the acquisition of two more steam locomotives abandoned in a quarry at Kiama in southern NSW.

In 1956 he began what must, at the time, have seemed an almost impossible task, the retention and restoration in situ of the 1883 Appleby Brothers beam pumping engine in the Goulburn Waterworks. This was carried out one weekend a month for two years with his wife Dorothy and a friend, all on a voluntary basis. (The engine is still in situ and operable today). For two decades, Bruce and Dorothy maintained the Museum of Historic Engines at Goulburn for the display of the Appleby engine and other engines.

He continued collecting in the ensuing years. One of his major 'saves' was John Fowler B6 traction engine 16162 of 1925, which had been used in the construction of Canberra during a period when work was accelerated to be ready for the first sitting of the Federal parliament in the new national capital in 1927. Recognising its importance, Bruce once again handed over what was then a large amount of his own cash to save the engine from the scrap man. That engine now graces the National Museum in Canberra.

His contribution to small regional museums has been just as great. The Alexandra Timber Tramway has two steam locomotives rescued by Bruce, and he is currently advising on the acquisition of a third. Locomotives saved by Bruce also grace the Illawarra Light Railway Museum Society collection at Albion Park in NSW, and Lake Macquarie Light Rail at Toronto, NSW.

Peter Evans

Above: Bruce Macdonald with his award. Photo: Melanie Dennis
Right: Bruce on Fowler 11885 of 1909 whilst it was under restoration at Goulburn, circa 1976. It is now preserved at the Alexandra Timber & Tramway Museum.
Photo: Leon Oberg via Melanie Dennis

Industrial Railway NEWS

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Special thanks to contributors to the *Sugar Cane Trains/Navvy Pics 2ft* Facebook page.

NEW SOUTH WALES

BLUESCOPE STEEL
Port Kembla Steelworks
(see LR 239 p.24)
1435mm gauge
The rail operator here is Pacific National. Seen stored out of use at Drews siding on 16 April were English Electric Australia Bo-Bo DE locomotives D29 (A.054 of 1961) and D33 (A.089 of 1964) and General Electric Australia Bo-Bo DE locomotives D41 (A.269 of 1974), D43 (A.271 of 1974) and D44 (A.272 of 1975) while on 17 April, Com-Eng Bo-Bo DE D6 (8-1951 of 1951) and English Electric Australia Bo-Bo DE locomotives D16 (A.030 of 1959), D31 (A.084 of 1964) and D32 (A.088 of 1964) of the same status were seen at Brickyard. Shunting round Cringila on 16 April were several of their successors, National Rail Equipment Bo-Bo DE locomotives PB5 (209-PB5 of 2014), PB6 (209-PB6 of 2014) and PB7 (209-PB7 of 2014). All locomotives of the PB class were rostered for work except for PB3 (209-PB3 of 2014) upon which modifications were being done. PB2 (209-PB2 of 2014) was doing remote control tests.
Brad Peadon 4/15

QUEENSLAND

CURTAIN BROTHERS (QLD) PTY LTD, Townsville
(see LR 240 p.28)
1067mm gauge
Ex Tasrail Emu Bay Railway Walkers B-B DH 1106 (658 of 1971) was sold to Cairns Kuranda Rail Services of Cairns in January. The other three ex Tasrail units, 1103 (640 of 1970), 1104 (641 of 1970) and 1107 (659 of 1971) remain here unsold.
Luke Horniblow 4/15; Hugh Hartwig 4/15; Gumtree website 3/15

MACKAY SUGAR LTD, Mossman Mill
(see LR 242 p.23)
610 mm gauge
Mackay Sugar and MSF Sugar have entered into an agreement for the latter to toll crush up to 250,000 tonnes of Atherton Tableland cane contracted to Mackay Sugar's Mossman Mill this coming crushing season. Mossman was unable to crush all cane contracted to it during the 2014 crushing season and this agreement will mean about a third reduction in the tonnage of cane transported down the Julatten Range to the road-rail interchange on the Cassowary line. Expected starting date for Mossman is 11 May with an estimated crop of 1 million tonnes.
ACFA nextgenfarmer website 10/4/2015; Newsport website 15/4/2015

MSF SUGAR LTD, Mulgrave Mill
(see LR 242 p.23)
610mm gauge
RSU training and commissioning was taking place during March using South Johnstone Mill EM Baldwin B-B DH 25 (6470.1 1.76 of 1976). It went back to South Johnstone very late in March. Com-Eng 0-6-0DH 9 *Meerawa* (FC3473 of 1964) was expected to be involved with RSU commissioning in late April. This loco and Prof B-B DH 22 *Aloomba* (P.S.L.25.01 of 1990 rebuilt South Johnstone 1993) will be used as RSU locos this coming crushing season.
Chris Stephens 4/15

MSF SUGAR LTD, South Johnstone Mill
(see LR 242 p.23)
610mm gauge
Seventy new 6 tonne bins are being manufactured by Bradken at Boogan for South Johnstone this slack.
EM Baldwin B-B DH 25 (6470.1 1.76 of 1976) returned from Mulgrave Mill very late in March. EM Baldwin B-B DH locomotives 24 (5477.1 8/74 of 1974) and 26 (7244.1 8/77 of 1977) are still there being fitted with RSU gear and new Mulgrave style hoods. All three will be used as RSU locos this coming crushing season.

Seen at Cringila on the Port Kembla Steelworks system on 16 April is Pacific National's National Rail Equipment Bo-Bo DE PB5 (209-PB5 of 2014). Pacific National is the rail operator for Bluescope Steel and its PB class locos are captive to this industrial location. Photo: Brad Peadon

Top: *Com-Eng 0-6-0DH 39 (AH4688 of 1965) at South Johnstone Mill's navvy depot on 3 April. Photo: Luke Horniblow* ***Centre:*** *Ex Tasrail Emu Bay Railway Walkers B-B DH 1106 (658 of 1971) at Cairns on 16 March following its sale to Cairns Kuranda Rail Services by Curtain Brothers in Townsville. Photo: Luke Horniblow* ***Above:*** *Mulgrave Mill's Clyde 0-6-0DH 18* Barron *(64-379 of 1964) at work with the herbicide spray unit along the Bump line on 19 March. Photo: Luke Horniblow*

Com-Eng 0-6-0DH locomotives 4 *Harvey* (AD1138 of 1960) and 5 *Bramston* (AH2460 of 1962) are to be fitted with new Cummins motors and Allison transmissions by IBS Engineering of Innisfail. 5 *Bramston* was transported there on 23 April with 4 *Harvey* delivered by early May.
Luke Horniblow 4/15; John Brincat 4/15; Chris Stephens 4/15; IBS Engineering Supplies & Innovative Solutions 4/15

TULLY SUGAR LTD
(see LR 241 p.21)
610mm gauge
Two hundred new 10 tonne bins are expected to be built for this Tully Mill this year.
Robert Shepherd 4/15

WILMAR SUGAR (HERBERT) PTY LTD, Herbert River Mills
(see LR 242 p.23)
610mm gauge
Macknade Mill's EM Baldwin B-B DH *Darwin* (6171.1 9.75 of 1975) is to be fitted with replacement bogies this slack. The existing bogies have EM Baldwin AD4 final drives for which no spares are carried as they are probably unique within the Wilmar group of mills if not the whole of the sugar industry. Replacement bogies have been sourced from another Wilmar mill, probably in the Burdekin and these are said to have originated in Fiji which would make them ex the two EM Baldwin B-B DH locos which were stored at Ontrak Engineering at Maraylya in Sydney for Proserpine Mill prior to being scrapped. These bogies have been stripped of the final drives and other fittings so new AD6 or AD6A final drives have been manufactured by Ontrak with wheels being sourced locally from Clyde 0-6-0DH 18 (DHI-5 of 1955) and EM Baldwin 4wDH *Hambledon* (8002.1 8.78 of 1978).
18 has been stored out of use at Macknade and the *Hambledon* has been stored out of use at Victoria although some years ago it was converted to a brakewagon in an abortive experiment. As of late April, the bogies were being assembled at Victoria Mill.

Assembly of the new 8 tonne bins at the Wilmar workshop in Ingham had been completed by early April.

Hudswell Clarke 0-6-0 *Homebush* (1067 of 1914) did a trip along the Nyanza line on 28 March for the Lioness Club who were in the district for a weekend convention. *Homebush* had recently been fitted with new safety valves.

Victoria Mill's EM Baldwin B-B DH locomotives *Maitland* (7070.1 3.77of 1977) and *Adelaide* (7070.2 4.77 of 1977) have been completely disassembled for overhaul this slack and are being repainted as well.

Luke Horniblow 3/15; Editor 3/15, 4/15

WILMAR SUGAR (PLANE CREEK) PTY LTD, Plane Creek Mill, Sarina

(see LR 241 p.22)

610mm gauge

The 28 tonne brakewagon of a cane train being hauled by Walkers B-B DH 2 *Karloo* (630 of 1969 rebuilt Bundaberg Foundry 1995) was struck by a 4WD which failed to stop at the Bruce Highway level crossing near Sarina at about 7.15 PM on 24 August. The 4WD also struck a car pulled up at the level crossing and a flashing light mast. The brakewagon derailed briefly before correcting itself.

Wilmar Sugar media release 25/8/2015

VICTORIA

JOHN HOLLAND PTY LTD, Melbourne

(see LR 236 p.25)

762mm gauge

Two more Schoema locomotives used on Melbourne's Northern Sewerage project have been noted as refurbished at the Schoema works for reuse elsewhere. Model CHL 40G 4wDH locomotives 6279 and 6280 of 2008 (numbered L08 and L09 respectively when used in Melbourne) were despatched from the Diepholz works in Germany in orange livery in July 2012.

Top: *Undergoing reassembly in the Victoria Mill locoshed is EM Baldwin B-B DH* Maitland *(7070.1 3.77 of 1977) on 19 March. Photo: Luke Horniblow* ***Centre:*** *Getting up steam on 28 March and also showing off its new safety valves is Victoria Mill's Hudswell Clarke 0-6-0* Homebush *(1067 of 1914). Photo: Christopher Hart* ***Above:*** *Mackay Sugar's EM Baldwin B-B DH* Inverness *(10123.1 5.82 of 1982) and Walkers B-B DH* Walkerston *(672 of 1971 rebuilt Pleystowe Mill 1994) about to be reunited with their bogies at Racecourse Mill on 12 March. Photo: Mitch Zunker*

They were sent to Canada for use by Strabag Inc on the 15km Southeast Collector Trunk Sewer construction in York, Ontario. Tunnelling there had been completed by May 2014, and it seems likely that they have been transferred to another Strabag contract in the Toronto area which commenced in late 2014. This is the Mid-Halton Wastewater Treatment Plant Outfall Tunnel at Oakville.
Ulrich Völz via Philip Graham 5/15

TASMANIA

HELLYER GOLD MINES PTY LTD
formerly HELLYER MILL OPERATIONS PTY LTD, Hellyer, Tasmania
(see LR 160 p.21)
1067mm gauge
A large battery locomotive was used at this site for a period until about 15 years ago to haul out the winch cable for the concentrator rail load-out at the Hellyer mine. The mine commenced operations in 1986 sending the ore to the Cleveland mine plant at Luina until the end of 1988. From 1989, ore treatment was transferred to the newly completed processing plant at Hellyer and at the same time, the railway was brought into use. An examination of photographs suggests that the locomotive was constructed by joining together two Jeffrey-type battery electric underground locomotives. It is suspected that they may have come from the Hunter Valley coalfields.
The mine site and processing plant are currently on a care and maintenance basis, owned by Hellyer Gold Mines Pty Ltd, a subsidiary of Ivy Resources Pty Ltd, and the plant has been retained on site. The locomotive was still present in 2011 and it therefore seems likely that it is still there. Any confirmation of this would be welcome.
Tony Weston 3/15; Ross Mainwaring 3/15; Michael Dix 4/15;
https://www.railpage.com.au/f-t11355883.htm

Top: *Late in March, remote control locomotive training was underway near Mulgrave Mill using South Johntone Mill's EM Baldwin B-B DH 25 (6470.1 1.76 of 1976). Photo: Chris Stephens* ***Centre:*** *Pioneer Mill's Clyde 0-6-0DH* Colevale *(65-438 of 1965) with a train of ex Queensland Railways ballast hoppers on Payards line on 20 March. Photo: Luke Horniblow* ***Above:*** *The unknown battery electric locomotive at Hellyer Gold Mines, Tasmania, on 23 February 2000. Photo: Michael Dix*

LETTERS

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Ilarwill Quarry
(LRN35; LR236 & 242)

Further to the recent Field Report (LR236) and Letter (LR242), regarding the NSW PWD's Ilarwill Quarry on Woodford Island (Clarence River), the following newspaper clipping (below right) clearly shows that initial use of the large quarry at Ilarwill dates to the last year of the 19th century (1900) when numerous tramways and other plant, installed in 1899, commenced operation. One suspects that the use of the word 'tram lines' indicates that this was a narrow-gauge operation; standard gauge not coming for at least another half-century during a second phase of quarrying. It is thought that the quarry was opened when Angourie quarry was exhausted. The Google Maps aerial image clearly shows the quarry. An accompanying photo, labelled "aerial photo of rocky outcrop", is actually the weather-worn quarry face.

The Clarence River entrance works were discontinued in September 1903 through lack of funds, though it was recognised that much more needed doing..[1]

Phil Rickard,
Ringwood, Vic.

1. *Clarence and Richmond Examiner*, 16 May 1908

Financing Local Authority tramways in Queensland (LR 241)

In LR 241, February 2015, p 36, under Buderim–Palmwoods Heritage Tramway, it is said that the line was financed by a tramway loan, guaranteed by Maroochy Shire Council ratepayers who gained advantage from the line and who were charged an extra rate.

The loan from the State had no special title, but it was called 'Buderim Tramway loan account' in the Shire books. Ideally the line would have earned sufficient to pay working expenses, and the redemption (repayments) and interest on the loans. In case it did not, the Local Authority Acts, under the provisions of which the line was built, allowed for the setting up of a Benefitted Area, that which was expected to gain from the existence of the line, and the imposition of a Tramway Rate (a tax on the unimproved value of land) within that area to meet the redemption and interest due to the State government if it was not covered by the revenue earned. The rate could not be used to pay for any loss on working expenses; to the extent there was such loss, it fell on the Shire as a whole. The Tramway Rate was in addition to the ordinary rate charged on the same unimproved value of land to pay for the normal services the Shire provided throughout its area.

There was no guarantee, and there was no choice in the matter of being judged to benefit from a line. There were disputes about the area to be covered by the Benefitted Area, and refusals to pay the rate, requiring Court action against the defaulter. Nambour, for example, was included in the Benefitted Area for the same Council's Mapleton Tramway, but most residents of the town considered they obtained no benefit from the Tramway, and many refused to pay. Both the Buderim and Mapleton lines had to close when they could no longer pay working expenses, despite extreme frugality in what was done, including maintenance.

Benefitted Areas were declared for other Local Authority activities which were useful only to part of their areas.

Guarantees were another thing, and applied on QR lines. From 1897, companies and areas which wanted a government railway could agree that losses and profits be shared by them and the QR. In the case of losses, that meant a special rate in a benefitted area, and the local authority concerned having to collect the rate and remit the revenue from the rate to the government. The loss considered revenue, working expenses and interest on capital. Various formulae applied to the attribution of revenue and costs to the line concerned. There was a maximum to the rate which could be imposed, and a maximum period, 14 years, to which the arrangement applied. After 1906, this system was extended to cover all new railways. Political opposition was intense, especially because pre-existing railways, loss making or not, did not have a similar obligation or benefit, and the whole guarantee system was abolished in 1915.

It was unfair that the state kept loss making QR branches open, met the losses on certain traffics and services (eg Brisbane suburban), and had certain remunerative traffics cross-subsidise loss making, while the local authority lines were forced to continue the meet operating expenses and all capital costs, through revenue or special rates in benefitted areas. Such led to earlier closure of local authority lines which remained (some were sold to the government) than of QR branches. The last local authority line, the Aramac Tramway, received special assistance from the State in the 1940s, during its last years, until roads could be improved (See P Bell and J Kerr: *The Aramac Tramway,* LRRSA, 2002, Chapters 4, 6 and 8). It also received favourable treatment from the QR in various ways.

John Knowles
New Maldon, UK

Clarence and Richmond Examiner, Grafton Saturday 2 December 1899 P 8

WOODFORD ISLAND QUARRY.—It is understood that work at Angowrie will cease about Christmas time, when the men go on their annual vacation, and that on resuming work after the holidays the Department will devote their attention to the new quarry on Woodford Island. The latter place has been undergoing preparations for some months. Much of the end of the mountain has been stripped of earth, and loose stone and some fine hard sandstone has been exposed. There are also two fine wharves, the one on the western side of the quarry being intended for a coal wharf, while that on the eastern side will be used for shipping the stone. Tram lines have been laid from wharf to wharf, and from each wharf to the blacksmith's and fitter's shop, and branch lines run into the quarry at regular intervals. The manager's house has been built on the top of the hill overlooking the works. When these works get properly going a considerable amount of cash will be paid away, and the town must, to a large extent, benefit by it.

Illarwil quarry, Woodford Island – see letter above left.

Field Reports

Please send any contributions, large or small, to fieldreports@lrrsa.org.au or to P.O. Box 21, Surrey Hills, Vic 3127.

'Derril' sawmill, Mt Disappointment State Forest, Victoria
Gauge unknown but probably 1067mm

The Derril Saw Mill was established about 1880 by Abraham Neill on his selection beside Strath Creek, close to the crest of the Great Dividing Range and 20 km south-east of Broadford. Five years later R A Robertson installed the Comet Sawmill on Crown land 2.6 km south-west of Neill's mill. The Comet mill was, from its commencement, connected to the Wandong station on Victorian Railways by a 3ft 6in-gauge tramway.

In 1885 R A Robertson formed the Wandong Timber Co. Ltd to operate the Comet mill and associated enterprises. This company acquired and renovated the Derril mill, probably during 1888. At this time the company was intending to construct a tramway for four miles north from Comet mill which would no doubt have provided a more convenient outlet for the Derril mill's timber. Unfortunately a severe bushfire on 26 January 1889 set fire to the latter mill's roof. Although the residence attached to the mills was saved, the plant was completely destroyed with the exception of some circular saws.

Immediately after the fire the Wandong Timber Co. Ltd was voluntarily wound up. The Comet Mill continued in operation under the ownership of Robertson, and later the Australian Seasoned Timber Company Ltd, but the Derril mill was not rebuilt.

Although the mill did not have any known tramways it formed part of the mill complex of what would become the Australian Seasoned Timber Company, which did have an extensive network of 3ft 6in-gauge tramways. Hence the location of the Derril mill site was an important part of the overall history of the company.

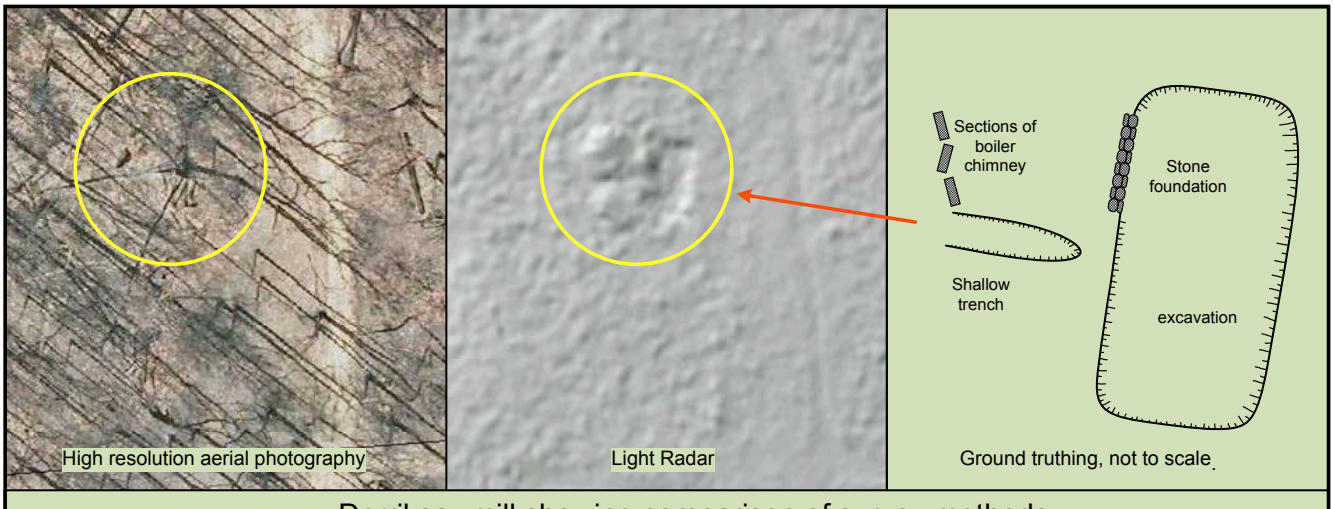
The Derril sawmill was situated on what was, at the time, private property, which meant that no site licence was required. Hence a lack of archival information, and no remaining local knowledge, made accurately locating this mill difficult. Aerial photography after the 2009 Black Saturday bushfire showed nothing of interest. Fortunately, Colin Harvey had access to Lidar imagery produced by VicForests for this area (Light Radar – see LR 234 page 32) and two sites of disturbance were immediately obvious. One was a deep trench down by the creek (which was investigated, but could not have been a sawmill site). The other was further up the hillside and featured a square excavation (obviously man-made) with what appeared to be several mounds of earth (probably resulting from that excavation), making this an obvious target for further investigation.

A section of riveted steel boiler chimney.
Photo: Peter Evans

Remnant bricks, probably from the boiler setting.
Photo: Peter Evans

On 4 March 2015 a team consisting of LRRSA researchers Colin Harvey and Peter Evans in partnership with Wandong historian and archaeologist Lynne Dore 'ground-truthed' the suspected location found on the Lidar. As the team walked down the road to a point opposite the Lidar target, dense scatters of broken transfer-printed ceramics and shards of thick bottle-glass embedded in the road were hopeful signs. The disturbance site was reached at 37° 20.791'S 145° 10.908'E after a short struggle through dense sapling regrowth interlaced with wire grass (resulting from the 2009 fire). The earthworks for what could only have been a sawmill site were readily apparent despite the heavy regrowth and the 126 years since the site was abandoned.

The large square excavation appears to be the location for the motive power for the mill. This tends to indicate that the mill itself may have been built up above the ground. The sawdust



Derril sawmill showing comparison of survey methods

Rubble stone-work foundations, probably for a steam engine. Photo: Peter Evans

trench was fairly shallow, which tends to confirm this. While there was no sawdust apparent at the site, immediately below the mill the regrowth thins out and there is a large open and relatively barren area, which may indicate that any remnant sawdust had rotted (or had been carted) away, leaving the soil in this area acidic and inhibiting regrowth. The heavy regrowth on the mill site itself prevented the preparation of an accurate site plan in the time available.

The most obvious relics were a large number of un-frogged bricks (most probably from a boiler setting), several sections of riveted iron boiler chimney, two section of very rusted heavy iron plate that may have been from a boiler (one appeared to have the remains of a rivet in it), and a stonework foundation for either a boiler setting or an engine, complete with one large mounting bolt. The presence of the bolt tends to indicate the latter. Few inferences can be drawn about the machinery (and the number and layout of the saws for the mill) except that it probably had a horizontal engine which drew steam from a Cornish boiler.

As nothing of substance can be seen on post-fire photography, this exercise tends to confirm the usefulness of Lidar for archaeological survey, and we look forward to more of the data being made available.

History by Colin Harvey, field report by Peter Evans, 03/2015.

References:

Lands Department selection file, VPRS 626/P0, Unit 2038, 1456/19.20.
Wandong Timber Co. Ltd company file, VPRS 932/P0, File 961.
Kilmore Advertiser, 2 February 1889.
Melbourne and Metropolitan Board of Works archives, VPRS 8609/P28, Unit 15, Folder HG34.

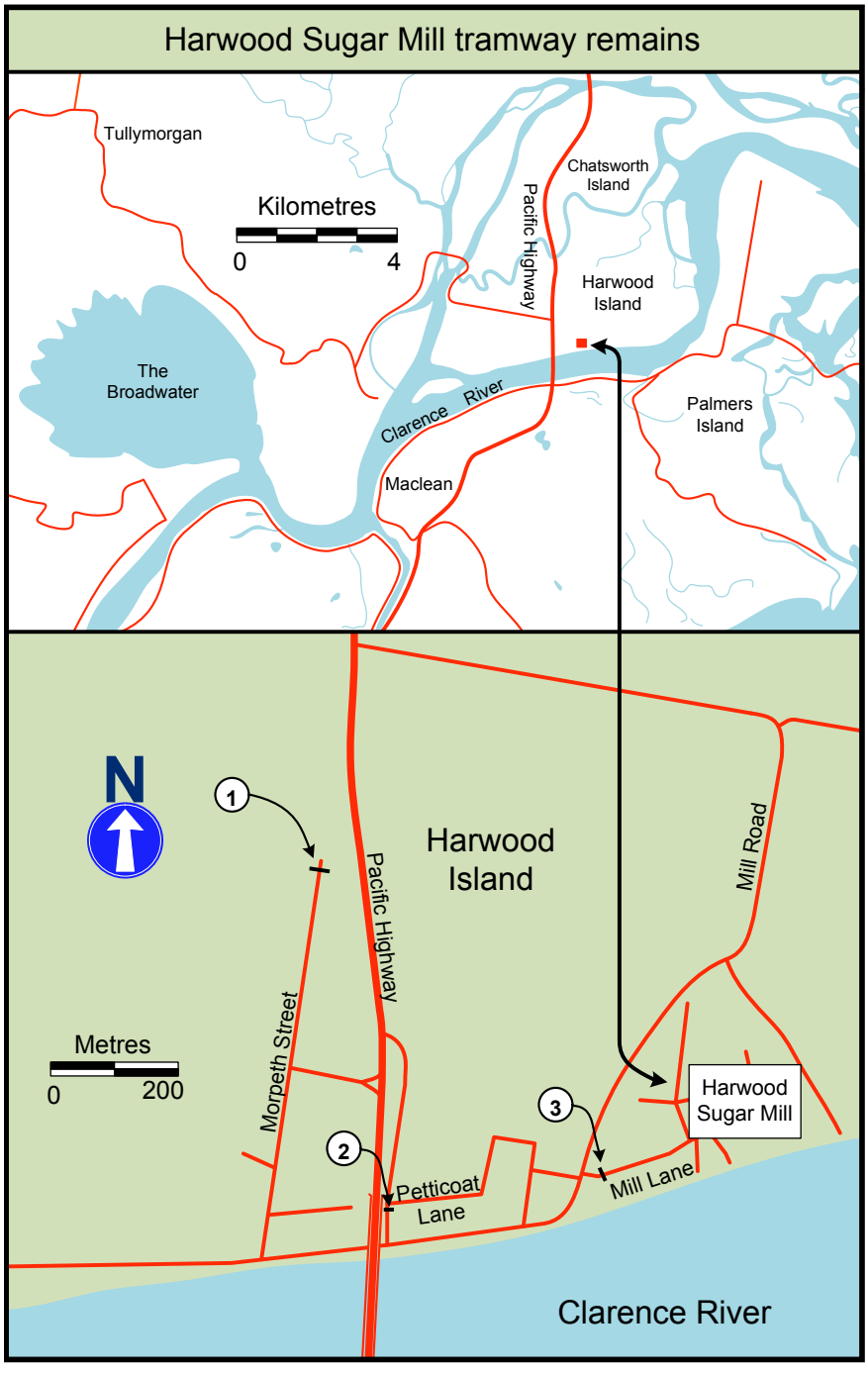
Harwood Sugar Mill, NSW
610mm gauge

See LR 46 and LR 48

Two brief visits were made to Harwood (40km north-east of Grafton) in late March pursuant to recent posts on the LRRSA Yahoo pages. In total, three remnants of 610mm gauge sugar cane tramway were located on Harwood Island. According to the Road Traffic Authority's (now Roads and Maritime Services') plans for the new bridge over the Clarence River at Harwood, these three remnants are thought to be the only remains of the small Harwood system that closed after the 1973 season.

All three pieces of track are across asphalted roadways – 1: Morpeth Street (once the Pacific Highway), 2: Petticoat Lane, and 3: Mill Lane – see numbers on map. The RTA's heritage consultants consider them of local heritage significance. Unfortunately, the Petticoat Lane tracks would appear most likely to be impacted by the proposed new bridge, it being planned just 25m to the east of the present bridge.[1] Cane tramways formed but a small part of the cane transport system at Harwood, the vast majority of cane arriving by river barge. In *Light Railways* No.46, Ian Crellin detailed a 1973 visit and, in LR48, reported on a re-visit in August 1974 for more detailed photographic purposes, only to find the system closed and the two internal-combustion locos gone. By June 1979 (*Light Railway News* 10) one loco, a Motor Rail 'Simplex' 4wDM B/No 4214 of 1929 was at Timbertown, Wauchope, where it remains (LR236), though in a somewhat battered condition. I can find no mention in LR or LRN of the other internal-combustion loco, but ARHS *Bulletin* 476 (June 1977) records 'Simplex' 11255 as being transferred to Victoria mill in Queensland.

The mill on Harwood Island had its origins when the Colonial Sugar Refining Company (CSR) established a sugar mill at Darkwater Creek, on the Macleay River, in 1869/70.[2] After just three seasons, badly impacted by frost, the mill was transferred to Harwood Island on the Clarence River. On the Clarence, its first crush was 1874;



610mm gauge tramline across Morpeth Street, Harwood, looking westwards. 16 March 2015.
Photo: Phil Rickard

the accompanying distillery was said to be producing 2000 gallons of rum per week by July.[3] The mill was powered by a beam engine built by Fletcher and Co, London to which was added, in 1877, another beam engine – built by Fawcett, Preston & Co, of Liverpool.[4] The first tramways used within the Harwood mill's catchment were installed in 1892 by CSR on nearby Palmers Island. About two miles of tramway were built at a cost of some £600, serving about eight farmers and around 300 acres of cane – the line enabled cane to be taken directly to the punts for shipping upstream to Harwood mill.[5] Photographs at Museum Victoria and the National Library confirm tramways were in use on Palmers Island in 1934 and 1957.

A couple of years later, farmers around Ulmarra wanted CSR to construct a cane tramway in their district although nothing seems to have eventuated.[6] By 1912 the various farmers' associations along the river were calling on CSR to build more tramways – Chatsworth Island farmers wanted 'tramlines and trucks for harvesting cane, as is done on the Richmond and Tweed [rivers]'.[7] Ten years later, CSR offered to build a tramway at Cormicks Creek, near Tullymorgan, provided cane farmers planted a minimum of 400 acres of cane for at least seven years.[8] The offer was accepted and construction of the line, about 3¼ miles in length, was underway by early 1924,[9] although some works were still being done in April 1925.[10] In 1927, Tullymorgan farmers sent about 2000 tons of cane down river to Harwood.[11]

Tramline across Petticoat Lane, looking westwards, under the Pacific Highway overpass. 16 March 2015.
Photo: Phil Rickard

Tramline across Mill Lane, looking eastwards towards the mill. 30 March 2015.
Photo: Phil Rickard

In 1929 CSR announced that it would build tramlines on Harwood Island.[12] Some lines were certainly in place for the 1932 crushing season – tenders were called in June for 'Line Laying and Cane Hauling' on the Harwood Island Tramline.[13] Lastly, in the National Archives, there are several photos said to be at Maclean, on the Clarence, depicting 2ft gauge light tramlines in use. Whether these really are at Maclean or whether the photographer labelled them as such since that town is the largest in the area is uncertain. In ARHS *Bulletin* 464 (June 1976), John Armstrong records Harwood mill as having 3½ miles of tramway to the end of the 1973 season. One wonders whether that included any of the isolated lines at Palmers Island and Cormicks Creek (and Maclean?), or relates solely to Harwood Island. Can any reader supply a map of the Harwood tram systems or any further details of these isolated cane tramways, the most southerly in Australia?

Phil Rickard (4/2015)

References:

1. *Woolgoolga to Ballina EIS Working Paper, Non-Aboriginal heritage – Part 2.*
2. *South Pacific Enterprise* – CSR 1956 (Angus & Robertson).
3. *Clarence and Richmond Examiner and New England Advertiser*, Grafton 27 April 1873; 13 January, 21 July 1874.
4. *Sydney Mail and New South Wales Advertiser*, Sydney, 23 October 1886.
5. *Clarence and Richmond Examiner*, Grafton, 20 August, 1 October 1892.
6. *Clarence and Richmond Examiner*, Grafton, 19 May 1894.
7. *Clarence and Richmond Examiner*, Grafton, 27 July, 31 December 1912.
8. *Evening News*, Sydney 9 March 1922.
9. *Richmond River Herald and Northern Districts Advertiser*, Coraki, 31 August 1923, 29 January 1924.
10. *Clarence River Advocate*, Maclean, 17 April 1925.
11. *Brisbane Courier*, 22 March 1927.
12. *The Queenslander*, Brisbane, 28 February 1929.
13. *Northern Star*, Lismore, 28 June 1932.

Torrumbarry Gallivant 2014
Gauges 610mm and 1600mm

A two-day field investigation over 18 and 19 December to Torrumbarry, Waranga and Mangalore provided some interesting observations for a small group of LRRSA members. We set forth with the prime objective of proving the site of the sand pit and the route taken by the second sand tramway at Torrumbarry. This followed an extensive preparatory effort involving document and aerial photographic research of the area to the west of the weir site, where the tramway was thought to have run. Having arrived at the location around 1pm and with 4WDs, GPS units, UHF radios, laser range finders, maps and compasses all deployed we set forth.

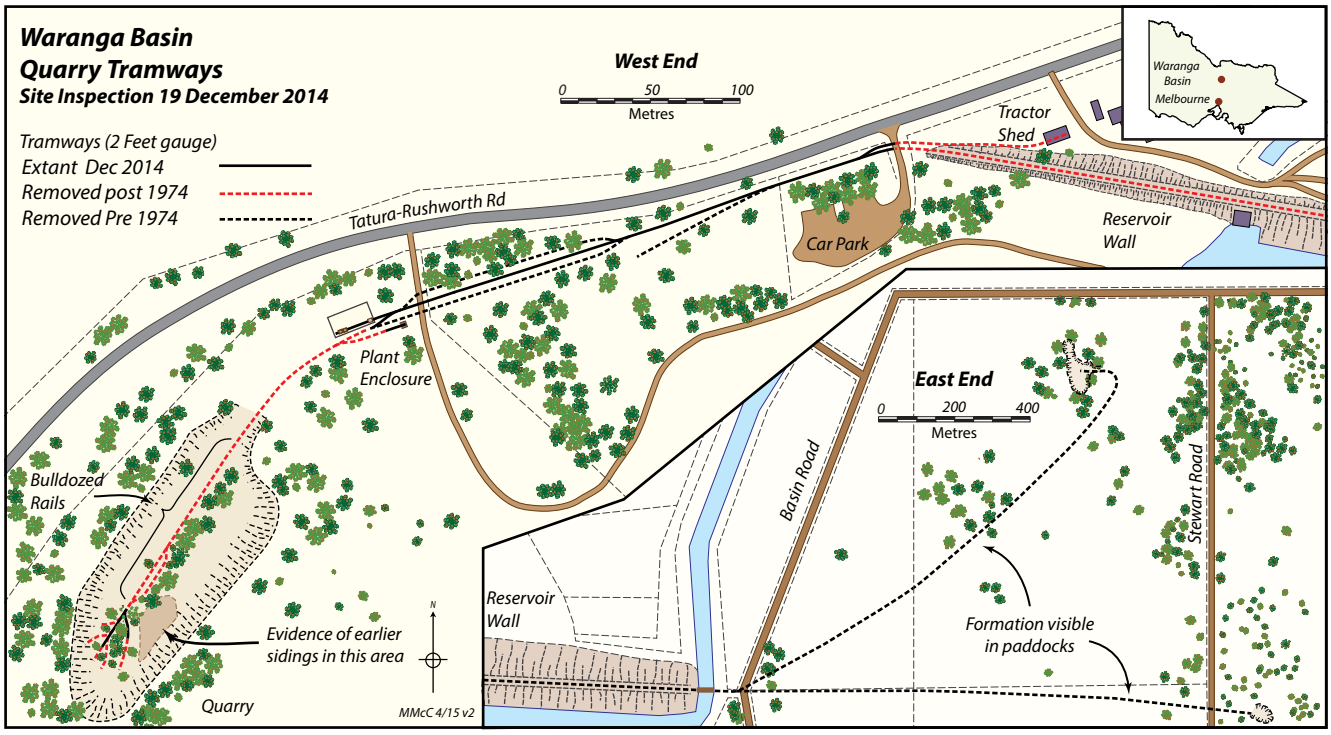
Well it can only be described as spectacularly successful in that the field work proved conclusively that the sand tramway didn't run anywhere near where it was thought to have. We found absolutely nothing, and can now confidently eliminate that part of the planet from any further suspicion of harbouring any form of tramway remains whatsoever. Nevertheless, the work led to the realisation that the tramway discovered in 2013 leading away to the west from the weir was in fact an overburden tramway and, by elimination, has probably pointed us to the likely location of the sand pit and its associated tramway.

Looking south along the remaining track to the quarry at Waranga Basin 19 December 2014. L to R Peter Evans, Mike McCarthy, Colin Harvey.
Photo: J Dennis

The 2014 Torrumbarry Galivanteers at the Waranga Basin 19 December 2014. L to R Colin Harvey, Peter Evans, Mike McCarthy, Bruce McLean, John Dennis, Chris Wurr. *Photo: J Dennis*

More field work will be needed to confirm this. All good fun, even if the visit didn't include an exciting line of sleeper impressions to follow.

After an evening of motivation renewal and essential rehydration, we set forth on Friday to the Waranga Basin to record the current state of the 610mm [2ft] gauge tramway system there. Armed with Mike McCarthy's sketch map which showed what was there in 1974 and material from LRN in 1984, we were able to record changes that have occurred over the ensuing thirty years. The accompanying map illustrates that, although much has changed and, sadly, a lot of track has been removed at both the quarry and the depot, there is still a lot to see at this fascinating location. Further working of the quarry over the ensuing period has seen much of the track-work bulldozed aside, leaving the rails strewn alongside the formation.



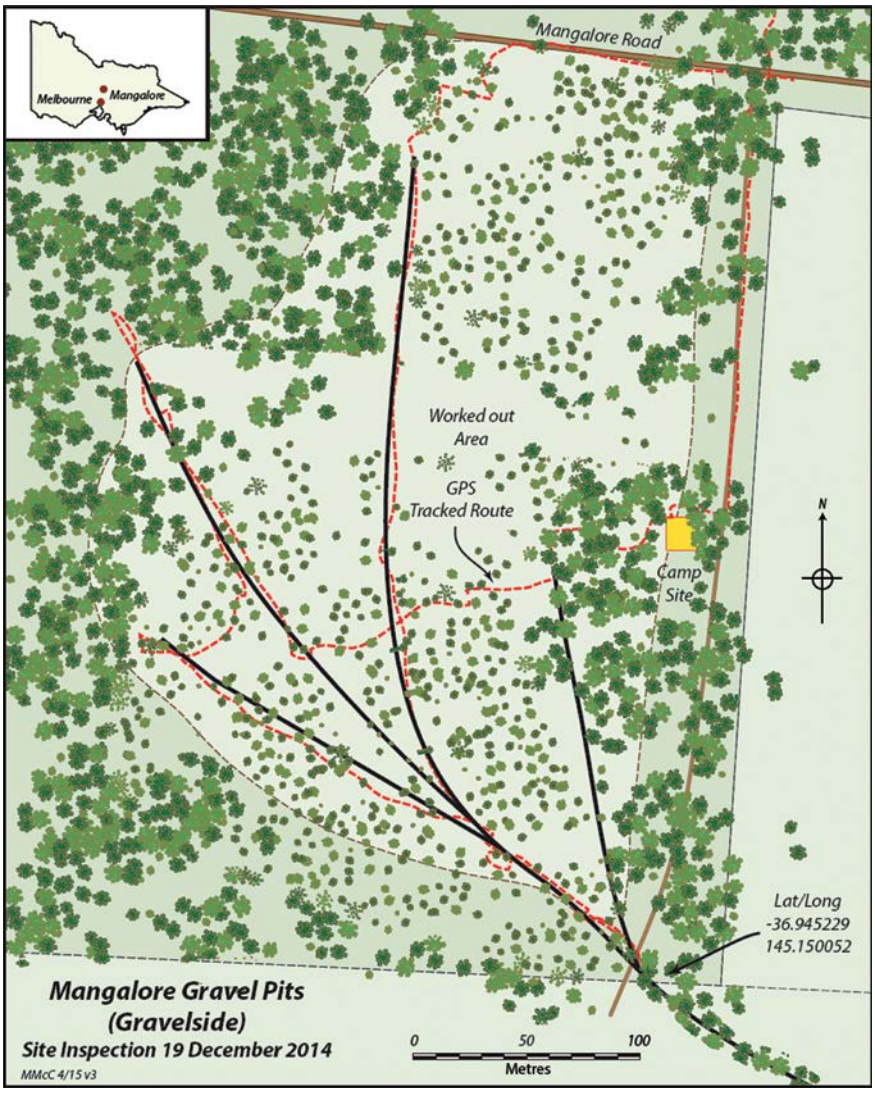
Above: *A section of fishplate at the Mangalore Gravel Pits. The stone surrounding it is typical of the water-worn quartz gravel at the pits, making it a cheap source of ballast requiring little further processing. Photo: Peter Evans*
Left: *A side-tipping skip made by George Sewell of West Footscray, Melbourne; one of three remaining rail vehicles at the Waranga site. Photo: Peter Evans*

The opportunity was also taken to visit the east end of the reservoir wall where the alignment of two quarry tramways leading to the wall could be seen running through paddocks. (See map previous page.)

Having farewelled our Bendigonians, Bruce and Chris, the remaining four adventurers headed off towards Melbourne but, with time available, took the opportunity to investigate the 1600mm [5ft 3in] gauge Mangalore Gravel Pits (Gravelside) Tramway to the north-west of Mangalore. These pits were first opened in 1872 to supply ballast for the North-Eastern Railway and, along with the associated tramway, worked off and on until 1938. Our idea was to traverse the site of the pits to record and interpret what could be found.

From our observations it was clear that the pits were worked a zone at a time and the tramway serving it was shifted as workings relocated. There were at least four alignments identified, all radiating from the south-east corner where the tramway entered the reserve. The end points of each line were found and plotted. Much evidence of the workings and the tramways remain. From what was seen, gravel was scooped and hauled to embankments above the tramway trucks from where the stone was tipped and/or shovelled into the trucks. Because of the removal of what top soil there was, regrowth has been restricted enabling much still to be seen to this day. It was an interesting place to conclude what was for most of the attendees our fourth and probably final Torrumbarry Gallivant. New places and discoveries await!

John Dennis, Peter Evans, Colin Harvey, Bruce McLean, Chris Wurr and Mike McCarthy, December 2014



South Australian Group visit to Milang and Clayton, Saturday 14 March 2015

Nineteen members and friends began to assemble at the Port Milang Historic Railway Museum around 11am and were welcomed by Alan McInnes, Roger Miller and Dianne & Kit Greening into the buildings and rolling stock where exhibits are housed. Many of the photos and a map on display are included in 'Boats across the lake', by Victor Woodrow, which is for sale ($15) at the station. A map of the rail and jetty sites was drawn in 1912 and enable the track, cranes and platforms which have been preserved to be set in their operating context.

The Light Railway centre south of the station houses a BEV loco from the Smithfield magazine. Peter Barry says the battery loco was numbered either 2 or 5 at Smithfield and he identified it as the one used on the last visit by the SA group to the Smithfield site.

Also in the Light Railways centre is another wagon from Smithfield and the TACL loco from Price, and outside are two more Smithfield wagons and a standard SA Harbors Board jetty wagon – the latter and the TACL are on loan from the National Railway Museum, Port Adelaide.

The TACL has some Days locomotive components. Near the north end of the museum site is a skeletal standard jetty wagon retrieved from sandhills near Kingston (South-East) and donated by the historical society at Kingston.

There is a 3ft 6in gauge ganger's trolley south of the station, and a standard gauge one in the LR centre shed. The other items of rolling stock on the site are broad gauge. The shed itself is still being repaired after a motorist damaged it last year.

At noon we moved on to Alan Beaumont's shed in Milang, to view three of his model layouts and the modern equipment he now uses to make models. He has made several gauge 1 models of the Smithfield explosives wagons and Alan is working on a gauge 1 model of the BEV loco in the Museum.

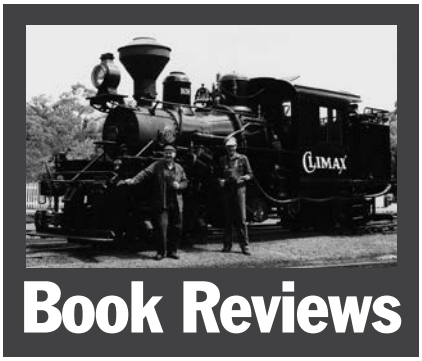
Around 12.40 we went down to Peter Lucas's house at Clayton where he served a generous lunch and drinks and had his gauge 1 garden railway working with radio-controlled locomotives both steam and battery electric. Alan Beaumont brought down some of the explosives wagons to run and several trains were operational and driven by members until about 3.30 in the afternoon.

Donations were made to the Museum, and Peter was thanked by all for organising the visits to the three sites.

Les Howard

An ex-Smithfield wagon. *Photo Les Howard*

Above: *SAHB jetty wagon and east side of the Light Railway centre. Photo John Meredith*
Left: *Peter Lucas's Gauge 1 garden railway, with Alan Beaumont's models of the Smithfield explosives wagons in the centre. Photo: Les Howard*
Below: *From left, Chris Andrews, Les Howard, Peter Letheby, Doug Fletcher, John Meredith, Kay Leverett, Doug Miles, Peter Barry, Robert Sherwood. Photo: Les Howard (Dave & Shirley Boyce, Rob & Mary Robinson, Trevor & Wendy Triplow, Mary Fletcher, Rosie Sherwood, Tony Belle and Meredith Miles were also present.)*



Book Reviews

Anatomy of a NARROW-GAUGE BALDWIN

The many lives of the "Tramway da Cantareira" #2 steam locomotive

by Peter Manning with historical record by Nicholas Burman

A4 size landscape format, card cover, spiral bound. 90 pages with 150 CAD drawings, and 20 large photographs, many in colour. Published 2015 by Camden Miniature Steam Services.
Available from LRRSA sales at $60.00 ($54.00 to LRRSA members).

This is the third in 'The Anatomy' series of books produced by Peter Manning. The previous ones – *The Anatomy of a Garratt* (Tasmanian K class), and the *The Anatomy of the Darjeeling Garratt* – were reviewed in *Light Railways* 208 and 232 respectively. Both were very highly praised for their quality.
This one describes a 600 mm gauge Baldwin 2-4-0 locomotive (B/No. 37399 of 1911) built for the Tramway da Cantareira, of Sao Paulo, Brazil. This 13 km tramway ran from central Sao Paulo to a water supply dam. The tramway had been built to aid construction of the dam, but the residents made use of it to visit the hills at weekends and holiday periods. As a result the tramway was retained to provide a passenger service. Around 1950 the locomotive was sold to the Usina Monte Alegre sugar mill on whose lines it worked for about ten years. After that it went to E.F. Perus-Pirapora cement company and was used for yard shunting on that company's railway. This business ceased operations in 1983 but the engine was not scrapped. It is now in the hands of the Institute of Railways and Preservation of Cultural Heritage.
As built the locomotive had all the elegance which characterised small Baldwin locomotives of that period. Later it was fitted with a spark arresting stack, steel cab, and second sand dome. Although these changes were relatively small, they detracted somewhat from the locomotive's appearance. The illustrations and drawings show the locomotive in both its as-built form, and as it looked at various times in later life.
The book includes detailed technical drawings of virtually all components, and three-dimensional drawings in colour showing how these parts fitted to sub-assemblies. Drawings of three different tenders are included, the bogie tender it was supplied with, and two four-wheel tenders it later ran with.
This book was irresistible to me, for the locomotive has similarities to the Powelltown tramway's *Little Yarra* (Baldwin B/No.37718 of 1912) which was described in LR 200. Both were 2-4-0s of the same general style, but there were also differences, e.g.:

	Cantareira No.2	*Little Yarra*
Gauge	600 mm	3 ft [914 mm]
Frames	outside	inside
Driving wheel diam.	2 ft 9 in	3 ft 1 in
Wheelbase, rigid	4 ft 6 in	6 ft 3 in
Wheelbase, total	11 ft	12 ft 4 in
Cylinders	11 x 16 in	10 x 16 in
Heating surface, total	396 sq ft	306 sq ft
Valve gear	Walschaerts	Stephenson
Tender	8 wheel	6 wheel
Tractive effort	7,500 lbs	5,880 lbs

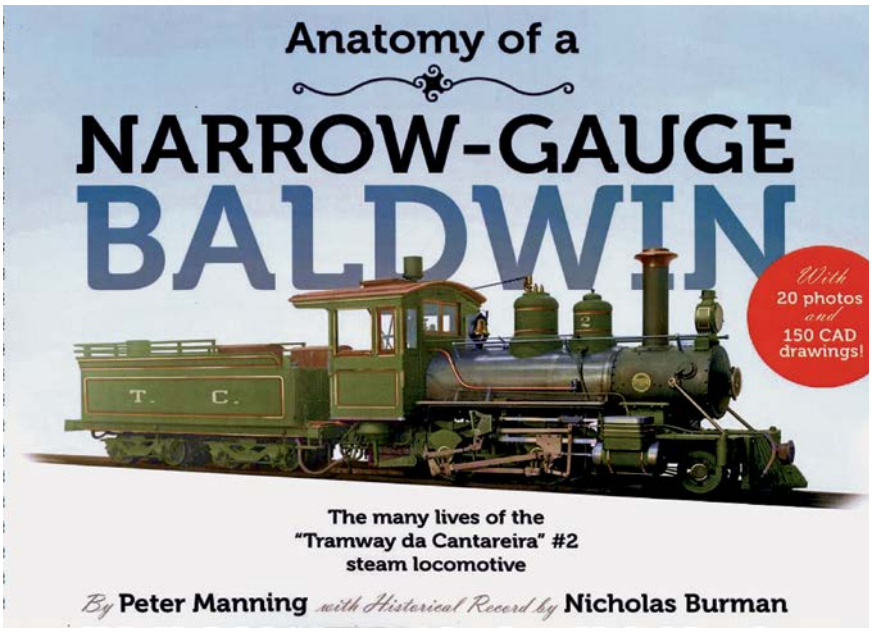
The boiler diameter was 3 ft in both cases, but the Brazilian locomotive's boiler was longer, and the firebox shorter than that on *Little Yarra*.
Interestingly, Cantareira No.2 was fitted with Walschaerts valve gear, which seems to be an unusually early use of that type of valve gear on small Baldwin locomotives.
In producing this book, Peter Manning has been ably assisted by significant contributions from other railway enthusiasts in Australia, Brazil, Canada, Germany, the USA, and the UK. The result is a book of very high quality, both in content and in the standard of printing. Earlier books in this series were digitally printed; this one has been offset printed on high quality matt art board.
As with the earlier books, it is spiral bound so that it lays flat – a benefit to those who will use it as an aid in model building.
There are three maps, all quite basic – the only part of the book that could be described as basic. The photographs are all very well printed. Ten are of full page size. One is a beautiful hand-tinted reproduction of the builder's photograph showing the livery as built – light ivy green with yellow lining and planished steel boiler cladding. Another is a builder's photograph of an equally elegant 2-6-0 Baldwin locomotive that was delivered with Cantereira No.2.
To round it all off, there is a beautiful full page painting of the locomotive at work in the Brazilian forest hauling a short passenger train.
Frank Stamford

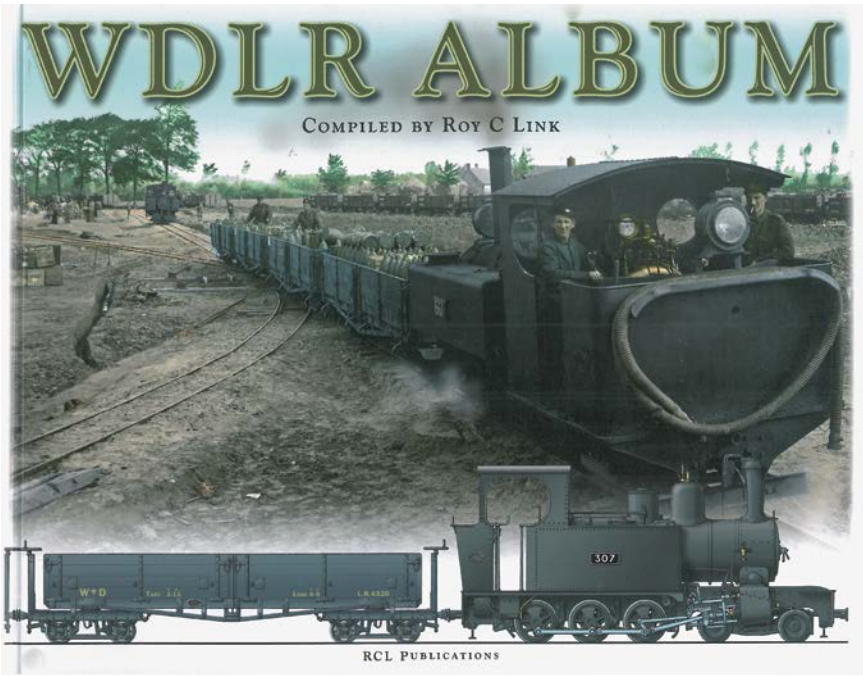
WDLR ALBUM

compiled by Roy C Link

256 pages, hard cover, landscape format 280mm x 215mm, with over 212 photographs, 12 modelers scale drawings, 71 drawings, diagrams and plans.
Available from the LRRSA online bookshop – $A88.00 plus postage. [price to LRRSA members $79.20 plus postage] (Weight 1,550 gm)

This is a magnificent book. It has been produced in the United Kingdom by RCL Publications and provides a unique record of British 60cm gauge railways used on the western front in France from the spring of 1916.
Both the Germans and the French had established strategic stockpiles of 60 cm rail equipment prior to the war, having developed purpose-built steam and internal-combustion locomotives. Although not specifically intended to serve the needs of trench warfare, whose development was unexpected to all concerned, the Germans and French soon began to build light railways utilising their equipment behind





the forward areas for the same purposes that the British later did, and to order very large amounts of additional material. The Germans had almost 3000 steam locos by the end of the war, although of course many were used on the Eastern Front.

The British 'War Department Light Railways' (WDLR) – their official title, came to this mode of supply transport late and it was specifically designed to be compatible with both their allies' and enemy's existing extensive networks and equipment. This enabled each side to utilise captured lines and equipment as the front shifted during the years of the war. When the Americans entered the war, they also constructed light railways using their own locomotives and rolling stock.

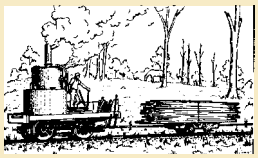
The extensive use of light railways preceded the successful development of small internal combustion powered locomotives but before the perfection of the robust pneumatic tyre. Within a decade, the all-wheel-drive, pneumatic tyred, internal combustion road truck would enter military service, at a stroke rendering the light railways obsolete whilst tracked armored fighting vehicles (both tanks and self-propelled artillery) would restore mobility to the wider battlefield.

The book is profusely illustrated with excellent photographs, detailed maps and copies of original blue prints of standard design details as well as diagrams of rolling stock.

There are seven chapters covering how the tracks were constructed, operational details, how the system was maintained, details of locomotives and tractors used and rolling stock details. The track used was usually 20 lb/yd rails supplied in panels with steel sleepers for ease of installation. All earthworks were dug by hand in the relatively flat countryside. The railways were principally used to transport ammunition and other supplies from stockpiles behind the lines to the frontline, and in some cases to transport wounded soldiers back to the hospitals. It was a large undertaking and at its peak was making deliveries of around 200,000 tons a week over an average distance of between 4 and 5 miles. To service the locomotives and all of the rolling stock extensive workshops were constructed. There was a wide range of locomotives used on the system including steam locos from Hudswell Clarke, Andrew Barclay, Hunslet and Baldwin and internal combustion locos ranging from Simplex tractors to Dick, Kerr petrol electric tractors. Also, a wide range of rolling stock was used to transport the various goods throughout the system. Full details are provided of all this in the book.

The book is highly recommended to those interested in the use of light railways in an unusual situation and it is timely given the upcoming centenary of the war on the western front.

Richard Warwick



LRRSA NEWS

MEETINGS

ADELAIDE: "Light Railways of South Australia & Northern Territory Part two"
Amusement railways in South Australia, Broken Hill and the Northern Territory. News of light rail matters will be welcome from any member.
Please contact Les Howard on 08 8278 3082
Location: 9 Craiglee Drive, Coromandel Valley.
Date: Thursday 4 June at 8:00pm

BRISBANE: "Bob goes to Irvinebank – Take two"
As Bob Gough was assisting on the QR 150 celebration train last meeting, he will be giving his presentation on his travels to Irvinebank, Queensland. Terminus of the 2ft gauge tramway servicing John Moffatt's tin mining empire, Irvinebank still has many historic buildings dating from the 1880s.
Location: BCC Library, 107 Orange Grove Road, Coopers Plains.
Date: Friday 19 June at 7:30pm

MELBOURNE: "Bill Hanks Presents…".
'The Rock Trains'. Two steam locomotives from the Mt Rainier Scenic RR in Washington State are pressed into service on an operating railway to save the line from a complete washaway, and closure. Bill will give an introduction about the Mt Rainier Scenic RR and the two locomotives, a Climax and 2-8-0 tender.
Location: Ashburton Uniting Church Hall, Ashburn Grove, Ashburton.
Date: Thursday 11 June at 8:00pm

SYDNEY: "AGM, with more from the Ken McCarthy collection."
NOTE TEMPORARY CHANGE OF VENUE
June is the month of the AGM. After conclusion of the formalities further photos from the late Ken McCarthy collection will be shown. Ken was a founding member of SPER and Illawarra Light Railway Museum and he amassed a large collection of photographs of varied railway topics. Further photos of light and industrial railway interest from Ken's extensive collection will be shown at the meeting.
Temporary new location at Burwood: George Street Centre, Cnr George St and Elsie St, Burwood. Located about 150 metres north of Burwood railway station, off Burwood Rd. There is a parking station available (pay) or street parking.
Date: Wednesday 24 June at 7:30pm

RESEARCH

Please send contributions to:
Research Editor, Stuart Thyer
PO Box 21, Williamstown, Vic 3016
e-mail: research@lrrsa.org.au

First diesel locomotives built in Australia

While discussions on this subject tend to focus on mainline operations, it appears that the first diesel locomotives constructed in Australia pre-date all State and Commonwealth railway efforts. Rather than the NSW Government Railways being responsible for this technological achievement, the Water Conservation and Irrigation Commission of NSW called a tender for the construction of three locomotives for the Wyangala Dam project on the Lachlan River, near Cowra, NSW.

Engineering firm Armstrong Holland constructed the 3ft gauge 4w locomotives, named *Jack*, *Archie* and *Dulce*, which were delivered by May 1930. The locomotive names, and the actual name-plates, came from the previously named Krauss steam locomotives that had worked on the Burrinjuck Dam project.[1] Powered by six-cylinder McLaren-Benz diesel engines, they were built at the Armstrong Holland works in Mascot, NSW, thus becoming the first diesel locomotives constructed in Australia. These worked on the Wyangala Dam project until 1935, then were sold to the Stanley River Works Board, responsible for construction of the Somerset Dam in Queensland.[2] The locomotives saw out the war-delayed project, although by the end *Jack* was the only operational locomotive, with *Archie* providing parts and the engine from *Dulce* having been used to power a sand barge on the project, which sank in 1943.[3] The remaining locomotives were sold in 1949 to a sawmiller at Mt Hallon in the Brisbane Valley. He intended to use the engines to power his mill, but never did so; thus the locomotives were finally scrapped in 1964.

Armstrong Holland is also believed to have constructed four smaller petrol powered rail tractors for use at Wyangala Dam. At least one went on to the Burrinjuck Dam construction project and as of 2008, was still there, in a works compound. Although all the locomotives constructed by Armstrong Holland seem to have been reasonably successful, it doesn't appear that they produced any more after this. As they were involved in producing equipment for the road building and construction industries, locomotives would have been well within their engineering capacity. Are any readers aware of the existence of other Armstrong Holland locomotives? Is the rail tractor still languishing in the works compound at Burrinjuck Dam or has it been put on display?

S Livesey, J Browning, R Horne , 'Armstrong Holland locos from Wyangala Dam', *LRRSA Yahoogroup discussion*, 15 March 2015

1. J Newland, 'The Goondah-Burrinjuck Railway', ARHS *Bulletin*, No 597, July 1987 p142
2. A Weston, 'Some early Australian diesel locomotives', *Light Railways*, No 69, July 1980, pp 4-7
3. A Weston, 'Early Australian diesel locomotives (LR 69)', *Light Railways*, No 72, April 1981, p19 (additional information missing from article in LR 69)

Substation, Compressor Plant and Workshops at Somerset Dam, 8 April 1937. In the foreground is one of the Armstrong Holland diesel locomotives. John Oxley Library, State Library of Queensland

A guide to downloading maps (QLD)

The Queensland Department of Natural Resources and Mines (DNRM), previously the Survey Office Department of Public Lands, has a significant digitised collection of historical maps and plans, which is now available online. Prior to this collection being created, researchers had to pay either the State Library or Archives for maps to be copied to CD and posted. While a significant resource, it is not the most user-friendly site to navigate through.

To help researchers find their way around the collection, Susan Cokley has written a guide to searching and downloading the maps. It is an extremely well written guide that makes sense of the indexes and naming conventions used on the site, making it an easy task for new users to find their way. Susan has allowed the document to be shared widely, thus we have placed it onto the LRRSA website in the 'downloads' section, http://lrrsa.org.au/Lrr_downloads.html

Copyright

What is Copyright in Australia?

Copyright is legal protection for the creators of 'works', giving them certain rights over their created material. Among the many types of 'works' are novels, journals, articles, reports, diaries, compilations (tables of information, etc), photographs, maps, diagrams, and plans. These are typical works that might be used in a research piece in *Light Railways* or similar publication. Copyright is automatic; a creator does not need to apply for it. So how long does copyright exist for and how does it affect your ability to use information in your research?

Under current Australian law, copyright expires at the death of the creator plus 70 years. Prior to the signing of the Free Trade Agreement (FTA) with the USA in 2005, it was the death of the author plus 50 years and photographs were simply covered for 50 years from date of publication. With a change of law in 2005 to align with USA law, any work in which copyright had expired under the former law stayed expired. This is the often talked about '1955 rule'; it is often stated that anything published prior to 1955 is out of copyright. While this is correct for photographs, it is only relevant to written works if the author had died prior to 1955. If an author published in 1954 and died in 1956, copyright was still current when the new laws were introduced in 2005, thus 70 years from the author's death keeps that work copyright until 2025.

Another common source of material is newspapers, where in older newspapers the paper owned copyright over material written by staff journalists. The rights of journalists have increased in recent years and they now have copyright over re-use of their work, while the paper holds copyright over the first publication. Government publications are slightly simpler and are not affected by the 2005 FTA changes. Copyright exists for 50 years from the year first published.

There are plenty of exceptions, exemptions and 'gray areas', orphan works (where no copyright owner can be identified or located) being one of

them. The Australian Copyright Council (ACC)[1] is a comprehensive source of information on various aspects on copyright; the National Library of Australia provides good information for users and is perhaps more user friendly to read than the ACC website.[2]

Fair Dealing

For much research, reproduction of large tracts of a work does not occur. In most cases, select segments are quoted to provide facts or relevant examples to the reader. These are covered under the 'Research or Study' provisions of the Copyright Act. The interpretation of 'fair' is somewhat open, but as there seem to no examples in case law of historians being sued for copyright breaches for citing extracts from other texts, it would seem that the approach taken by researchers and historians is seen as allowable and appropriate.

Even if text is used under the fair dealings provisions, or a photograph is used that is out of copyright, there is still an expectation that the document source is cited or the photographer acknowledged. See the 'Referencing' article in LR241.

Reproduction Rights

The right to reproduce an image from a media or archive organization is quite separate to copyright. If an organization holds the only copy of a photograph in their collection, then they can charge for accessing and using it. An example is the Fairfax Media archive, which contains images that pre-date 1955, thus out of copyright and potentially free to use. If only they have access to the original negatives and prints and thus control access to the photographs, an image you want to use will need their permission to access and publish. This will almost invariably mean that a fee has to be paid; one *Light Railways* researcher had been quoted a 'concessional' fee of $132, not always affordable for a shoestring budget researcher.

As long as an archive maintains control of the image, they can charge for its use. Once a researcher knows the photo exists however, they can try and search for it in other places. If, for example, the same photo was found in a State history archive, or located in a local history society, it could be legally used instead of the archive's version. We are fortunate that State Libraries will allow reproduction with only very small fees (usually to cover costs) or with no fees at all. Many images appear in *Light Railways* under these conditions.

Creative Commons

A recent innovation is Creative Commons, a not-for-profit organisation which has developed a range of 'copyright licences'. As the Creative Commons website says "The CC licences provide a simple standardised way for individual creators, companies and institutions to share their work with others on flexible terms without infringing copyright. The licences allow users to reuse, remix and share the content legally."[3]

A growing volume of material is being published under Creative Commons, the 'CC' logo on a website indicates that content can be shared under the terms of the particular licence chosen by the author or creator.

In Australia, archives, museums and Governments are moving towards releasing in copyright material under Creative Commons licence. This greatly simplifies the re-use of material, as permission does not need to be obtained. The Australian Creative Commons website has further information on this which leads to many interesting and useful resources.[4]

Look out for this symbol on more and more websites in the future. It signifies material able to be shared under Creative Commons.

With increasing volumes of historic material being digitised, researchers have greater access to raw material. Understanding how copyright and reproduction rights affect you ensures lawful use of this material. While at times, the issues can seem confusing, dealing with these is surely a minor concern against having access to significant volumes of research data.

1. Australian Copyright Council, copyright.org.au/, accessed 15 April 2015
2. Copyright in library items, National Library of Australia, www.nla.gov.au/copyright-in-library-items, accessed 26 April 2015
3. About the Licences, Creative Commons Australia, creativecommons.org.au/learn/licences, accessed 26 April 2015
4. Learn about CC, Creative Commons Australia, creativecommons.org.au/learn/, accessed 26 April 2015

Fairfax Media archive nightmare

While digitising photographic archives and selling access to the collection is seen as a profitable venture, it is not without its perils. "*Fairfax Media's decision to ship up to eight million historic New Zealand news photographs and negatives to Little Rock, Arkansas, for 'digitising' has proved perilous. Two years on, the digital archiving is yet to be completed, an unknown number of the photographs have turned up on eBay.com for sale and Rogers Photo Archive (RPA), the company involved, is now in receivership facing at least 10 lawsuits totalling more than $94 million.*"[1]

It would seem that a sizeable amount of Fairfax Media archive has been potentially lost to New Zealand. Australian archives are also affected; the article indicates that some photographic records of the *Sydney Morning Herald*, *The Age* and other Australian Fairfax publications are also involved. A controversial decision to allow the export to occur was made by the New Zealand Government in 2013. Fairfax Media has initiated legal proceedings to recover its archive.

1. B Rudman, 'Fairfax's photo nightmare: I told you so', *The New Zealand Herald*, www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11432690 Accessed 15 April 2015

Australian Forest History Society Inc.

The Australian Forest History Society (AFHS) crosses disciplines with the LRRSA in a number of areas relating mainly to historic sawmilling and the use of light railways as a mean of transport. The aim of the AFHS is to advance historical understanding of human interactions with Australian forest and woodland environments. The Society has the following objectives in support of the aim:

- the conduct and encouragement of research and studies of Australian forest history;
- the dissemination of scholarly research, studies and information on Australian forest history by publications, meetings, conferences, workshops, electronic means of communication or other means;
- the promotion of interest in Australian forest history;
- co-operation with organisations and persons within Australia or elsewhere having similar interests and objectives;
- the identification of, and dissemination of information on, sources for forest history research;
- the promotion of the retention and safe custody of source materials for forest history research.

The Society will hold its 9th National Conference between 21-24 October 2015 in Mount Gambier, South Australia. The primary theme of the conference will be plantations, but papers are welcomed on a range of other forest-related subjects including sawmills and tramways. Further details are available from the AFHS website www.foresthistory.org.au

Google Earth Pro

A recent change of policy from Google means that *Google Earth Pro* is now free. While it does not offer any increase in the quality of satellite images available, it does have a modest selection of tools that may be of use. It features a measurement tool for distance and area (part of the ruler tool), and users can easily produce high resolution images for publication.

It can be downloaded from google-latlong.blogspot.com.au/2015/01/google-earth-pro-is-now-free.html. Once you download and run *Google Earth Pro*, enter your email and 'licence key' which is 'GEPFREE'. Thanks to Mark Kendrick for posting this information onto the LRRSA yahoogroups site.

The Bush Mill, Cuba Park Railway, Penny Royal World, Tasmania

Would anyone with a plan, no matter how rough, of any of these lines and/or good photographs please contact Jim Longworth, c/- the Research Editor.

Heritage & Tourist NEWS

News items should be sent to heritagetourist@lrrsa.org.au Digital photographs for possible inclusion should be sent direct to Scott Gould at editor@lrrsa.org.au including the name of the location, the name of the photographer and the date of the photograph.

QUEENSLAND

WOODFORD RAILWAY, Woodford

610mm gauge

Additional work has found to be required before the newly acquired Perry steam loco (Perry Engineering, SA, 5643/51/1 of 1951), can return to service. The trailing truck has been found to be in worse condition than originally thought, with unacceptable play in the axle box guides, and the wheels need turning. President Terry Olsson reports that when running chimney first as occurred at Dreamworld, it was not a problem. However when running in reverse, as needed at Woodford, work is required to make it safe to use. Volunteers also found some leaking boiler stays hidden behind the fire bricks in the firebox when they removed these bricks as part of the conversion back to coal/wood firing. At the time of writing they are waiting for these to be inspected by the boiler inspector. Unfortunately this additional work means return to service of this loco may be delayed.

During January and February passenger numbers were considerably down on the same time last year. The very hot weather certainly did not help. Over the weekend of 21 and 22 February, Woodford was subject to heavy rain resulting from Cyclone Marcia that crossed the Queensland Coast north of Yeppoon on 20 February.

Greg Stephenson, Track Day Coordinator, reports that with extreme hot weather with frequent rain combined with Christmas and holidays, there has been little progress on track activities. However, volunteers did manage to install two concrete sleepers in the main line on one very hot Saturday before retreating to activities in a more shaded area. The heat and rain has led to flourishing weed and grass growth, so considerable time has been spent on vegetation control – grass mowing and poisoning along the track. Plans are to continue sleeper renewals in concrete or steel as part of the regular maintenance. At Peterson Road the constant demand for mowing and poisoning has diverted the track gang from track building activities.

Whilst the wet weather has delayed most activities in the open, it has been an opportunity to prepare and match fish plates with compatible track bolts in preparation for assembling more panels of track. An additional two panels of track with 60lb/yd. rail and concrete sleepers have been fish-plated into position on the future mainline. These panels came complete from Ingham, however a number of cracked sleepers and rusted connections were replaced to ensure their long life.

Whilst the ex-QR steel sleepers to be used in the point work had been cut to size for some time, there has been a few hold-ups in sourcing appropriately skilled people with time available to weld them together. They now have enough sleepers to commence one set of points and welding on the second set is well advanced.

Durundur Railway Bulletin 3 and 4 March/15

FRIENDS OF ARCHER PARK STATION AND STEAM TRAM MUSEUM, Rockhampton

610 mm gauge

Members are planning to refresh the museum, emptying every box and corner, collecting all items that are not on display and also liaising with the Development Officer of the Queensland Museum Network to make plans to improve the museum. Part of this process is the cataloguing of the books and exhibits which they hope to have completed by the end of the year.

The museum was lucky with Cyclone Marcia with only minor building damage, some fence damage, big trees down at both ends of the car park and a huge mess in the car park. Unfortunately they had to cancel the Family Fun Day on 1 March due to the aftermath.

The Heritage Grant for the upgrade of the Soundscape should go ahead soon. An application for a 50% grant to the RRC Community Assistance Program for restoring the floor and floor coverings and refurbishing the upholstery in the heritage rail carriages for a total value of over $17,000 has also been submitted.

The QR sign is now sitting in a prominent position for visitors to see at the southern end of the platform. The orange safety fencing has been replaced by semi-permanent fencing donated by ARC that will make things safer for the school holiday activities. Gardens and planters have also been painted and re-potted and are all looking good. The steam generator has been sandblasted and before long before it will be in its correct position on the C17 ready to be painted. Members are also getting quotations for stairs up into the diesel instead of using the ladder.

Tram Tracks 4/15

NEW SOUTH WALES

AUSTRAL BRICKS, Eastwood

895mm gauge

Kevin Waid visited the Eastwood shale quarry site in February and made note of what was written on a plaque next to the display of a shale quarry skip.

'Drilling and blasting was used to win Ashfield shale at most of the older brick pits around the Sydney metropolitan area. Prior to the advent of dump trucks and conveyor belts, skips were used to transport shale up the steep face to the brick pits and over to the brick making plants. This practice continued well into the second half of the twentieth century including at Austral's Eastwood plant where skips operated until 1999. It was not uncommon to find pit workers beginning and ending their day as passengers in the skip which was preferable to walking.

In the course of the day the skip would be filled at the working face and would then travel around the base of the brick pit over a roughly laid railway track. The steep upward journey to the pit top was made over more permanent and better laid tracks with the help of a winder – a steel cable winch attached to the skip. At the top, the skip would be upended and emptied into

This unusual looking shale hopper saw 60 years service at Eastwood brickworks, retiring in 1999. Photo: Kevin Waid

SMR 10 and 18 add to the festive scene at East Greta Junction during the LS Rail family day on 17 April. *Photo: Robert Driver*

a shale bin. Skips had minds of their own and at times came off the rails, coming to a rest in all sorts of places such as inside shale bins, upside down in the muddy pit sumps or hanging by the winder cable half way up the cliff. There is also the odd runaway story.'
Kevin Waid 2/15

South Maitland Railways Pty Ltd
On Friday 17 April, track maintenance contractor LS Rail, which leases portion of the SMR yard at East Greta Junction, arranged for preserved SMR locomotives 10 and 18 to be brought out of storage and parked in the Up platform at East Greta Junction to add some colour to the firm's family picnic day. 18 was in steam and took guests on short footplate rides along the SMR main departure road as far as the ARTC boundary with the main northern line.
Robert Driver 4/15

VICTORIA

PUFFING BILLY RAILWAY, Belgrave
762mm gauge
The project to convert NGG16 129 (Beyer Peacock, Manchester, 7430 of 1951) is taking shape with the arrival of the brand new boiler from the boiler manufacturer in Sydney in April.
Also delivered from ER Curtain of Sydney were a spare set of flanged boiler plates and all the formers which have been created to manufacture the flanged plates.
While the boiler was still on the fabricators' rollers the smokebox was aligned and welded on; a job which would have been much harder to do after delivery.
The boiler was also sandblasted and painted prior to delivery to ensure a quality, durable finish made to last.
The new water tank and coal bunker are complete and in storage at Gembrook, along with new side-rods and the re-gauged wheelsets. Work at Belgrave focuses on preparing the boiler cradle.
The engineering crew have been working through calculations for the new brake rigging (air rather than vacuum as originally fitted) and preparing drawings for suspension and brake components, including pins, bushes and links.
The Saturday workshop day volunteers have been busy making and driving in new fitted bolts to the boiler cradle, carrying out repairs to the smokebox front plate and restoring other parts including the headlamps, turbo generator and sand boxes.
On Easter Saturday 9 April 1955 Puffing Billy became the second operating preserved railway in the world with the commencement of regular operation of the train between Upper Ferntree Gully and Belgrave with locomotive 3A. The Victorian Railways agreed to operate the train initially for a trial period under a guarantee against losses for firstly the Citizens Committee headed up by Mr Harold Hewett and later by the newly formed Puffing Billy Preservation Society.
The first preserved railway was the Talyllyn Railway in Wales which re-opened to passengers on 14 May 1951. The Festiniog Railway, also in Wales, had been under restoration since 1954 but did not re-open to public passenger traffic

The new boiler for NGG 16 129 being delivered to Puffing Billy's Belgrave workshops as G42 stands alongside. *Photo: Russell Hicks*

6A hauls a Gembrook bound train at Cockatoo on Thursday 9 April 2015, the 60th Anniversary of Puffing Billy becoming the second operating preserved railway in the world. *Photo: Ted Godwin*

until 23 July 1955 – steam haulage (with locomotive *Prince*) began on 5 August 1955. In the USA there were a couple of railways built for the operation of preserved locomotives and rolling stock prior to this but they were not "preserved railways" as such.

To mark this most important 60th anniversary in a small way, Steve Holmes requested to be rostered as driver on the 11.10am Gembrook train on Thursday 9 April, 2015. His fireman was Barry Rogers and although not planned, the train was hauled by locomotive 6A, which had been the standby loco at the Gully for the entire preserved period. Following VR tradition, the smokebox door of 6A was adorned with a chalk message.

Puffing Billy website Workshops update 4/15, *Narrow Gauge*, 3/15, Ted Godwin 4/15

Climax locomotive 1694 on the 'Commissioners' Special' at the site of the Landslide, 28 March 2015. The train departed Belgrave at 6.30pm after the 60 participants had the opportunity to visit the Puffing Billy Railway's Belgrave workshops. A spit roast dinner was provided at the Packing Shed, Nobelius Siding, and the train returned to Belgrave at 11.28pm, two minutes ahead of schedule! *Photo: Frank Stamford*

WALHALLA GOLDFIELDS RAILWAY, Walhalla
762mm gauge
The skirt is now on the face of verandah at Walhalla station, the scallops have been cut in but it is still not fully completed. The wooden frame on top of the verandah still has to be painted. There is new lighting on the station building, all the fences are now back in place and the refurbishment of the goods shed is nearly completed.
The ceiling in the goods shed was plastered on 3 March, filled on the 4th then the final sanding on Friday the 6th. Then volunteer tradies stepped in over the weekend, wired up the lights, cut holes in the ceiling for the lights and sound system and then painted the ceiling all ready for a wedding on the 14th. The next week carpenters were to come back to finish off the cornice but this was delayed.
There are six new recruits training to be guards and drivers. Siobhan O'Dwyer, when qualified, will be the first female driver for WGR. Two of new recruits Rodney Reed, Driver, and Tim Heeks, Locomotive Assistant, have joined the volunteer group; both are firemen and drivers at Puffing Billy. There are a number of volunteers who work at both organisations.
The railway has also obtained a large tray truck with a 10 tonne crane and a smaller Canter truck which were surplus to Metro trains Melbourne.
Arrangements were made during January and the vehicles were collected and driven to Morwell where they will undergo roadworthy inspections prior to being re-registered under the WGR name.
The Hi-rail equipment on the Canter truck, which is not suitable for narrow gauge, has been removed, and is likely to be passed onto another tourist railway group.
A training class is to be held shortly for people who will operate the crane on the large truck.
There has been a problem with fuel contamination in the class 10 loco (former EBR Walkers 576, 1963), requiring draining and cleaning the fuel tanks and replacing all filters and problems with the fuel pump related to the contaminants. Tanks were cleaned and refilled, and a new glass filter fitted so the fuel can be visually inspected. Ongoing problems with the fuel pump have been recently overcome. The new compressor which has been working too well, has now been tamed with repairs and adjustment to the unloading valve. 1001 is important at busy times as it is the only loco currently capable of pulling four loaded carriages up the 1 in 30 grade from Thomson to Walhalla. The Fowler (Fowler, Leeds, 0-6-0DM, 1951), the most reliable workhorse, is in line for a fresh coat of paint as soon as the carriages have been repainted.
Kasey (EM Baldwin, Sydney, 1970) has also performed well through the busy period but requires the services of a small skinny, double jointed mechanic to remove the hydraulic pump to replace a seal and stop an annoying leak.
The commercial painters who have just completed the painting of the Walhalla station building have been awarded the contract to repaint the carriages in their traditional colours.
Trolley MTV3 is stored at Walhalla and available as required while a new stretched underframe has been constructed for MTV4 and reconditioned axle bearings and new wheels and reconditioned drive gearbox have been fitted. A rebuilt brake system has been installed. The front axle allows the wheels to turn independently which significantly reduces curve resistance.
The modified Orica trolleys are now also in service with the maintenance gang.
Dog Spikes and Diesel 2 and 3/15

TASMANIA

WEST COAST WILDERNESS RAILWAY, Queenstown
1067mm gauge
Passenger numbers for the railway have been good for this year thus far, slightly exceeding expectations each month despite the cool summer. For the 12 months to 1 April, the railway carried 20000 passengers, 90% of whom were from Australia.
WCWR 4/15

The ATSB has released its report into the derailment of an empty passenger train near Teepookana. On 9 December 2014, diesel locomotive D2 (Drewry 2406, 1953) with an empty carriage and crew of three, departed Dubbil Barril at about 1136, bound for Regatta Point. At about 1215, a radio message was received from the train crew advising that the locomotive had derailed all wheels. The trailing empty passenger carriage remained on track. The crew sustained minor injuries (bruising and stiffness).
West Coast Wilderness Railway (the operator) investigated the occurrence, the findings of which indicated the track condition and geometry was not a contributing factor. Mechanical examination of the locomotive found that the

West Coast Wilderness Railway's D2 (Drewry 2406 of 1953) waits to depart Regatta Point with the service to Rinadeena on 16 April 2013. Photo: Scott Gould

front right hand axle box horn guide had jammed due to a lack of lubrication. The jammed horn guide had restricted axle articulation while the locomotive was negotiating a slight left-hand curve, causing the leading wheel on the right side to climb the rail head and derail to the right. A blanket speed restriction of 10 km/h exists for diesel locomotives travelling the section between Regatta Point and Dubbil Barril. Although the locomotive did not have a mechanism to display or record speed, individual crew member interviews and the damage sustained by the track infrastructure and rolling stock suggested that speed was not a factor in the derailment.

West Coast Wilderness Railway operates three diesel locomotives of this type – primarily for shunting and the occasional freight service. They are not normally used for passenger services. Although the locomotives receive regular inspections they can spend long periods idle, are often housed in the open and are subject to the harsh environment of Tasmania's west coast.

A pre-departure inspection (A-exam) was conducted on the locomotive before operation, but the lack of adequate horn guide lubrication was not noted. The investigation found that the A-exam did not specify a requirement to check the axle box horn guide oil reservoir to ensure lubrication was being applied.

This incident highlights to operators and maintainers, the importance of continually monitoring and reassessing risks to the safe operation of rolling stock – particularly with respect to low utilisation operating scenarios.

ASTB Final report: *Derailment of empty passenger train near Teepookana, Tasmania,* 12/14

SOUTH AUSTRALIA

COBDOGLA IRRIGATION AND STEAM MUSEUM, Cobdogla

610mm gauge

Work has commenced on the construction of another passenger carriage for the Cobdogla Irrigation & Steam Museum's railway. It will be of the same chassis design as the existing wooden body carriages, but the carriage may be of an enclosed type rather than the open top design. The bogies have been completed with the wheel sets receiving new axles as have all the other passenger carriages. To date, the chassis has been constructed in three pieces in a member's shed. The pieces have been transported to the Loveday workshop for final assembly, after which the top will be added. To assist with planning, the Redwater Creek Railway has kindly provided photographs of its carriages as examples of enclosed types of carriage.

Running days this year, have had mixed attendances from the public. The January Twilight Trains hauled by Simplex locos *Farleigh* and *Peter* (7369 of 19039 and 9861 of 1953) were generally well attended. The free open day in support of the petition (concerning the Humphrey pump, see below) was also well attended, but on the Easter Sunday open day, numbers were well down on expectations. The organistation attributes this to the Humphrey Pump still not running. All the other usual exhibits were running during the open days with Bagnall *Margaret* (1801 of 1906) in charge of the trains.

The Bagnall's oil burner installation has been modified with new steam valves and a revised layout for the oil and steam pipes to reduce the amount of space the old installation was using on the footplate.

The lighting up procedure for the Bagnall has been changed. Formerly, a diesel fuelled electric oil burner was used until about 40 p.s.i. of steam was raised, after which the pilot and then main burners were started, and the startup burner removed from the footplate. This was a cumbersome procedure which used about 30 litres of diesel for each lighting up.

Following the lead of the Psyche Bend Pumping station crew who have also recently changed the lighting up procedure for their ex N class loco boiler (they were using four tons of wood at each start up), Cobdogla is now using compressed air to pressurise the boiler to about 20 p.s.i. The funnel blower is then turned on and compressed air from the boiler is used to operate the pilot burner. After about 90 minutes, an increasing reading on the pressure gauge indicates the boiler is now producing steam, and once 40 p.s.i. is reached, the air supply is disconnected and the steam takes over the atomisation of the oil. The startup probably uses a similar amount of fuel, but as this is sump oil, which is collected for the cost of picking it up, the running costs will be reduced.

The Fowler Z7 ploughing engine has again been booked for the Waikerie Vintage Machinery Club's Hit-N-Miss Rally, to be held at the earlier date this year on 8 and 9 August. Although an exhibit in its own right, the big Fowler has the additional duty of using its cable to winch the tractor pull sled back to the start line after the tractors have had their pull. This speeds up the

Simplex locos Farleigh and Peter top and tail a food and wine train at the Cobdogla Irrigation and Steam museum in November 2011. Photo: Brian Grayson

Sixty years in retirement. V9 in Pioneer Park, Naracoorte, 19 February 2015 *Photo: Phil Rickard*

operation, allowing almost double the number of tractors to show their paces each day.

The Society's other traction engine, the B6 crane engine will be back in action later this year. After languishing without tubes for a number of years, new tubes have been installed and some welding has been done on the boiler to enable a return to steam. The boiler will be hydraulically tested in the near future, after which some general tidying up and the refitting of the crane will be done. The Fowler shed is to be extended to enable both Fowlers and the Aveling & Porter roller to be accommodated in the one building.

The petition to Parliament seeking to reinstate funding for future operation of the Humphrey Pump raised just under 6000 signatures. Many people downloaded the petition and took it to their local events, including the National Vintage Machinery Rally in Carrick, Tasmania. The petition has been presented to Parliament and the organization is now waiting for a reply.

After an interview on ABC local radio on the day of the free open day, the Minister stated that SA Water never had any intention of withdrawing funding from the general operations of the Cobdogla Irrigation & Steam Museum. It was, however, not at that stage prepared to fund the upgrades required to allow the Humphrey Pump to be restarted. This statement is at odds with one made by a staff member who had indicated that funding for the museum would end on 30 June. The Society is now seeking clarification of these contradictory statements.

Cobdogla Irrigation and Steam Museum email 4/15

NARACOORTE LUCINDALE COUNCIL, Naracoorte

1067mm gauge

In May 1955 the South Australian Railways presented locomotive V9, a 3ft 6in-gauge 0-4-4T, to the Naracoorte District Council (now Naracoorte Lucindale Council). It is presently on display in Pioneer Park and appears well cared for (as is the park) with most fixtures and fittings in place. It is under an architecturally-pleasing shelter and is not fenced in – something of a rarity today – and may be boarded either from the platform or via the cab steps. A notice board clearly details its provenance, history and dimensions. There was little evidence of graffiti or vandalism (indeed I saw none in this pretty town). V9 was built by Beyer Peacock & Co, (B/N 1597 of 1876), one of four in the original V-class batch, for service between Kingston and Narracoorte (as it was then spelt). Introduced in February 1877 to replace the existing horse power on the 52-mile-long line, the V-class proved little better than their equine predecessors and were transferred to shunting duties when 2-6-0 tender locos became available. In 1888 V9 was transferred to the Northern Division. From 1912 to 1914 it was used by the Geological and Mines Department at the Parramatta and Yelta copper mines and smelter (which the government had purchased the previous year to operate as state mines) near Moonta, after which it returned to the SAR's Northern Division until pensioned off in April 1955.

Phil Rickard 4/15

OVERSEAS NEWS

NEW ZEALAND

DRIVING CREEK RAILWAY, Coromandel

381mm gauge

The railway is a narrow gauge bush and mountain railway on the outskirts of Coromandel built on a 22 hectare property. The Railway operates every day of the year apart from Christmas Day and ANZAC morning, under a Railway Operating Licence issued by the New Zealand Transport Agency. It is seeking a full time General Manager to manage the Railway's activities including engineering, Way and Works, Commercial and Marketing activities. The General Manager is required to oversee the operation and maintenance of the Railway with a staff of approximately 15 engineers, drivers, Way and Works and commercial staff. As all staff are employees, there is no responsibility for management of volunteers.

BLENHEIM RIVERSIDE RAILWAY, Blenheim

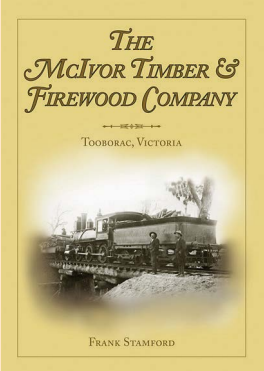
610mm gauge

After several years of planning, two years of hard work, and the huge support of many local organisations, businesses, and volunteers the new one kilometre Omaka branch line to Brayshaw Park station has opened. The grand opening was on 21 March. The railway operates on the first and third Sundays of each month.

FRONZ Journal 2/15

New from LRRSA Sales ...

The McIvor Timber & Firewood Company



Tooborac, Victoria
By Frank Stamford
Published by the LRRSA
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By Nick Anchen
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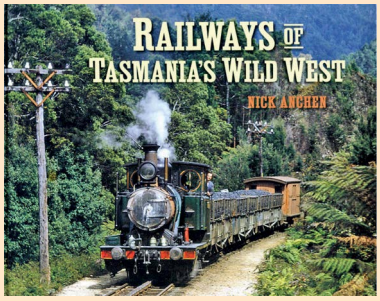

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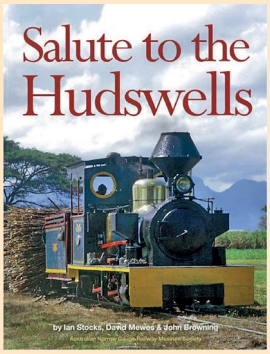

Published by the Australian Narrow Gauge Railway Museum Society
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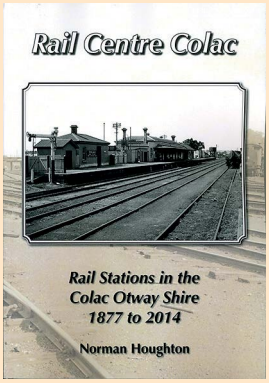

By Norman Houghton
Published by the author.
262 pages, A4 size, soft cover, many historic photographs.

Gives a detailed history of every station and siding from Birregurra to Pirron Yallock, and on the Alvie, Beeac, Forrest, and the Beech Forest narrow gauge line (which takes up 105 pages, plus 21 pages for its junction station - Colac).

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