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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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Imperial to metric conversions:

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 265 February 2019

Contents

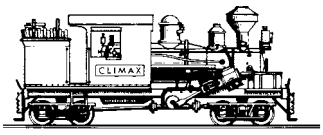
Editorial

"A picture is worth a thousand words" is an expression often used to say that a photo or diagram conveys the meaning or essence more effectively than a slab of confusing and verbose text. The expression can also be used for a very good map. Over the years we have endeavored to have high quality and very descriptive and interesting maps to support the well researched articles that we publish. *Light Railways* is very fortunate to currently have the services of Ian McNeil, Mike McCarthy and Peter Evans who prepare the majority of the high quality maps that we publish.

The maps in the current edition are a good example. The author, Peter Cokley, gathered a large amount of mapping material showing various aspects of the tramways concerned. This included aerial photos, Google Earth, old tourist maps, advertising material for the subdivision of the land in the 1900s, state government 1:25000 topography maps and so on. Then the author, Editor and Ian McNeil worked out what we wanted to show and how best to describe the tramways covered in the article. Ian then went away and worked his magic using various computer programs. I am sure you will agree that the final product is excellent.

So, on behalf of all LRRSA members and readers of *Light Railways* I would like to acknowledge and thank Ian McNeil and Mike McCarthy in particular (there are others too including Peter Evans, Bruce Belbin, Scott Gould and more recently Owen Betts) for the excellent work that they produce. *Richard Warwick*

Front Cover: *On Friday 2 November 2018 – a warm but wet morning – this beautiful matching pair of Canadian Red NA class locomotives – 7A and 12A – wait at Belgrave to haul the 17 car 10.30 train to Lakeside. At Menzies Creek 7A and six cars will be detached from the train and return to Belgrave. Meanwhile 12A will take the remaining 11 cars to Lakeside, then return with that train to Belgrave. In the afternoon it will make another return trip to Lakeside. On the right is 6A which is waiting to take the 11.10 train to Gembrook. At 12.30, 7A will take the Lunch Train from Belgrave to Lakeside. Such is a typical day on the Puffing Billy Railway, with at least three engines normally in steam. Photo: Frank Stamford*



Light Railway Research Society of Australia Inc. A14384U
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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.

Material is accepted for publication in *Light Railways* on the proviso that the Society has the right to reprint, with acknowledgement, any material published in Light Railways, or include this material in other Society publications.

Robb & Co's Fowler outside the Chinderah crib room during the CSR era. *Photo: Tweed Regional Museum*

Robb & Co's Cudgen Sugar Operations

by Peter Cokley

Preamble

This article examines a 19th century Tweed River sugar tramway company that was located in the Northern Rivers region of NSW. The 1882 Robb & Co mill and its later wharf and tramway almost did not eventuate as the Colonial Sugar Refining Company (CSR) was in discussions with the Cudgen farmers some years earlier. These 1879 discussions even included a possible CSR Cudgen tramway. Robb & Co's 1882 mill purchase was actually quite brave, considering CSR, one of the more wealthier companies in Australia, opened its own Condong sugar mill in 1880, two years earlier, only 18 km up the same river!! This article will also reveal Robb & Co, due to low cane supply for several seasons before 1911, had decided to close. Fortunately for it, CSR purchased the operations following the owner's 1911 death. In the Robb & Co era at Cudgen there were two steam locomotives and about 16 kilometres of track work. This article presents evidence that the second of those locomotives, Krauss 2195 of 1889, was on Cudgen's inventory at least by February 1893, some years before previous reports. Robb & Co's first locomotive at Cudgen , Fowler 6554 of 1891, had arrived in October 1891.

The 'leading light' in the Robb & Co sugar operations was infrastructure contractor John Frederick Robb of Melbourne.[1] Also included is William Warner Julius, who was the owner of the original October 1882 sugar mill that Robb & Co purchased and rebuilt as a four-story version by December 1884. James Joseph Casey, CMG, whose background included being a newspaper proprietor, barrister, Victorian Parliamentarian and eventually a Victorian judge, will also get an honourable mention.[2] One indication of the financial status of Robb and Casey was that in 1882 the president of the Federal Bank of Australia (Limited) was the Hon JJ Casey, CMG, and the list of directors included John Robb.[3] One of the developers is also commemorated by Robb's Monument on the Cairns–Kuranda railway in north Queensland. He is also honoured by the street name of John Robb Way in the same town as the sugar mill!

John Frederick Robb's third son, John Alexander Robb,[4] enters this chronicle as a major Cudgen personality around 1893. John Robb, the father, was usually listed as John Robb in the Government Gazettes and his son was variously shown as John Alexander Robb or John A Robb or JA Robb on official documents. This article will detail later that the specific Robb death that preceded the 1912 sale to CSR, was that of the son, John A Robb, as the father had died many years earlier, in 1896. The various Robb family enterprises were not just limited to the Tweed, as they included the Victoria Dock contract in Melbourne as well as the construction of the Cairns railway, amongst others.

CSR is linked to the Cudgen tramway's history, so it worth noting for clarity sake that CSR's corporate history, like Robb and Co, also involved a father and son in executive positions. The father was Edward Knox, (1819–1901), and the second son was Edward William Knox (EW Knox), (1847–1933). In 1869 young EW Knox was appointed manager of the northern rivers NSW sugar mills with the title of Superintendent of CSR's Clarence River Mills. At the time his father was Chairman of Directors. In 1880, the same year CSR's Condong mill opened, EW Knox replaced Joseph Grafton Ross as CSR's General Manager.[5]

In essence, this article uses the classic historical investigators' maxim to 'follow the money trail'! In this case it traces the mill ownership and the evolving tramway's money trail! It studies how business entrepreneurs saw an investment in a tramway as an essential ingredient of the mill's success.

Cudgen and Chinderah

Chinderah in the pre-tramway era had a public wharf at the road junction between what became the Pacific Highway and the road to Cudgen. The eventual Robb & Co sugar wharf was 200 metres east of this road junction.[6 7] In the early days the present Chinderah area was sometimes known as Cudgen and the present day Cudgen town area was termed Cudgen Scrub. In the tramway era and well into the 1990s, until the highway bypass was built, the Pacific Highway ran along the foreshore road. This road is now Chinderah Bay Drive.

The need for sugar trams to cross the Pacific Highway to access the sugar wharf within the Chinderah township, ceased in 1959. That was when the tramway link between the previously isolated Cudgen tramway system and the main CSR Condong tramway, was completed.[8] This 1959 link is shown on the detail map marked black.

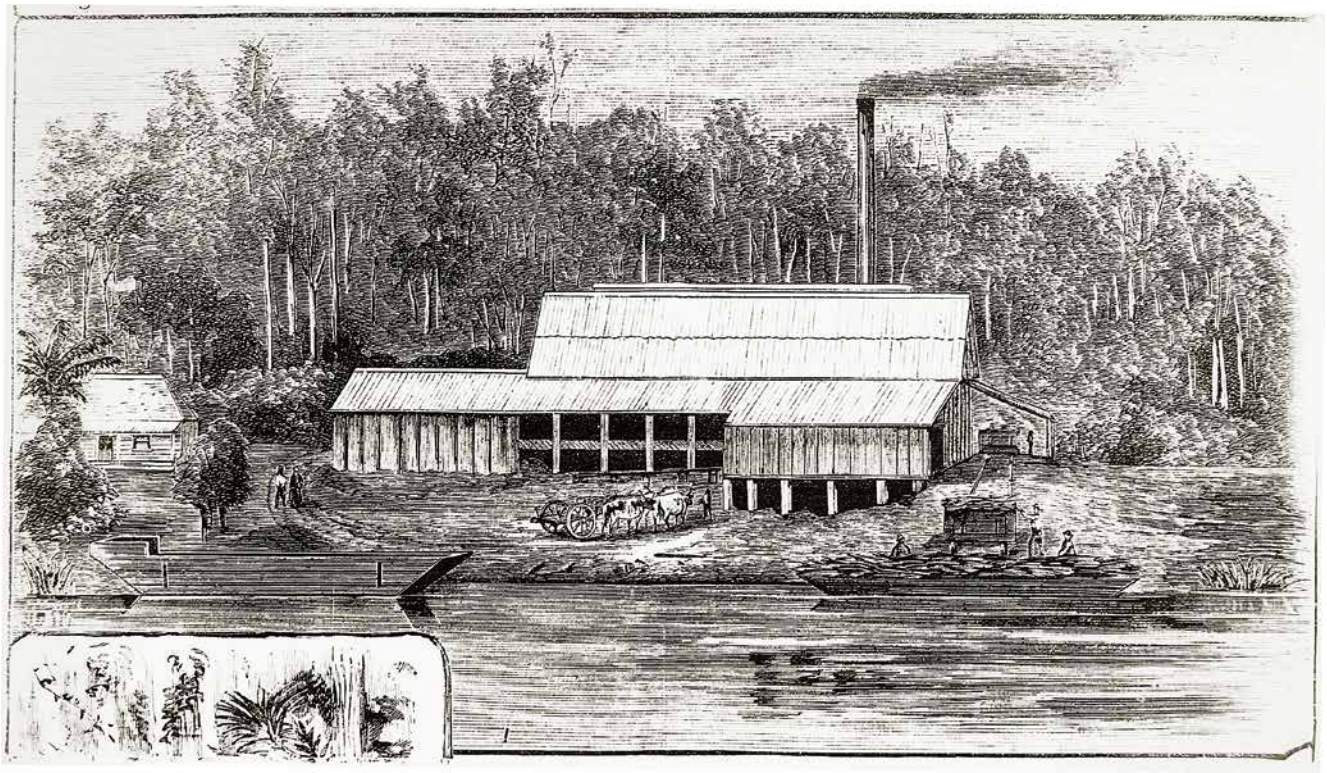
A Tweed Museum sourced c1890s plan of the Cudgen township shows the Robb & Co sugar mill was located just east of the Cudgen township with the mill's entrance gate near the present-day intersection of the suitably named John Robb Way and Guilfoyle Place. Guilfoyle was another local sugar identity. The mill area was to the east of the mill's gate with the barracks to the south and the stables to the north of the gate. Housing estates now cover this area. The main mill buildings were further east and can be described as under the present-day Tweed Coast Rd about 200 metres north of the Cudgen Rd traffic lights-controlled intersection!

The Cudgen land parish also extends south to around Pottsville on the coast and includes Cudgen Lake near Bogangar/Cabarita Beach. This lake feeds into Cudgen Creek which flows northwards and empties into the ocean at Kingscliff. The land parish of Cudgen thus includes the beaches and surrounding areas along Cudgen Creek familiar to readers of Jim Longworth's 'The Titanium Tramway at Cudgen' mineral sands article in *Light Railways* 207 in June 2009. In the Robb & Co era, the Chinderah wharf and Cudgen sugar mill areas would have been the major settlements in the Cudgen parish and Kingscliff as such was not developed. These days Kingscliff would be described as the main business district in the Cudgen land parish.

Early Tweed Sugar Tramway History

The Abbotsford Sugar Mill, dating from 1875, near Tumbulgum, had one of the first Tweed River district tramways. An 1881 wood engraving available from the Queensland State Library[9] shows a short tramway from Abbotsford's wharf to the mill. The mill's description, as listed for the 1883 dissolution of partnership auction,[10] noted the cane rollers were fed from the sugar cane laden river barges by trucks hauled up by the engines. That suggests the use of a winch powered by the mill's boiler.

An undated early cadastral plan in the Tweed Heads Museum's files shows the Abbotsford Mill on the eastern Tweed River bank, just south of the minor watercourse, about



Abbotsford Sugar Mill's tramway. 1881 wood engraving Queensland State Library

one kilometre south of Tumbulgum village. Checks with the Google Earth distance measuring tool at this location reveal a tramway length of around 30 metres at best.

This mill was the work of local growers James Pringle, Alex Pringle, James Shankie, Patrick Byrne and John Richie.[11] While the initial partnership was dissolved in about 1883, this mill is understood to have lasted to c1895.[12] Tumbulgum was one of those towns that changed names, being known as 'Tweed Junction' before 1881.[13]

CSR Cudgen before Robb & Co

CSR's 'Tweed Letter Book' reveals that in the late 1870s Cudgen farmers were willing to participate in CSR's Tweed scheme as John Guilfoyle, Henry Clarke and Thomas Quigan wrote to EW Knox on 10 March 1879. They wished to negotiate with CSR, for the erection of a sugar mill, for the area they described as three miles square. That land area is close to the sugar farms that eventuated in the Cudgen district, so the Cudgen farmers' request was for a mill at Cudgen, rather than the much larger Condong mill's cane area.

The CSR 'Tweed Letter Book' also shows EW Knox's 9 December 1879 memo indicated he was considering a 3 km horse drawn system on portable tracks at Cudgen, with sufficient wagons for the product of 250 to 400 acres. But, he wrote he did not think the present Cudgen growers had that amount. Knox also noted a much larger supply would allow the use of small locomotives.

The Knox 9 December 1879 memo did not mention a Cudgen mill. Also, the 3 km tramway length matches the eventual Robb & Co mill to wharf tramway, suggesting Knox was considering a tramway from the Cudgen ridge area to a Chinderah wharf with the cane barged to the Condong mill. Knox's memo also mentioned he was making inquiries with the Hartley Kerosene Co regarding costs for hauling shale along its tramway. Perhaps Knox was attempting to obtain a comparative tramway costing baseline value? What he termed the Hartley Kerosene Co would be the Hartley Kerosene Oil and Paraffine Company with shale mines and oil works near Hartley.[14] Knox's letter also described the portable railway he was considering as similar to what was then 'used largely in France'.

The reference to 'used largely in France' would probably refer to French sugar beet farmer and engineer, Paul Decauville, who devised a rail system in late 1875 which he patented as Decauville's Iron Carrier. It consisted of light portable track in short lengths which could be carried by two men. In May 1878, Decauville wrote to the CSR with an offer to sell portable railway via its agent, Audley Coote of Hobart, for use on its proposed Tweed River operations.[15] CSR's Homebush mill in north Queensland was possibly the first Australian plantation to adopt the Decauville system in its entirety, with Paul Decauville himself overseeing the installation in 1883.[16]

But, as history records, this CSR Cudgen tramway did not eventuate in the pre-Robb & Co era. Price was the stumbling block as CSR's 'Letter Book' shows that a week later, on 16 December 1879, CSR offered a Cudgen tramway if the farmers were prepared to negotiate at a low price. Evidently CSR had offered less than was acceptable as Guilfoyle and Clarke wrote to Knox on 19 January 1880, complaining the offer was too low. CSR Cudgen tramway discussions stalled around this time. The next section of this chronicle shows the Cudgen farmers having more success dealing with Robb & Co instead, and that is the money trail that finally leads to a Cudgen tramway!

Cudgen growers also had access to Henry Robert Cazalar's small Cudgen sugar mill dating from the early 1870s. This was near the lands of Messrs Guilfoyle and Clarke.[17] [18] [19]

Sugar Mill and Wharf Tramway

This portion of the article opens with *The Queenslander* newspaper of July 1882 reporting William Julius of Cudgen having 140 acres of land and about to erect a sugar mill. *Trove* shows Julius had obtained his land from Henry Clarke, who was one of the 1879 Cudgen cane farmers negotiating with CSR, and Mrs Clarke performed the 26 October 1882 opening ceremony for Julius' mill. The July 1882 *Queenslander* also follows up on Guilfoyle who was reported as selling 320 acres to Robb and Co of Melbourne.[20] [21]

The newspaper account of Julius' mill opening shows at least some of the equipment was from the Atlas Engineering Co of Sydney and involved a 20 hp horizontal engine and two 25 hp multi tube boilers, as well as a staff of 30. This 1882 Julius sugar mill opening date, confirmed from contemporary newspapers of the time, is a different year to what is stated in some publications and websites.

Roll forward again a few weeks after the opening ceremony and the ownership of that mill had changed. The new owner was Robb & Co, comprising a partnership between John Robb, William Julius and James Casey. The actual handwritten partnership document shows the 10-year partnership was signed at Cudgen on 6 December 1882, with Julius named as both a partner and manager.[22] Several publications and websites show a different year for this document signing.

So, on the matter of tracking the tenure of the Tweed Tramway land, the Guilfoyle and Clarke land that CSR tried for in 1879, did eventually end up with CSR. First, via the various 1882 Robb & Co deals and then the 1912 sale to CSR.

Signs were evident that something big was happening when JJ Casey's application to erect a wharf appeared in the Government Gazette for 20 July 1883.[23] The other indicator was when Robb & Co pulled down Julius' 1882 mill and constructed a new sugar mill on the same site. This new four storey high French design diffusion mill was operating by November 1884.[24]

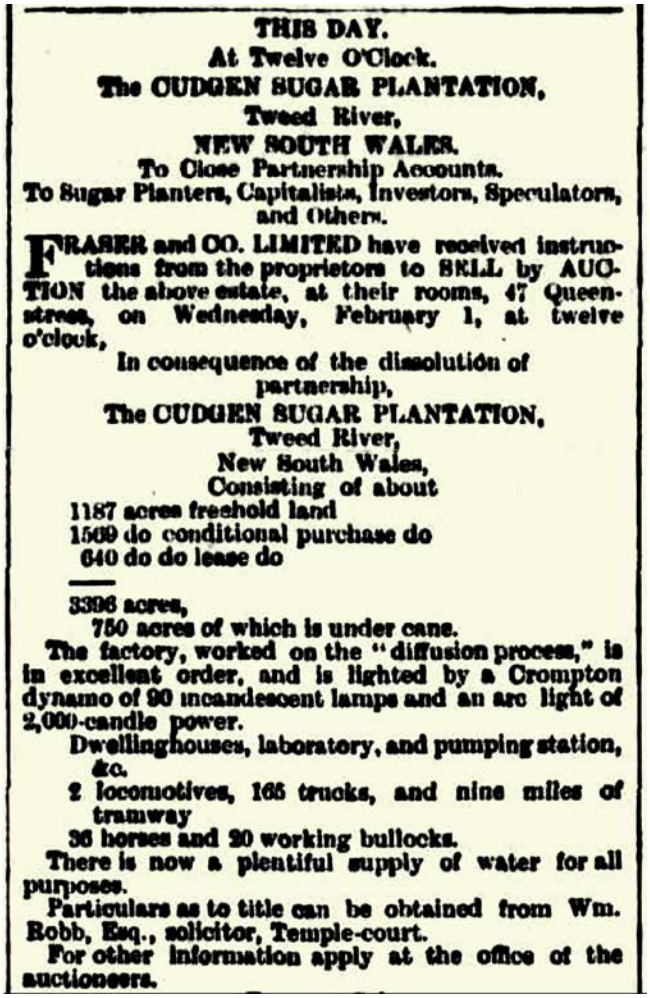
As the 1884 Robb & Co Cudgen mill was 'said' to be the only diffusion design sugar mill in Australia, an explanation from 1892 is offered. It involved the cane being cut into thin slices and the juice boiled out.[25] A report from 1895[26] described the Cudgen mill's cane slicing process as feeding the cane into hoppers so it dropped through a drum system, each drum being shod with iron knives. The sliced cane was then fed to the diffusion pots. The usual Queensland and NSW mill, instead of the juice extracted from the cane itself by diffusion pots, extracted the juice by crushing the cane with rollers and so sometimes termed a roller mill. Diffusion is also the process by which the flavour of tea comes out of the tea leaves in a teapot.

A present-day description of a diffusion mill, involving beet sugar, was sourced for clarity.[27] The process starts by slicing the beets into thin chips. This increases the surface area of the beet to make it easier to extract the sugar. The extraction in the diffusion mill takes place in a diffuser, thus the name of the mill type, where the beet is kept in contact with hot water for about an hour. A typical present-day sugar diffuser weighs several hundred tons when full of beet and extraction water. The modern-day diffuser is a large horizontal or vertical agitated tank in which the beet slices slowly work their way from one end to the other and the water moves in the opposite direction.

While the above report shows Cudgen was still a diffusion style mill in 1895, in 1891[28] the manager of Robb & Co's Cudgen mill was advertising to purchase a three-roller sugar mill, complete with gearing and engine. Perhaps the extra roller mill was in addition to the diffusion equipment and reports later in this article reveal corresponding mill and tramway expansions in 1892.

As the December 1882 contract was a 10-year agreement, the Wednesday 1 February 1893 *Argus* (Melbourne) advertised an auction that day to sell the 'Cudgen Sugar Plantation', to close partnership accounts.[29] As John Frederick Robb died in 1896, he was still alive when the partnership was dissolved in 1893. History records the result of all these negotiations that John Robb's son, John A Robb, born 5 September 1870, took over the Cudgen sugar business, aged about 22.

Of interest to researchers of Krauss locomotives, the February 1893 auction listed the Cudgen sugar estate's equipment as including two locomotives, tramway, and rollingstock etc. The listing of two locomotives reveals the Krauss locomotive, as well as the Fowler, was part of the Cudgen inventory by the beginning of 1893. This date for the Krauss locomotive at Cudgen is some years earlier than past reports and will be analysed in the locomotive section below. That February auction notice, revealing two locomotives, was inserted by the owners, so could be expected to be accurate.



THIS DAY.
At Twelve O'Clock.
The CUDGEN SUGAR PLANTATION,
Tweed River,
NEW SOUTH WALES.
To Close Partnership Accounts.
To Sugar Planters, Capitalists, Investors, Speculators, and Others.

FRASER and CO. LIMITED have received instructions from the proprietors to SELL by AUCTION the above estate, at their rooms, 47 Queen-street, on Wednesday, February 1, at twelve o'clock,

In consequence of the dissolution of partnership,
The CUDGEN SUGAR PLANTATION,
Tweed River,
New South Wales,
Consisting of about

1187 acres freehold land
1509 do conditional purchase do
640 do do lease do

3336 acres,
750 acres of which is under cane.

The factory, worked on the "diffusion process," is in excellent order, and is lighted by a Crompton dynamo of 90 incandescent lamps and an arc light of 2,000-candle power.

Dwellinghouses, laboratory, and pumping station, &c.

2 locomotives, 165 trucks, and nine miles of tramway

36 horses and 20 working bullocks.

There is now a plentiful supply of water for all purposes.

Particulars as to title can be obtained from Wm. Robb, Esq., solicitor, Temple-court.

For other information apply at the office of the auctioneers.

John Alexander Robb

As well as organising the Cudgen sugar enterprise, JA Robb had other calls on his attention in 1908 and visited Melbourne. The cause was various Robb family members were engaged in supreme court action against each other for what the Melbourne *Argus* newspaper termed the 'Robb Millions'.[30] Elizabeth Robb, John Frederick Robb's widow, died in 1920, so she was still alive in 1908 to see the row over the family money!

Fate took a hand when JA Robb died, aged 41, at Cudgen as a bachelor on Sunday 24 September 1911 and was buried locally two days later in Murwillumbah. Naturally various negotiations took place between the Robb family and CSR, following JA Robb's death, as the extra cane supply would be advantageous to CSR. The CSR 'Letter Book' records the negotiations led to an eventual sale contract dated 7 March 1912. An interesting aspect was revealed by JA Robb's solicitor brother William's 18 March 1912 correspondence to CSR. In it he wrote that, as the supply of cane to the Cudgen mill for several seasons had not approached the minimum provided in various farmers' agreements, Robb & Co had already decided to close. There was also a 1910 media report that CSR had been negotiating

for the purchase of the Robb sugar activities. But the price asked was considered too high by CSR.[31]

At least two options were available if the Cudgen mill had closed at that time, regardless if JA Robb died in 1911 or not. One obvious option is the same as what did eventuate, with a CSR acquisition of the Cudgen cane lands, and cane transported by barge to Condong. Another option was offered by the 1911 opening of the Tweed Heads dairy factory. In a similar manner, other former Tweed cane areas, including Terranora and Bilambil, converted to dairy.

There were newspaper rumours in 1908 that the Nestles milk company was interested in the Robb & Co Cudgen land.[32] The report suggested the Cudgen land could be devoted to both dairy and sugar, including a condensed milk factory as well as a sugar factory.

Locomotives

In March 1891, Robb & Co had invited tenders for shipping from Sydney to Cudgen of 170 tons of rails, 75 cane wagons and one locomotive. Robb & Co also invited tenders the same day for 1500 tons of coal from Newcastle to Cudgen.[33] The same tender also revealed the mill's output as it called tenders for shipping from Cudgen to Sydney, at intervals, of 2000 tons.

The *Sydney Morning Herald* of Wednesday 14 October 1891 reported this locomotive had arrived the previous Thursday and the newspaper also reported it was working very satisfactorily on the three-kilometre line between the mill and the wharf.[34] The mention of locomotive testing on the line in October 1891 also reveals the line was built by then, so likely the rails and locomotive arrived on separate voyages. John Armstrong's June 1976 *ARHS Bulletin* article, 'The Sugar Tramways of Northern NSW',[35] records the initial Cudgen locomotive as an 0-4-0ST saddle tank locomotive from John Fowler and Company of Leeds, its works number being 6554 of 1891. It had outside frames and 8½ inch diameter by 12 inch stroke cylinders with motion operated by Joy valve gear.

Lismore's *Northern Star* of 23 July 1892 mentioned extensive alterations were made at Robb and Co.'s sugar mill including that the tramlines in the plantation were being extended.[36] This mill expansion and the tramway extension could also be a likely time to bring in the extra Cudgen locomotive listed in the February 1893 auction in the Melbourne *Argus* advertisement.

The second locomotive was described by John Armstrong as a Krauss 0-4-0 well tank locomotive, works number 2195 of 1889, with outside Stephenson valve gear. It eventually carried the name *Eviron*. This Krauss locomotive was later transferred to Condong mill, and was scrapped there about 1941, having in the interim being reboilered as well as gaining extra side tanks. It also had the honour of being the only steam locomotive to have worked the Condong based system, as distinct from the Cudgen system.

This was one of six 30hp Krauss locomotives with works numbers 2178 – 2181 and 2195 – 2196, that had previously worked on Robb's Victoria Dock contract in Melbourne, as recorded by Bruce Macdonald's 'Krauss Locomotives in Australia' in *Light Railways* 153 June 2000.[37] These Krauss locomotives became available early in 1892, following Robb's Victoria Dock contract, as John Robb's eldest son, Arthur Thomas Robb, had a 'For Sale' advertisement in the *Sydney Morning Herald* for 23 March 1892, for 2 ft gauge 30 hp locomotives, German tip wagons, 20 lb/yd and 50 lb/yd rails.[38] That March 1892 newspaper predates the February 1893 Cudgen Estate auction, so the locomotive could have arrived at Cudgen before the auction. It also fits in with the Cudgen tramway extension period mentioned in the July 1892 report. Arthur Robb's advertisement did not specify the number of locomotives.

The "old" Fowler locomotive 0-4-0ST (6554/1891) in action at Cudgen in 1937.
Photo: C C Singleton, ARHSnsw Railway Resource Centre 008663a

Krauss locomotive in the cane fields at Cudgen. Note the 'jump points' in the foreground in front of the cane wagon.
Photo courtesy Tweed Region Museum

The February 1893 Robb & Co auction statement that Cudgen had two locomotives, means an investigation is needed to help clarify the subsequent history of these former Victoria Dock Krauss locomotives. The difficulty being earlier accounts noted all six went on to work at the Happy Valley reservoir south of Adelaide. But the presence of one at Cudgen at the same time, shows not all six did go to Adelaide.

What is known is that tenders, due 12 July 1892,[39] were called for the supply of two locomotives for the Happy Valley reservoir. *Trove* also reveals no locomotives were at the reservoir by 3 December 1892, although the report stated the engines would be purchased from Victoria.[40] The *SA Government Gazette*, as reprinted in *The Advertiser* (Adelaide) of 10 February 1893, recorded the acceptance of the tender to supply two second hand locomotives, 2ft gauge, for Happy Valley Waterworks for £760, with MC Davies, listed as the provider.[41]

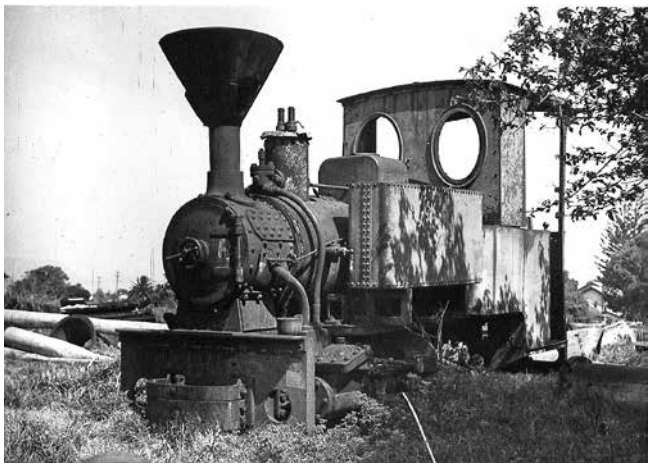
The number of locomotives at Happy Valley had increased as the *Advertiser* (Adelaide), on 6 March 1894, published an inspection report on the Happy Valley Waterworks.[42] It included the observation there were four 30-horsepower locomotives, with the statement they were purchased second hand from 'Mr Robb', and were obtained from the West Melbourne docks. Also known through *Trove* is that on 3 December 1896, the South Australian Commissioner of Public Works offered by auction the whole of the plant used during the construction of the Happy Valley Waterworks. The list showed four, not six locomotives.[43] Researcher John Browning ponders; 'It seems to be the case that the four Happy Valley locomotives offered for sale in December 1896 included the two from Davies, a contractor (who may simply have been acting as an agent). The fact that a photo exists of locomotives at Happy Valley numbered 3 and 6 most likely shows that Robb had numbered all six locomotives on his Victoria Dock construction project in Melbourne.'[44]

More examination of *Trove*, for the benefit of Krauss research, was done on the Tasmanian history of Krauss 2180 of 1889, as this was also one of the six from Robb's Melbourne docks contract and previously recorded as going to Happy Valley Waterworks. But evidence as follows suggest it did not go to Adelaide. This highlights the Tasmanian and Cudgen locomotives as the two ex-Victoria Dock units that did not go to the Happy Valley contract.

Trove shows that the *Zeehan and Dundas Herald* of 20 March 1896, well before the December 1896 Adelaide auction, reported a steam rail tender and a locomotive were expected from Melbourne by the next steamer, for the North-East Dundas light railway in Tasmania, for construction duties. The same report also mentions the ordering of a special heavy engine from England for permanent work on the line.[45] This meant a smaller locomotive was being shipped from Melbourne around early 1896, and, also on order was what was eventually revealed as a Sharp, Stewart, of Glasgow, locomotive. The report also suggests what was eventually revealed as a Krauss, had a tender of some description. As it was a well tank locomotive, perhaps it was considered it needed an auxiliary tender.

The *Zeehan and Dundas Herald* of 3 December 1896, the same day as the Adelaide auction of four Krauss locomotives, reported the presence of two locomotives at the North-East Dundas light tramway. The larger one was mentioned as from Glasgow and a smaller locomotive, presently undergoing repairs, having been used for the construction so far.[46] The presence of a Krauss heritage locomotive at the North-East Dundas light tramway was confirmed when Launceston's *Daily Telegraph* reported in February 1897 that 10 miles of rails and ballast had been laid with a Krauss (Munich) locomotive, (named in that manner) with which work on the line had been commenced.[47]

These Tasmanian reports together indicate the Krauss locomotive had arrived and worked in Tasmania well before



Krauss 0-4-0WT Eviron *(2195/1889) was transferred from Cudgen to Condong in the 1920s and retired circa 1933. Photographed by Ken Rogers at Condong in September 1940.*

the December 1896 Adelaide auction, so it was not one of the Adelaide Krauss locomotives. The North-East Dundas light tramway's Krauss would thus be revealed as locomotive 2180 of 1889 as the *Light Railways* No 153 (June 2000) list notes it as Tasmanian Government Railways No.H1, with a heritage including Robb's Victoria Dock Construction.

Exactly when the Cudgen Krauss locomotive was named *Eviron*, spelt as such, is unclear. The Eviron Estate is a few kilometres over to the west from Cudgen and the eventual Eviron tramway was part of the main Condong CSR mill tramway system, not the local Cudgen tramway system. This suggests the Krauss locomotive was named and transferred from Cudgen after CSR purchased the Eviron Estate around 1923.[48] [49] That year might also be an indication when CSR built the Eviron tram line portion of the Condong mill system.

Cudgen Tramway

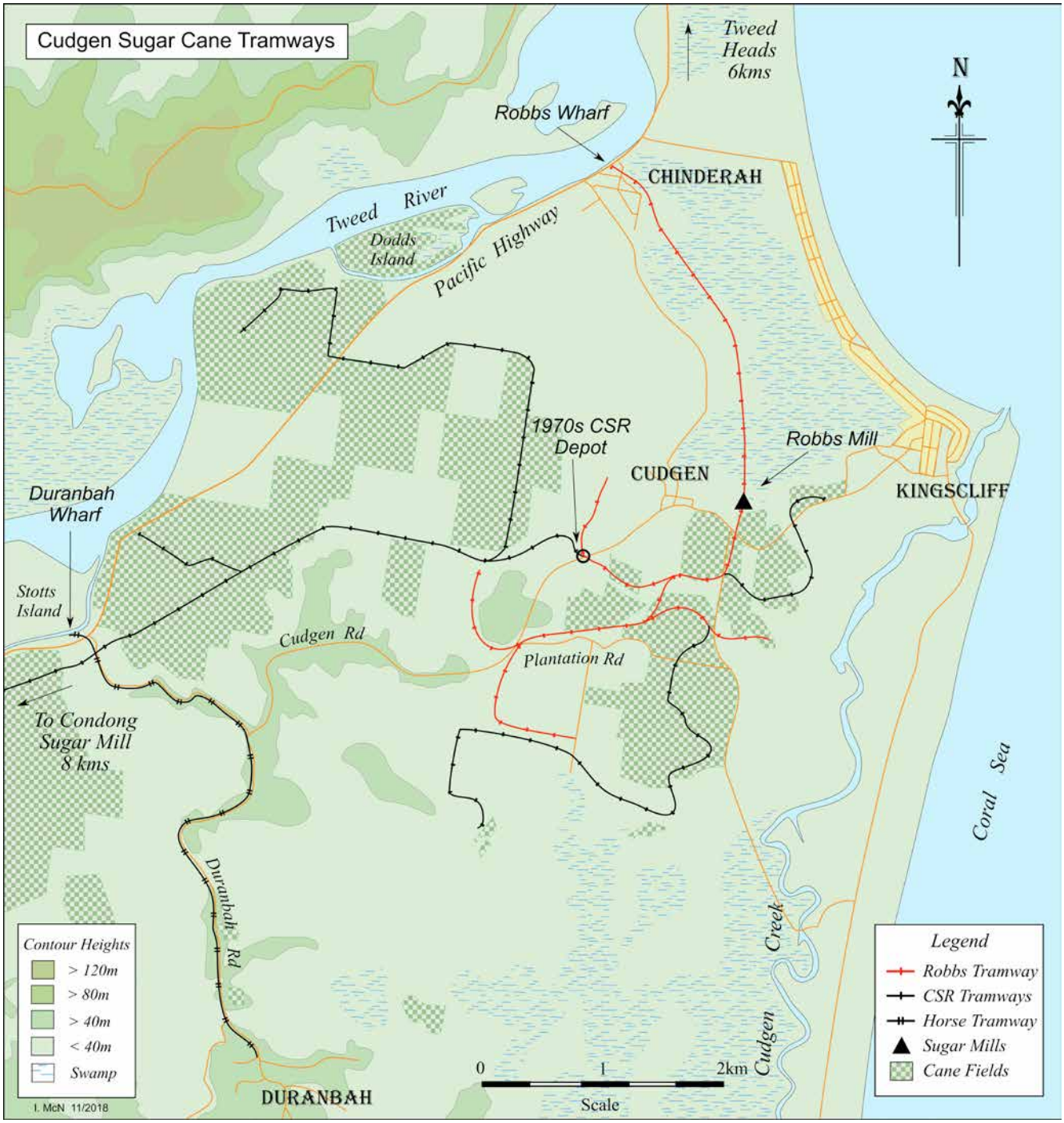
The previously mentioned Robb & Co February 1893 auction in the *Argus* (Melbourne) listed 165 trucks and nine miles (14.5km) of tramway. It would be expected that the 165-truck total included both cane wagons as well as wagons to carry bagged sugar to the Chinderah wharf and return with bagged coal.

The CSR 'Letter Book' shows Arthur Robb's 17 November 1911 stock list letter to CSR's HV Dixon, at the time of sale following his brother JA Robb's death, included the following items. The tramway was shown as 7½ miles of permanent tramways and 1½ miles of portable tramways for a total of 10 miles (16km). Discounting the 3 km Chinderah wharf line reveals around 13 km of farm lines. Rolling stock was two locomotives and 163 trucks. That 1911 truck total closely matches the 1893 auction total, and the track work's additional mile since 1893 may just be sundry modifications.

Following the 1912 sale of the Robb & Co estate to CSR, the land was subdivided and sold as smaller blocks. The Cudgen mill itself was dismantled with the main building transported by bullock wagon to the Chinderah wharf and barged to Condong where it became a maintenance shed.[50] Cudgen's main diffusion design sugar mill equipment would have been of little use to Condong, which was a roller style mill.

The former Cudgen mill site became CSR's locomotive depot and general workshop for the then isolated system. The 1914 track plan of the post Cudgen sugar mill era[51] showed the locomotive depot and rail yard based on a mainline and crossing loop as well as storage sidings. This plan included the predictable locomotive depot features of a locomotive shed, an inspection pit and a coal storage dock on a siding outside the shed. It would be assumed that the CSR depot included the machinery Robb & Co's used to undertake locomotive maintenance as well as general wagon repairs.

Side view of the Fowler's coupling rods as it propels its load towards the Chinderah weighbridge in 1937.
Photo: CC Singleton, ARHSnsw Railway Resource Centre 008663b



David Mewes recorded that the depot marked on the map as '1970s depot' had replaced the depot at the former Robb & Co mill. This removed any need for the use of the tracks back up to the old mill. The 1970s depot was located on Cudgen Rd on the downhill side of the present day electrical sub-station that also occupied the same site in the early 1970s. The junction of the 1959 tramway link between Cudgen and the Condong system was also near the electrical substation.

The Cudgen farm tramway system is shown on the attached map.[52] The topography consisted of two east west low ridges with Plantation Rd roughly along the southern ridge and the town portion of Cudgen Rd, on the northern ridge. The lowlands between the ridges included a swampy creek, also running generally east west. This meant inbound loaded trams from the Plantation Rd ridge descended that ridge, then across the intervening creek bridge and worked up the grade to the Cudgen Rd ridge and over to the mill.

Much of the CSR built route marked on the map to the south of Plantation Rd matches a 30 September 1912 two mile long track extension plan prepared for CSR by surveyors Dobbie & Kenny.[53] They described the route as without any major engineering difficulties and was within CSR's own Estate and the grade would vary from 1 in 40 to level, so that it may be said that a good grade can be obtained for the whole distance. The surveyors pointed out that the 1 in 40 grade is on the outgoing track so will only have to be negotiated by an empty tram.

The map also includes CSR's September 1894, 4 mile 53 chain horse operated sugar cane line along the Duranbah ridge. The 1896 and 1907 Cudgen Parish maps note the CSR cane barge mooring site, termed 'Duranbah Wharf' on the Parish maps, was located on Stotts Channel fronting Cudgen Parish Portion 56. Details of this tramway and some of the other nearby Tweed sugar wharves and tramways, such as Stotts Creek (Byrne's) wharf, will be discussed in a later edition of *Light Railways*.

Cudgen Ruling Grades

This section of the article compares loads hauled over the ruling grades, both in the steam locomotive Robb & Co era, as well as the later internal combustion locomotives. Sydney's *Evening News* of 6 December 1892 reported the Cudgen trucks are drawn by what it termed a miniature locomotive of eight horsepower, weighing six tons, and capable of hauling up the incline 20 tons at the rate of 15 miles an hour. If the account is taken at face value, the eight horsepower aspect suggests it was not the 30hp Krauss although it would have been at Cudgen by then. Thus, maybe this data concerns the Fowler. But this presupposes the weight and horsepower were recorded correctly by the reporter, so, the reporter may have seen either locomotive.

If we accept the stated 20 tons at the rate of 15 miles an hour, then a general comparison can be made with later locomotives. The incline could be the one from the creek bridge from the Plantation Rd direction and heading north upgrade to the mill.

The next locomotive with Cudgen haulage data was the Cletrac (Cleveland Tractor Co) locomotive intended for CSR's Crabbes Creek line. CSR papers reveal that in 1921 the Cletrac locomotive was load tested at Cudgen before its eventual arrival at Crabbes Creek. A letter from CSR Sydney to the Manager of its Condong Mill, dated 25 August 1921, reported it was consigning what the Sydney person described as an oil loco from Sydney to Chinderah Wharf. About a month later, a letter from the Condong Mill manager to CSR Sydney, dated 24 September 1921, revealed the Cletrac locomotive, after the load tests at Cudgen, had transferred to the Condong mill. Another letter from Condong Mill's Manager to CSR Sydney, dated 29 October 1921, stated it had finished laying track at Crabbes Creek and the Cletrac loco was working this line. The *Tweed Daily* of 30 November 1921[54] reported the Cletrac was working 'eminently successful' hauling cane in the Crabbes Creek area.

The Cletrac 4wPM locomotive was built by CSR's Pyrmont Sydney workshops. As the image shows, it was a farm style tractor fitted with a tramway frame and running gear. The 4wPM description needs clarification as Cletrac farm tractors were advertised in NSW in 1920 as operating on kerosene.[55] Put briefly, this involved a petrol-kerosene engine that started on petrol and switched to kerosene when the engine was hot enough to handle the kerosene. The Cletrac was reported by the CSR papers as using petrol throughout the Cudgen tests.

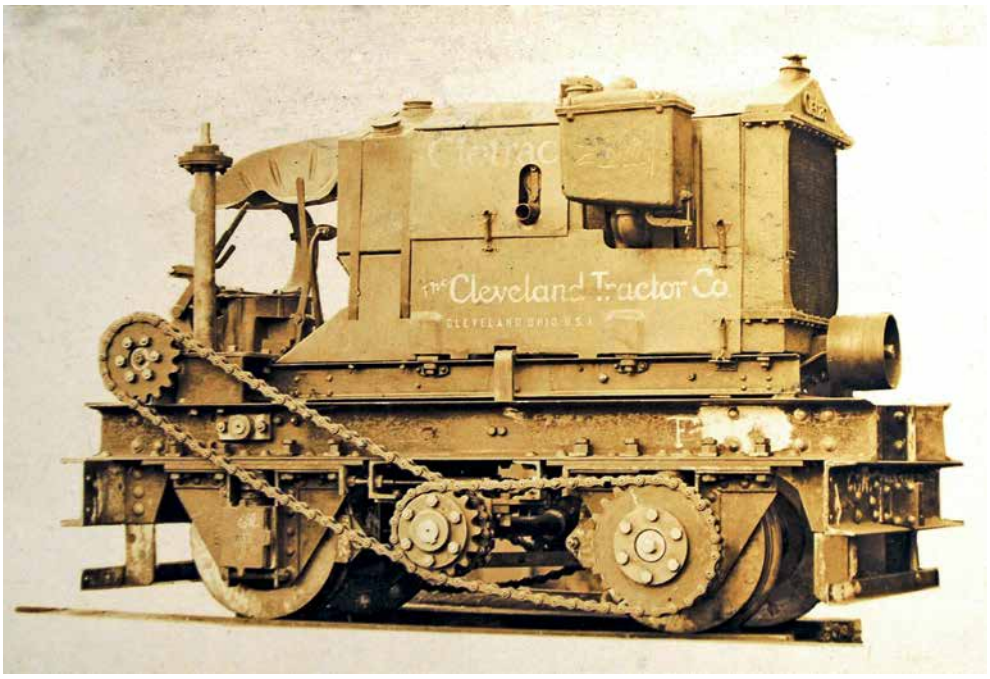
The Cletrac Cudgen test result was 14 tons gross of loaded cane wagons on a 1 in 50 grade, with no speed indicated. That gives us the Cudgen ruling grade in the loaded direction in 1921. The Cletrac weight was stated as approximately three tons.

The CSR papers also reveal it cross referenced the Cletrac against Motor Rail (Simplex) locomotive haulage data which was stated as 11 tons on a 1 in 60 at 8 mph and 13 ½ tons on a 1 in 40 at 3-5 mph. While that shows the Simplex hauled more on a steeper grade, researcher John Browning points out that the clue might be that speed was slower with the heavier load. John notes there were two gears on the Simplex. Perhaps the 1 in 60 was in second gear and the 1 in 40 was in first gear. If so, the performances described may well be consistent with what might be expected – the speeds certainly seem to be.

It is unclear if CSR used Motor Rail's quoted haulage figures, or if the Simplex was trialled by CSR elsewhere. John Browning notes CSR had four Simplex locomotives by August 1921. Three were in Fiji and the fourth was enroute to Childers Mill at the time of the Cudgen trials. The fact there was no Simplex units on any of CSR's Tweed tramways in 1921 explains why the Simplex tested on different grades to the Cletrac. While the Cletrac's load haulage nominally was similar to the Simplex data, the next locomotive to arrive on the Tweed a few years later was a Simplex.

The next Cudgen load data comes from the final weeks of the system. In October 1974, researcher David Mewes recorded notes for 0-4-0 DH EM Baldwin No.9 on its regular evening run. No.9 could only control a maximum of ten loaded bins northwards down the steep grade to the creek bridge from Plantation Rd, so obviously it came up from that bridge towards Cudgen Rd. Thus, the 50 ton gross load up the following grade from the creek bridge was determined by what the Baldwin could manage downhill. It is possible this same grade was the ruling grade for the earlier tests.

As revealed earlier, the track south of Plantation Rd that is coloured to indicate built by CSR, includes a 1 in 40 grade for empty trams.



Original version of the Cletrac locomotive in 1921.
Photo: John Browning Collection

The saddle tank Fowler as a rear end shunter at the Chinderah Wharf area. The other lines and the wharf are in the background, giving details of the full layout of tracks at Chinderah. *Photo: C C Singleton, ARHSnsw Railway Resource Centre 008667*

Chinderah Operations

During the Robb & Co era, its Chinderah sidings were used to send bagged sugar and receive bagged coal. It is likely the sidings included a line for loaded wagons and another for empty wagons. In the post Robb & Co era, the new owners used the Chinderah sidings for loading long stalk sugar cane into Condong bound barges.

The crossover near the weighbridge allowed the locomotive from the mill to uncouple and run forward onto the outgoing line, ready to receive empty wagons for haulage to Cudgen. Locomotives also sometimes ran around the train on arrival at Chinderah and propelled the load to the weighbridge.

The two main sidings continuing over the Pacific Highway as separate sidings to eventually merge on the wharf. The book *Turnock on Tweed* states the wagons were drawn over the weighbridge and to the wharf by a steel cable from the steam powered winch on the wharf, with the weighbridge stated as about 60 metres from the wharf. As the winch was on the wharf, the winch cable would have been strung across the Pacific Highway during this time. The same winch would have returned the empty wagons, possibly by a pulley arrangement. *Turnock on Tweed* also notes the Chinderah CSR wharf derrick crane was steam powered, so likely the same boiler powered both the winch and the crane.[56 57]

Conclusion

The total Condong tramway, including the Cudgen operations, concluded with the 1974 season. These days there are only scattered tramway remnants in the Cudgen and Chinderah district. One example comprises rails in the road surface at the corner of Cudgen Rd and Plantation Rd. Wharf stump remnants were extant in 2017 in the river bank rock wall at the Chinderah sugar wharf site. Another change is the Cudgen agricultural focus has shifted as market garden type farms predominate on the once cane lands.

Acknowledgements

Thanks for guidance are extended to John Browning and David Mewes as well as Tweed River historians Immy McKiernan, Susan Cokley, Denise Garrick and Ross Johnson. Thanks, are also extended to John Armstrong for the inspirational 1976 *ARHS Bulletin* article. Also, thanks to members of the Tweed Heads Historical Society, which is part of Tweed Shire's Tweed Regional Museum at Murwillumbah, whose professional staff, including Erika Taylor and Kirsty Andrew, have answered my many questions. CSR research notes, including portions of CSR's 'Tweed Letter Book', other notes, plans and images, are part of the writer's collection. These are from several sources, including deceased estates, and originally likely from research trips to CSR's record collection in the Noel Butlin Archives Centre at the Australian National University, (NBAC/ANU). Finally, thanks are extended to Ian McNeil for the preparation of the excellent maps that accompany this article.

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View from the Chinderah wharf, with the Pacific Highway beyond the individual loaded wagon. The weigh station is the white building at the centre behind the loaded wagons. The Crib shed is behind the post on the left side. *Photo courtesy Tweed Region Museum*

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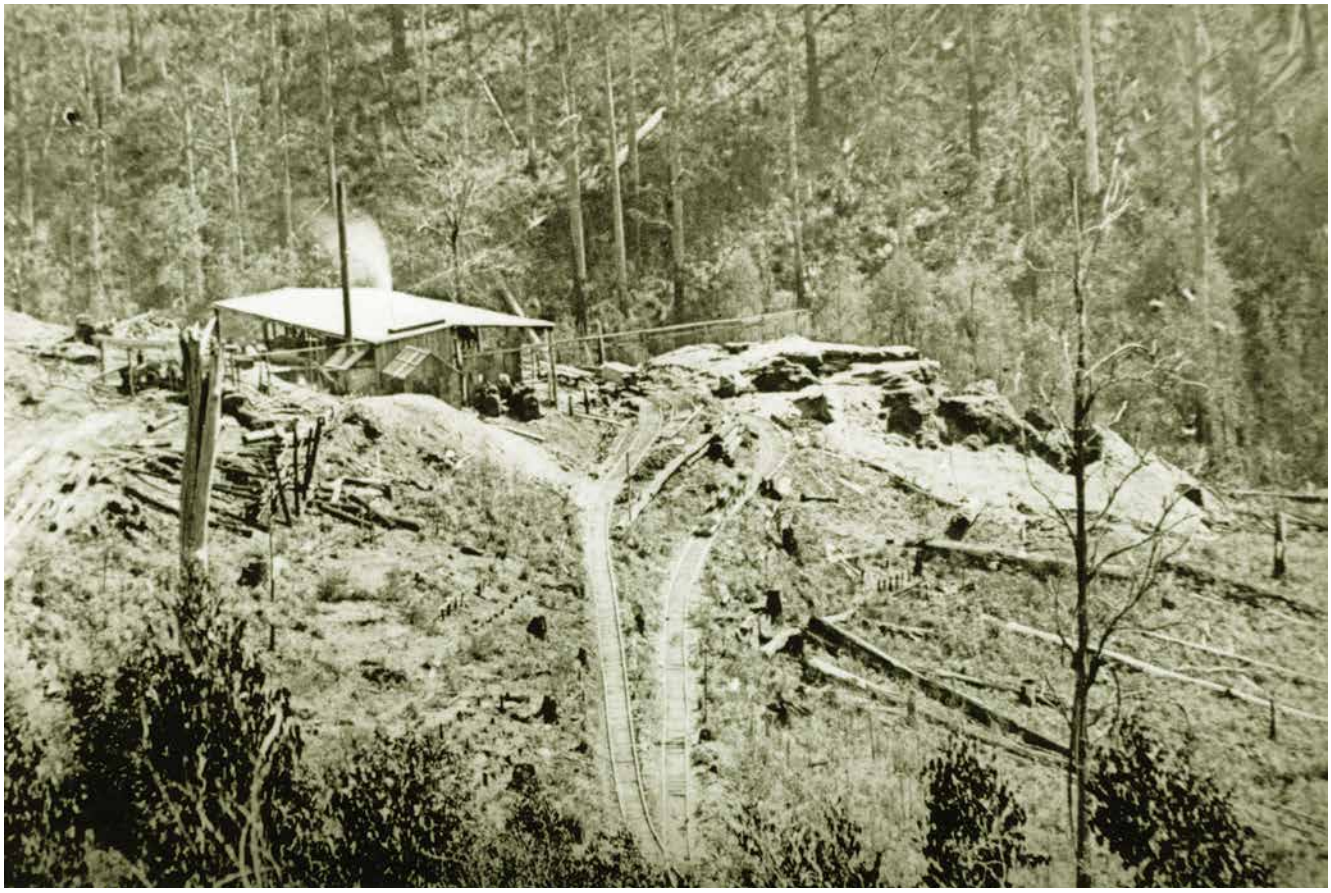
Photo taken on 24 November 2018 at the corner of Plantation Road and Cudgen Road at Cudgen showing the rails still embedded in the roadway. Photo: Peter Cokley



Clark & Pearce newly-rebuilt No.2 mill in 1926. The week before Christmas 1925 the mill was totally destroyed by a fire accidentally started by employees of the State Electricity Commission near the Rubicon Falls. The fire burnt through 6000 acres and damaged or destroyed many of the tramways in the vicinity. The skyline is not apparent in the photograph, so perhaps it was never reused after the fire. A tramway was later extended through the upper end of the skyline and, by 1939, had reached the top of the Blue Range via an incline. Unknown photographer, Peter Evans collection.

Does Away with Tramways! – An early Victorian 'skyline'

by Peter S Evans

On 9 January 1919, Rubicon Forest sawmillers Clark & Pearce applied for a mill site and cutting rights north of the firm's pioneering water-powered mill. The new mill would be located just above the Rubicon Falls and adjacent to the firm's existing outlet tramway down the Rubicon River. The timber surrounding the mill site was principally Mountain Ash, with some Alpine Ash and Messmate. Construction of the mill was underway in May 1920,[1] but the exact date of opening is not known. The mill became known simply as 'Clark & Pearce No.2'.

Initially the mill's logging winch was situated close to the log-yard. A tramway was then extended in a northerly direction towards the top of the Middle Range. When this area was cut out in late 1922, a logging tramway was laid in a southerly direction down to the western bank of the Rubicon River. The section down to the river was worked by a second winch, which was used to haul the logs up to the mill along the tramway. This winch drew steam from one of the mill boilers. The tramway was gradually extended to the south as a horse-worked line along the west bank of the river. However, there was one exception to the use of tramways to feed the mill. A good patch of Messmate above the Rubicon Falls was delivered to the mill using an aerial ropeway or 'skyline' crossing the river.[2] This was in operation by December 1925, and ran north-west from the log yard at the mill to a point on a small hill on the other side of the valley. Below the main rope was a foot track (with a log bridge over the Rubicon River) which was used by the fallers to get to their cutting area just to the east of the main rope terminus.[3] This was the only skyline logging system to be used in the Rubicon Forest, and almost certainly the first of its type in Victoria. The only known photograph of it dates from the period when Alexandra photographer Robert Sapsford was making a series of photographs of the construction of the Rubicon hydro-electric scheme between 1925 and 1929 (the original is on Sapsford's personal display board illustrating that construction, now held by the Alexandra Timber Tramway & Museum).

Transporting materials by wire ropes is, of course, not new. The Chinese were using primitive wire ropes to cross rivers over 1600 years ago. In Europe, aerial ropeways were in use by the Middle Ages.[4] It only required the development of steel-stranded ropes of sufficient strength to carry heavy loads to permit their use in the timber industry. Such ropes were pioneered by men like John A Roebling, who commenced manufacture in the USA in 1840.[5] In 1859, wire ropes were being used in Germany to transport logs downhill and were known as 'gravity shoots'.[6] By 1896 such systems were in common use in Europe and had attained a degree of sophistication including tensioning devices, separate control cables, and innovative support methods.[7] The first modern steam-hauled skyline is claimed by the Bridal Veil Lumber Company of Portland, Oregon, USA in 1899.[8] By 1905 the Lidgerwood Manufacturing Company in the USA was offering for sale complete systems termed 'cableway-skidders'.[9]

However, one wonders what the inspiration for the skyline system at Rubicon could have been? Was there some sort of local connection?

A REVOLUTION IN SAWMILLING PRACTICE

M'DONALD'S PATENT

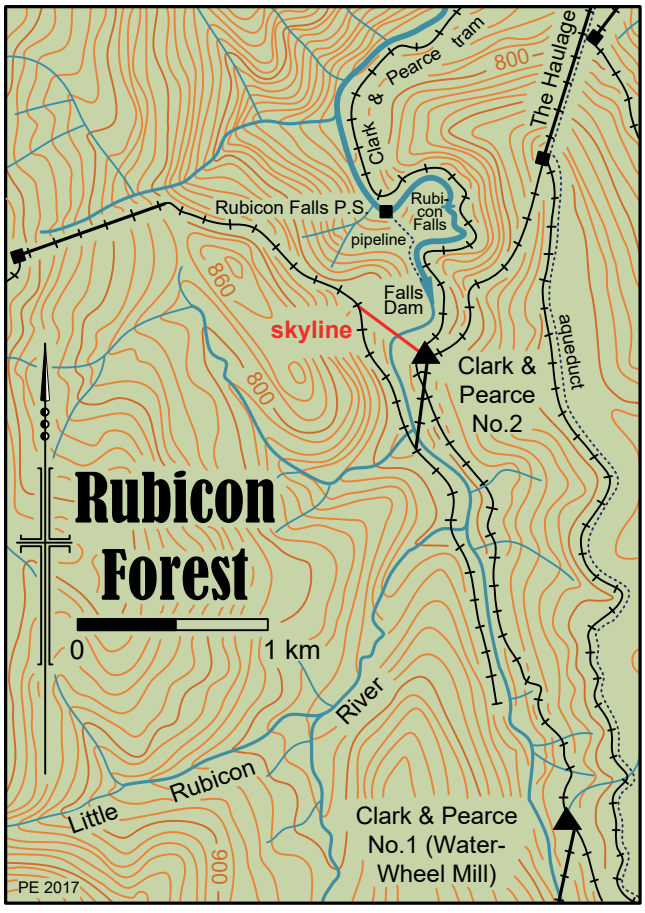
Aerial Logging System

DOES AWAY WITH TRAMWAYS

What it is. What it Does. And How it Does it.

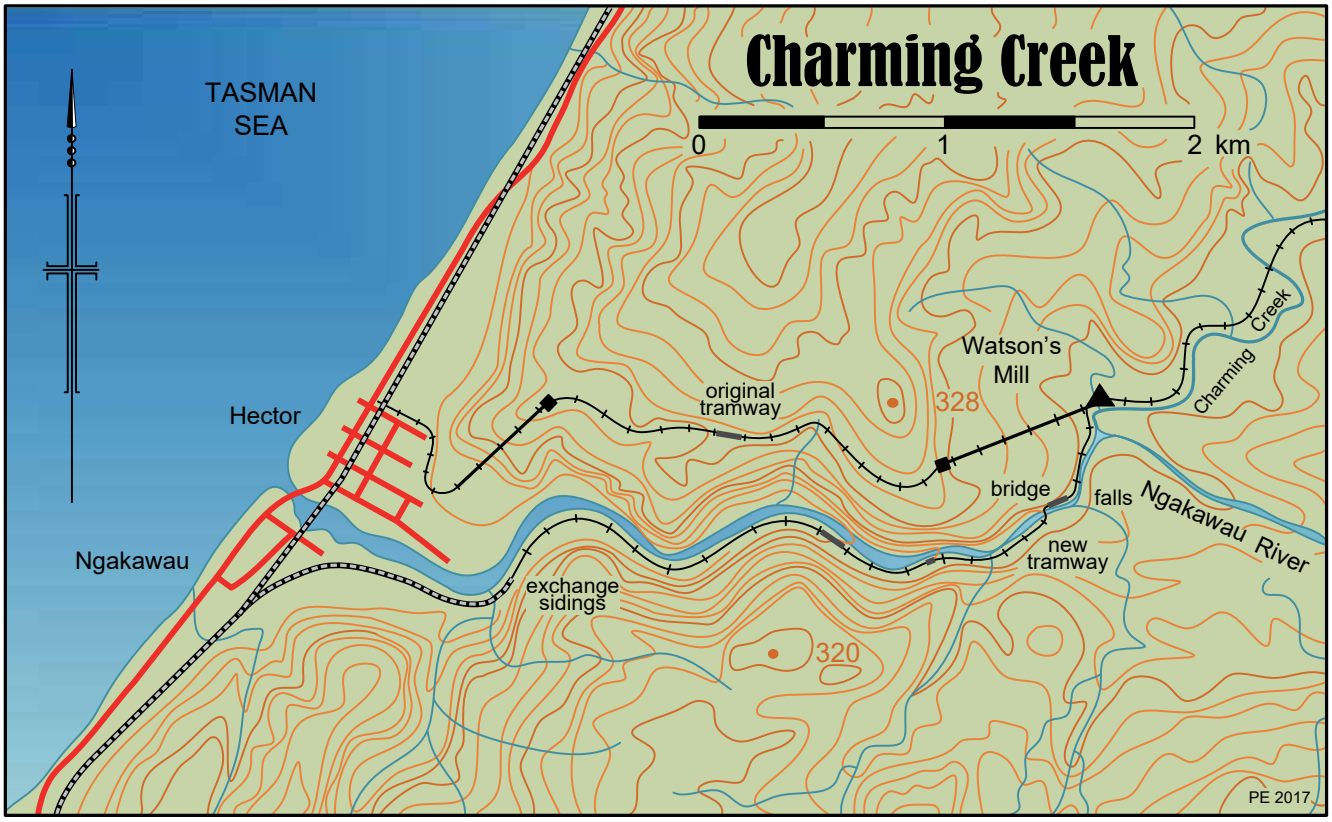
Pamphlet distributed by Harry Wallace to the Forests Commission of Victoria in January 1926, promising that McDonald's patent aerial logging system 'does away with tramways'. PROV,VPRS 11563/P1, unit 24, file 26/97.

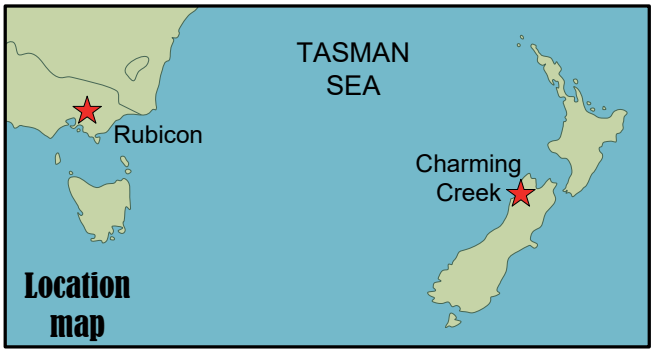
There very possibly was, both to location, timing, and business arrangements. In January 1926, just as Clark & Pearce was rebuilding its mill after a fire started by men working on the construction of the hydro-electric scheme, forests departments around Australia were sent details of a patent 'aerial logging system' by Harry Wallace, a building contractor of Benalla. Since Benalla was one of the markets for timber produced by Clark & Pearce, Wallace was very likely a customer, and the Rubicon skyline was in use just as Wallace was getting ready to publicise the technology more widely. It is entirely possible that Clark & Pearce first learned of this technology from Wallace. Amongst the advantages of the system was a great saving of money in logging operations, and its principal claim was that it 'does away with tramways'. The system was 'invented' by Murdoch White McDonald, Wallace's son-in–law, who had married Harry's daughter, Mabel Wallace, in February 1909. McDonald was born in March 1875 near Clunes, Victoria, and subsequently 'served his time' as blacksmith at the Berry Consols mine before being appointed technical advisor to Watson's sawmilling plant at Charming Creek, north of Westport in New Zealand's South Island, where he developed his aerial logging system. The system was perfected by 1923 and, by the end of 1925, McDonald had five systems working in New Zealand forests. (His system was manufactured by James J Niven & Coy, which had started in Napier in 1886 and, from 1913, was based in Wellington).[10]



A log on the skyline crossing the Rubicon River sometime before December 1925. Photograph by Robert Sapsford, Alexandra Timber Tramway & Museum collection.

Robert Tannahill Watson and his brother George Henry Watson obtained sawmilling rights at Charming Creek in 1901. Charming Creek was a tributary to the rugged Ngakawau gorge, then considered unsuitable as a means of transporting timber, so the brothers worked their way up the ridge from the NZR railhead at Hector, installing an incline and cutting timber at temporary mills and continually extending a tramway through difficult country. Finally, around 1906, a winch-operated incline was constructed down into Charming Creek and the intended permanent mill site. The mill settled down to regular operation cutting mainly Rimu and Kahikitea (much of the latter was exported to Australia for butter boxes). By 1914 George had a falling-out with his brother Bob and left the partnership, and it would appear that it was around this time that Murdoch McDonald became involved in the technical side of the milling operations.

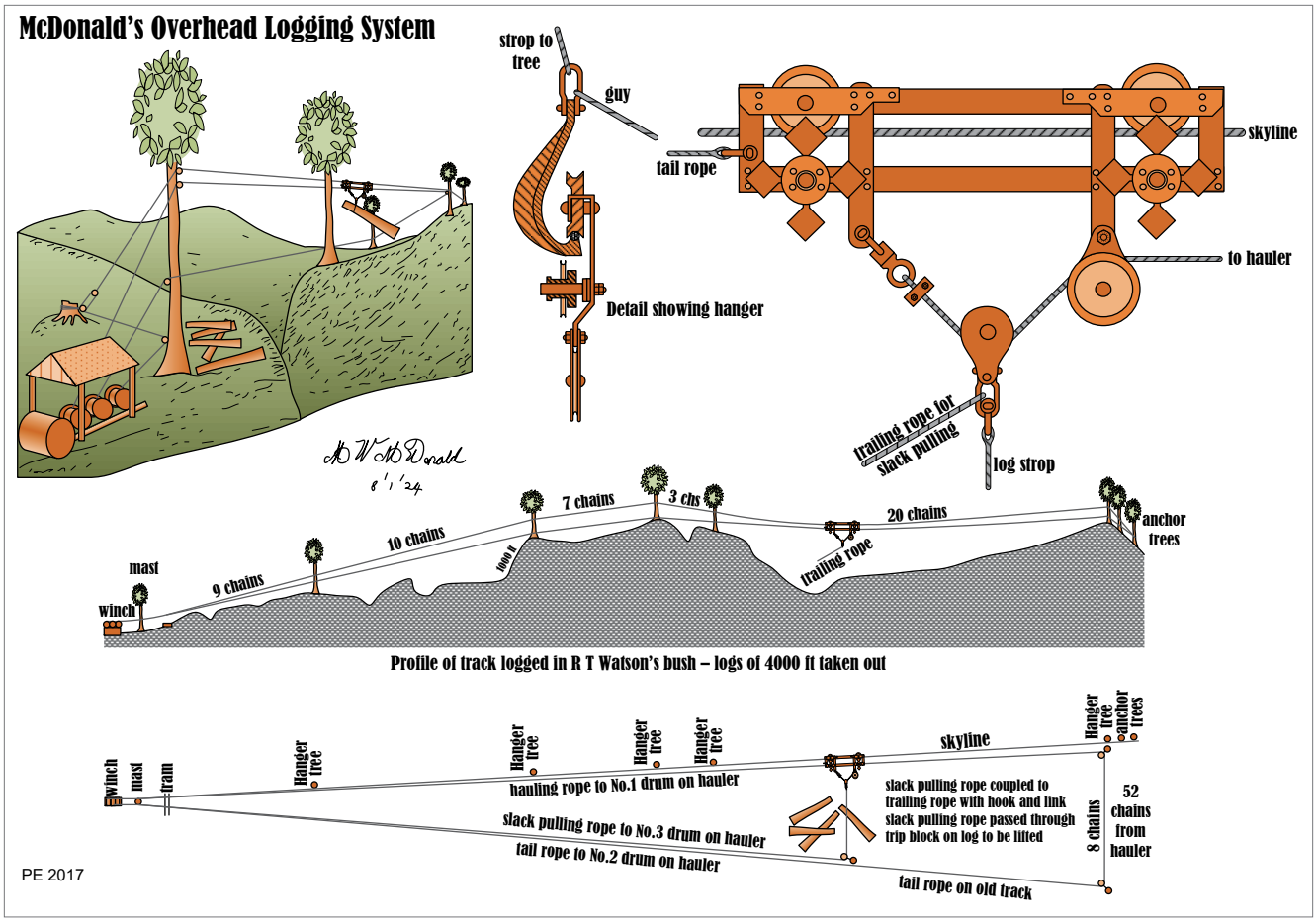


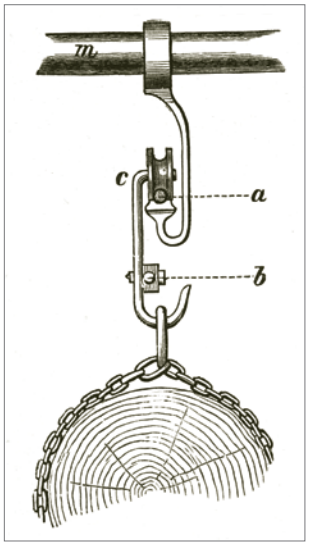


Logs were initially obtained via a network of tramways extended up Charming Creek, some so steep that they employed a Fell-type centre-rail for braking. Such tramways were expensive to construct, maintain and operate, and McDonald's patent aerial logging system potentially offered a cheaper and cleaner way to deliver logs to the main logging tramway.[11] The principal merits of the system were outlined in the promotional pamphlet sent to Australian Forest Departments in 1926:

> Many sawmillers are in a position to-day of having good milling timber growing in more or less inaccessible positions, involving a very heavy expenditure on the construction and maintenance of tramways, tressle-work [sic], cuttings, rolling stock, and traction, in order to get the logs to the mill; and in many cases the amount of timber available does not justify the capital outlay involved in the construction and maintenance of such works. More particularly is this the case in those areas where the more readily accessible timber has been cut out, leaving a comparatively small quantity per acre still available. It was recognition of this fact which encouraged the patentee of the system to which this article refers to develop a plant capable of hauling logs over broken and precipitous country without regard to the height of spurs or depth of gullies to be crossed, and enabling rivers to be negotiated without difficulty in bringing logs to the mill. It will, of course, be obvious to practical millers that, whereas a tramway which has served its purpose is seldom of such value as to justify removal (unless the rails are of steel, with a correspondingly higher initial cost), the aerial system can be taken down and re-erected with a minimum of expense and labour in another position. There is no comparison between the labour cost involved in the laying of a tramway and the erection of an all aerial outfit. The former necessitates, under even the most favourable conditions, the clearing of a wide track, removal of stumps, grading, laying of tramway, and ballasting, and not infrequently heavy expenditure on cuttings, tunnels, tressles [sic] and bridges. Then comes, the rolling stock, the horses, harness, horse feed, maintenance of tramway and rolling stock, and finally the realisation of the fact that when the block is cut out the whole outfit is left to the ravages of decay. With the latter, not one of the foregoing conditions apply, as a careful perusal of the following description, of the plant, method of laying out, erection and operation will demonstrate. Finally, when the work is done, the whole outfit, like the proverbial Arab's tent, is dismantled and packed off, to be re-erected elsewhere; so there is no loss of capital as in the case of a tramway system.
>
> The plant, as standardised, is designed to haul logs from a distance of 80 chains, by which it will be seen that one plant can clear an area two miles in diameter, and where logs have to be carried a greater distance than one mile it would become necessary either to duplicate the aerial plant or install a hauling engine to feed it. … On Mr R T Watson's plant 28 drags can be taken out in 8 hours, and logs up to 4000 feet can be conveniently handled. With suitable plant such as that designed and manufactured [by us], no difficulty would be experienced in taking out 50,000 feet per day.[12]

The major innovation claimed in the patent was the hangers for the skyline (attached to suitable trees), which permitted the carriage to pass each suspension point unobstructed. However, this technology had clearly (albeit in a less robust form) been in use in Germany in the early 1890s[13] and systems similar to that suggested by McDonald had been patented in the USA by Horace Butters in 1883, Richard Lamb in 1894 and, much later, by Charles Vogel and George Taitt in 1912.[14]





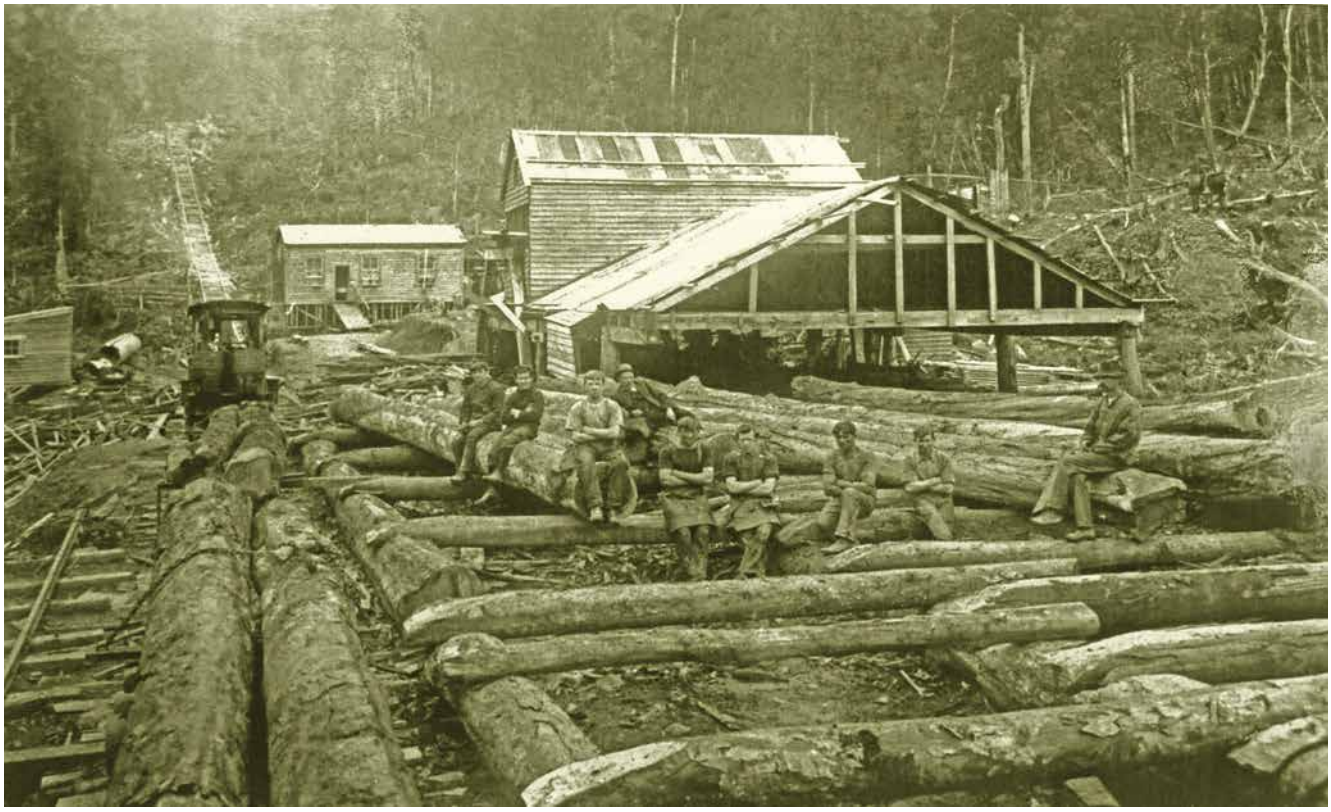
Left: *McDonald's hanger system was not new in concept, as this diagram from* Schlich's Manual of Forestry *clearly demonstrates in Volume V, page 354. (Publication date: 1896).*

The logging tramways were not the only area where Bob Watson was determined to reduce costs. The incline leading up from the mill, the horse-worked line along the face of the ridge (which incorporated a tunnel), and the final incline down into Hector were expensive to work and maintain. In mid-1910, Watson began the survey of a tramway up the Ngakawau gorge connecting the NZR sidings at Ngakawau with the Charming Creek mill. Blasted out of the hillside along the gorge, the line eventually incorporated three tunnels, a significant suspension bridge across the Ngakawau River near the Mangatini Falls, and an extensive section where a half-tunnel locally-known as 'the verandah' was blasted out of a rock face near the mill. Initially laid in wooden rails to the gauge of 3 ft 6 in for horse-traction, the tramway was re-laid with steel rails in the mid-1920s to permit the use of a Fordson-powered rail tractor. Sections of the tramway were steep enough to require the use of a Fell-type centre-rail for braking. Today, the Ngakawau gorge tramway route has been converted into the spectacular Charming Creek Walkway and is maintained by New Zealand's Department of Conservation.[15]

Murdoch McDonald was obviously keen to introduce his aerial logging system into Australia using his father-in-law, Harry Wallace, as an agent. Patent application 21552-3/24 was accepted by the Commonwealth Patents office for the use of the aerial logging system in Australia. The Forests Commission of Victoria sought practical advice on its merits. It forwarded details to Mr. H A Smith, Manager of the State Sawmill at Nayook West, for a practical appraisal of the system and for a judgement as to whether it was economical 'in comparison to ordinary logging tramways.' Smith's opinion did not favour the system. Too much forest had to be wastefully felled before the skyline and tail-ropes could be erected. The labour cost of rigging the blocks was estimated to be very high, as men with the ability to carry out the necessary tree climbing were scarce; Smith thought the installation cost alone would be in the region of £3000. This was thought to be too much expense to justify in Victorian forests. The Forests Commission, on receipt of this advice, declined to purchase a system.[16] Perhaps the only Victorian legacy of McDonald's system was the inspiration for the short skyline at Clark & Pearce's No.2 mill. Although it did not directly used McDonald's patent, the basic principle was the same although the scale was smaller.

Skyline technology would eventually be accepted in Victoria in the late 1930s, but based largely on American practice. Its greatest Victorian proponents would be the Federal Timber Company at Warburton, and Hec Ingram and Jack Ezard at Erica. The latter used aerial logging systems with great success at Erica from 1933. A proponent of mechanisation in the steam-age of logging, Jack Ezard stated:

> We adopted the ropeway system in an attempt to cut costs on lowering gears and to put our logging engines in strategic positions not attainable with lowering gears. [We] installed a boiler and two small engines at the bottom of the ropeway to hoist and load.



Watson's Charming Creek Mill circa 1917. A steam locomotive has recently arrived with a rake of logs for the mill. Beyond the locomotive is the abandoned incline from the original outlet tramway, while the new line down the Ngakawau gorge curves off to the left. The mill crew is posed for the photograph, with Bob Watson reclining on the logs behind them. The solitary figure seated on the log on the far right is Murdoch McDonald. DoC interpretive material, Charming Creek Walkway.

'The Verandah', a section of tram close to the Charming Creek mill which had to be blasted out of the cliff face. Just outside the modern DoC fence, the cliff face drops sheer to Charming Creek. *Photo: Peter Evans*

> Put on a special lowering drum, built in Hobart, on front of the Lidgerwood [which operated the skyline], making four drums on this machine, and put in an extra boiler ... The total number of moves made was 29, not counting lowering machines or minor moves around spurs. The area covered as near as we can estimate is 2,800 acres. The whole of this area has been within reach of the ropes at some time or the other [17]

Fortunately for the subject matter for this article, aerial logging in the age of steam was predominantly used in conjunction with tramways, so Murdoch McDonald's prediction that aerial logging 'does away with tramways' failed to eventuate for some time.

The best surviving representation of the technology is the 'Washington Winch', once operated by Ezard Investments Pty Ltd to supply logs to its mill at Swifts Creek in East Gippsland. This winch was imported by the Kauri Timber Company in Western Australia and used there until the late 1940s, when it was moved to Victoria. It was purchased by Ezard in 1959 and installed beside the Nunniong Road to log out of some very steep gullies. The winch survives in excellent condition along with two spar trees and associated rope-work. It is very likely the single most-important steam logging site in Australia and, due to it still being in the last position it worked, a rare survivor internationally. And, finally, the technology had 'done away with tramways'.

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Ezard's skyline and Lidgerwood logging engine in the Thomson Valley near Erica. From the film Timber, *originally shot in 1937 and re-edited for release in 1947. Images extracted by Carl Hopkins, compilation by Peter Evans.*

Some unusual skips at Black Jack colliery

by Phil Rickard

Situated on the banks of the Namoi River, NSW, the town of Gunnedah (population about 8700) lies 307 km by rail NNW of Newcastle, on the fertile Liverpool Plains. Following a recent overnight stay in Gunnedah, and with a few hours spare, I was driving around, taking in the sights of this interesting town. One place at which I stopped was Pensioners Hill where a lookout commands decent views of the township. It is also a good place to watch the lengthy coal trains that pass around the base of the hill and through the station. I was also aware of a memorial on the hill, commemorating miner Steven Rennick, who died at the Gunnedah Colliery's No.4 tunnel in 1986 [mentioned in LRN51, April 1986, but colliery unknown]. Climbing the hill, to my surprise, I also encountered a row of three colliery skips, of somewhat unusual construction, having corrugated sides and ends.

The only skips of which I had knowledge were those at Wonthaggi, Victoria. Maybe, I wondered, corrugated skips were well known in NSW. None-the-less, intrigued, and never having seen photos of such skips, I proceeded to photograph them and measure the gauge – 2 ft 3 in. Further examination found small makers plates on a couple of the skip ends. As time was on the wing, and wishing also to visit the nearby Gunnedah Rural Museum, I moved on.

The mentioned museum is situated beside the Oxley Highway, on the western side of town and surely has one of the largest collections of early agricultural and transport items in Australia. It is huge! Shed after shed, acre upon acre, with all manner of machinery – steam engines, boilers, oil engines, tractors, cars, domestic and farming plus hundreds of collections. My principal interest was the battery-electric locomotive pictured in its brochure. Unfortunately it was inaccessible, in a storage paddock 'out the back'. But, at the front of its premises I spotted another two corrugated colliery skips. Their builder's plates confirmed they were from the same maker as those seen earlier – Robert Morris, of Farnworth, Lancashire, England.

Examination of the various makers plates revealed that the company had been restructured at some time; R.Morris & Co had become Robert Morris Limited. All plates included patent numbers 11364/11 and 10303/12 and a later search of the British patent records soon elicited copies. The more interesting is 11364 whereas 10303 outlines an improved method of bending the corrugated sheets across the corrugations (a feat in itself – see picture).

The Robert Morris engineering works was situated in the town of Farnworth, near Bolton, in Lancashire, in an area known for collieries; much of its business was related to mining machinery and equipment. The patentee is recorded as Thomas Morris of St German Street, Farnworth and his patent for "Improvements in Waggons or Trucks for use in Collieries and the like" was applied for in May 1911 and accepted in early January 1912.

Morris's idea was to use corrugated steel for the sides and ends of skips, the top and bottom being folded over for rigidity. The flat steel base had wells for the wheels; the base also doubling as the foundation for the pedestals and axle bearings. The method of joining the corrugated sides and ends is most unusual. Each end-sheet was bent 90 degrees at the corner to overlap the side panel and the two fixed by a vertical steel pin or rod as depicted. Yet, comparing the patent drawings, with the actual trucks at Gunnedah, revealed a major difference – a wooden underframe. Clearly the Achilles' heal of the trucks as patented (and presumably as supplied to the Gunnedah Colliery Company Ltd for its Black Jack mine) is the chassis and buffing gear. Colliery skips are subject to an inordinate amount of rough treatment and the patented trucks must have been found wanting.

At some point in their lives modifications were made. With bodies still in good condition someone at the Black Jack colliery transferred the patent corrugated bodies onto standard colliery underframes which, with their solid wooden frames, cross stretchers, tie rods and dumb buffers, are able to withstand much rough shunting. It seems likely the original wheels, with their six visually pleasing reverse-curved spokes, set to 2 ft 3 in gauge were utilised, with new plain pedestals provided for the axles.

The only articles I could locate on the Gunnedah mines appeared in the ARHS *Bulletin* No.413 (March 1972), by Gifford Eardley; and in the *Australian Model Railway Magazine*, for June 1991 where Bob Gallagher updates some matters. In 1877 coal was discovered about four miles south-west of the town, near Black Jack Mountain, though it was not until 1899, with the formation of the Gunnedah Colliery Company Limited that mining started in earnest. A contract was obtained to supply the high-quality coal to the New South Wales Government Railways. The company built a railway, over 3½ miles in length, from the mine to the NSWGR's North-Western line, between Gunnedah and Narrabri; the actual junction being about 2½ miles north-west of Gunnedah station. Over the years the company owned four standard-gauge steam locomotives.

In 1917, a new adit was opened higher up the hill and a branch line, about ½-mile in length constructed. Included with the new mine was a skipway system and I strongly suspect that is when the Morris skips were acquired. How or why Robert Morris Limited was able to secure a sale to a colliery on the other side of the world is unknown. There were plenty of local manufacturers of such items. Morris patent skips were also used at Corrimal colliery, the remains of one was noted in the bush in 2013 by historians. It possibly originated from the nearby Excelsior colliery, at Thirroul. In New Zealand, at least three collieries on both islands are known to have used them – locations as far from Lancashire as one could find.

In Mr Eardley's article there is a good map showing the basic surface layout, with a network of skipways of both 2 ft 3 in gauge and 3 ft 3 in gauge in evidence. Scant mention is made in the article of the skipways nor why there were two narrow gauges; was the opening of a second tunnel at the new mine reason to introduce yet another gauge? All the skips seen by the author were of the narrower gauge.

On 1 March 2016, the Gunnedah newspaper, the *Namoi Valley Independent*, included a photograph of all five skips, stored in the museum's back paddock together with the battery-electric locomotive. Three of those skips were moved to Pensioner's Hill in June 2016 leaving two at the museum, where they were re-positioned at the front of the property.

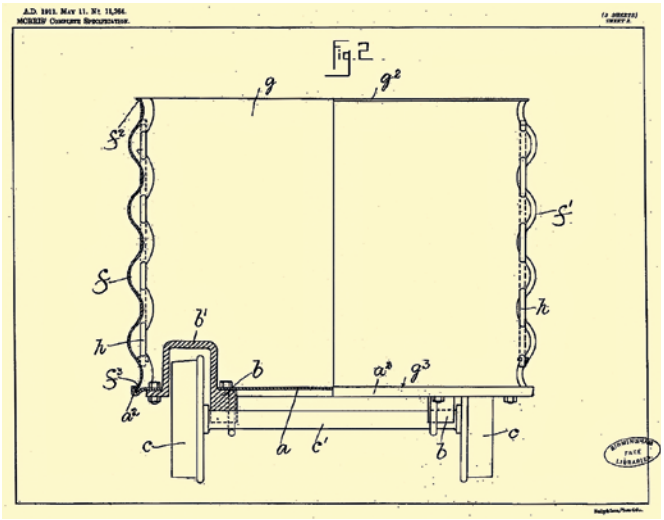
If readers know of any other Morris patent skips around Australia, or can add further to these brief notes, I am sure the Editor would be most pleased to hear from them.

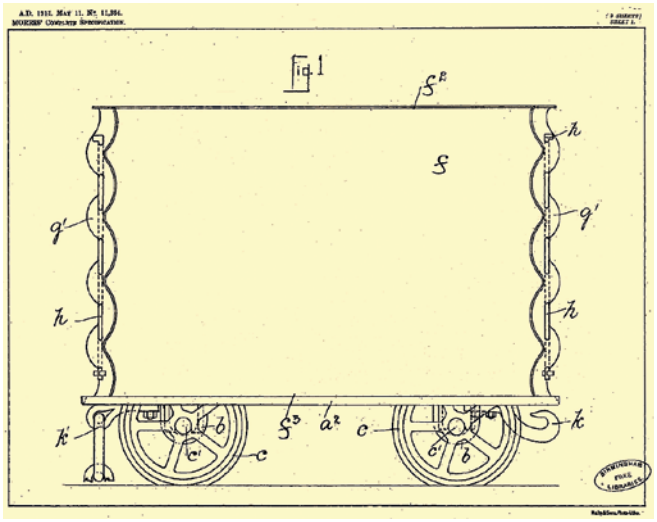
Acknowledgements:

European Patent Office for diagrams of GB191111364 https://worldwide.espacenet.com/

My thanks to John Garaty for details of the corrugated skip at Corrimal, also for alerting me to patent GB281093, an improved Morris skip of 1927, some of which also ran at Corrimal and possibly originated from Mt Kembla colliery.

Photos by the author 5 May 2017.





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

QUEENSLAND

DOWNER EDI, Maryborough

(see LR 261 p.24)
1067 mm gauge
Walkers B-B DH DH73 *Hugh Boge* (718 of 1974) was seen at work on 31 October, 21 November and 12 December. It was seen in the works yard and on the connecting line to Maryborough West. This firm has secured maintenance contracts for Queensland Rail rolling stock and DH73 is expected to be busy on transfer movements.
Eric Perkins 10/18; John Henry Green 11/18; Peter Sauer 12/18; Arthur Shale 12/18

ISIS CENTRAL SUGAR MILL CO LTD

(see LR 264 p.24)
610 mm gauge
New bins were seen in service during October and these have the Bradken design Willison couplers. As of December, work had not commenced on track laying on the new line along the ex QR formation from Cordalba towards Booyal. A long curved wooden bridge over Woco Creek, a short distance out of Cordalba, had been partially dismantled by late October. During November, Walkers B-B DH 6 (610 of 1969 rebuilt Isis Mill 2002) was seen with the poison train.
Maurie Styles 10/18; Mitch Zunker 10/18; Ben Glossop 11/18; Brian Bouchardt 12/18

MACKAY SUGAR LTD, Mackay mills

(see LR 264 p.24)
610 mm gauge
Construction of Racecourse Mill's new loco shed was well under way in mid December and associated track laying was in progress. This shed is being built on the southern side of the Peak Downs Highway which is the same side as the mill yard. The highway level crossing to the existing loco shed was due to be removed during December. Construction of the connecting line from the mill to Farleigh Mill's Palms line has progressed with the section along the course of the ex QR Mackay Valley Railway being ballasted and tamped early in December. Mackay Sugar has nine EM Baldwin B-B DH locos and for the past few seasons, three have been stationed at each of the mills. *Hampden* (6706.1 5.76 of 1976), *Foulden* (7220.1 6.77 of 1977) and *Inverness* (10123.1 5.82 of 1982) at Farleigh Mill. *Charlton* (9562.1 6.81 of 1981), *Langdon* (9562.2 6.81 of 1981) and *Balmoral* (10684.1 4.83 of 1983) at Marian Mill. *North Eton* (6780.1 8.76 of 1976), *Shannon* (7126.1 5.77 of 1977) and *Mia Mia* (9815.1 10.81 of 1981) at Racecourse Mill. Just one of these locos, the Charlton, is paired up with a brake wagon and that is the Gemco 4w+4w unit B VAN 2 (CV001-WR20911-85 of 1985). All are at the Farleigh Mill loco shed for slack season maintenance with all but one having bogies removed. Com-Eng 0-6-0DH *Eton* (FB3170 of 1963) was seen stabled on a rail train at Farleigh Mill's Calen depot on 15 December. All identification has been removed from at least the right side of the loco.
Tom Badger 10/18; Mitch Zunker 11/18, 12/18; Luke Horniblow 10/18, 12/18

MACKAY SUGAR LTD, Mossman Mill

(see LR 264 p.24)
610 mm gauge
On 2 November, Com-Eng 0-6-0DH *Faughy* (AL4190 of 1965) was seen working solo without its multiple unit partner, Com-Eng 0-6-0DH *Douglas* (AL2562 of 1963). The Commonwealth Government will provide $20 million and the State Government $25 million to help the cane growers organisation Far Northern Milling Pty Ltd to buy Mossman Mill from Mackay Sugar.
Gregorio Bortolussi 11/18; ABC Far North 21/12/18

MSF SUGAR LTD, Mulgrave Mill

(see LR 264 p.26)
610 mm gauge
Mulgrave Mill's bridge woes have continued with Peets bridge across the Mulgrave River on the Goldsborough branch declared unfit for locos. On 16 October, Clyde 0-6-0DH 25 *Cucania* (63-289 of 1963) was seen pushing full bins onto the bridge from the far side for collection by a loco from the mill. It had been transported by road to this location.

Com-Eng 0-6-0DH 17 Deeral *(AD1453 of 1962) heads into the Mulgrave Mill full yard with cane from the south while, left to right, Com-Eng 0-6-0DH locos 26* Meringa *(AK3675 of 1964) and 7* Highleigh *(B1010 of 1956) and Clyde 0-6-0DH locos 18* Barron *(64-379 if 1964) and 19* Redlynch *(65-435 of 1965) wait for empties on Friday 26 October 2018.* *Photo: Gregorio Bortolussi*

Above: *Mossman Mill EM Baldwin B-B DH* Daintree *(7303.1 7.77 of 1977) crosses the North Mossman River on 2 November. Photo: Gregorio Bortolussi*
Below: *The receding view as Isis Mill EM Baldwin B-B DH 11 (10130.1 6.82 of 1982) traverses the double track section on the climb up to Cordalba from the mill on 27 October. Photo: Brian Bouchardt*

On the same day, Com-Eng 0-6-0DM 5 (A1005 of 1955) was seen still stationed on the far side of a small bridge on the Meerawa branch.
Gregorio Bortolussi 10/18; Chris Stephens 11/18

MSF SUGAR LTD, South Johnstone Mill
(see LR 264 p.27)
610 mm gauge
The bogie bins previously used within the mill yard for road transport cane were seen stored at Goondi during October.
Gregorio Bortolussi 10/18

WILMAR SUGAR (HERBERT) PTY LTD, Herbert River Mills
(see LR 264 p.27)
610 mm gauge
Victoria Mill's Clyde 0-6-0DH *Lucinda* (65-436 of 1965) was on loan to Macknade Mill from 24 October to 11 November and from 14 to 21 of November. Victoria Mill's Clyde 0-6-0DH *Perth* (69-682 of 1969) did a couple of short stints on loan to Macknade from 25 or 26 of October, returning on the 26th and again on 5 November returning that same day or the next. Victoria Mill's Clyde 0-6-0DH *Ingham* (64-382 of 1964) was on loan to Macknade for several hours on 11 November. EM Baldwin B-B DH *Selkirk* (6750.1 8.76 of 1976) arrived at Victoria Mill on loan from Kalamia Mill on 10 November and was still there on 8 December. EM Baldwin B-B DH *Gowrie* (7135.1 7.77 of 1977) and EM Baldwin 6 wheeled brake wagon BV 2 (7065.5 6.77 of 1977) returned to Victoria Mill on 4 December after spending the latter half of the crushing season at Macknade Mill.
During a violent storm on 28 November, empty bins were blown out of several sidings around the district, including a rake of four units which found its way back to the Victoria Mill yard from a siding on the opposite side of Ingham. Another rake blew out of a siding in Macknade's Seymour area and went through the catchpoints and across the diamond at Bemerside North, delaying the tilt train.
Victoria Mill's Hudswell Clarke 0-6-0 *Homebush* (1067 of 1914), steamed across to Macknade Mill on 8 December for that mill's social club Christmas party. Short rides were given from the golf links out along the Hawkins Creek line with the train returning to Victoria in the early evening.
New 11 tonne bogie bins are to be assembled in the Macknade truck shop this slack season with most components manufactured in the Wilmar Ingham workshop.
Editor 10/18, 11/18, 12/18; Luke Horniblow 11/18, 12/18; Joe Roveglia 11/18; Gregorio Bortolussi 11/18

WILMAR SUGAR (INVICTA) PTY LTD, Invicta Mill, Giru
(see LR 264 p.27)
610 mm gauge
Walkers B-B DH *Cromarty* (708 of 1973 rebuilt Bundaberg Foundry 1996) is to be rebuilt at Pioneer Mill this slack season.
Shane Yore 10/18

WILMAR SUGAR (KALAMIA) PTY LTD, Kalamia Mill
(see LR 264 p.27)
610 mm gauge
EM Baldwin B-B DH *Selkirk* (6750.1 8.76 of 1976) was on loan to Victoria Mill from 10 November and was still there on 8 December. This loco now has a Detroit Diesel Series 60 motor and Allison transmission.
Joe Roveglia 11/18; Editor 12/18

Top: *EM Baldwin B-B DH* Selkirk *(6750.1 8.76 of 1976) and Walkers B-B DH* Herbert II *(612 of 1969 rebuilt Walkers 1993) cross at Tobanna Loop on Victoria Mill's main line south on 25 November. The former was on loan from Kalamia Mill. Photo: Luke Horniblow* ***Above:*** *Inbound South Johnstone Mill EM Baldwin B-B DH 26 (7244.1 8.77 of 1977) crosses outbound Com-Eng 0-6-0DH multi-unit locos 9 (AH3979 of 1964) and 8 (AA1543 of 1960) at Dillons Loop on 20 October. Photo: Luke Horniblow*

Above: *The scene in the loco shed at Farleigh Mill, where Mackay Sugar's fleet of Baldwin bogie locomotives is maintained each slack season. In the foreground, on 19 November, is EM Baldwin B-B DH* Balmoral *(10684.1 4.83 of 1983). Photo: Mitch Zunker* ***Below:*** *Com-Eng 0-6-0DH* Barratta *(AH4098 of 1965) at Invicta Mill on 13 October. Photo: Jamali Labelak*

Inkerman Mill's Com-Eng 0-6-0DH Keebah *(C2231 of 1958) and EM Baldwin B-B DH* Iona *(4498.1 7.72 of 1972) cross at Powers junction on 11 November. Photo: Luke Horniblow*

WILMAR SUGAR PTY LTD, Pioneer Mill, Brandon
(see LR 264 p.27)
1067 mm gauge
Walkers B-B DH *Jerona* (647 of 1970) is to be rebuilt here this slack season along with Walkers B-B DH *Cromarty* (708 of 1973 rebuilt Bundaberg Foundry 1996) from Invicta Mill.
Shane Yore 10/18

WILMAR SUGAR (PROSERPINE) PTY LTD, Proserpine Mill
(see LR 264 p.29)
610 mm gauge
EM Baldwin B-B DH 10 (9816.1 10.81 of 1981) is being repowered with a Mercedes Benz V8 motor combined with an Allison transmission this slack season. By mid December, 10 had been stripped down to the frame. The cab will be extended to match that on EM Baldwin B-B DH 19 (7070.3 4.77 of 1977) at Victoria Mill.
Tom Badger 12/18

NEW SOUTH WALES

BLUESCOPE STEEL LTD, Port Kembla Steelworks
(see LR 264 p.29)
1435 mm gauge
In November, Pacific National's English Electric Australia Bo-Bo DE D27 (A-040 of 1960) and General Electric Australia Bo-Bo DE D40 (A-241 of 1972) were reportedly still in use when required.
Chris Nuthall 11/18

MANILDRA, SHOALHAVEN STARCHES PTY LTD, Bomaderry
(see LR 264 p.29)
1435 mm gauge
Walkers B-B DH 7315 (674 of 1971) and Goodwin Co-Co DE locos 44208 (G-6045-08 of 1971) and 44209 (G-6045-09 of 1971) were still sitting in the yard at Bomaderry Station on 26 October.
Glen Greathead 10/18

WESTERN AUSTRALIA

BHP BILLITON NICKEL WEST, Kalgoorlie Nickel Smelter, Hampton
(see LR 252 p.29)
1435 mm gauge
Trackmobile 'Magnum' road/rail shunt locomotive K165 *Priscilla* was seen here in early November.
Walter Rowe 11/18

OVERSEAS

FIJI SUGAR CORPORATION
(see LR 264 p.29)
610 mm gauge
The driver was killed when his truck collided with a Rarawai Mill locomotive at Natawa crossing, Tagitagi in Tavua at 3.20 am on 25 October. The truck was travelling at high speed and ignored the loco's warning lights and horn blasts.
The Farer Group Fiji tourist train had not commenced running by early November. Two steam outline diesel locomotives and two 27-passenger carriages were imported and they are to operate from near Nadi Airport on the Lautoka Mill rail system. This rolling stock is stored in the open opposite Air Terminal Services, Nadi.
fijivillage.com 26/10/2018; *Fiji Sun* online 8/11/2018

LETTERS

WWW1 Surplus and Memorialised Locomotives (Letter LR264)

John Browning has pointed out to me in correspondence that the Barclay locomotives subject of my previous letter to the Editor were not WW1 surplus as I had been led to believe by the reference in LR263, but were in fact works locos purchased by BHAS directly from Barclays as numbers 1545 and 1546 in 1919. He referred me to a paper by Richard Horne[1] that comprehensively provides the history of these Barclay locomotives.

He also queried the restoration status of the war surplus Hunslets. I stated three have been restored to running order; in fact only one has been fully restored to operational condition, No 1215/1916 by the War Office Locomotive Society UK, which was subject of a note in LR263[2] reporting its first steaming on 8 July this year on the Apedale Valley Light Railway. Two others have had cosmetic restoration, albeit to a high level of engineering excellence – 1239/1917 ex North Eton No 4 by the Workshops Rail Museum Ipswich,[3] and 1218/1916 ex Gin Gin No 1 by the Australian War Memorial.[4] Other war surplus ex-canefield Hunslets in various conditional states are in storage or on display.

References:

1. R.T. Horne, R.T (1984). Andrew Barclay Locomotives in Australia, New Zealand & Fiji. *ARHS Bulletin*, Vol.35, No.560, 121-136.
2. Anon (2018). Killamarsh UK HUNSLET 4-6-0T locomotive 1215. *Light Railways* 263, p39, October 2018.
3. Shiels, Robert (2018). Hunslet locomotive 1239 (WD327). On the Western Front and in Queensland. *Light Railways* No 261, 3-8, June 2018.
4. Whitmore, Mark (2002). The train now arriving… *Wartime* Issue 17 Autumn, 48-50. Australian War Memorial Canberra.

Ian Bevege
via email

WW1 Surplus and Memorialised Locomotives (Letter LR264)

In his letter (LR 264) about the Pichi Richi Railway's acquisition of the ex-BHAS loco *Passchendaele*, Ian Bevege relates the oft-told story that the BHAS Andrew Barclay 0-6-0Ts (B/Nos. 1543-44 of 1918 & 1545-46 of 1919) were purchased from the British War Department as war surplus, but I would be very interested to know if anyone has any evidence to support this claim.

In the September 1979 issue of the *ARHS Bulletin*, Richard Horne refuted this story and gave a completely different account of their origins. He stated that their specifications were prepared specifically for BHAS, who ordered the four locos in 1917. They were not built until 1918-19 because the pressures of war work meant they had a low priority, which was why their builder's numbers (allocated at the time of ordering) were out of chronological sequence.

He also commented that the locos that immediately preceded the first of the BHAS locos in the Andrew Barclay builder's list, B/Nos. 1518-42 of 1917, were 60cm gauge 0-6-0 well tanks built for the British Army's ROD in France, and suggested that this, along with the BHAS locos' battlefield names, may have been the cause of the misunderstanding.

Would the British War Department have ever had any need for 3 ft 6 in gauge locos? The European theatre of war required standard gauge and 60cm gauge locos, and there would probably have been a need for metre gauge locos as well, but I cannot see any need there for 3 ft 6 in gauge locos. Did the ROD use 3 ft 6 in gauge locos anywhere else?

Darryl Grant
via email

WW1 Surplus and Memorialised Locomotives (H&T report LR 263 and Letters LR 264)

Ian Bevege's letter is of interest with regard to the eventual use in Australia of ex WDLR 2ft gauge Hunslet and Baldwin locomotives. However, both he and the H&T report are incorrect in stating that the quartet of BHAS 3ft 6 in gauge Andrew Barclay locomotives were built for the WDLR and purchased, as surplus, by the BHAS. I examined the order book at Andrew Barclay's works and it is quite clear that the locomotives were ordered new by (quoting) 'BHAS Pty. Co. Ltd., London'. Although given consecutive works' numbers, 1543 and 1544 were ex works on 26 June and 31 August 1918, while 1545 and 1546 were not shipped out until 26 June and 23 June 1919, respectively, the delay presumably being due to the pressure of war work. It is noted in the order book that the locomotives were to be painted black with narrow red lines and special brass nameplates were to be fitted.

The above explains why these locomotives are not listed in Roy Link's WDLR compilation, for they were never WDLR locomotives. Nor did the WDLR, to the best of my knowledge, have any 3 ft 6 in gauge locomotives. How this myth came about is not known, but probably in the same way... wishful thinking...that it was erroneously believed the Armistice train was hauled by one of the ROD 2-8-0s subsequently sold to J & A Brown. It was hauled by a ROD 4-6-4T, one of those originally ordered from Beyer, Peacock by the Netherlands Railways, but commandeered by the UK Government, along with a batch of North British built NSWGR 2-8-0s. Similarly, No. 3 of the Sulphide Corporation, NSW, a 0-6-0T, was ordered as AB 1503 of 1917, but was commandeered by the Government for use in the UK, as was its replacement AB 1605 of 1918. Third time lucky, the Sulphide Corporation finally received AB1629 of 1919. Fortunately, 1605 is preserved on the Isle of Wight Steam Railway.

Attached is the builder's photo of AB 1544/1918 *Polygon*, the elusive member of the quartet. It should be noted that 1543 *Pozieres* had 12 in x 20 in cylinders and was considerably bigger than the other three, which had 10 in x 18 in cylinders.
The fifth loco, acquired after *Polygon* had been sold, was *Port Pirie*, AB 1955/1928. It was the same size as *Pozieres*.

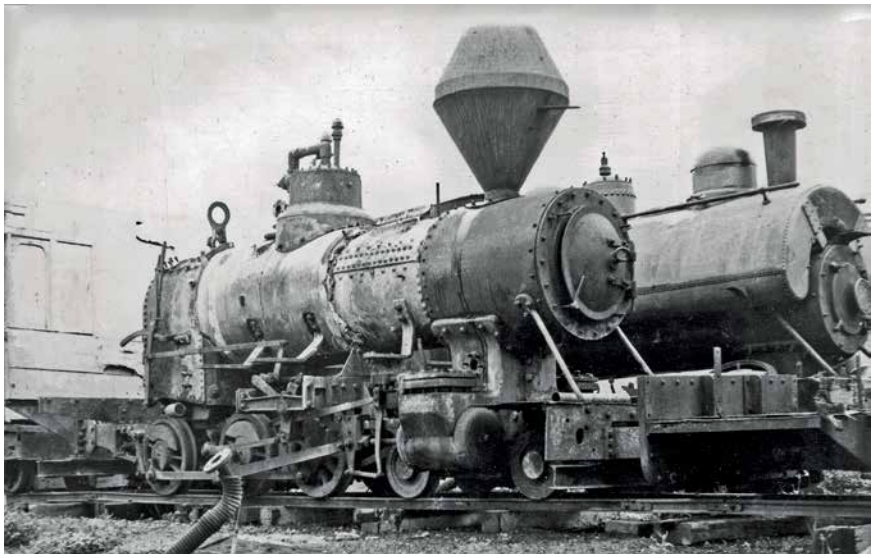
Richard Horne
South Croydon
United Kingdom

End of an era – a driver's perspective. Dreamworld locomotives (LR 264)

Congratulations to Teddy Hancox for writing up the story of the operation of steam locomotives on the line at Dreamworld.

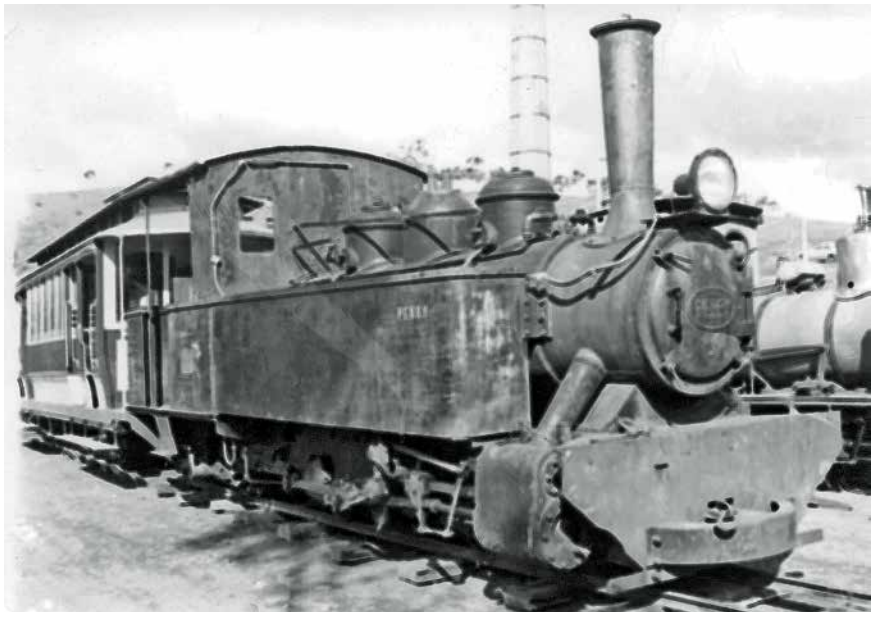
I became acquainted with this project when I received a visit at my museum operation at Goulburn by John Longhurst in 1973. He stated he was looking to purchase a 2ft gauge steam locomotive for a project he was considering on the Gold Coast area. He

Builder's photo of Polygon. *Photo Richard Horne collection*



The Baldwin locomotive at Goulburn in about October 1972 before it was taken for restoration. Photo: Leon Oberg

The Baldwin at the engineering shop at Rydalmere in Sydney where the Longhurst restoration and rebuild took place in about 1974. Photo: John Longhurst



Ex Bingera Perry at Goulburn in late 1976 with the ex Sydney tramways 'D' Class four wheel car which Bruce Macdonald rebuilt on a pair of ex North East Dundas Railway bogies. It has now been restored to its authentic form at the Sydney Tramway Museum. Photographer Unknown

then told me of his plans, which were to be a condensed combination of Disneyland and Knott's Berry Farm in Los Angeles which he was going to build using the finance from the sale of a successful business.

It so happened that I had purchased the derelict ex War Service Baldwin 4-6-0T locomotive from the Racecourse sugar mill not long previously and, upon the removal of the side tanks to start restoration, I was hit with the idea to rebuild it as an early American style 4-6-0 tender locomotive so I purchased the bogie tender that had served the 0-4-2 Sharp, Stewart No.10 locomotive ex Isis Central sugar mill.

When John Longhurst saw this locomotive he was hit with the same intention as myself. So, I convinced myself that he could make my dream happen a lot quicker than me so we came to an arrangement. The locomotive and tender were transported to an engineering workshop at Rydalmere in Sydney for the work to be done. It was then taken to the almost completed project at Coomera.

I bought the Perry from the Bingera sugar mill in 1973 when there were plans to extend the Goulburn 2ft gauge railway along the riverbank by about a kilometre. This did not eventuate neither did the proposed enlargement of the museum project so I decided that I would personally abandon the project and leave it to a local Committee to administer. I gradually sold off those items of my ownership and left Goulburn in 1978.

The Perry was purchased by LRRSA member Paul Simpson of Sydney and transported to his home. Later, when Dreamworld considered the need for a second locomotive I suggested that Paul's Perry would be ideal. So, Paul agreed to the sale and the Perry was duly transported to Dreamworld.

John Longhurst sold his interest in Dreamworld and moved to northern Queensland. Dreamworld still exists but with a different feeling and attitude.

Bruce Macdonald
via email

End of an era – a driver's perspective. Dreamworld locomotives (LR 264)

I just thought I would provide some feedback on the great article in the December *Light Railways* on the Dreamworld operation. The warts and all approach gives it a greater real life appreciation of the effort needed to sustain it under an administration that really did not know what a gem it had. I only went there once but it was the railway that I went to see.

There are too many articles in the current railway press that appear to be virtually advertorials and company announcements made news. The lack of investigative journalism is evident, perhaps to avoid upsetting the 'authorities'? Some good technically competent criticism and observations is sorely needed.

This was a great read!

Warwick Allison
via email

The Cheetham Chronicles: Part 6 (LR 263)

I very much enjoyed Peter Evans' article with its great variety of illustrations. He has done an excellent job sorting out a lot of the uncertainty regarding the locomotives used by the company.

The presence of Ruston & Hornsby 252805 at Laverton is intriguing. It is clear from Ruston & Hornsby records that 285309 and 285310 were ordered by Ruston & Hornsby (Australia) Pty Ltd on behalf of Cheetham Salt in April 1949 following a tendering process. They were despatched from Lincoln in August 1949.[1] The record for 252805, ordered in August 1946 and despatched to Melbourne in August 1947, is sparse by comparison and does not record a customer other than Ruston & Hornsby (Australia).[2]

In LR 219, I outlined the evidence for the presence of an unidentified Ruston & Hornsby locomotive at Colortone Brick Pty Ltd, Frankston in March 1950, when it was offered for sale "little used". A diesel locomotive was still in use at Colortone in February 1953.[3] As there appears to be a rather full knowledge of Ruston & Hornsby locomotives sent new to Australia, I cannot help wondering if this was in fact Ruston & Hornsby 252805, later obtained by Cheetham second-hand. There is no other known possibility that I am aware of, but the evidence is only circumstantial.

The original engine number for Ruston & Hornsby locomotive 283510 was 286245.[1] In December 1976, I noted that this engine had been replaced by a new 3YDA engine from Ruston & Hornsby (India), number 743D476. I had earlier been surprised in January 1976 when I discovered that locomotive 283509 had received an engine of the same type and origin, 743D494.[4]

The question of Days locomotives also comes up in connection with Cheetham. Peter mentions at least three dating from the late 1930s and the last one delivered in 1941. One of them was advertised for sale in December 1949.[5] The count of at least four is borne out by those known to have been in preservation. Two (one without engine unit) were noted by Peter Charrett at Laverton on 30 June 1973, and he saw what were presumed to be the same two at Geelong Steam Preservation Society, Belmont Common on 6 January 1974.[6] In mid-1975, I only noted the more complete unit at Belmont Common.[7] This went to the Puffing Billy Museum in 1979,[8] but I have no record of the whereabouts of the other, the only possible clue being a suggestion from 40 years ago that it may have gone to an Illawarra Light Railway Museum Society member.[9] Any further information would be welcome.

In 1975 there were also two Days tractors at the Van Diemen Light Railway Society, Don, Tasmania, that are said to have come from Cheetham and have passed through various hands since. One found its way back to Victoria and the Alexandra Timber Tramway & Museum in 2007.[10] The other was obtained by Gary Barker in 2008 and painstakingly restored for use on his Glencoe Agricultural Railway in southern NSW.[11]

John Browning
Annerley, Q.

References:

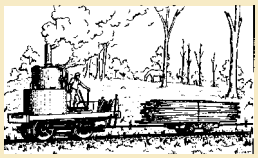
1. Copy of Ruston & Hornsby Sales Order Form for locomotive order numbers 51/490085-6 courtesy Ken Plant
2. Copy of Ruston & Hornsby Sales Order Form for locomotive order numbers 51/460191 courtesy Ken Plant
3. LR 219 June 2011 page.32
4. Personal observations at Cheetham Salt, Laverton, 23 December 1976 & 2 January 1976
5. *The Argus*, 17 December 1949 page 35 http://nla.gov.au/nla.news-article22799249
6. Peter Charrett, personal communication, 21 October 2018
7. Personal observation at Belmont Common, 29 June 1975
8. *Light Railway News* 11, August 1979; https://victorian-collections.net.au/items/5850883bd0ce1e1770a021ff accessed 5 December 2018
9. *Light Railway News* 3, April 1978
10. LR 195 June 2007 page 27
11. LR 215 October 2010 page 25; LR 238 August 2014 p.24

Light Railways of Australia Facebook Group

The *Light Railways of Australia* Facebook Group is for people interested in the types of railways described in *Light Railways* magazine. It is intended to provide a meeting point and means of communication for all those interested in its aims. It is managed by three LRRSA Committee members. It currently has 1030 members. You do not have to be a member of the LRRSA to join the Group.

Amongst the many interesting photographs uploaded recently was this one, probably at Pikes Hill Quarry, Kiama, NSW, circa 1916:

You will find the group here:
https://www.facebook.com/groups/LightRailwaysAustralia/



LRRSA NEWS

MEETINGS

ADELAIDE: "Lime sands tramways at Coffin Bay and other Eyre Peninsula lines"
The next meeting will include a discussion on the lime sands line from Coffin Bay and also other Eyre Peninsula lines. News of light rail matters will be welcome from any member. Intending participants would be well advised to contact Les Howard on 8278 3082 or by email lfhoward@tpg.com.au, since accommodation is limited.
Location:
1 Kindergarten Drive, Hawthorndene.
Date: Thursday 7 February 2019 at 7.30pm

BRISBANE: "Cane trains in Bundaberg"
Bob Gough will be presenting films and leading discussions on cane trains in Bundaberg that were running in 2017.
Location: BCC Library, 107 Orange Grove Road, Coopers Plains.
Date: Friday 15 February 2019 at 7.30pm

MELBOURNE: "More South Gippsland tramways"
Mike McCarthy will complete his odyssey of presentations through South Gippsland. This time with a focus on Hoddle, Fish Creek and the railway construction ballast tramways.
Location: Ashburton Uniting Church Hall, Ashburn Grove, Ashburton.
Date: Thursday 14 February 2019 at 7:30pm

SYDNEY: "The dams of Sydney and their light railways"
Jim Longworth will present a detailed description and interpretation of the tramways used in the construction of the Avon, Cataract, Cordeaux and Nepean dams. These tramways were required for moving materials to the site, concrete batching and other sundry applications. Jim will provide a comprehensive photographic coverage of this interesting subject.
Location: Woodstock Community Centre, Church Street, Burwood. Free Council car park behind building (entry via Fitzroy Street) or close-by street parking. Only 10 minutes easy walk from Burwood railway station.
Date: Wednesday 27 February 2019 at 7:30pm

Grampians Quarry Tour – Saturday 17 & Sunday 18 November 2018

The Grampians quarry tour took place over the weekend of Saturday 17 and Sunday 18 November 2018, thanks to the Victorian State elections being scheduled for the following weekend. The tour was attended by 16 members and David Hudson assisted me on the reconnaissance for the tour in September.

We were very lucky to have scheduled the tour for this weekend as the weather was perfect for bushwalking. Around 25 degrees and sunny each day, with a cool breeze and an abundance of wildlife, but surprisingly no snakes.

The members met at the Stawell Historical Society museum on Saturday at 1100 and proceeded towards the beautiful Grampians National Park to the west examining the remains of the former broad-gauge Grampians Tramway. Along the way, we detoured on side roads to look at the old formation, which is now a bike path at the Stawell end. Further out we inspected several large wooden bridge foundations, which would be over 130 years old if original.

Around 1300 the members walked into the Heatherlie quarry and had lunch there. This is a wonderful historic site with many features worth exploring. On entering the site, you see three stone buildings which have been carefully restored to their original condition. There are the remains of several cranes and winches. Beyond the buildings lie two boilers and an air receiver, complete with four-cylinder diesel compressor.

Following the path northwards, the group came across several sections of 3 foot tramway complete with tipping truck frame on wheels and the "V" cross-section bucket lying nearby. This tramway appears to have passed over the broad-gauge line which is deep in a cutting (with dry stone walling) and leads to a dump of condemned stone to the east.

Around the site are numerous examples of the "plug and feather" technique of rock splitting, including several examples where the plug has become irretrievably jammed and the rock discarded. After lunch the group walked back along the formation to two substantial concrete skeleton bridges, which were installed in the 1920's after bushfires destroyed the original timber ones. On the way back, we detoured through the proposed location of the Heatherlie township, which was surveyed but never built.

We arrived back at the cars at around 1600 and dispersed for the day. Some members headed back to Stawell and beyond, while others camped at the Plantation camp ground, just south of Heatherlie. Our hosts at Plantation were Darren, Harley and little Princess who were very handy with the campfire. We supplied the beige couch (yes beige couch !!) as well as the music and all the campers had a very memorable night together.

On Sunday the members regrouped at Stawell at 1000 and visited the Historical Society museum. Our hosts were Kate van Dyck (Museum/Curator) and Greg Robson (Secretary/Treasurer). The historical society is run by volunteers and very well resourced. It has a significant quantity of historical artefacts, papers and photographs, all stored in climate-controlled rooms.

Its cataloguing is very professional and growing, given the number of items currently being held. The Society has access to local school, marriage, baptismal and burial records. It also has information concerning businesses, hotels and their licensees and stations. We were able to obtain photocopies of historic papers related to Heatherlie and the branch line, which we had not seen before.

The museum situated in the former Pleasant Creek court house is comprehensive and representative of the many local industries around Stawell. The theme when we visited was the local woollen mill, which had a long history that was curtailed by cheaper imports. The museum has sections demonstrating gold history, military history, women's history (including period clothing), scale models of Stawell buildings and many other interesting exhibits.

Around 1100 we drove west towards Pomonal along the pipeline road to the Lake Fyans quarry. The group got separated despite the convoy being led by our own monster truck and we soon regrouped at Birdswing road, thanks to Mal Dow. We drove into the National Park and parked as close to the quarry as AWD vehicles would allow. The members then walked about 500 metres to the quarry situated on the top of the spur.

The group climbed to the head of the quarry and compared the view to pictures we were carrying of the old State Rivers and Water Supply Commission 2 foot gauge tramway circa 1920. The old right of way is clearly visible through the trees making a straight line towards Lake Fyans in the distance. We also inspected some more recent earth works along the right of way (which looked like a ruined water storage), but concluded it was probably not related to the tramway.

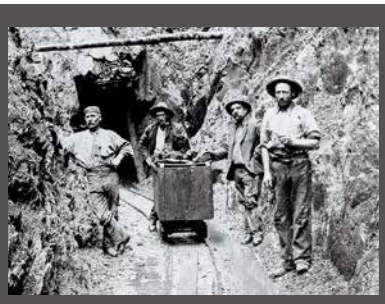
We walked back to the cars at around 1300, drove to the pipeline road and into the Stawell water supply tunnel reserve. There is an interpretive display in the car park which shows pictures of the tunnel's construction, the aerial fluming back to Stawell and later replacement with an overhead, then underground pipe. The old maintenance building has collapsed but the foundations are clearly visible near the display.

We had lunch in the reserve and you could hear the water running beneath your feet near the tunnel entrance, but unfortunately there were no taps available to drink from. Around 1500, the members said their farewells and headed back to their respective homes, mostly via Pomonal and Ararat.

I would particularly like to thank David Hudson, Chris Wurr, Peter Evans, Scott Gould, Phil Rickard, Colin Harvey and the Victorian Premier for helping me plan a sensational tour.

Simon Moorhead

Members pose for a group photo at bridge remains of the former broad-gauge Grampians Tramway near Oslers track. Photo courtesy of Owen Gooding



Field Reports

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

Condon's Tramway, Yahoo Creek, Kawarren, Victoria
Gauge 914 mm

The Condon family ran two sawmills at Kawarren at different times from 1912 to 1938, both having tramways. I have earlier written up these enterprises in *The Beechy*, but more recent research has caused me to revise my account. In 1991 I was alerted by a logging contractor that he had come across what he described as 'a bit of Condon's tramway' on the plateau above Yahoo Creek. I went for a look and found a length of intact tramway, maybe 50 metres, in the logging coupe. The tram was isolated, presumably the rest of it having been burnt in the 1939 bushfires, and I too thought it was the terminus of Condon's tram as they had logging rights around here in the 1920s and 1930s. Tracing back the imaginary route along the compass bearing across a dead level landscape, where no earthworks would be needed for a tram, seemed to take the tram into the northern head of Yahoo Creek. Jack Condon had told me some years earlier that his father and uncle had three miles of tram along Yahoo Creek. That seemed to equate with the distance. However, my recent research has caused me to doubt this, and wonder if the tram actually ran along the southern branch of the creek. The north branch would have been routed through two dairy farms (northern neighbours of the Condons), and I doubted that this would have occurred. The south branch ran through three blocks, two of which were earlier milled by Benallack and Coppock, and which Condon had acquired, and abutted a Timber Reserve that Condon was given access to in 1925. This Reserve was further to the west than its current boundary so, if Condons used the north branch to get the north end of the Reserve, the tram would have ran through the neighbours' private property and end up too far above the rest of the Reserve on the south. This timber would be out of convenient reach.

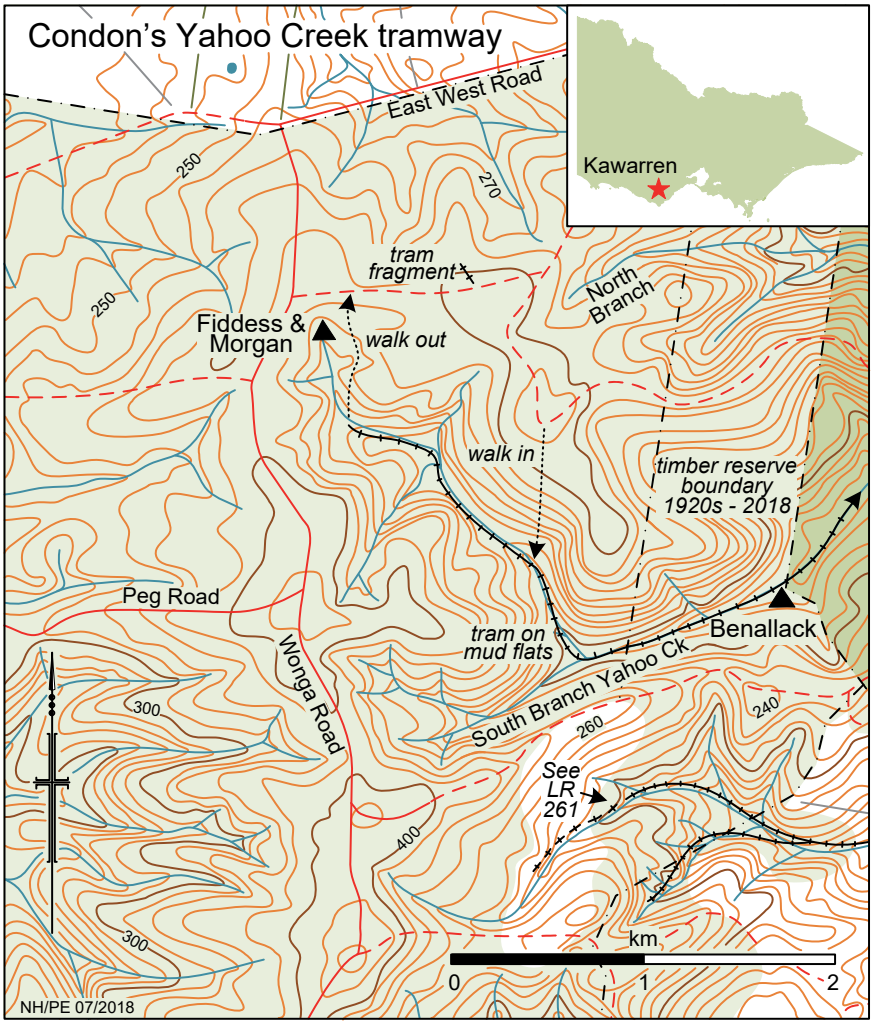
In April 2018 I made two forays into the bush to check the head of the north branch and the closest gully coming up from the south branch but found no tramway. I then visited the mid area of the south branch near where Condon's block met the Timber Reserve, the region of Benallack's mill, and back towards the Condon mill. The creek here runs in a wide valley with mud flats and although I walked along maybe one kilometre of creek bed I found no trace of a tram so, if there was a tram, it was laid directly onto the flats with no earthworks being needed.

On 20 June, 2018 I made another trip, this time into the area between where I had earlier looked. I had a dreadful time walking 700 metres downslope from Yahoo Creek Track at the top through the bush to get to the creek, as the undergrowth was all enveloping. I reached the main creek at a gully junction and, on getting down to what were very narrow mudflats here, I thought I could see some shovel marks on a road bed indent. Indeed I could! This was the tram. The creek valley in these parts closes in, so the tram was squeezed into the bank just above the water level.

The tram formation follows the creek, changing sides where the creek course wobbles around, so there were bridges every so often. I counted ten of them over the 1.2 kms distance that I walked along the creek. These bridges would have been made from two logs dropped across the gap and some decking nailed on, nothing fancy, and all since washed away or decayed to nothing. Landslides have buried the formation here and there and floodwaters have scoured the creek margins, so the formation has been cut back or vanished entirely in quite a few places. I lost track of it several times due to scours and slips, but kept on up the creek until the formation, or what was left of it, re-appeared.

The route kept trending north-west and west until the valley opened out a little and the tram became harder and harder to track. I assumed the tram on this heading and found it again at what looked like a log landing. There was not much left here, merely an open level spot with one indent from a skid visible. The formation went on a little bit with what appeared to be a branch tram taking off on the other side of the creek to the west, but this line, if it was such, petered out up the slope a little bit. The creek tram went maybe 50 metres past the landing and then vanished. Here I lost the tram for good, guessing that if it continued then it ran up the mud flats to end somewhere under the old Fiddess & Morgan mill site (1899–1902).

However, even this bearing would not take the tram up to the plateau on the north, way off my right shoulder, unless in a big semi -circle that turned back on itself. I was puzzled by this, but let it go at the time, and after poking around on the mud flats further up decided I could find no more so quit the site. I climbed out of the creek up onto the high ground and trudged north up the slope towards Old Wonga Road. I kept the main creek gully on my left hoping that if the tram came out of it onto the plateau then I would see it, but no luck in this regard. On the way out I found that my camera was missing, having been ripped off my lanyard and webbing

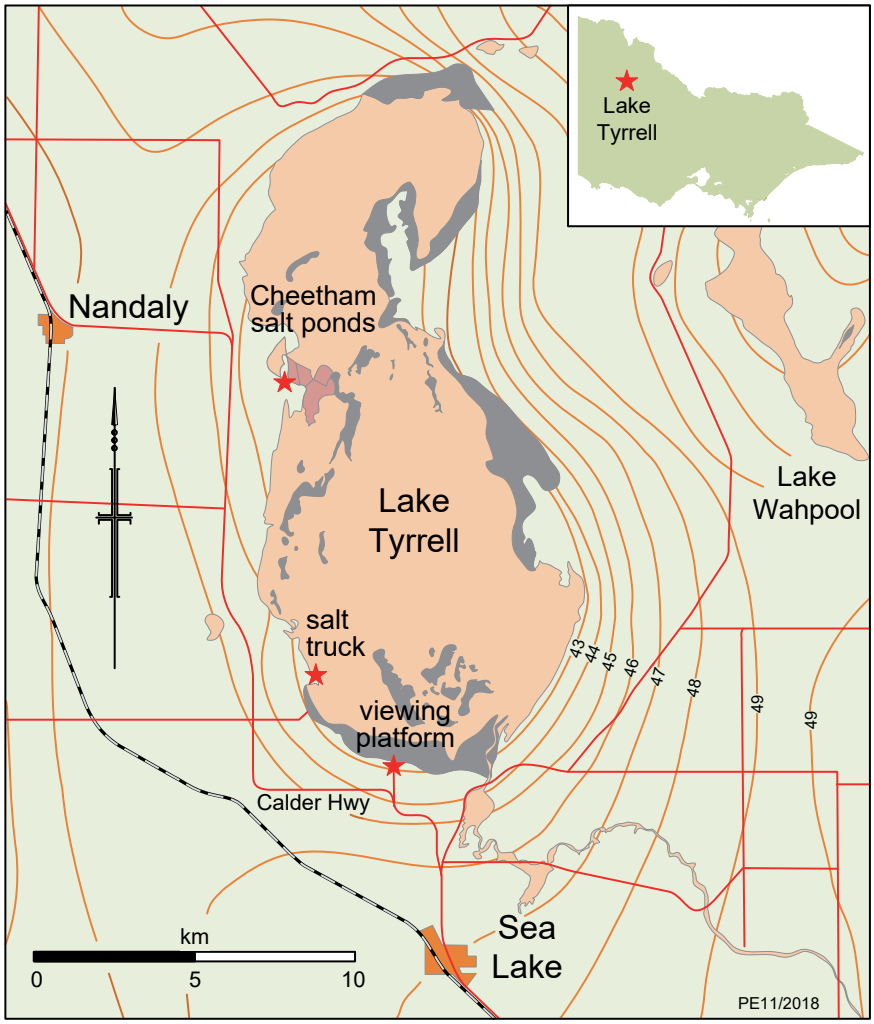


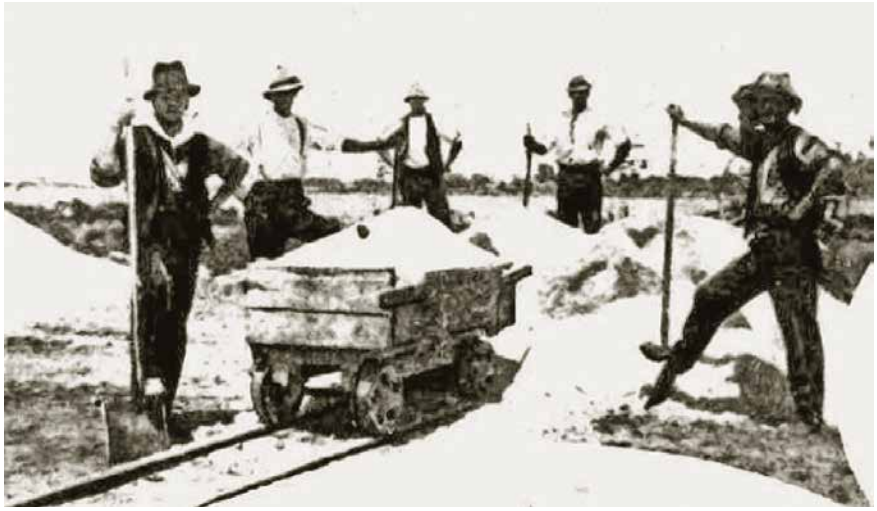
belt in one of the vegetation messes I crawled through, so I have no pics of the day. I ruefully lamented that so far this walking season I have lost my expensive PLB at Kincaid's tram site on Asplin Creek three weeks ago, crawling through more messes, and now my camera at Yahoo Creek, thus making a dent in my wallet of about $1,000 for replacements.

When at home and plotting my route I realized that I had probably walked right to the end of the tram, near that log landing, as the distance was three miles or five kms from the mill. So the tram went along the south branch of the Yahoo Creek. This tram did not go up onto the plateau so that leaves the mystery of that 50 metres of tramway to the north-east that could not possibly be an extension of the tram I walked today. Perhaps it came down the other north-south gully and connected with the main tram, but I had already checked that gully with no result. Maybe that tram was not Condon's at all, and I and the logger had jumped to unwarranted conclusions.
Norman Houghton, 06/2018.

Lake Tyrrell. Victoria
Gauge 610mm

Lake Tyrrell (the name is derived from the local indigenous word for 'sky') is situated in north-west Victoria and is the largest salt lake in the State with an area of 180 square kilometres. The opening of the railway to the nearby town of Sea Lake in 1893 enabled salt production from the Lake to be put on a commercial footing, and the large-scale production of salt commenced in 1896. The *Weekly Times* of Saturday 6 March 1920 (page 34) has a number of images that show salt gathering by manual shovelling, and by a wheeled scraper pulled by two horses. Bulk salt transport on the lake was by both tramway (see accompanying picture) and by horse-hauled dray. Once off the Lake, the salt was bagged and taken to Sea Lake using a wagon pulled by a team of horses. From the 1960s the northern end of the Lake has been harvested by Cheetham Salt using more modern methods, including artificial ponding. A visit to Lake Tyrrell in hot and windy conditions in November 2018 revealed the remains of a salt truck a few kilometres north-west of the viewing platform. It can be found by following the road NW past the viewing platform near the southern end of the Lake. (Another road comes off the Calder Highway to provide closer access). The salt truck is a few hundred metres past where the latter road comes in. Not much other evidence was seen, but we are talking about a salt lake that 'eats metal'.
Trevor Viénet 11/2018





Above left: *Salt truck on Lake Tyrrell in 1920.* Weekly Times, *Saturday 6 March 1920, page 34.*
Left: *Salt truck on Lake Tyrrell in 2018. Photo: Trevor Viénet*

Heritage & Tourist NEWS

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

QUEENSLAND

DURUNDUR RAILWAY, Woodford

610mm gauge

The railway recently acquired a larger lathe from an auction at Rockhampton Railway Workshops. This lathe will now turn all of the wheels for the railway except the loco driving wheels. This lathe, along with the small lathe purchased a while ago, will meet the needs for the foreseeable future. The two old lathes have been removed and are being disposed of.

A back hoe was used to lift the rail components of the pointwork onto the steel point bearers that had previously been laid out for the by-pass track round the locomotive storage shed. These points came from Nambour Sugar Mill and rusted fishplates and bolts need to be replaced and decades of Maroochy River caked mud removed from the flangeways. The rail bender was used to adjust the curved rails and to remove some other extraneous bends. The rails still remain to be attached to the steel bearers. Two panels of concrete sleepered track have also been assembled using ex- Ingham round-hole sleepers. Completion of the by-pass track is an on-going project.

Whilst there has been no activity at the Petersen Road end of the mainline, progress has been made on the marathon task of cutting and welding ex-QR steel sleepers to fabricate the point bearers required for the two sets of pointwork required for this project. The works at Margaret Street station had depleted the railway's stocks of fabricated point bearers. Workers will return to this area once the storage shed by-pass track is completed knowing that materials are to hand.

Durundur Railway Bulletin 39:354 November/December 2018

Top: *Ex-Mulgrave mill No 4* Nelson, *John Fowler & Co. 0-4-2, 20273 of 1934 on the turntable at Port Douglas, 21 October 2018. The train was well patronised and either collected or dropped off passengers at all intermediate stations. There was a commute aspect to patronage.* ***Above:*** Nelson *on the Balley Hooley Railway, runs around its train at St Crispins, 21 October 2018. Both photos: Mike McCarthy*

NEW SOUTH WALES

PETE'S HOBBY RAILWAY, Junee

610 mm gauge

This report covers recent progress with the overhaul and restoration back to operational condition of 2-ft gauge John Fowler 0-6-0TT B/No. 8766 of 1900, one of the collection of Pete's Hobby Railway.

As covered in the previous report, Peter had decided to prepare a second steam locomotive from his collection for boiler inspection to ascertain whether it could economically be returned to operational condition. On the occasion of his previous visit, the Boiler Inspector had been upbeat with this initial inspection, however expressed a desire to undertake an internal inspection and in particular, the front and rear tubeplates.

Workers managed to extract all 75 tubes from the Fowler's boiler. Initially, because of the condition of the tubes extending into the front tubeplate, it was thought that these tubes were in usable condition, so they were only removed reluctantly. On removal of the top manhole cover however, it was found that water had penetrated, corroding several tubes and forming large rust holes. Naturally, the tubes were difficult to extract and had to be cut into pieces within the boiler barrel for final extraction. Collapsing of the tube ends within the front and rear tubeplates was a slow process.

It was proving too difficult to access the firebox interior with the boiler standing vertically, so the decision was made to turn the boiler on to its side. This allowed easy access into the firebox for the rear tube extraction. Before rolling the boiler, it was necessary to remove the diamond-stack funnel, thus providing an opportunity to closely examine its inner workings. With the boiler supported on its side, a gazebo covering was erected to provide shelter.

Once all the tubes were removed, the boiler was again washed out. As the boiler was full of dirt and scale it must have been difficult to steam.

It seems that the Fowler may have worked only one or two seasons following the 1965 overhaul. From an undated photo received, the Fowler had a head-on cornfield meeting with a diesel loco,

coming off second-best at the cab end and a premature withdrawal from service.
The Boiler Inspector visited in October, mainly to undertake the ultrasound of the front and rear tubeplates. Thankfully, no cracks were found and at this stage, it appears that the boiler will be good for its original working pressure of 160-lbs psi. That is not to say that the locomotive will be operated at this pressure which would be in excess of the requirements of Pete's Hobby Railway. Luckily, despite some pitting at various locations on the boiler barrel and around the firebox, sufficient metal thickness remains to allow for the full ticket. The Hunslet was also inspected and passed for a further year at the same time.
The bogie tender is in extremely poor condition (rusted through all-around), necessitating a total rebuild above the frame of the water and fuel-carrying areas. Examination of other similar Fowler tank locomotives of the 1900s period, show a semi-circular floor extension bolted to the main frame, with suitable open fencing to protect the crew. New side tanks, with provision for a small coal bunker, were manufactured many years ago, dating back to the days of the Weavering Light Railway at Loftus. These Fowler locomotives were all fitted with the original round-top boiler, while this Fowler, 8766, was fitted with a new square-firebox boiler in the late 1930s. Should funding become available at a later date, there is nothing to stop the tender rebuild.
Another contentious aspect is in regard to the brakes. At the moment, there is only a hand-brake, acting on four of the six driving wheels. A steam-operated brake would be appreciated by the engine crew. Then, there is the unresolved question of couplings.
Replica builder's plates are already held as John Fowler 8766 which is where another issue arises. As the main frame was taken back to bare metal, the number 8735 was found above each of the six horn-blocks, being identified as L1, L2 & L3, R1, R2 & R3. Assuming that 8735 is a builder's number, this belongs to a 0-6-0T 2-ft gauge loco also built in 1900 for the (Queensland) Geraldton Divisional Council for use on the Council's tramway at Innisfail. The Tramway was taken over by the Queensland Government in July 1914 when 8735 became No. 1 on the Innisfail Tramway roster. According to the book *The Innisfail Tramway* by John Armstrong and G. H. Verhoeven, published by the LRRSA (revised edition, 2000), 8735 was condemned and written off in October 1925. Possibly the frames were swapped during construction – one little mystery to which the answer may never be known.
There is also the perennial question of the final paint scheme. On Peter's last viewing of the locomotive at CSR's Victoria Mill in 1965, the side tanks and tender were painted a light green, with a black underframe, boiler and smokebox. A stylised "PERTH" name was painted on the side tank below the open cab. At this stage Peter is favouring gloss black all over, with red lining.
A request in the previous Progress Report for an explanation of the various identification numbers stamped into the rods, motion and wheels has gone unanswered. Surely someone must have THE answer.
Peter Neve
Report taken from Progress Report 48, Restoring the Fowler, November 6, 2018

RICHMOND VALE RAILWAY MUSEUM, Richmond Vale
1435 mm gauge
The railway is very proud to announce that the entire Mulbring Road (1.2km towards Leggetts Drive) section of track is now fully rehabilitated and has passed its inspection. The section has been closed due to the damage caused by last years devastating bush fire.
This now means that stage one of the rebuilding of the track is complete. To achieve this milestone, the volunteers and industry partners have worked together to:
- Replace 550 burnt timber sleepers with donated concrete sleepers
- Replace 100 timber turnout bearers
- Drop and tamp 400 tons of new ballast It is estimated that almost $1,000,000 of in kind donations and value of work has been put in to get to the end of this stage.

The work undertaken on the Mulbring Road branch would not have been possible without the support of many rail industry organisations and for that RVR is eternally grateful.
The RVR can now move on to the next stage of track work, which is rehabilitating the burned out line back down to our carriage shed first, then the final stage is the track to Pelaw Main.
Light Railways of Australia Facebook Group, December 2018

ZIG-ZAG RAILWAY, Lithgow
1067 mm gauge
The Zig Zag Railway in Lithgow will be brought back to life five years after it was badly burned during the State Mine bushfire in October 2013. The NSW Government has committed $2.3 million towards restoring the tourist railway. Zig Zag Railway carriages, tracks and infrastructure suffered significant damage during the 2013 bushfire that destroyed 210 homes and damaged 150 others across the Blue Mountains in October 2013. Premier Gladys Berejiklian said the Zig Zag Railway was an important link to the state's rail history and this funding would open up the attraction to thousands of new tourists each year. The redeveloped Zig Zag railway is expected to attract over 60,000 tourists to Lithgow each year. The government funding will build on existing co-contributions of $5.1 million to restore and bolster the railway from Transport Heritage NSW and Zig Zag Railway.
Western Advocate on-line November 29, 2018

VICTORIA

ALEXANDRA TIMBER TRAMWAY AND MUSEUM, Alexandra
610 mm gauge
The ATT has acquired its first electric-powered industrial locomotive. It is was ordered by the Commonwealth Department of Supply in 1941 from the British Electric Vehicles (BEV) division of Wingrove & Rogers Ltd., Liverpool, UK. It was one of four ordered (chassis numbers 2216, 2217, 2230 and 2231). All were 2 ft gauge and fitted with bronze wheels to reduce the risk of sparks in an explosive environment. They were shipped to Adelaide in April 1942 for use at the Smithfield munitions depot then being built

British Electric Vehicle 0-4-0BE (now minus connecting rods) loaded on a trailer on its way to Alexandra. The vertical section is the driving position folded up for transport. *Photo: Stefan Rebgetz*

north of Adelaide. The loco was powered by 24 two volt batteries and had a towing capacity of ten tons at five mph. For some unknown reason, the coupling rods on all locos were removed soon after delivery to Smithfield, leaving only two wheels driven on each loco. (See *Light Railways* 148 for further details of this interesting railway). The Smithfield facility was closed in March 1998 and the railway equipment (which by then included only three locomotives) was put out for tender in late 1998. One locomotive is currently operational at the Milang Light Railway Centre in South Australia. ATT's example (which is minus its battery box) was purchased from an Adelaide collector, and is currently awaiting final transport to Alexandra for assessment.

There has been further progress with track maintenance and on the installation of a triangle for turning locomotives. A number of working bees were held where various sections were completed and one more working bee should see the triangle completed.

Despite advice from Public Transport Victoria that leases for Tourist & Heritage sector members are on hold, VicTrack has advised that the T&H lease for Alexandra will go ahead. This now could be before the end of 2018. There are a number of problems with the previous head lessee, as well as minor matters with some of the sub-tenants that will require resolution before the lease can be signed. This is a crucial step for the ATT and one that has been a long time coming, but eventually it has to get everything resolved in order to make the lease work in its favour. The lease plan will give the ATT exclusive use of the former railway precinct, except for the tract of land on the south-eastern corner of the site, and two small pockets of land for sub-tenants.

Timberline 164 December 2018 Newsletter of the Alexandra Timber Tramway & Museum Inc.

KERRISDALE MOUNTAIN RAILWAY, Kerrisdale

610 mm gauge

A site visit in November revealed what a wonderful railway and museum it is; small in scale but big in concept. The railway is reached via a road off the main road between Tallarook and Yea which leads to a small but perfectly adequate car park. It's a family run railway with Andrew Forbes being the owner, builder and operator, assisted by his wife with his daughter being the second driver on days of two train running. Trains (hauled by Malcolm Moore, number 1039 built in 1939) run every hour on the hour and opening times can be obtained via the website. Trains begin inside the museum and immediately ascend up a steep incline, past a timber siding, Strath View Siding, to the Top Points where the train is reversed and the ascension continues to Summit where

Top: *Kerrisdale Mountain Railway: View from the Bottom Points from where the train has just commenced its run up the mountain. An idea of the steepness of the line can be gained from this perspective. The siding to the left is used for storage of locomotives.* ***Above:*** *The train hauled by Malcolm Moore 1039 built in 1939, at Summit waiting for the return of passengers and the descent to the terminus. Both photos: Andrew Webster*

passengers alight to inspect the various railway artifacts (my favourite was the point lever from the Zeehan and Dundas Railway in Tasmania) and enjoy the views across the ranges towards the east where the broad sweep of the former Tallarook to Yea, Mansfield and Alexandra line can be seen. This is now a railtrail and can be seen quite clearly. At the Summit and Top Points stops, Andrew provides a commentary on the area and proves to be well versed on the local flora, fauna and history and is able to point out some of the mistakes that have been made by the early and present local landowners in their land clearing practices which have created lots of problems for the area.

The train then descends through the Top Points back to the museum where Andrew gives an interesting and lively talk about the many exhibits there. He then takes the passengers across to the workshop to view and inspect his 0-4-0 steam locomotive which is in the final stages of construction and should be ready for work on the railway next year. It is claimed to be the first new steam locomotive built in Australia since sometime in the 1950s. Andrew began work on the wheels of this locomotive 23 years ago and has been working on it ever since. Great attention has been paid to detail on this locomotive, for example, the sand boxes have glass viewing sections built into the sides so that the operator can clearly see how much sand is in each one, something essential on such a steep line. It is a very handsome locomotive and its operation should be a real drawcard for the railway.

After the workshop visit, passengers can relax with coffee and cake in the area around the museum. On the day of the site visit, the railway was very busy with a big group of people from a central Victorian model train group. Despite that, room for one more passenger was found on the one o'clock train. The price of a ride is very reasonable and considering the fact that you get a guided tour of the museum and workshop and a commentary on the ride, this is great value.

The fact that this is a family concern creates a problem for the operator. Andrew is afraid that the next owner of the very desirable property will just close the line, sell off the assets and turn the permanent way into a walking track to the top of the property. Hopefully some solution can be found that will enable this wonderful little railway to continue to operate.

Andrew Webster 28/11/2018

Top: *The LRRSA's Victorian entertainment meeting for December entailed a visit to the Puffing Billy Preservation Society's museum at Menzies Creek. Big changes have been made here in the last ten years or so, none bigger than the construction of a large purpose-built display hall for the many valuable exhibits. Here we see TACL locomotive 55/1928, manufactured by Malcolm Moore Ltd for the Forests Commission of Victoria's 2ft 6in-gauge Tyers Valley Tramway.* ***Above:*** *Beautifully restored 0-4-0T locomotive* Carbon, *built by SA Usines Métallurgiques du Hainaut (Couillet), Belgium, No. 986/1890, for Decauville, for the Metropolitan Gas Co's West Melbourne gasworks. To the right is Class-A Shay locomotive No.14 from the the Ali-Shan Forest Railway, Taiwan, one of twenty Shays built by Lima for that railway. Hopefully the museum will re-open this year. Both photos: Phil Rickard*

PUFFING BILLY RAILWAY, Belgrave

762 mm gauge

The structure of the Lakeside Signal Box is now complete and awaits internal fitting out and connection to the Lakeside points and signals. It has been carefully designed to fit in with the other structures at Lakeside which are heritage based designs although relatively recently constructed. Comments on the high quality of the build are made by all who see the new building. The aim now is to transfer existing safeworking functions into the new box in 2019 with fit out and commissioning of the 1940s, 40 lever, electro-mechanical frame to follow.

Meanwhile, the South African Garratt is nearing the final stages of construction. In mid-December it was moved outside the workshop to enable the cab and forward water tank to be spray painted. The rear tank is not yet attached although it is constructed. On this locomotive, the attention to detail can be clearly seen and it should prove an asset to the railway (although its deployment is not without some disagreement). Work is in progress or has been completed on the brake release and springs, reversing rods, live steam pipes, engine lubrication unit, swab holders, oil pots, spark arrestor mesh, thermocouple and temperature gauge, smokebox door and its baffle and handrail, drifting steam valve, cab steps, bi-fold door on the rear sheet of the cab, cab seat frames, cab roof, and detail work on the cab structure. Additionally, the front water tank has been lowered into position and the hind tank/coal bunker unit has been trial fitted, and modifications made to make the shovel plate. Thus, progress continues apace, as the engine grows and the pile

of parts slowly shrinks. Finally, the new cab side number plates have arrived. These are accurate replicas of the original NG/G16 number plates carried by the engine and reflect the locomotive's South African Railways heritage.
The newly converted oil-fired engine, 14A, has been run intensively following its release to traffic. There are now ten qualified drivers and seven qualified firemen, with another six firemen currently in training. With summer approaching, training and familiarisation for crews will continue as the railway prepares for the fire season. Following experience in operation, and feedback from the crews during training, some modifications have been made, particularly to the 'plumbing' layout. This makes operating the engine a little more user-friendly and should eliminate possible problems with condensation in the atomising steam supply. More detail is available on the Workshop blog: puffingbilly.com.au/news/workshop-blog/.
Andrew Webster 30/11/2018

WALHALLA GOLDFIELDS RAILWAY, Walhalla
762 mm gauge
Bogie conversion work for the first pair of bogies for the DH locomotives was allocated to Primech Engineering Services. The first of four wheelsets was stripped of its axle-boxes and gear-case and wheels removed to determine the work required for axle modification at Hardchrome Engineering at Yallourn. Design review has indicated that to reuse the existing wheels is going to require manufacture of new axles for the locomotive. This will be a major expense. ADRA Group is working on the new axle design drawings for the conversion.
The second pair of the four tram bogies (trucks in tram parlance) has now been modified by JBI Engineering and stored at Erica. The removal and replacement of the painted canvas roof will be reviewed at the same time. First, loco DH 72 must be relocated to a new location at Hardchrome Engineering. The trolleys on which it now stands will be transferred to Thomson Way and Works shed and the X1 tram body will be transported to Thomson and mounted on the trolleys. This work is becoming urgent to fit in with the project milestones agreed to with the RDV. The new diesel engines acquired for the railmotor project are yet to be modified to reduce overall height by relocating the cooling water outlet to the side of the engine.
Hardchrome Engineering has pressed the wheels off one of the tram axles and awaits drawings from ADRA to enable quotes for the modification, re-gauging and assembly of the wheelsets as driving axles for hydraulic drive units. Once ADRA has completed the axle and wheelset drawings, quotations for the axle conversion and wheel machining and assembly will be sought. Design investigation revealed the railway needed new wheel hubs which have been ordered from IXL Engineering in Geelong. The pattern for the wheels has been completed and production will occur soon. The hydraulic drive system manufacturers are finalising the control equipment for the drive to include all necessary drivers' controls on an electronic panel.
WGR has applied to Transport Safety Victoria for a variation to restore its accreditation status as a Rolling Stock Operator and Maintainer to include "Design, Construct, Commission, Modify, Maintain, etc., Rolling-Stock" (Which WGR has been doing since the very beginning), and TSV has now requested more information in support of the application. Recently WGR had a further meeting with TSV where many of the outstanding issues were discussed and hopefully resolved in WGR's favour. However TSV has now cast doubt on WGR's ability to operate passenger trolley rides after the railway had been doing so for five years following the submission to them in 2013. Consequently, at present the railway can only use the trolleys for WGR internal (maintenance and emergency) use.
Dogspikes and Diesel October/November 2018

TASMANIA

TASMANIAN TRANSPORT MUSEUM, Glenorchy
610 and 1067 mm gauges
Getting to the point where the Museum can lodge an application with the Office of National Rail Safety to vary its accreditation to enable train operations on the former suburban line, is taking much longer than ever expected. Several hurdles have been cleared (including track and mechanical standards) and the main SMS document should be finished soon. However the Museum has identified two positions that are critical to the safety of the operation and for which it is yet to find personnel: Track Worker Class 2 and a Signal Electrician. It will not be possible to extend Museum operations to the suburban line until these key positions can be filled.
The remaining windows have been fitted to the railcar. The external aluminium frames are still to be fitted, although this is not a big job.
A 1986 Mazda T3500 dual cab truck has been donated to the Museum by the West Coast Wilderness Railway. The truck was surplus to its needs and fortunately the WCWR was willing to transfer the ownership to the TTMS. The truck has run a high mileage and suffers from normal wear and tear, and some items such as tyres and the windscreen will need to be replaced. However, it appears to be in good mechanical order and will be useful for the Museum in both road and rail mode, particularly when train running extends beyond the museum tracks. The truck was collected from Queenstown in October and it ran faultlessly. An assessment will be made on the condition of the truck and what needs to be done to upgrade it, and at some stage training and accreditation will be addressed so that the truck can be used on the railway lines
Newsletter November-December 2018

SOUTH AUSTRALIA

MILANG RAILWAY CENTRE, Milang
610 mm and 1610 mm gauges
On 30 November 2018 there was a re-enactment of the 50th anniversary of the last SAR passenger service to Milang. At Milang, the Ruston (partner of the one just acquired by the ATT in Victoria) was started for Trevor Lloyd from Stenhouse Bay, who drove it when it was used there; its transmission is still being worked on. A section car and the jetty tractor were also energized and videos of these were shown.
Peter Lucas's booklet, *The Lakes Railway*, was launched on the day, and copies were available to buy.
A pair of wheels from a hopper used at the Peterborough gold battery has been added to the displays in the centre, and more exhibits are being sought.
A cartoon style mural has been proposed for an inside wall of the new extension, featuring a BEV hauled train alongside a panel displaying cross-sections of tracks in the various light rail gauges. Outside, on the doors to the extension, cartoon style murals are proposed, depicting the jetty tractor and a small steam loco, and on the wall of the original building, a horse-hauled jetty wagon, and a much larger sign in the style of a cupola roof and centred above the roof gable showing the name of the centre. Steam punk was also suggested and if any reader viewed the recent photographs of Steam Punk events in the UK, this could be a real crowd-pulling event.
The 2 ft gauge line through the new extension has been extended, allowing the BEV and wagons to be positioned where they can be easily seen from the museum platform, to which steps have been added giving access to the newly paved path linking to the SALR centre, alongside the recently acquired travelling crane.
SA LRRSA minutes December 2018

NATIONAL RAIL MUSEUM, Port Adelaide
On 10 December 2018 the NRM will celebrate its 30th anniversary of operating at Port Dock. It was opened by the then Premier of SA John Bannon and there were a large number of guests including representatives from Federal, State and Local governments. At the opening *Peronne* made its first official run and it was a major highlight of the day. *Peronne* (3 ft 6 in gauge 0-6-0T Andrew Barclay Sons & Co.) will celebrate its 100th birthday next year.
A 30th birthday celebration was held on 8 December 2018.
Catch Point, December 2018

Back Cover Photos:
Upper: *Mossman Mill Com-Eng 0-6-0DH multi-unit locomotives* Cook *(AL3372 of 1964) and* Ivy *(AL4181 of 1965) at Killaloe on 24 October. Photo: Gregorio Bortolussi*
Lower: *Victoria Mill's Hudswell Clarke 0-6-0* Homebush *(1067 of 1914) in the 4-mile area on its way to Macknade Mill on 8 December. Photo: Luke Horniblow*

Between the late 1800s and the 1950s many of the major dams constructed across Australia were often carried out using a wide variety of tramways using horse, human, steam and diesel power. In this environment, those building the dams displayed much innovation and ingenuity. A series of articles describing the use of tramways in the construction of a number of these dams in Victoria has been prepared and will be published in *Light Railways* in due course.

One such dam was Sugarloaf (now known as Eildon Reservoir) in north-eastern Victoria, the first stage of which was constructed between 1915 and 1932. It impounds the waters of the Goulburn River and tributaries, for irrigation purposes in Northern Victoria. The dam was built at a point where the valley walls are precipitous on one side of the river but with a gently rising river bank the other. Those river flats necessitated the building of a lengthy embankment to dam the entire width of the valley. Central to that wall was the construction of a concrete core wall some 20 metres high. The *Commonwealth Engineer* of 1 October 1922 describes the process:

> In the case of concrete intended for the corewall, after being drawn up the ramp by the winch (from the concrete mixing plant) rakes of trucks are drawn away along the embankment by horses to a movable hoist. The hoist is essentially a gallows with a swinging arm, and is worked by a steam winch. The trucks are brought alongside the hoist, and the truck body is lifted off the undercarriage and raised into the air. The arm then swings around to a position over the forms, the truck is lowered onto the forms and the concrete is tipped into position.

The 2ft-gauge tracks were located inside the tracks for the crane. This is an example of the often Heath Robinson-like ingenuity required on these often very remote sites.

Both photos – State Library of Victoria, image numbers rwg/u619 and rwg/u628