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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 250 August 2016

Contents

Editorial

This edition of *Light Railways* marks a major milestone for the LRRSA – issue number 250. The Society was formed in 1961 and this magazine has been regularly produced since that time to the point where we now have 250 editions. The actual magazine has evolved over time from a one-page sheet to the high quality magazine that we now receive six times a year.

Over the 55 years of its existence, the magazine has had a relatively small number of editors, support staff and contributors, which is testament to the dedication and commitment of the volunteers producing it.

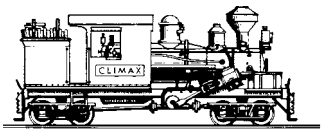
When one scans through all of the previous editions one cannot help but be impressed by the extent and coverage of the topics in the magazine. What we now have is an incredible record of light railway development in Australia since the first railways were built in the mid 1820s. This forms an invaluable research resource for future generations of those interested in light railway history.

Whilst we have come this far, and recorded this much light railway history, there is still much to be done. With a vast number of historical records now on line or readily available through public record offices in each state, and Trove providing access to digitized newspaper collections, access to our history has never been easier. We have a large amount of material on hand ready to publish, but we need more to keep the magazine going into the future.

To mark the occasion, this edition of *Light Railways* is a special 48-page version that includes a wide variety of subjects and geographical locations – we hope you enjoy it.

Richard Warwick

Front Cover: *Graeme Belbin's Baldwin 0-4-2T 1* Fairymead *(10533 of 1889) at Lake Macquarie Light Rail, Toronto (NSW), on 27 April 2008. The locomotive was despatched from Philadelphia in December 1889 and was number 28 of Baldwin's Class 6-8-C. The customer was A H & E Young of Fairymead sugar mill near Bundaberg and this was the first locomotive used on their 2 ft gauge lines. Photo: John Browning*



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.

Light Railways is the official publication of the Society. Material submitted is subject to editing, and publication is at the discretion of the Editor.

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.

The Baldwin locomotive, at a log landing on the Comet Mill log tramway in 1898. Although showing the signs of 13 years of industrial use, at this time the engine still had most of its fittings. Of note is the lack of safety equipment in use by the workers and absence of protection for the engine crew from any excursions by the following logs. Photo: Australian Seasoned Timber Company album, Wandong History Group Inc.

No one was to blame

Death and injury in Victoria's Plenty Ranges in the tramway era.

by Colin Harvey

On the first day of March 1926 Thomas Dunn farewelled his son, John, at the Spencer Street Railway Station on the 6.30 am Albury train. John Dunn had been successful in gaining a position as a 'puller out' at Jack Harper's sawmill in the heart of the Mount Disappointment forest, 50 kilometres north of Melbourne. This was his first day on the job.

Alighting at Wandong station, Dunn met his new employer and joined some of his future workmates for the 14-kilometre tram journey to the mill. The morning tram departed at 9 am and, on this day, consisted of several four-wheel bogies drawn by five horses. Dunn and sawmill hand Henry Meredith found a comfortable seat—a bag of oats on the rear bogie.

The first part of the journey was east from Wandong township along the Dry Creek valley. About a quarter of a mile out the rear bogie derailed throwing Dunn off. Unfortunately, the derailment occurred just as the tram was crossing a bridge. Dunn fell about 12 feet to the hard ground below; landing on his left shoulder and the side of his head.

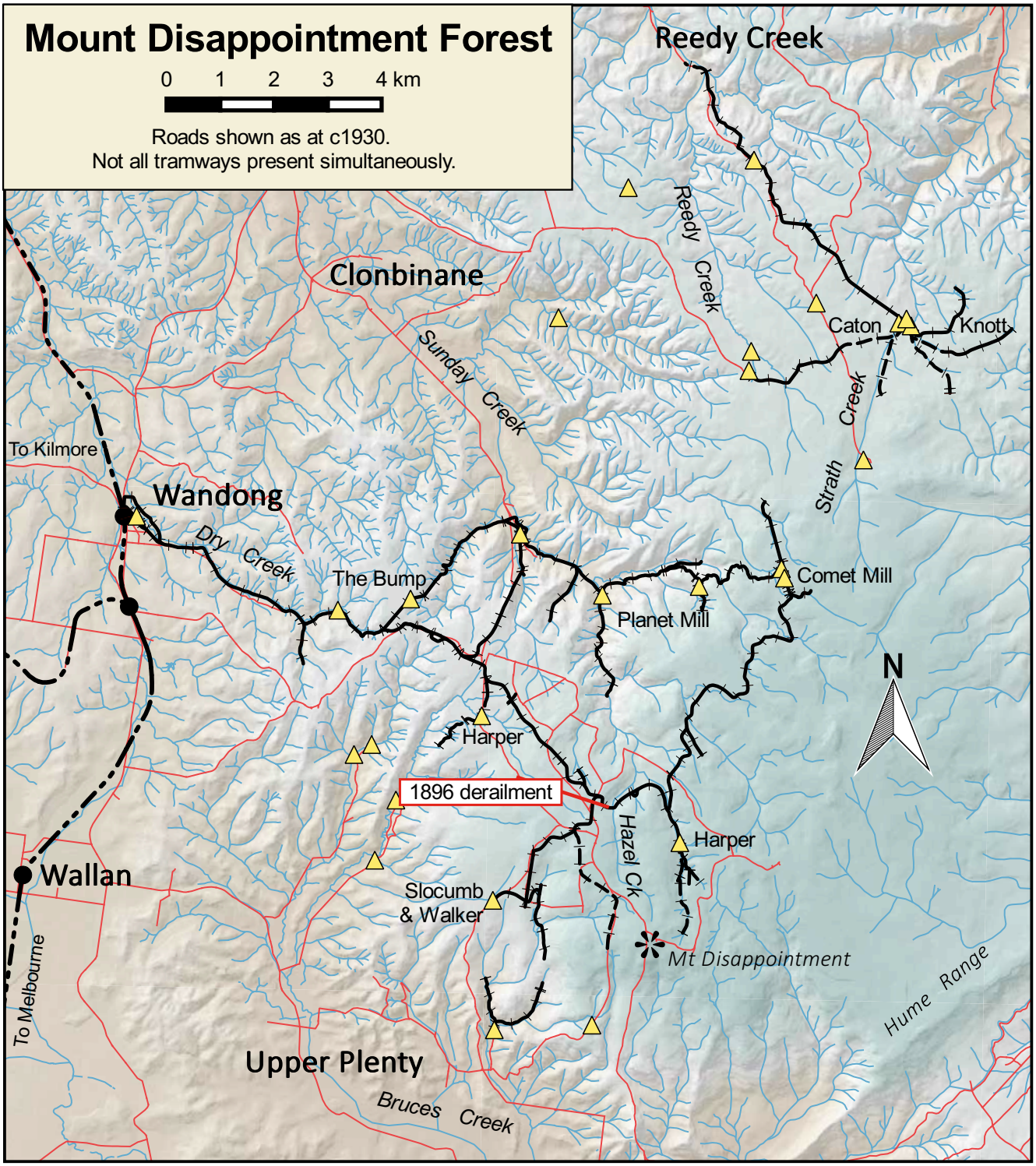
Immediate arrangements were made to stretcher the unconscious man to the Wandong Hotel and Dr Brown was summoned from Kilmore, 12 kilometres away. The doctor concluded the victim had sustained a fractured skull and ordered him to be conveyed to the Kilmore hospital; which was done by means of Ford truck. At 9.00 pm the still-unconscious man died.[1]

The forest has always been one of the most dangerous places in which to earn a living; but John Dunn was particularly unlucky.

The forest

In the early days of European settlement, the main forest industry in the Plenty Ranges was timber splitting. Sawmills were located within the forest from the 1850s until 1941, increasingly after the opening of the railway to Seymour in 1872 and especially after the relaxation of cutting restrictions near the former Yan Yean Reservoir catchment from 1885. Tramways, almost all 3 ft 6 in. gauge, were used, mainly in the larger operations, from 1884 until the 1940s.

Much of the Mount Disappointment forest is on a rocky plateau intersected by deep gullies. Not only did the topography make logging and tramway operations difficult, the arduous access meant that sawmills had to be relatively self-sufficient communities. In the case of Comet Mill the population exceeded 150. The tramways from mill to railhead were, of necessity, used by all and sundry and, when combined with steep grades and tight curves, were always a potential source of accidents to both



humans and animals. Apart from the hazards peculiar to the sawmilling trade, such as sharp axes, spinning saws and falling trees, the usual bush hazards of fire, snakebite, et cetera were ever present and shared by the mill employees' families.

Major accidents that were reported in newspapers have been included in the table accompanying this article. What constituted a newsworthy accident depended on the victim. A sawmill worker losing a fingertip would not rate a mention but the Minister of Lands falling off his horse was a source of copy if not sympathy. Some things never change!

Tramway accidents

Apart from John Dunn's aforementioned accident, two other fatal accidents, and several causing serious injury, are recorded that directly relate to tramway operations. Loading and unloading trucks were also prolific sources of significant injury.

The year 1896 was a particularly bad one for accidents with two fatal tramway accidents occurring only 29 days apart; both on the Australian Seasoned Timber Company's tramway. On the afternoon of 29 May, Walter Murray was the driver of the Baldwin 0-4-0ST locomotive (B/N 7556 of 1885) on the log tramway feeding the Comet Mill. After shunting some empty trucks into a siding about four miles from the mill,[2] the pointsman, Donald Parker, reset the points for the main line so that the engine could be attached to some loaded trucks. The engine steamed up the 1-in-30 grade at what all the witnesses described as an unusually high speed, and collided heavily with the logs on the first truck. It seems to have been the usual practice to run loaded trains funnel first so the flimsy wooden cab offered little protection for the driver. The force

of the collision fractured a steam pipe and the driver was seriously injured and thrown under the loco.

Murray was extricated and placed on a truck, conveyed to Comet Mill and then to Wandong, where he arrived about five hours after the collision. He died an hour later from injuries that included compound fracture of the leg, burns and probably internal injuries (there was no medical examination). The magisterial inquiry determined that the death was accidental and 'due to the deceased solely in not allowing himself sufficient time to control the engine'. At the time of the collision two women from Comet Mill were also in the cab, at Murray's invitation, and one might suspect that this could provide some explanation as to the unusually flamboyant driving and lack of attention.[3]

The second fatal tramway accident occurred on the evening of 27 June when four loaded timber trucks, coupled together, were being coasted down the Dry Creek valley from the Bump towards Wandong. The set of trucks had two brakemen, Harry Sims and Martin Ginter, each in charge of two trucks. After about a mile and a half the brake on the third truck failed. Ginter immediately jumped off but Sims hesitated while the trucks gathered speed. He fell under the wheels suffering major injuries to a leg and arm. An empty truck was obtained from the Bump and the injured man conveyed to the Wandong station, presumably with the intention of sending him to Melbourne, but he died a few minutes after arriving.[4]

Near misses

In addition to accidents, newspapers reported near-misses, if sufficiently spectacular, and accounts from visitors of the perceived, and undoubtedly real, hazards of tramway travel. The relatively heavily trafficked line of the Australian Seasoned Timber Company had tight curves and grades as steep as 1 in 10, worked by horse and gravitation; a combination certain to excite visitors.[5] The following extracts from a report on a visit by the Kilmore Waterworks Trust Commissioners are typical:

> …the party journeyed pleasantly along the upgrade for 4½ miles, until the famous "Bump" was reached. Here the horses were dispensed with, and the car coupled on to a steel cable, where there is a steep drop of some hundreds of feet, mainly over a trellised bridge-work, which makes one shudder to look down and contemplate the awful possibilities of a breakage of the cable, or any slight accident, the inevitable ending of which would be a fearful death to all concerned. The more nervous of the party had their hearts in their mouths until the car reached the level position in safety, and many a fervent prayer was silently uttered during the perilous descent. It proved a most thrilling experience for a novice to go through. The grade is about 1 in 3, but every precaution is exercised, and very few accidents, it is happy to relate, ever occur. It is said that a short time back, a loaded truck of furniture broke away, and up to this day, nothing has been found of the truck or a vestige of the furniture, the whole being thrown into one of the deep and picturesque ravines near the line. Leaving the cable, the party has another exciting ride to go through. Again the services of horse flesh are dispensed with, and the party is left to the mercy of the driver, Mr William Patton, who takes charge of them, and with a hand brake, guides his load of living freight over declivities and around abnormally sharp curves at a pace that strikes terror into the hearts of the stoutest of the commissioners…
>
> Passing over a defective rail [while travelling on the log tramway], the car left the rails, but a few minutes only sufficed to put it back…
>
> Most of the journey home to Wandong is by gravitation, and consequently takes less time to fall 1000 [feet] than to climb it. The much-feared "Bump" is again reached, and the living-freight car is steadily hauled up. The concluding 4½ miles to the terminus is most enjoyable and exciting. With Patton as guide and brakesman, no fear is felt, and the distance is covered, with 14 passengers, in the record time of 15 minutes, minus horses or power of any kind, the fall being sufficient to run the car the whole distance at a pace that is exhilarating as well as spirit-stirring and heart thrilling, and it was no wonder that at the end Mr John Taylor ejaculated "Thank the Lord we are safe at last."[6]

Some participants in the tramway experience were so moved at arriving safely that they expressed their gratitude in tangible form:

> Mr Walter Douglas was presented with a locket, a gift of Mr J H Hoskins of Bendigo [timber merchant and shareholder in the company], who, on his last visit to the Comet, together with his daughters, were coming down the "Bump" on a truck in charge of Mr Douglas, when the break [sic] went wrong but through his pluck and determination managed to stop the truck in time to prevent what no doubt would have been a serious accident.[7]

Perhaps the most spectacular tramway accident occurred on 27 August 1900. A log train, headed by the Baldwin locomotive, left the forest depot for Comet Mill at 6 am. The morning was frosty and the rails icy. Despite the engine and truck brakes being applied, the train gathered speed on the long descent to the Hazel Creek bridge. The driver and brakeman made the sensible decision to 'abandon ship' before the speed became too great. Left to its own devices the train continued for another mile over steepening grades and sharpening curves until it left the rails.[8] Ploughing on, pushed by the logs behind, the train reached a six-feet-deep cutting, where the engine ran up the bank and rolled over so that the wheels were in the air. Not surprisingly the safety valve was knocked off and 'the smoke box, dome cab and other parts…very much shattered'.[9]

The cutting near Hazel Creek where the runaway train derailed with part of the locomotive sand dome in the foreground. Photographed 109 years after the event. *Photo: Colin Harvey, August 2009*

Although not strictly a tramway accident, one incident had the effect of putting Slocumb and Walker's log tramway permanently out of operation. On Monday 23 May 1904 the employees warmed themselves around the boiler of the mill on Yarra Creek while engine driver Charles Patton finished his breakfast after raising steam. Three minutes before the seven o'clock starting time, just after the men moved off, the boiler exploded, sending fragments flying past the workers and completely destroying the mill. It was surmised that the safety valve had been screwed down too tightly but physical evidence of the boiler remains, still *in situ*, suggests that water shortage or structural fault may have been involved.[10]

Observations

Attitudes to safety have changed completely since the nineteenth century. Prime responsibility for safety in the tramway era was universally considered to lie with the individual. Employers were not legally required to provide a safe working environment although they were expected to encourage workers to act in a 'safe' manner.

Minimal safety equipment was available: no helmets, goggles or adequate machine guards. Safety inspections were rare. For example, in Victoria it was not until 1911 that rural sawmill boilers were required to be officially inspected and registered. Formal training and accreditation were limited to specialist roles such as engine drivers, and these requirements were sometimes ignored.[11]

Should an accident occur, first-aid knowledge was limited but fellow workers did what they could. The victim was then faced with an arduous, and usually painful, journey to what medical assistance was available; Kilmore or Melbourne being the only options from Mt Disappointment. Unlike most bush mills, a telephone was available at the Comet mill from 1892 and, with luck, the doctor could be summoned from Kilmore and met in Wandong. Lack of modern antibiotics meant that even a relatively minor injury could be fatal. The isolation also hindered preventative medicine. A Comet resident complained in 1893 that 'we are expected to go all the way to Kilmore or Melbourne to get our children vaccinated, and that proves a very costly item to us poor working men'.[12] Nineteenth-century rural residents did, however, enjoy a consistently lower rate of death from infectious diseases than occurred in insanitary urban areas; infant mortality rates in particular being of the order of 30 per cent lower.[13]

Society Secretary Phil Rickard examining a section of the boiler that exploded at Slocumb & Walkers mill on 23 May 1904 – still lying where it landed. Photo: Colin Harvey, September 2009

Stuart Thyer clears the moss from the 'very much shattered' cast-iron base of the locomotive sand dome. Photo: Colin Harvey, August 2009

In the cases of sudden death an inquest or magisterial inquiry was usually held to determine the cause; frequently under the auspices of the local Justice of the Peace. These inquiries were concerned only with determining the proximate cause of death and not of finding the underlying reasons and recommending preventative measures. Even determining the precise injuries resulting in death was difficult in the absence of *post mortem*, or any, medical examination, and this was not usually thought particularly relevant to the inquiry anyway. In any case, there may not have been a great desire by the presiding officer to criticise other members of the local community. In the case of the death of William Sims, bush foreman at Comet Mill, the inquiry was held by R A Robertson, JP, who was the manager, and a major shareholder, of the company that owned the mill!

By 1900 there were signs that attitudes were starting to change. At the conclusion of the inquiry into a second death in the Comet Mill log yard, Mr Taylor, JP, observed that 'it would be well for the police to make enquiries to ascertain if proper precautions were taken to prevent them, and whether special instructions were given to the men employed'.[14]

Before legislated workers compensation was introduced in the first decade of the twentieth century, friendly societies were formed to assist members and families in cases of illness or accident. At Mt Disappointment, the employees of the Australian Seasoned Timber Company each subscribed one shilling a month to the Kilmore Hospital and, in 1895, formed the 'Comet Benefit Society'.[15]

Around the start of the twentieth century legislation was passed providing for means-tested age pensions (allowing the possibility of retirement to those previously compelled to work into old age),[16] recognising industry-based unions (the Federated

Sawmilling-related accidents – Mt Disappointment 1884–1926

Date	Location	Victim	Description
Oct 1884	Wandong	Joseph Quarry	'Accidental death' from fractured spine struck by a tree when felling timber.
Nov 1884	Wandong	Patrick Lee and John Murphy	Severe injuries when struck by bough of tree while constructing a bridge. (Probably on the outlet tramway from the Comet Mill).
Jan 1889	Comet Mill	Samuel Watkins	Three fingers cut off by circular saw
Jan 1889	Comet Mill	Robert Allison James Taylor	Crushed by log in log yard. Allison killed, Taylor severe injuries. (Allison was the oldest settler in the area and lived near the mill)
Jan 1891	Caton's Mill	Unknown	Thumb has severed by saw.
Aug 1892	Comet Mill	Towers	Broken collar bone and internal injuries when crushed by a log.
Oct 1891	Wandong	Brown	Severely burnt by a fire at Australian Seasoned Timber Company store.
Feb 1893	Wandong	Thomas Wakeham	Drowned in seasoning-works dam
Mar 1893	Wandong	Goldsack (foreman engineer)	Foot crushed by truck at seasoning works
Aug 1893	Comet Mill	Williams Sims	'Accidental death' after being struck on head by falling limb.
Nov 1893	Wandong	Charles Patton (aged 5)	Right arm amputated after being crushed by truck wheel.
Jan 1894	Planet Mill	Unknown	Hands badly cut
Jan 1894	Planet Mill	Unknown	Feet crushed
May? 1894	Bump Incline	Walter Douglas	Serious concussion from a fall from a truck crossing a bridge (The victim was later killed in a sawmill accident in Western Australia)
Feb 1895	Unknown	R Best (Minister of Lands)	Strained back when horse became entangled in a fallen tree.
Feb 1895	Comet Mill log tram	W Patton	Leg broken when loading a log
May 1896	Comet Mill log tram	Walter Murray (loco. driver)	'Accidental death' when crushed in collision between loco and loaded trucks.
Jun 1896	Bump - Wandong	Harry Sims	'Accidental death' when run over by runaway trucks.
Aug 1896	Comet Mill	Holt	Broken leg due to timber falling from a truck.
Jan 1897	Wandong Station	John Walker	Broken leg due to timber falling from a truck.
Jul 1897	Comet Mill	Butler	Broken leg due to flitch falling on him.
Oct 1898	Comet Mill	A Mackay (mill manager)	Blood poisoning after being struck by rebounding timber.
Apr 1898	Bump - Wandong	Smith (trespasser)	Broken leg from falling off a 'borrowed' truck.
Apr 1889	Wandong	Willie Douglas	Thumb amputated after being caught between sling and load of timber when loading railway trucks
Mar 1900	Comet Mill log tram	William Morris (loco. driver)	Leg severely lacerated when log penetrated cab after loco derailed.
Apr 1900	Comet Mill	Charles Walther	'Accidental death' when crushed by log when loading a truck in log yard.
Jun 1902	Wandong	John Martin	Compound fracture of the thigh through a flitch of timber rolling on him.
Jul 1913	Reedy Creek sawmill	Jas Tait	One toe taken off and another one badly cut when axe slipped while felling timber.
Apr 1914	Knott's tram, Reedy Creek	Seven employees	One sustained a broken leg the others bruising when truck derailed.
Aug 1917	Harper's Mill	W Davern	Struck on head by 8in x 8in x 16ft timber
Mar 1926	Harper's tram, Wandong	John Dunn	'Accidental death' from a fractured skull when a truck derailed.
Mar 1926	Harper's Mill	S Harper	Severely lacerated arm when caught in belting and dragged into the machine.

Saw Mill Timber Yard & General Wood Workers Employees' Association was federally registered in 1905) and creating courts for setting and enforcing minimum employment standards.[17] Limited paid sick leave was introduced in industrial awards from 1922 and became general in the 1930s.The progressive reduction in working hours that occurred during the twentieth century no doubt helped reduce fatigue-related accidents.

The biggest changes to work safety have resulted from the creation of a legal obligation of employers to provide a safe working environment for employees, including ensuring workers are properly trained in safety procedures.

Mechanical falling and snigging and large automated sawmills have removed the present-day timber worker from many of the hazards associated with producing, transporting and processing logs – although some new hazards from powered and mobile equipment have appeared. Processing facilities tend to be located in towns with good access to medical assistance and even isolated logging locations can be reached relatively quickly with modern communications, reasonable roads and, if necessary, evacuation by helicopter. In many cases of death in the tramway era, death occurred some hours after the accident. It seems reasonable to suppose that similar injuries today would often not be fatal.

Recent safety statistics for native-forest harvesting indicate that, on average, there are about four 'lost-time' injuries per million cubic metres of logs harvested, however transporting logs is about twice as dangerous as harvesting them. Logs are now transported long distances on public roads, which exposes the general public to hazards unknown in the nineteenth century. Trucks loaded in Victorian native forests travel about 5.7 million kilometres per year, and the same distance empty. Despite modern equipment, processing timber is the most hazardous part of the current supply chain: about double the lost-time injury rate of harvesting and transport.[18]

The idea of the public casually travelling on timber tramways or visiting active logging operations is now inconceivable. In Victoria these days it is illegal for the public to be within 150 metres of any area where logging is being undertaken, or even to enter a forest under certain weather conditions.

In general, things really are better than the 'good old days' even if not always as exciting.

Acknowledgements

Thanks are due to the staff of Heritage Victoria for permitting an archaeological survey of the Mt Disappointment State Forest after the 2009 bushfire and to the members of the LRRSA survey group that organised and carried it out. In particular Phil Rickard spent many days in company with the author trudging up and down mountains to accurately locate and record often obscure remains.

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Looking towards the town, a 1912 view from a recently docked paddle steamer. Rueben Coppins, long-time wharfinger, is at far left with a flat truck loaded with luggage and mail bags, while Nuggett*, the jetty horse, looks over his shoulder, awaiting a summons. Several groups of passengers head along the jetty, probably destined for the railway station to continue their journey, via the train that is sitting at the platform. PS* Murray *is at right with the 3-masted* Ada & Clara *opposite.* *Photo: SLSA PRG 280/1/14/593*

Milang – its jetty and tramways

by Phil Rickard

Some seventy kilometres south-east of Adelaide and situated on a slight elevation above the otherwise flat western shores of Lake Alexandrina, lies the town of Milang, founded in 1854. At that time the nearest town in the Adelaide direction was Strathalbyn, about twenty kilometres distant. The first settlement of the district had occurred during the early 1840s when pastoralists and settlers moved onto the plains between Strathalbyn and the lake shores. Ten years later it was towards the lake that the local settlers started looking for a solution to their various transport problems.

In 1854 the river trade was in its infancy. The previous year construction started on a horse-drawn tramway, between Goolwa wharf, near the Murray mouth, and the ocean at Port Elliot where a jetty was built and breakwater commenced. Around the same time it was felt that a settlement on Lake Alexandrina, and nearer to Strathalbyn, would be beneficial and a survey was ordered. In November 1853 the western shore of the lake was inspected and a site selected. It was located close to end of the existing track between Strathalbyn and the lake and occupies Tod's Hill, a small but prominent elevation above the flat surrounding shoreline.

A new town and jetty

The first allotments were laid out in December 1853, a government town was gazetted in June 1854 and the first lots were auctioned in mid-July.[1] In twelve months the town had grown to over one hundred persons and calls started for a jetty to facilitate trade. In October 1854, following adoption of a motion by Dr John Rankine, MLC, the South Australian Legislative Council requested that the Governor place £1000 on the forward Estimates for a jetty and 'road or tramway across the swamp' in order to reach it.[2] A year later, in November 1855, £2000 was included in the government's forward Estimates for 'Milang Jetty and approaches'[3] and tenders were called.[4] The contract was awarded to McClure and Hinckley, and preliminary work may well have commenced before Christmas; early in the new year the contractors were seeking bullock waggons to carry materials to the site. Included in the contractor's other works around the same time were the temporary, wooden City Bridge over the Torrens River, and the Guichen Bay (Robe) jetty.

At the time, water transport was easily the most economic means of shifting goods. Milang residents felt sure that the growing river wool trade would head for their jetty and then overland to Port Adelaide. In addition they hoped that the heavy mineral ores from the mines at Strathalbyn would head to Milang, to be moved by water to Goolwa then tram to Port Elliot for export. The barrier of the Mount Lofty ranges, between the river basin and Adelaide was a determining factor in all this – wool (being of much lesser density than mineral ore) could be moved overland by large drays whereas the economics of moving ore over the mountains was tenuous. The less it moved overland the better so a nearby port could be its saviour.

Jetty construction

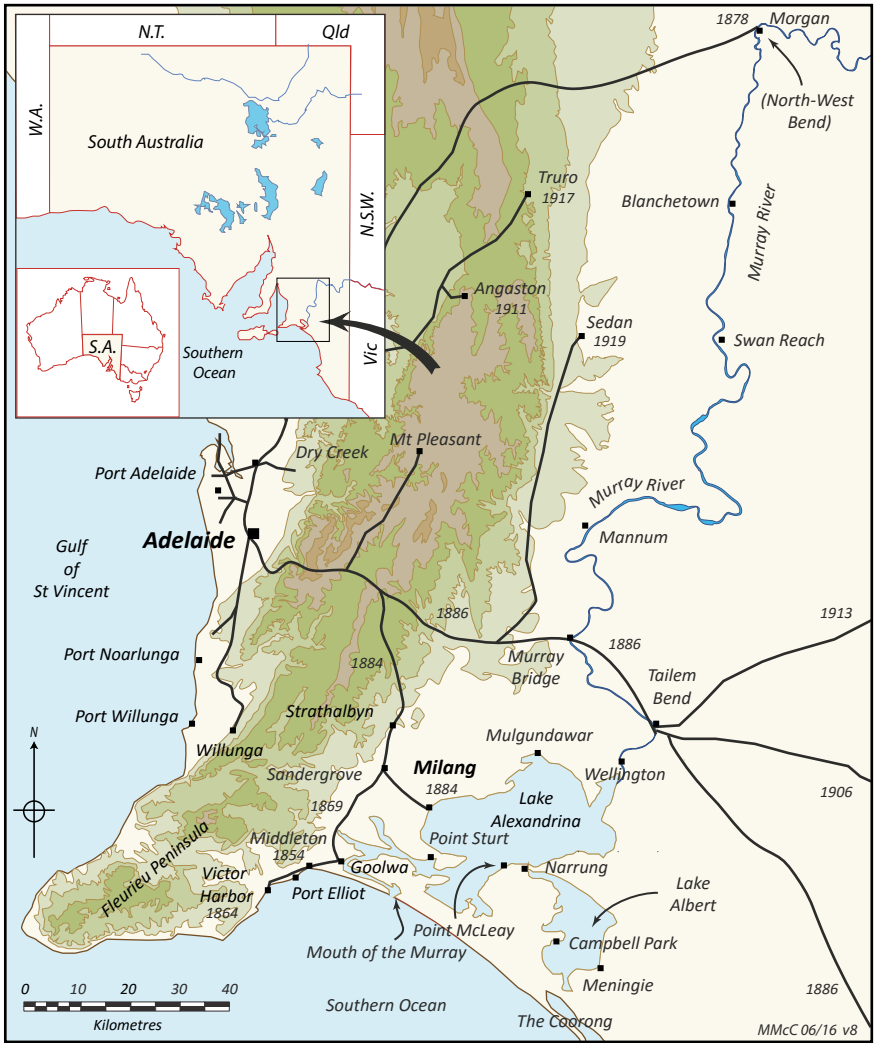
In early January 1856, the *Adelaide Register*, reporting on the rising importance of Milang, noted that the town was in an elevated position, on a rocky rise, but;

> The waters of the lake ... do not reach the foot of the cliff, a marshy flat six or seven hundred feet long intervening ... Across this low ground an embankment is to be made, terminating in a

jetty, with four feet of water ... sufficient of the class of vessels navigating the river and the lake ... A tramway will be laid down on this causeway, which, turning sharp around at a right angle on reaching the hill, will continue up the face of the cliff till it terminates near the foot of the southern slope of the hill.[5]

Bear in mind that 'cliff' and 'hill' are relative terms in an otherwise flat landscape. The top of Tod's Hill is fully 13 metres above a samphire swamp that extended out to the shoreline. The first pile for the jetty was driven on 15 January 1856 under the watchful eye of the government's Superintendent of Works, Mr Charles Brewer.[6]

In late February the three commissioners from the government's recently-formed Breakwater and Jetty Commission[7] visited Milang and, with the works being in an early state of construction, did not find much to displease them. In relation to the tramway, they noted they had: '... no opportunity of forming any conclusive opinion of the manner in which the embankment and tramway will be executed and finished, as it was ... in an incomplete state, but ... there appears to be every probability of its being a most credible and useful portion of the undertaking.' All but one jetty pile had been driven and some of the other heavy timbers had been placed – not bad for only five weeks work.[8]



In May the government advised the Bremer District Council that it would be in charge of the jetty when completed.[9] However, at the start of June, the Bremer DC was partitioned, the breakaway part forming the new Alexandrina District Council. The original advice was rescinded and Alexandrina DC was advised that it would have control of the jetty when completed.[10] By early June 1856, the tramway was said to be almost complete and just a small amount of planking was required together with a crane, which arrived towards the end of June.[11] It seems there had been a delay of several months awaiting some necessary timbers and the tramway plant from Adelaide.[12] The actual opening date is elusive however both jetty and tramway appear to have been in use by July even if not fully completed.[13]

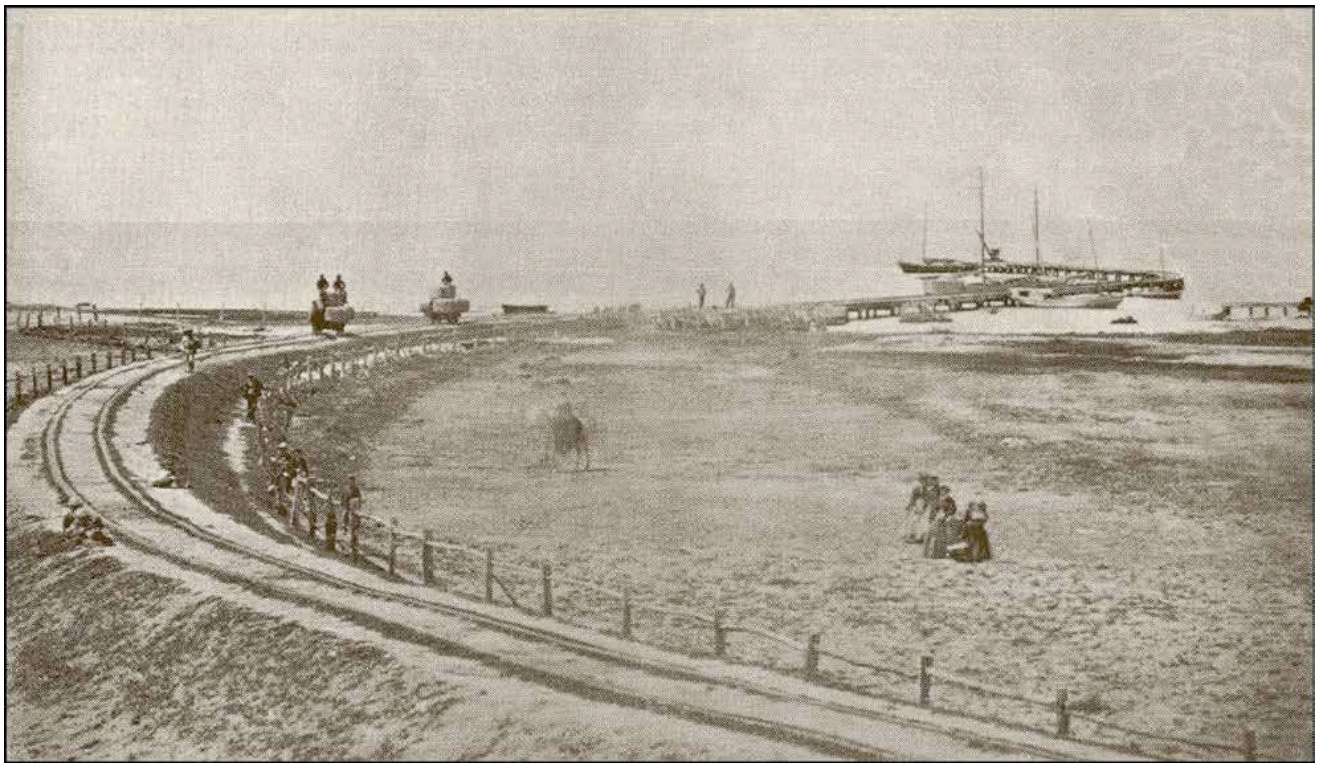
The jetty, as completed, was some 220ft-long with between four and five feet of water at the outer end, though that could vary according to the state of the Murray. With the jetty now under the council's control, the tram and jetty were put out for leasing annually – a Mr Alexander Kemp being the lessee for the first few years, £27 10s being paid in 1860.[14]

Early tramways and jetty extension

It seems that, as built, the tramway's gauge was three feet – an 1867 report in the *Register* of 'A Pleasure Trip on the Lakes' states that the party involved, after viewing the 300 tons of wheat awaiting shipment: " ... marched up the jetty, duly admired the three feet gauge tramway which it sustained and embarked on board the *Telegraph*." Ordinarily, one would treat such a statement with caution, except that in this case the pleasure party included the Commissioner of Public Works and a number of eminent persons including Albert Henry Landseer, by that time Milang's foremost shipping agent and merchant.[15] Another report advises that the rails were of half-inch plate iron from which we can infer the tramway as built, was of long iron straps affixed on the top of wooden rails, similar to the early Fleurieu Peninsula jetties along the coast south of Adelaide.[16]

By September 1856, with the jetty complete, Albert Landseer, sought authority from the Alexandrina DC to construct a tramway from his warehouse, across Daranda Terrace, to connect with the jetty tramway.[17] Within a year of the jetty's completion silting was said to be evident; locally it was felt that the jetty was incorrectly sited – a common theme among outport jetties in the 1850s. By April 1857, the council was requesting the government to extend the jetty into deeper water. The estimated cost was £1000 and in December 1858 £700 was placed on the Estimates for such extension provided the locals found the other £300.[18]

The following year the Colonial Architect called for tenders for the works and in July 1859, the contract was awarded to William Masson, of Dry Creek, at £823.[19] Masson had an earlier association with Milang – a couple of years previously he had constructed a 50-foot river steamer, the *Mosquito*, at Dry Creek and transported it overland by waggon, hauled by ten pairs of bullocks, to Milang for launching.[20] During August 1857, Masson sailed the *Mosquito*, partly-owned by Albert Landseer, upstream and it became the first steamer to enter the Murrumbidgee (at the start of September), to finally arrive at Balranald to deliver supplies. Truly an epic voyage along the snag-filled rivers.[21]



On the 17th October 1867, a delegation from Milang met the Commissioner of Public Works and asked for the jetty to be widened and a double-track tramway laid. To support their claim Albert Landseer displayed a photograph; this may well be that photo. It depicts the jetty as it appeared between 1859 and 1869, with a very uneven narrow-gauge tramway with iron strap affixed on top of wooden rails. The area where the ladies are standing was the scene of two huge corroborees at the start of March 1870, with hundreds of aborigines coming from surrounding areas. Watched by Milang locals from Tod's Hill, the night scene was described as 'wild and picturesque in the extreme'. Photo: Milang and District Historical Soc.

Work on the jetty extension started promptly and was completed by the end of November. The extension – 490 feet long, curving to the north from the existing jetty head – was officially opened with some local fanfare on 2 December 1859. The first 400-feet was eight feet wide whilst the outer ninety feet was some 16 ft 6 in in width. The single line of 3 ft gauge tramway was also extended, dividing into two tracks at the outer, wider section. Total jetty length was now 711 feet and reached water that was between 5 ft 6 in and 6 ft 6 in in depth, finally obviating the need to lighter goods to some of the paddle steamers. In the event the works came in under budget and it seems local ratepayers only had to subscribe £200.[22]

By this time control of the jetty was back with the Bremer DC. At the start of 1859 the north-eastern parts of Alexandrina,[23] which included the western parts of Milang, had been excised from Alexandrina DC and returned to Bremer DC – and with it, importantly, went control of the jetty.[24] It was an unfortunate fact that the boundary between the Bremer and Alexandrina hundreds [a subdivision of a county] went diagonally through Milang (the same boundary as that used for the district councils – see diagram) and was the cause of some ire among settlers and residents at the time – "Why should we pay for roads that only they use."

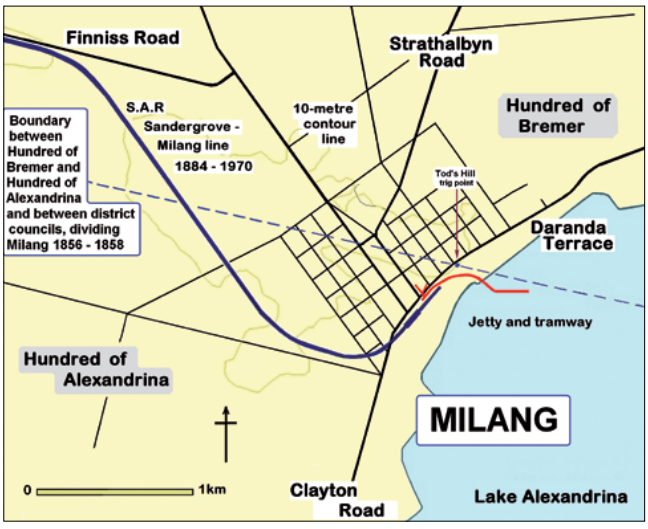
From 1861 onwards William Peter Dunk was the lessee of the jetty and tramway – in 1868 Dunk paid £21 to the Bremer DC for the lease. A couple of years later he tendered £63 and lost – but only for a short while as the winning bidder failed the conditions. The increase in lease payment is indicative of the amount of trade now coming through Milang. As Dunk was charging 4d per bale for tramming from vessel to store, it would seem to have been a 'good deal' for him.[25] The Dunk family name was to be associated with the Milang jetty and shipping trade for over seventy years.

Gauge conversion and duplication

The 1860s witnessed a huge increase in Milang's river trade, such that in October 1867 a deputation led by Mr J Rankine, MP, and including Albert Landseer and several Bremer district councillors travelled to Adelaide and waited upon the Commissioner of Public Works to press the case for duplication of the jetty tramway, one Adelaide paper noting the main complaints thus:

> When the tramway was laid down such a heavy traffic was not anticipated, and the rails were not of a proper description, being merely of plate-iron. The rails were also becoming loosened, and the tramway was otherwise out of repair. A single line of rails was also insufficient, and ... a double line of rails should be laid and the jetty increased in width.[26]

In early 1868, the Engineer-in-Chief visited Milang for a first-hand inspection and later that year funds of £1300 were



placed on the Estimates for the work. In August 1869 the contract for widening the jetty and embankment, laying down two lines of tramway and constructing several sidings was awarded to Rowland Nutt of Strathalbyn for £870.[27] Nutt was an experienced contractor whose previous local works included a bridge at New Hamburg, the small Clayton jetty and a cattle punt at Thomson's to cross the River Murray. In 1868 Nutt had a sawmill on the estate of Thomas Graham JP, at Blackwood, 4½ miles north of Strathalbyn, where he was cutting redgum to fulfil his contract to supply 25,000 sleepers, and the decking of the Currency Creek viaduct, on the 5 ft 3 in gauge Strathalbyn and Middleton Tramway, then in course of construction. Almost certainly Nutt used this mill in connection with his Milang jetty contract.

Unfortunately, work on the jetty had hardly started in early September before it stopped and another delegation headed to Adelaide to ascertain the reason. The Commissioner of Public Works claimed no knowledge and called in the Engineer-in-Chief who stated that no order to cease work had been issued however it was soon ascertained that all costings had been erroneously done on the basis that £1500 was available. In consequence it was decided to widen the jetty and approach embankment as planned but only lay double 3 ft 6 in gauge tracks on part of the jetty – the embankment to await (hopefully) further funding. The Engineer-in-Chief also advised that new rails for the new tramway were costing £14 per ton, delivered at Milang. Clearly there was to be no more iron strap rail on wooden baulks![28] By mid-November the two tracks had been laid on the jetty. By years end, Nutt's contract was finished; shipping having continued despite the disruption during the works. The council graciously allowed its lessee (W P Dunk) a reduction in rent as compensation for the inconveniences caused.

The 1870s – Milang's heyday

The 1870s were Milang's heydays. The following July snippet from the *Southern Argus* gives some idea of trade at the port:

> The Milang Jetty presents quite a lively appearance at present, no less than 4 steamers loading at once, and to judge by the quantity of stuff that has passed along the Tramway this last few days, they must have nearly all full cargoes.[29]

As well as ushering in a decade of increased trade, 1870 also brought the first of another recurring test for the jetty and tramway – floods. Very heavy rains anywhere in the Murray/Darling river basin could lead to high water levels in the lakes if the Murray Mouth couldn't cope with the volume of water. Above average water levels also enabled small trading vessels to reach as far as Salt Creek in the Coorong.

At the end of August 1870, Mr Dunk reported to council that the high lake level was damaging the tramway embankment across the swamp, which had effectively become part of the lake. £5 was spent in remedial works – presumably several dozen yards of stone. Matters continued to worsen during September and further works were carried out – by mid-October £27 13s 2d had been expended and still the water was rising. By the end of October the *Register* noted "The pier at Milang is nearly covered, the water having reached to the rails, and the flood often sweeping over the jetty and approaches."[30] In early November several councillors inspected the tramway and promptly ordered more stone for the embankment – 100 yards at 1s 7d per yard.[31] It seems a succession of high water levels over the next several months were cause for concern – in March 1871 council reimbursed Mr Dunk over £37 for continual jetty and tramway repairs.

In June 1871 a deputation from Milang went to Adelaide and asked the Commissioner of Public Works for a new 4-ton crane as the existing jetty crane was not up to the task and in poor repair.[32]

Albert Landseer's various buildings along Daranda Terrace, Milang. From the left, his warehouse, general store and flour mill. Landseer's tramway branched from the jetty tramway yard via a wagon turntable (to the right of the photographer), and is seen crossing the road to enter the warehouse through the arched doorway. Internally, it extended beyond, into his bonded store. The four-story flour mill received a tramway connection in 1884 and its curving track can also be seen. The flour mill opened in February 1871, costing around £2000 and was powered by a 12hp beam engine. The company name on the general store indicates a post-1905 date for the photo. Unfortunately all these buildings were demolished in the 1960s. *Photo: State Library of South Australia (SLSA) B 27584/86*

Adelaide Observer, 1 February 1868

MILANG SHIPPING.

ARRIVED.

January 24—QUEEN, steamer, 80 tons, G. Pickhills, master, from Goolwa.

SAILED.

January 28 - QUEEN, steamer, 80 tons, G. Pickhills, master. for Wentworth. Passengers—Mrs. Williams, two children, and servant, Mrs. and Miss Gunn and servant, Miss Williams, Mrs. Squires, two children, and servant, Messrs. Quin and Allan, and Mrs. Burt and child, in the cabin; and one in the steerage. Cargo—198 cases and 4 qr.-casks spirits, 73 bags sugar, 20 boxes soap, 20 do. candles, 20 do. tea, 20 half-chests do., 12 boxes raisins, 5 cases bitters, 6 do. syrups, 37 pkgs. timber, 2 trunks boots, 1 case matches, 28 sash-weights, G. S. Read; 10 bags sugar, 2 do. rice, 1 case coffee, 2 chests tea, 1 pkg. hops, 2 do. drugs, 10 do. hardware, 10 cases kerosine, 1 tierce earthenware, 1 bale drapery, 1 case ointment, 9 pkgs. groceries, 4 do. drapery, 2 cases biscuits, 1 cask butter, 23 pkgs. furniture, 1 steam-boiler, A. H. Landseer.

Their pleas were rewarded a few months later when £150 for a new crane and new rails were placed on the Estimates. It seems most likely that the rails were for duplication of the tramway along the embankment. This new crane was finally installed in June 1872[33] and is believed to be the crane now on the jetty and registered as an Historic Monument. One of the crane's heavier tasks was the loading of truck loads of firewood for the paddle steamers. Large firewood stacks were maintained along the town-end of the curving embankment, above flood level, and jetty trucks would be loaded as required and moved to the head-shunt at the outer end of the jetty where the crane was affixed. At an unknown date Dunk obtained a hand-operated rail-mounted crane. It was of wooden construction and was mounted on a heavy tramway truck and could be moved around as required to assist in loading and unloading vessels where ever they were berthed. This piece of rolling stock was still at Milang in the 1930s. Additionally, another fixed crane, thought to be of 1½ ton capacity, was positioned on the loading dock next to Daranda Terrace. When the railway opened the SAR also erected its own crane nearby for trans-shipment purposes.

In 1872, according to the Customs Department, Milang had the largest trade of any South Australian river port. Many paddle steamers servicing the Lower Murray and Darling Rivers (those districts yet to be reached by railways) would tranship at Milang, for overland transport to Port Adelaide by horse and bullock waggons. In 1868 Landseer completed a second, stone warehouse at the back of his existing warehouse and extended his tram into the new, two storey building. The floor of the new warehouse was arranged to be flush with the tram truck floors, the tramway running in a well. Two cranes were installed to facilitate loading and unloading operations.[34] The tramway that ran through the buildings connected to the jetty line via a wagon turntable on the east side of Daranda Terrace.[35] It is presumed that Landseer's tram line was regauged at the same time as the jetty tramway, by late 1869.

MILANG TRAMWAY.

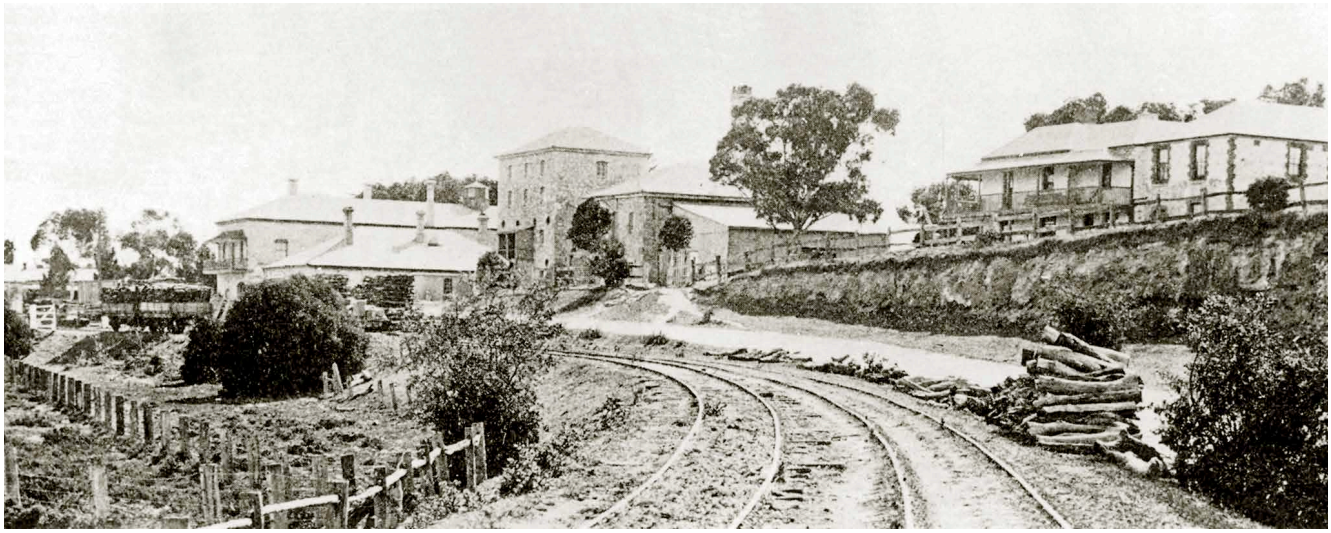
TENDERS will be received at this Office until NOON on FRIDAY, January 24th, 1873, for LEASING the JETTY and TRAMWAY at MILANG for a term of Three Years, from the 1st day of February next. Full particulars may be had on application at this office.

The Council do not bind themselves to accept the highest or any Tender.

W. D. STEPHENSON,
Clerk.

Bremer District Council Office,
January 1st, 1873. 355-7

Around the corner from Landseer's stores were those of Thomas Brakenridge, commenced in mid-1868 and with a view to also obtaining a tramway connection.[36] In October 1869, soon after completion, Brakenridge was granted council permission to put his own tramway across Daranda Terrace.[37] Whether this tramway, which would have been required to run along Luard Street, was ever built is not known. Brakenridge soon disposed of his retail store, instead concentrating on wholesale business and river trade. The following year he purchased the PS *Vesta* and, in 1873, a new paddle steamer – PS *Excelsior*, constructed by the Goolwa Foundry.[38] After three years as a river boat captain, Brakenridge sold his interests and moved to Port Elliot. He died in 1881, at the age of fifty years.



Good views looking up the tramway to Daranda Terrace are few and this is one of the better ones! A couple of SAR 4-wheel open trucks can be seen at left, possibly loaded with firewood. Landseer's various buildings are left of centre. To the right, with the verandah, is the Pier Hotel, the building of which started in 1857. This image originally appeared in the Observer, *Adelaide, 23 November 1907; photographer William Sydney Smith. Photo: A D Lockyer colln. 7-1001-039-192, courtesy National Railway Museum*

View along the jetty from the 'elbow'. Behind the photographer the tramway was a single line to the shore. In this view, thought to date to c.1918, the ps Murray is on right, and ps Jupiter on the left. Nuggett, the long-time jetty horse, is seen at the head of a couple of jetty trucks which are being loaded utilising the rail travelling crane at rear. Nuggett's equally long-time driver, Rueben Coppins is watching proceedings. Lack of wheelhouses may be to ameliorate the effect of cross-winds on the lakes. *Photo: SLSA B 18035*

The wool trade

By the mid-1870s Landseer had installed a steam-powered dumping press for compressing wool bales. 'Dumping' was done in order to save space when wool bales were in storage, and being transported – especially on ships to Britain. Landseer (now the local MP) was reckoned to have the largest private warehouses in the colony, capable of holding about 5000 bales of undumped wool, and was extending his interests to boat building near the jetty.[39] Indeed, so extensive were his warehouses that he had a telephone installed in early 1878, between his office and that of his clerk.[40] Paddle steamers were coming from as far as Bourke, and beyond, bringing wool downstream and returning up river with all manner of goods including flour from Landseer's flour mill.[41] At this time, most of the Murray trade, upstream of the Darling junction, was via Echuca, however the Darling trade was still to Milang or Goolwa. Indeed, the shipments of goods up the river could be quite large; in May 1877 it was reckoned that Landseer alone had shipped around £20,000 worth of merchandise up river in the month.[42]

During the latter half of 1877 deepening works were conducted along the north side of the jetty, from the bend to the outer end, using a spoon barge. The following year contractors Nicol and Oliver's winning tender of £244 6s 9d brought further repairs and widening of the jetty, allowing the double-track tramway to be extended.[43] Later in 1878, with yet further repairs required, the Bremer DC asked the Marine Board for assistance to the value of £600. This it declined to do unless control of the jetty was handed to the Marine Board; the change over occurred in March 1879 by government proclamation.[44]

At its first meeting after acquiring the jetty, the Marine Board discussed the 'novel mode of dealing with jetty receipts' it had inherited.[45] Mr Dunk offered to continue the present lease arrangement under which he received the jetty tolls in return for a lease payment to the council. His current rental was £77 per annum. However, in view of the reducing traffic, due to the recent opening of the railway to North-West Bend (today's Morgan), Dunk offered £50, which the Marine Board accepted. By 1890 Dunk's lease payment had reduced to £20 per annum, a measure of the diminution of Milang's trade. The use of horse-traction on the jetty was a major cause of deterioration of the decking, together with excessive loads on the tram trucks which 'sprang' the beams. The Marine Board generally opposed the use of horses on jetties and in November 1879 informed Dunk to limit loads to a maximum of three tons.[46]

As mentioned, the opening of the last length of railway between Adelaide and North-West Bend in October 1878 soon had an effect on Milang's trade. River traffic from above Morgan started using that port in lieu of Milang or Goolwa. None-the-less, in December 1880 channel deepening operations at Milang started, using the Marine Board's former river snagboat *Grappler* which had been converted into *No.* 7 dredger. By month's end over 2500 cubic yards of spoil had been removed to create a channel thirty-feet wide from the jetty into deeper waters. By mid-January 1881 the channel was about one-thousand feet in length. Operations continued until early February by which time almost 4700 cubic yards of spoil had been removed and average depths improved to around six feet.

A royal tram truck

In November 1867 Milang had its first royal visitor when Prince Alfred, the Duke of Edinburgh, boarded a steamer for his visit to 'the lakes' with a shooting party. Whether he had the honour of travelling on the jetty tramway is unknown. However, fourteen years later the tramway certainly had its 'moment of regal glory' when, in June 1881, the teenage sons of the Prince and Princess of Wales visited South Australia. After a number of days in and around Adelaide, their Highnesses, Prince Albert Victor and Prince George (the future King George V), headed for Melbourne by the overland route. Coach to Strathalbyn, then on to Milang where the crowds were out in force.

Following the welcoming address by Mr Landseer, MP, the royal party took its places on a 'special truck' and proceeded to the jetty where the PS *Dispatch* awaited, for the trip across the lakes to 'Campbell Park', the estate of T R Bowman, on Lake Albert where they stayed the night.

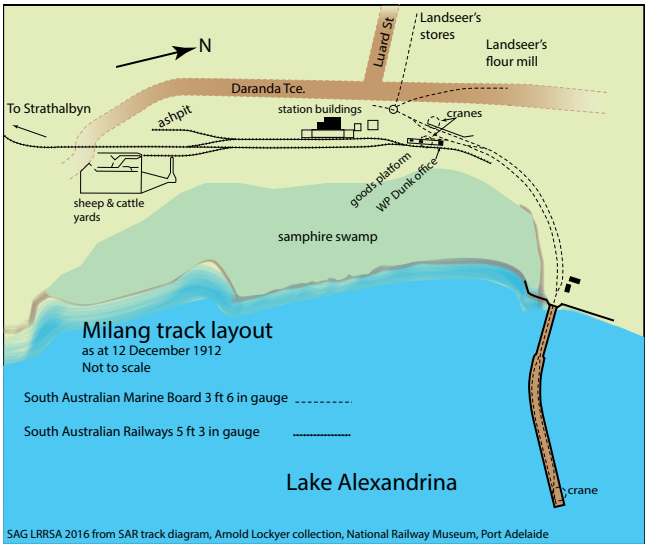
The sixteen-year-old Prince George dutifully kept a diary of his journeys and many years later some extracts appeared in the newspapers –

> ... to Milang, on the western side of Lake Alexandrina ... Here, Mr Landseer, the chief resident member of the Assembly, and owner of the steamer on the lake, got us on the tram and ran us down the jetty, where the Dispatch was waiting with steam up, on board which they had prepared lunch for us.[47]

Almost certainly the 'Royal tram' was one of the unsprung flat trucks with a couple of seats affixed. From Campbell Park (where they went kangaroo hunting), the PS *Dispatch* (owned by W P Dunk) took them to Meningie from whence a coach travelled to Kingston [S E], a train to Narracoorte (original spelling), coach to Penola, Casterton and Hamilton, and finally train to Melbourne. Such overland journeys usually took four or five days.

SAR Milang branch line

In mid-December 1884, seemingly as consolation for the loss of much of the upper river trade, the South Australian Railways built a branch to Milang, providing a direct, if rather slow, railway connection with Adelaide. Almost certainly, this line was built due to the influence Albert Landseer exerted in parliament – twenty-five years earlier Landseer had campaigned for a tramway from Strathalbyn to Milang only to see it built to Middleton and thus provide a connection to Milang's rival – Goolwa. Even with much of its trade gone, busy days still occurred – one such being 28 January 1885 when four paddle steamers arrived on the one day, bearing over 5000 bags of wheat, all of which had to be transported up to Daranda Terrace via the tramway. Most of it was then transhipped onto the broad-gauge for transport to Adelaide on the newly-opened railway though some would be destined for Landseer's flour mill. In 1884, to cater for this traffic, Landseer had constructed another tramway from the wagon turntable, curving across Daranda Terrace in a north-easterly direction, to his flour mill.[48]



SAG LRRSA 2016 from SAR track diagram, Arnold Lockyer collection, National Railway Museum, Port Adelaide

Yet again, though, events conspired against Milang. The concurrent opening of the railway to Murray Bridge, then on to the Victorian border soon afterwards, created the Adelaide to Melbourne intercolonial railway and again Milang's trade was badly hit. In May 1886 Landseer and Dunk had to retrench more than a dozen labourers as Murray Bridge drew in much of Milang's remaining river trade.[49] However, being a businessman, Landseer always had his eyes on the 'bigger picture' and had expanded, having branches in Adelaide, Port Victor, Goolwa, Murray Bridge and Morgan, besides Milang.[50]

Fishy business

By this time the jetty tramway had reached its final configuration – double tracks from the railway station to the base of the jetty, single track to the jetty elbow, then double tracks for most of the outer main jetty with a set of stub points near the head with a single-track head-shunt adjacent to the fixed crane. Following opening of the railway bulky goods could always await a few days in the station yard if required until rail trucks were available. However there were a couple of commodities that depended on speed of transit – butter and fish. In May 1892, after suffering for a number of years, a meeting of over forty fishermen met in Milang to voice their grievances. It seemed that on average, about two tons of fish per week was railed to the Adelaide markets. Unfortunately, it seems, the South Australian Railways were not very good at handling Milang's fish traffic.

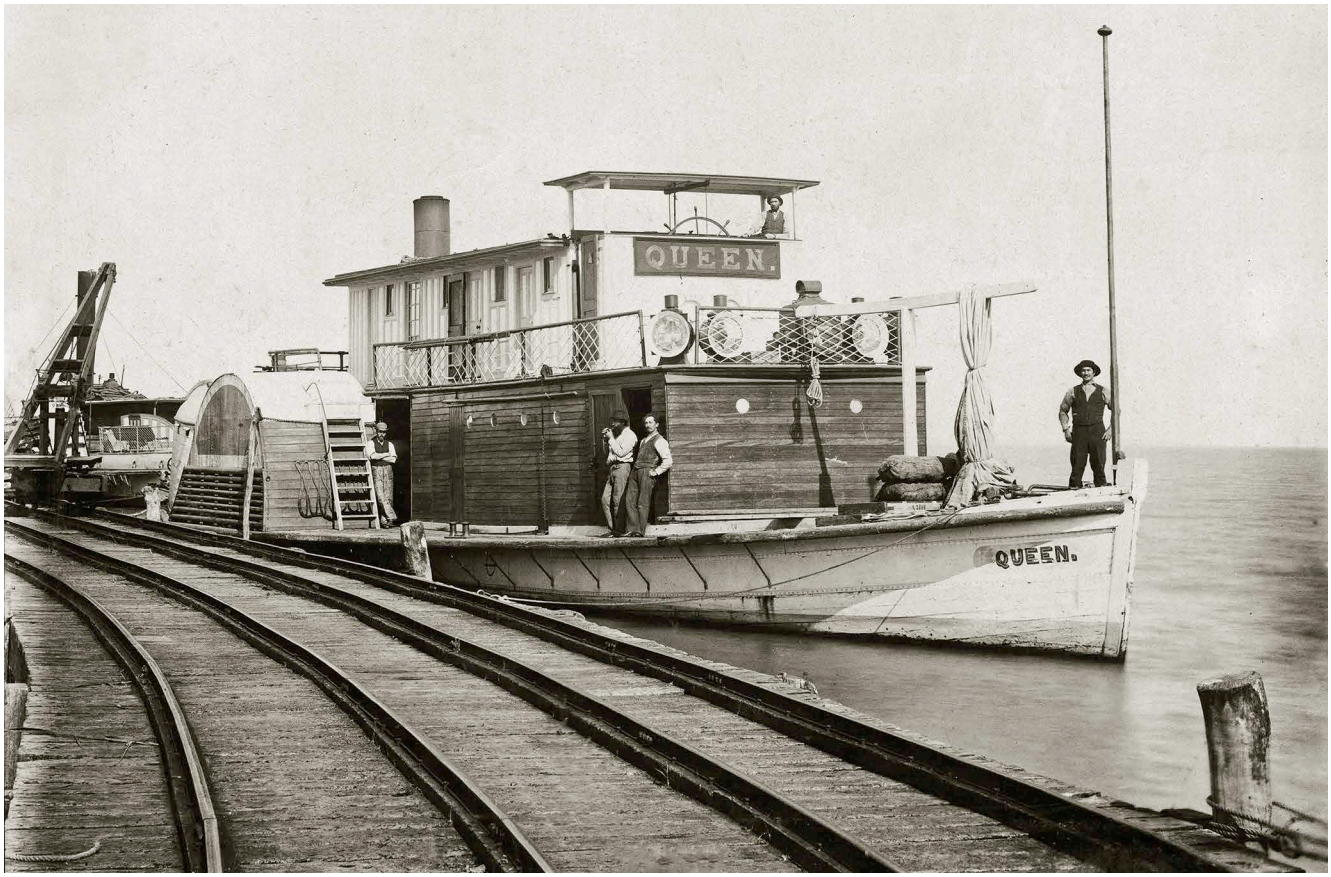
The meeting wanted the jetty tramway re-gauged to match that of the railway (5ft 3 in) to enable a special truck for fish to be run to the foot of the jetty so they could load.

> At present the fishermen had to bring the fish up from the jetty to the railway station on trucks, the property of the lessee of the jetty, and pay him for the haulage, or else push it up themselves, a distance of something under a quarter of a mile. This should not be as the Milang fishermen send more fish to market than the Goolwa fishermen, who were provided with better facilities.[51]

One fisherman had suffered 15 cwt [c. 760 kg] of fish condemned. They had departed Milang on the 1.20 pm train however the boxes were unloaded at Strathalbyn where they sat in the sun for two hours. He lost not only his fish but also lost when the railways charged him for the carriage! Butter, from the Milang Butter Factory sometimes had similar journeys; when travelling in the van with fish it could be contaminated by the smell, sometimes made worse if there were consignments of skins and hides included. The plea to change the jetty tram gauge from 3 ft 6 in to 5 ft 3 in was ignored but a few years later the railways did alter the timetable to include an early morning train which better suited all parties.

River trade declines

In July 1890, the Bremer DC asked the Marine Board to hand control of the jetty and tramway, currently being repaired by the Engineer-in-Chief's Department, back to it. The secretary of the Marine Board thought that as Milang was a railway terminus control should reside with the South Australian Railways. Revenue at the time was about £50 per annum.[52] In the event



Above and right: The PS Queen *at the Milang jetty, with another paddle steamer in the background. Of interest is the rail-mounted hand-operated travelling crane mounted on a solidly built four-wheel truck. This shy vehicle rarely appears in jetty photographs. Operation is by a windlass on the far side of the jib, via a simple reduction gearing. A ratchet and pawl is fitted to ensure what is lifted stays lifted! The whole crane can be rotated. There is no obvious counterweight apart from the weight of the crane's lower parts behind the pillars, probably limiting its lifting ability to less heavy items such as wool bales. Photo: SLSA B12313*

the Board refused to comply with council's wishes much to the chagrin of local ratepayers who thought it should be regarded as a railway siding as it formed a key part in the exchange of goods from the station to the paddle steamers.[53]

W P Dunk, the jetty's long-time lessee had a unique arrangement in that he owned the jetty tram trucks (thought to number three or four), the rail-mounted hand crane and various other plant, and any users thereof had to pay him.[54] It is not certain when Dunk took ownership of the jetty trucks but it was probably before 1873. In April of that year he approached the Alexandrina DC with an offer to buy the disused jetty truck from the demolished Point Sturt jetty, 10 km to the south.[55] The council had built a short jetty at that place in 1857, complete with a 3 ft 3 in gauge tramline and one truck. By 1871 the jetty was 'useless', seeing scant trade and not worth repairing and the jetty timbers were sold. Dunk's offer for the truck was accepted and £5 changed hands.[56] How the re-gauging was accomplished is unknown but was probably in the time-honoured means of cutting the axles in the middle and fitting a sleeve.

Despite loss of river traffic, there was one trade that remained for a while longer – the lakes trade, with paddle steamers and schooners serving Mulgundawar, Narrung, Point McLeay, Meningie and various properties on the northern and eastern shores of lakes Alexandrina and Albert.

At Milang, during its 'season', bales of wool and sacks of wheat, would be transferred from the paddle steamers onto the 3 ft 6 in gauge jetty trucks and hauled by a horse to the railway station for transfer to 5 ft 3 in gauge SAR railway vehicles. Other goods included milk and cream for the Milang Butter Factory and elsewhere and as already noted, fish for Adelaide. Another somewhat unusual and short-lived traffic was salt.[57] By July 1898 the South Australian Salt Company had built a salt works, jetty and tramway at Mulgundawar, on the northern shores of Lake Alexandrina. The output was shipped through Milang for some five or six years.

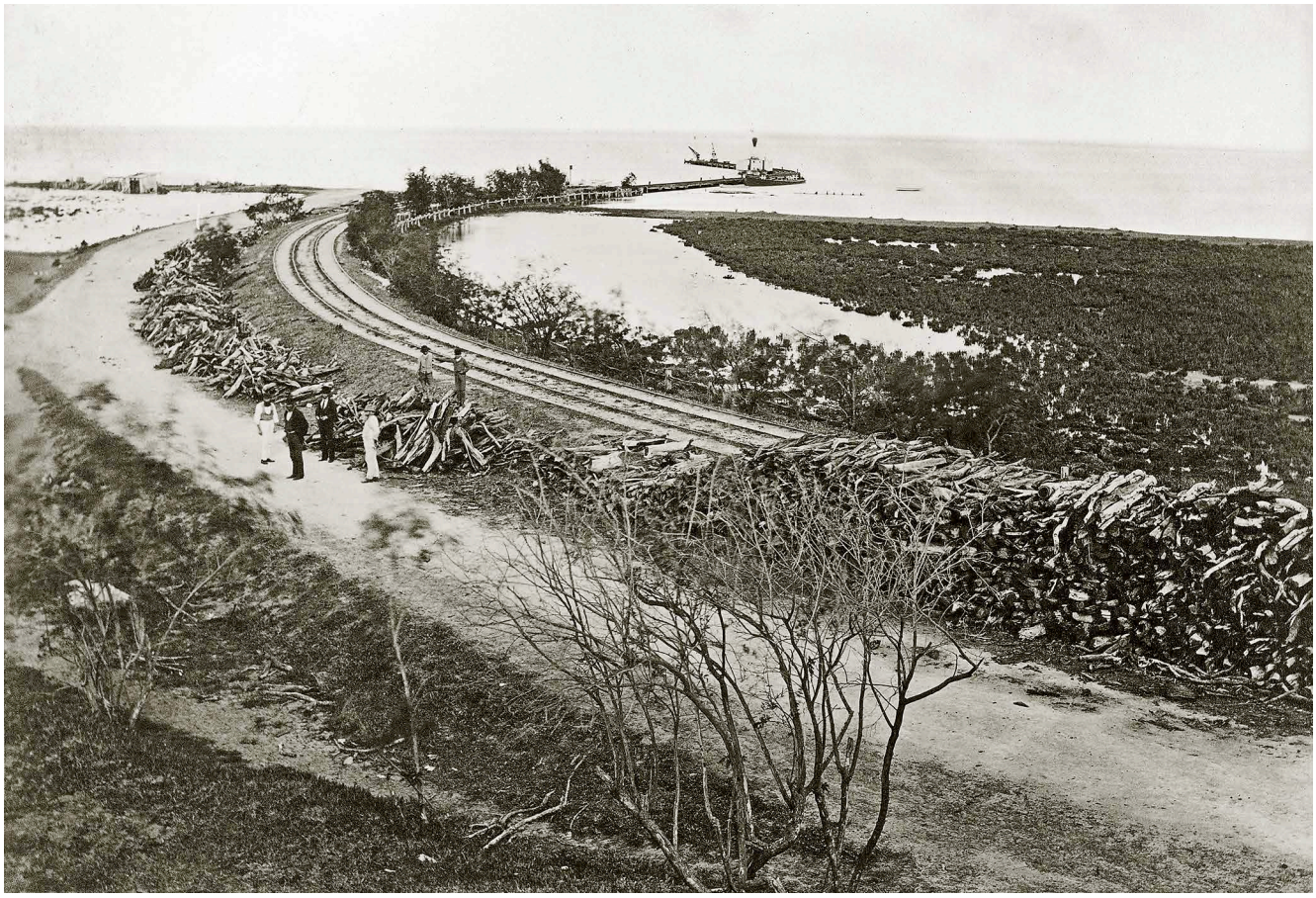
Some steamer traffic didn't require the tramway (except to use it as a pathway) – such as the pigs, sheep and cattle from various pastoral properties, destined for the Adelaide market. In the opposite direction went a large assortment of general merchandise, foodstuffs, machinery and the mail, destined for the otherwise isolated lakeside communities.

End of the lakes' trade

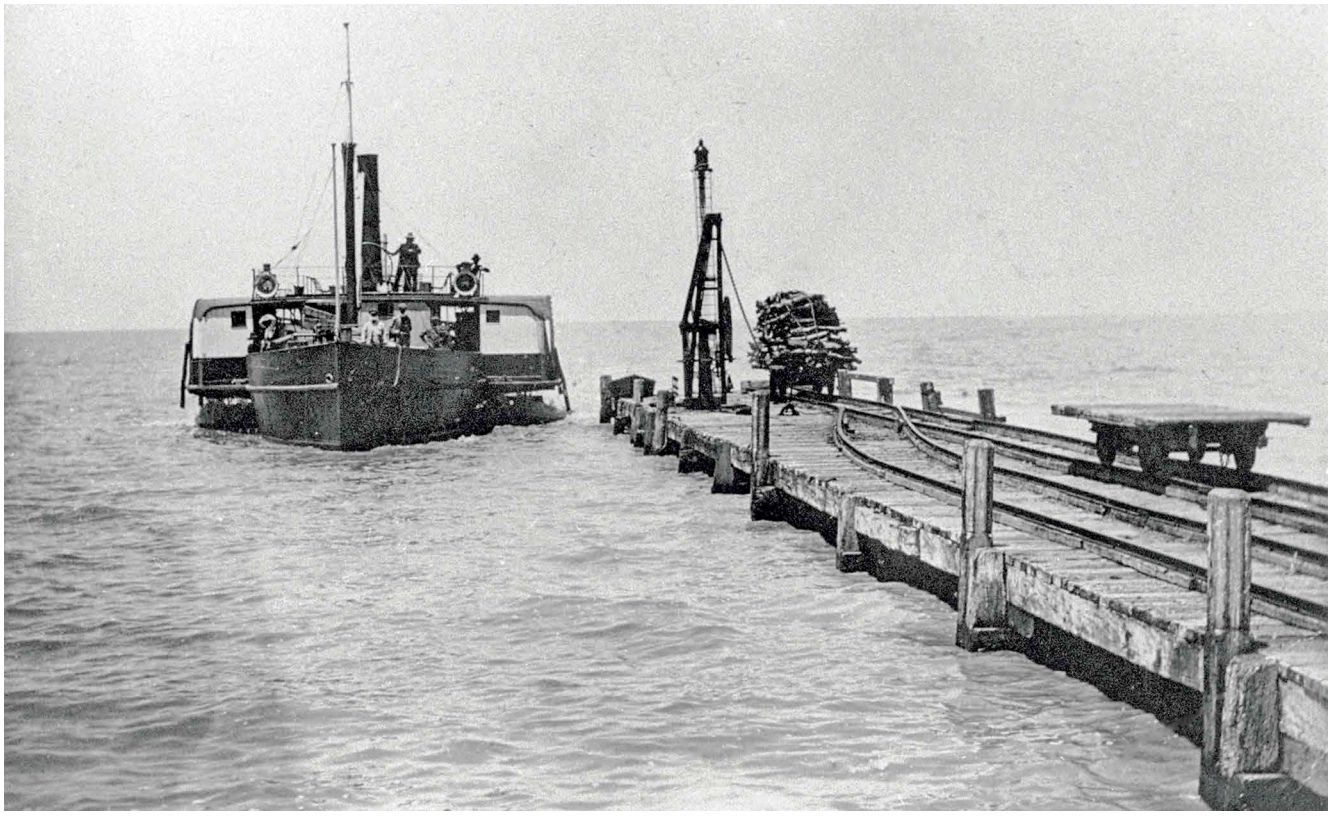
Although use was diminished, the jetty still had to be maintained and every few years there were calls for repairs. The continual employment of horses on the jetty saw, in 1894, the reuse of material from the 'useless' Mulgundawar public jetty.[58] A jetty had been built at that place in 1869 following a protracted campaign by local settlers. Much to their chagrin it was never provided with a tramway, making it all but useless and it was little used, falling into disrepair. Again, by 1905 the Milang jetty and tramway, according to Messrs W & H Dunk, needed further repairs and the Marine Board duly allocated £50 for the necessary work.[59]

With the coming of the new century and as more towns were connected with adequate roads, commercial steamer traffic fell away until just one regular run remained. Throughout the Great War and into the 1920s, the PS *Jupiter*, owned by W & H Dunk, and captained by Daniel Cremer since 1902, continued its service, Milang – Narrung – Meningie, carrying the mail in addition to anything and anyone, as well as the seasonal excursion traffic. From the end of 1925 the Meningie mail delivery changed to road transport and the PS *Jupiter's* service reduced, the main run being curtailed to Milang to Narrung – the very low water level in Lake Albert at the time also being a factor. Low water in Lake Albert meant that steamers had to wait around a mile offshore at Meningie whilst goods and passengers were ferried back-and-forth by rowing boats. Despite much reduced tonnages, dangers still presented – in 1928 Rueben Coppins, the jetty horse-tram driver, lost the top of a finger when the reins became entangled in a moving truck and effectively decapitated the digit concerned.[60]

In January 1929, Narrung's mail contract also changed to road transport causing W&H Dunk to withdraw from shipping and send the PS *Jupiter* to Goolwa for repairs. For what little lakes traffic remained, A H Landseer & Company assumed running steamer services using the PS *Kelvin*, obtaining the services of Captain Cremer. Following overhaul the PS *Jupiter* saw little further usage until, in March 1931, Messrs Dunk put the steamer up for sale. With no buyers, the last of Milang's commercial paddle steamers often lay idle apart from occasional excursions, usually at holiday times. In early 1933 the PS *Jupiter* was sold, towed to Outer Harbour, near Adelaide, and converted into a floating crayfish depot. Her remains can today be seen in Mutton Cove, in the Port River.



General view along the recently installed double track to the jetty, c.1875. From the base of the jetty to the elbow it was single track and then reverted to double track along the outer section. The new jetty crane plus the hand-operated travelling rail crane are visible. At left it appears drays have been dumping firewood billets which will then be stacked, ready for sale to the paddle steamers. The water level in the lake is at a moderately high level, inundating the samphire swamp and borrow pit for the embankment. *Photo: SLSA B10610*



PS Jupiter *approaching the jetty, c.1910, with Captain Cremer at the helm. A truck-load of firewood for any steamers requiring same, sits in the head shunt, next to the jetty crane. The* Jupiter *commenced operations on the Murray River system in 1868 and went through various configurations over the years. Daniel Cremer was captain of the* Jupiter *for almost thirty years. Unusually, the* Jupiter *did not have a wheelhouse – was this to reduce the wind resistance on the lakes' crossing? At the time this photo was taken she was owned by W H & W P Dunk, her engines were rated at 30hp and the hull measured 110ft long, 19ft 6in wide, drawing 6ft of water.* *Photo: SLSA PRG 1258/1052*

One event that did draw large crowds to Milang and saw a number of paddle steamers in port was the annual Milang Regatta. Held on Commemoration Day (now Proclamation Day – 28 December), since 1889, it had been held at various times of the year since 1856. By the early twentieth century large crowds came each year – the jetty and town would be crowded, paddle steamers and myriad other boats would attend and various events held.

Apart from the paddle steamers there was a number of sailing vessels operating competing lakes services. One of the last to operate from Milang was the *Ada & Clara*.[61] Built at Milang in 1891 by Carl Kruse as a three-masted schooner, by the early 1930s it was operating as a two-masted vessel with auxiliary engines. In 1934 it was fitted with two engines, one kerosene and one petrol and the masts removed. It operated as a general trader, to Narrung, until the end of 1936. In future just the occasional paddle steamer would visit, such as the PS *Tarella* from Goolwa, bringing tourists or scholars on excursions.

Demise of the tramways

By this time the jetty tram trucks saw little use, though fishermen found them convenient for moving their catch – such as the large mulloway, weighing up to 40 kg, that were sometimes caught in the lake. Sometimes several tonnes would be caught in a few hours.[62] During the shearing season, some wool would still come in by boat, with bales transferred to the station on the jetty trucks. By the 1930s there was no regular jetty horse and on occasions a motor car would be used to tow a couple of laden trucks up the grade to the station. Up in town, the tram lines across Daranda Terrace to Landseer's stores and mill, were showing their age. In January 1937 the council (by that time Milang was part of the Strathalbyn DC),

Before the barrages were built across the Murray, large hauls of Mulloway were caught in the lakes. In this 1920s photograph, Walter Woodrow jnr dispalys his huge catch. It had a dressed weight of 91 pounds. *Photo: SLSA PRG1258/2/1109*

in response to complaints from the Automobile Association of SA, wrote to Landseer Ltd about keeping the tracks and strip of road in good condition.[63] The company, clearly still using them, promptly assured council they would comply in future. None-the-less, trade was but a fraction of the 1870s.

Post-war, matters had changed markedly when, in August 1948, the Milang ward councillor wanted the 'old rails' removed.[64] It seems Landseer Ltd were no longer using them as no objection was forthcoming and the rails were subsequently removed. Inside Landseer's warehouse the rails remained in the floor until the buildings were demolished in the early 1960s – a great loss to the notable buildings in Milang.[65]

Down on the jetty things took a turn for the worse when in August 1956 flood waters in the Murray River reached the lakes. The worst flood in South Australia's recorded history, water lapped over the jetty deck. Unlike the 1870, 1917 and 1931 floods that also saw waters lap at the jetty tram rails before gradually receding, catastrophe followed in mid-September when an intense storm from the south-west whipped the lake waters into a maelstrom. Over half the jetty was washed away, piles ripped out, and decking and rails twisted.[66] The following year the jetty was rebuilt, but only half as long as previously.[67] Just a single 3 ft 6 in gauge tram track was laid, dogged directly to the jetty planks, unlike the original jetty where the rails were laid on longitudinal wooden baulks. This truncated tramway lasted for another ten years until the rails were finally removed in the mid-1960s.

Milang and the jetty today

Today, the shortened jetty, visited by tourists and fishermen alike, with the heritage-listed crane at its head, juts into Lake Alexandrina – a reminder of days past. Whether the crane is as old as sometimes claimed is a matter for debate – 1872 seems the most likely date of installation. In June 1970 the Sandergrove to Milang railway closed and in 1992 the station site and building was established as a railway museum with various items of rolling stock, of both 5 ft 3 in and 3 ft 6 in gauge. Included among the items is a former SAHB jetty truck, minus its floorboards and currently lacking interpretive signage. Trucks of a similar type were used at Milang in its later years; it is a reminder of the long-gone Milang jetty tramway, but only to those who know its provenance. The nearby Port Milang railway museum houses an interesting display of photos and memorabilia from early Milang. Adjacent to this and currently under development is the South Australia Light Railway Centre. Items recently received for display include an ex-Harbors Board TACL rail tractor and another jetty truck. The whole complex, together with Milang, is definitely worth a visit.

Acknowledgements

Thank you Trove, or more correctly, thank you taxpayers of Australia for funding the National Library to develop Trove which enabled this history to be researched. Please write to your local MP to ensure this funding is maintained – one never knows with politicians when funding will suddenly dry up! Thanks also to Les Howard for his meticulous and invaluable corrections to my original draft and for alerting me to several historic photos in the Arnold Lockyer collection at the National Railway Museum, Port Adelaide.

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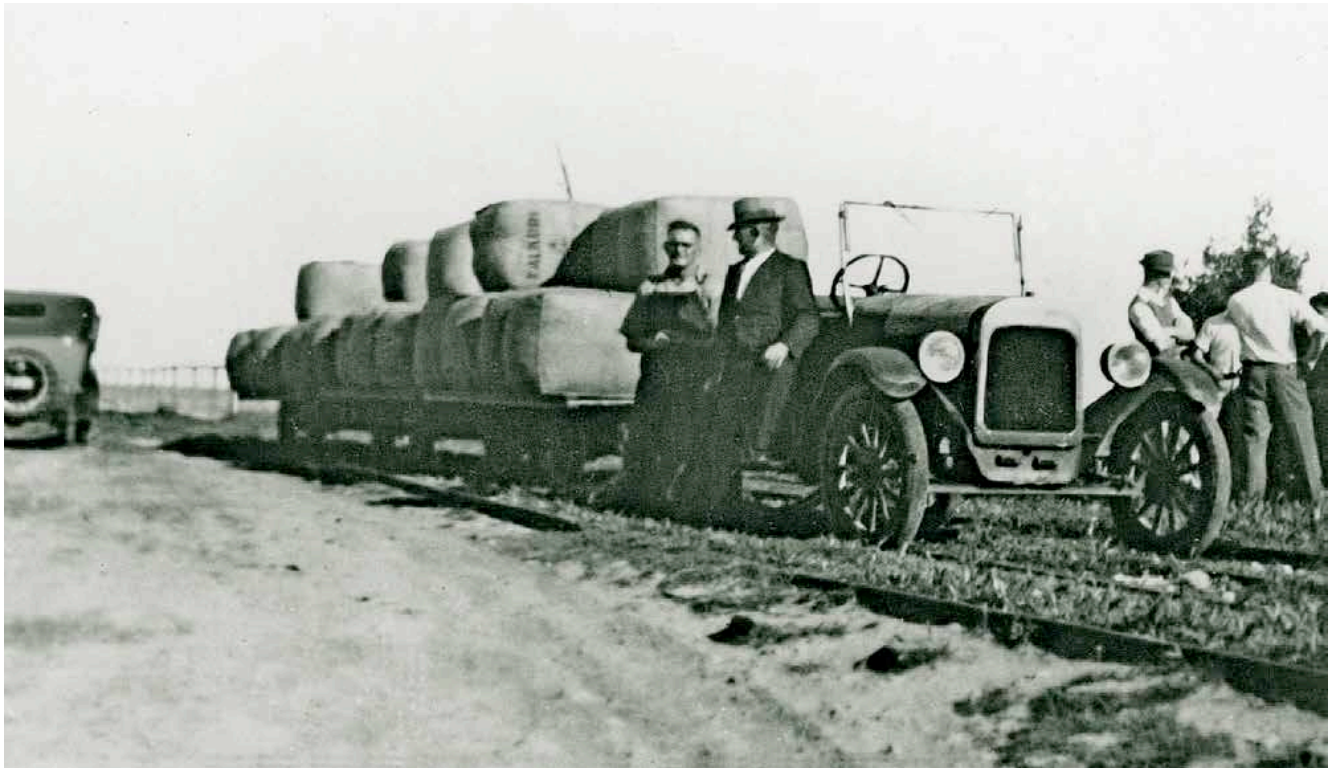

By the mid-1930s the jetty horse had gone from Milang. Here we see three jetty trucks loaded with about thirty bales of Yalkuri wool, about to be hauled to Daranda Terrace by a well-used 1923 or 1924 Chevrolet 'Tourer'. The Yalkuri Pastoral Company's station is situated on the Narrung peninsula, on Lake Albert. It was formed in 1918 when the company purchased 13,400 acres of Campbell Park estate from Arthur Percy Bowman, one of the pioneering Bowman family of pastoralists. A P Bowman was the nephew of T R Bowman, whom we met earlier in this story. *Photo: A D Lockyer colln. 7-1001-039-204, courtesy National Railway Museum*

Close up of the stub points and track construction near the jetty 'elbow'. Note the rather battered point lever.
Photo: A D Lockyer colln. 7-1001-039-206, courtesy National Railway Museum

References and notes

Principal newspaper references hereunder. For a complete list of the hundreds of newspapers consulted refer to my tag list "Milang" on Trove; http://trove.nla.gov.au/tag#

Newspaper abbreviations. SAR: *South Australian Register*; SAA: *South Australian Advertiser*; AO: *Adelaide Observer*; AT: *Adelaide Times*; SACWM: *South Australian Chronicle & Weekly Mail*; SA: *Southern Argus* (Strathalbyn); TA: *The Advertiser*; TR: *The Register*; TC: *The Chronicle*; MBCOGA – *Mount Barker Courier and Onkaparinga and Gumeracha Advertiser*

1. *SAR* 16 Jun 1854
2. *SAR* 28 Oct 1854
3. *SAR* 15 Dec 1855
4. *SAR* 16 Nov 1855
5. *SAR* 9 Jan 1856
6. *SAR* 25 Jan 1856
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8. *SAR* 14 May 1856
9. *SAR* 21 May 1856
10. *SAR* 13 Dec 1856
11. *SAR* 25 Jun 1856
12. *SAR* 13 Jun 1856
13. *AO* 19 Jul 1856, SAR 18 Sep 1856
14. *SAR* 13 Dec 1856, SAR 7 Jan 1860
15. *SAR* 4 Mch 1867
16. *SAA* 18 Oct 1867
17. *AO* 27 Sep 1856, AT 10 Oct 1856
18. *SAR* 18 Dec 1858
19. *SAR* 8 Jul 1859
20. *SAR*10, 22 Apl 1857
21. *SAR* 14 Oct 1857, Albert Henry Landseer (1829 – 1906) and Rosina Masson (William Masson's daughter) were married on 4 Nov 1856. Rosina died at Milang in 1871, aged 41. Landseer re-married the following year to Harriet Sarah Taylor. He died in 1906, aged 77.
22. *SAA* 15 Jul 1859, SAR 8 Dec 1859, SAA 25 May 1860
23. *SAR* 14 Jan 1859
24. *SAR* 17 Jun 1859
25. *SA* 20 Mar 1869
26. *SAA* 18 Oct 1867
27. *SACWM* 28 Aug 1869
28. *SAA* 8 Sep 1869
29. *SA* 2 July 1870
30. *SAR* 31 Oct 1870
31. *SAR* 11 Nov 1870
32. *SAR* 23 Jun 1871
33. *SAR* 15 Jun 1872
34. *SAR* 19 Jun 1868
35. *SA* 18 Jul 1868
36. *SA* 15 Aug 1868
37. *SAA* 23 Oct 1869
38. *SA* 14 Mch 1873
39. *SA* 30 Dec 1875, SA 1 Jun 1876
40. *SA* 7 Mch 1878. The telegraph arrived in 1865. Milang would not be connected to Adelaide by telephone until 1905!
41. *SA* 30 Nov 1876
42. *SA* 24 May 1877
43. *SAR* 2 Apl 1878
44. *SAA* 21 Mch 1879
45. *SAR* 27 Mch 1879
46. *SAR* 19 Mar 1878, 4 Nov 1879
47. *TC* 2 May 1935
48. *SAR* 20 Dec 1884
49. MBCOGA 7 May 1886
50. Even as late as 1905, Landseer was able to entice large shipments of wool from the Murrumbidgee and Edwards rivers, to bypass Swan Hill and ship their wool to Goolwa, for Victor Harbor. TR 1 Nov 1905. At the same time he was running excursion steamers from Murray Bridge to Morgan and Mildura, connecting with the railways at each place.
51. *SAR* 28 May 1892
52. *SAR* 5 Jul 1890
53. *SA* 7 Aug 1890
54. *TC* 12 Dec 1896
55. *AO* 5 Apr 1873
56. *SA* 25 Apr 1873
57. *TA* 21 Jan 1903
58. *TA* 22 Dec 1894
59. *TR* 4 Aug 1905, TR 10 Nov 1905
60. *TR* 21 Feb 1928
61. *SA* 4 Oct 1934
62. *SA* 19 Mch 1936
63. *SA* 27 Jan 1937
64. *SA* 18 Aug 1948
65. Pers Com Allan McInnes
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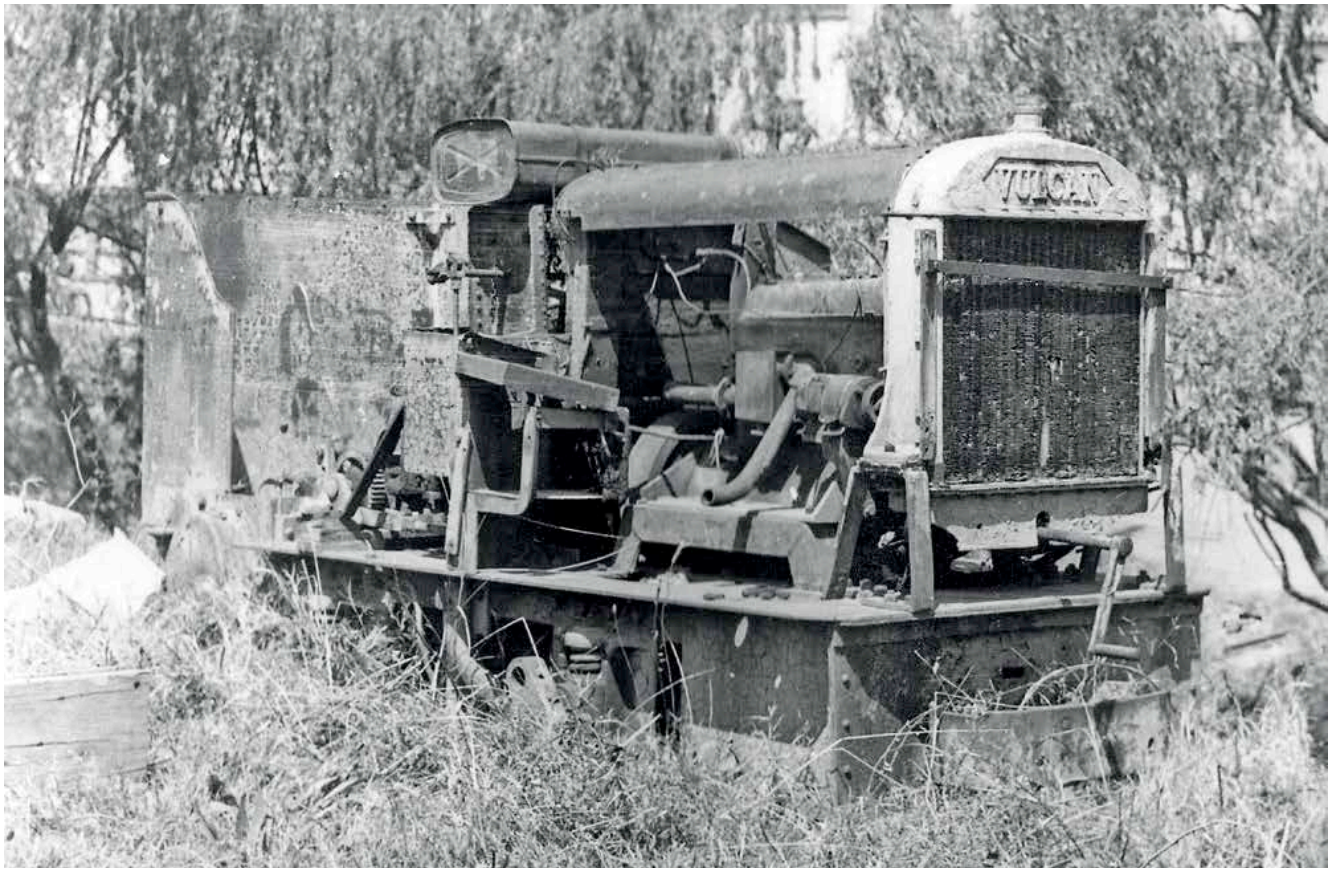


The converted Blackstone/Vulcan locomotive at Thirroul, 3 October 1953. *Photo: K. McCarthy*

Light railways at Thirroul and Home Rule

by Jim Longworth

During the early years of last century two 2 ft gauge light railways were used to haul silica rock at Red Head and Bannisters Point on the NSW far south coast. Three locomotives worked on the lines: a 4-wheel Blackstone; an 0-4-0 Krauss; and a 4-wheel Motor Rail Simplex.[1] The first two locomotives survived closure to be reused elsewhere. Components of one locomotive were reused at a fireclay pit at Thirroul, and components of another were reused at a Kaolin clay pit at Home Rule. Some of the bogie open wagons were also reused at Home Rule.

Fire clays

NSW has been well endowed with white clays suitable for use in manufacturing cheaper types of earthenware and firebricks. However high grade kaolin and porcelain clays have been in relatively short supply. Clays and shales to be used in manufacturing firebricks and similar fire resistant materials are scattered widely across the state. White clays have been traditionally used for lining boiler furnaces, blast furnaces, gas retorts, lime kilns, cement kilns, and metallurgical kilns. Their resistance to heat is principally due to their chemical composition containing low percentages of fluxing oxides.

Thirroul Brickworks

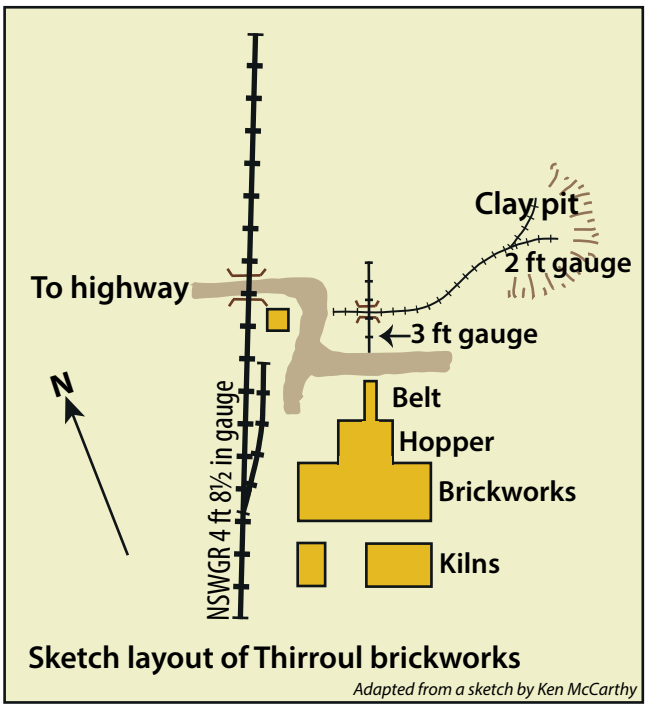
Thirroul is located on the outskirts of Wollongong in the Illawarra region south of Sydney, and important deposits of brick and fireclays had been developed there in association with the Upper Illawarra Coal Measures.

During 1919 Henry G Clyde, son of Henry O Clyde who was a part owner of the Bulli Colliery, engaged James Thompson to establish a brickworks at Thirroul on land purchased from Edward Hewitt. The land was located at the abovementioned fireclay deposit. Known as the Vulcan Fire Brick Company, the brickworks commenced operations during 1920.[2] The brickworks was located on the eastern side of the Illawarra railway line south of Thirroul railway station, between Wrexham Road and Beattie Avenue. Two sidings were located on the Down side of the mainline to service the works. The works supplied high and medium grade fireclay refractories to local industry.

The establishment of the Australian Iron and Steel Company and development of the Port Kembla steelworks significantly increased local demand for firebricks. The brickworks responded by purchasing more land. However, the economic depression of the 1930s reduced the demand for firebricks, forcing the Vulcan Fire Brick Company into liquidation. However, the Thirroul works had two major competitive advantages over other potential refractory suppliers. It was located within a few yards of its supply of raw materials, and within a few miles from its major customer. Around 1935 Newbold Silica Fire Brick Co. Ltd bought the brickworks. Purchasing the works seems to have strained Newbold's finances, with the company being required to raise an additional £20,000. In 1940 Newbold Silica Fire Brick Co. Ltd, was renamed Newbold General Refractories Ltd.

Due to the importance of steel to the war effort, and hence of firebricks to the steelworks, Newbold was classed as an essential industry. Production continued through World War II and staff were exempt from military service.

During the 1950s the works acquired more land to the north and was further extended. By September 1959 fire clay



Sketch layout of Thirroul brickworks
Adapted from a sketch by Ken McCarthy

was being quarried from underneath a clay shale overburden which was being removed by bulldozer. A mobile conveyor shifted the overburden to various parts of the quarry. The fire clay was being quarried by a diesel powered overhead tipping shovel into motor lorries which delivered material to a small crushing plant in the quarry.

During 1972 BHP took over the brickworks, renaming it Australian Industrial Refractories. BHP subsequently rationalised its operations and the works went into a long slow decline. Hooker Rex purchased sections of the land during 1982 for subdivision into residential lots.

Brickworks light railway

Around 1938, the company seems to have relocated some of its 2 ft gauge light railway equipment, notably the Blackstone locomotive, from the far south coast to its Thirroul brickworks. At Thirroul the locomotive was stripped down and fitted with a Vulcan petrol lorry engine, becoming a Blackstone/Vulcan locomotive. The locomotive was observed in operation at Thirroul during 1949. It was used to haul rakes of side-tipping V skips loaded with clay from the pit to an opening beside the rails, through which the clay was dumped, into a wagon waiting underneath sitting on a 3 ft gauge incline. The 3 ft gauge wagon would then be winched up the incline, where it in turn was emptied onto a belt conveyor for the final delivery into the hopper at the brickworks.


Typical brickworks 4-wheel side-tipping all metal V skip at Thirroul, 3 October 1953. *Photo: K. McCarthy*

By 1953 the tracks had been lifted and the locomotive abandoned.[3] I do not know what happened to the locomotive or the light railway.

Home Rule

Home Rule is a locality name as there is no such named township. The locality of Home Rule is situated between the prosperous township of Mudgee and the famous gold mining township of Gulgong, which was once 'The town on the $10 note'. Both Mudgee and Gulgong lie along the route of the Wallerawang–Gwabegar railway line. The 20 mile 18 chain long section of single track government railway between these two towns was opened on 14 April 1909. The railway passed a few miles to the west of Home Rule, with Warrobil being the nearest railway station. Warrobil was six miles south of Gulgong and 205 miles by rail from Sydney. The station was opened concurrently with opening that section of line. Warrobil is said to be the Aboriginal name for a range of nearby hills.[4]

A very extensive deposit of creamy white greasy clay occurred at Home Rule. The buried deposit was derived from local granites. However, 45 ft of deposited quartz gravel and sandy alluvium overlaid the deposit. Quartz pebbles were sparsely distributed through the deposit and it had an area of about 7,750 square yards, and was at least fourteen feet deep. The uniform white colour made the clays, in an un-burnt form, suitable for use in kalsomines and cold water white paints. However on burning, the colour changed to off-white making the clay unsuitable for manufacturing into chinaware. Some of the clay deposits had fire resisting properties, making the material suitable for use in manufacturing firebricks.

During 1930-31 Newbold Silica Fire Brick Co Ltd moved into the Home Rule area, and obtained 1,083 tons of kaolin, which was converted into firebricks of reputedly excellent quality.[5]

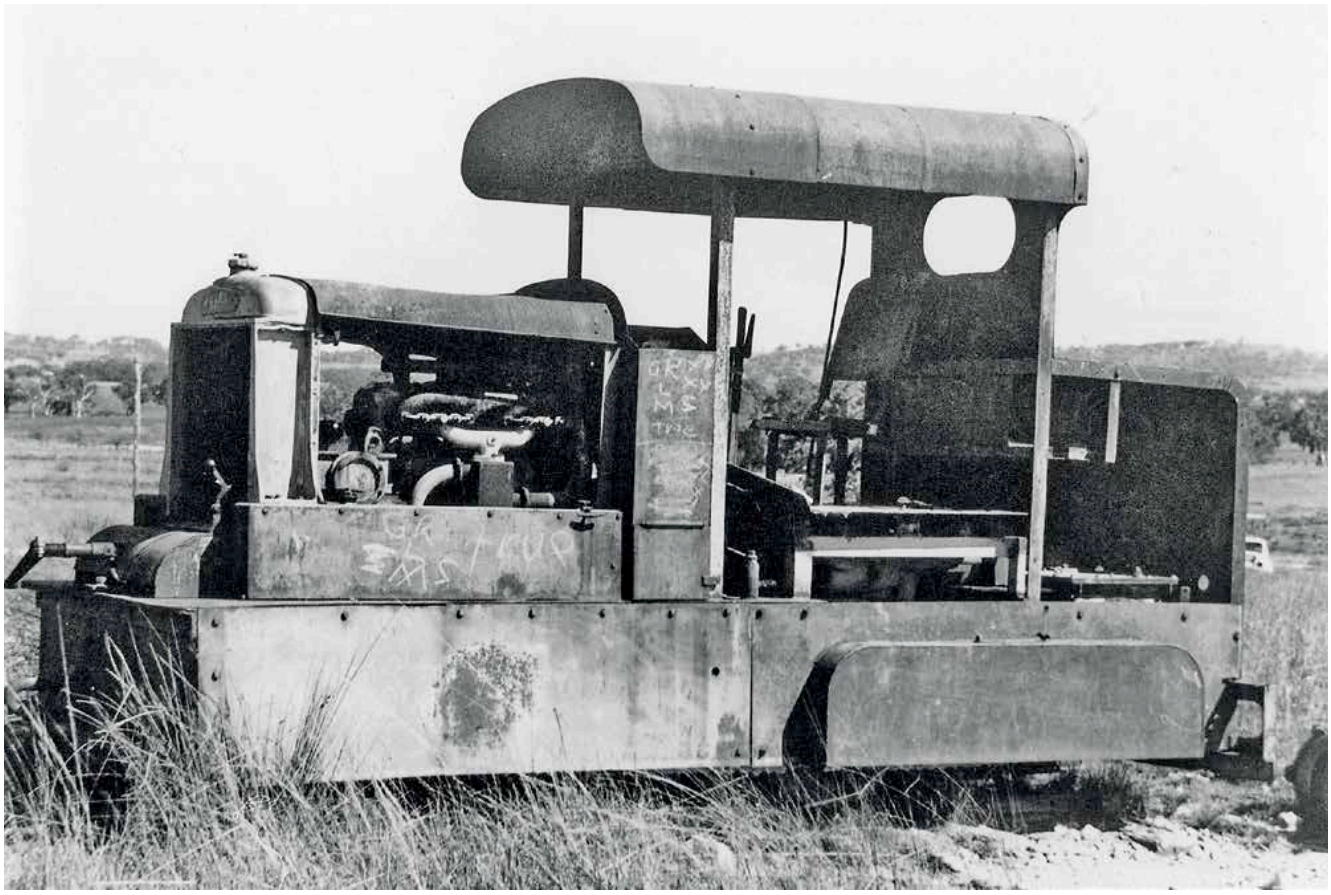
Owing to the great demand for the clay during the Second World War, part of the overburden above the clay deposits at Home Rule was removed and the deposit subsequently worked as an open pit. The deposit was regarded as the most satisfactory deposit in Australia for the manufacture of high-grade, high-alumina firebricks. Large quantities were railed to the Newbold works near Newcastle[6] with the indicative output from the pit shown in Table 1.

Table 1.

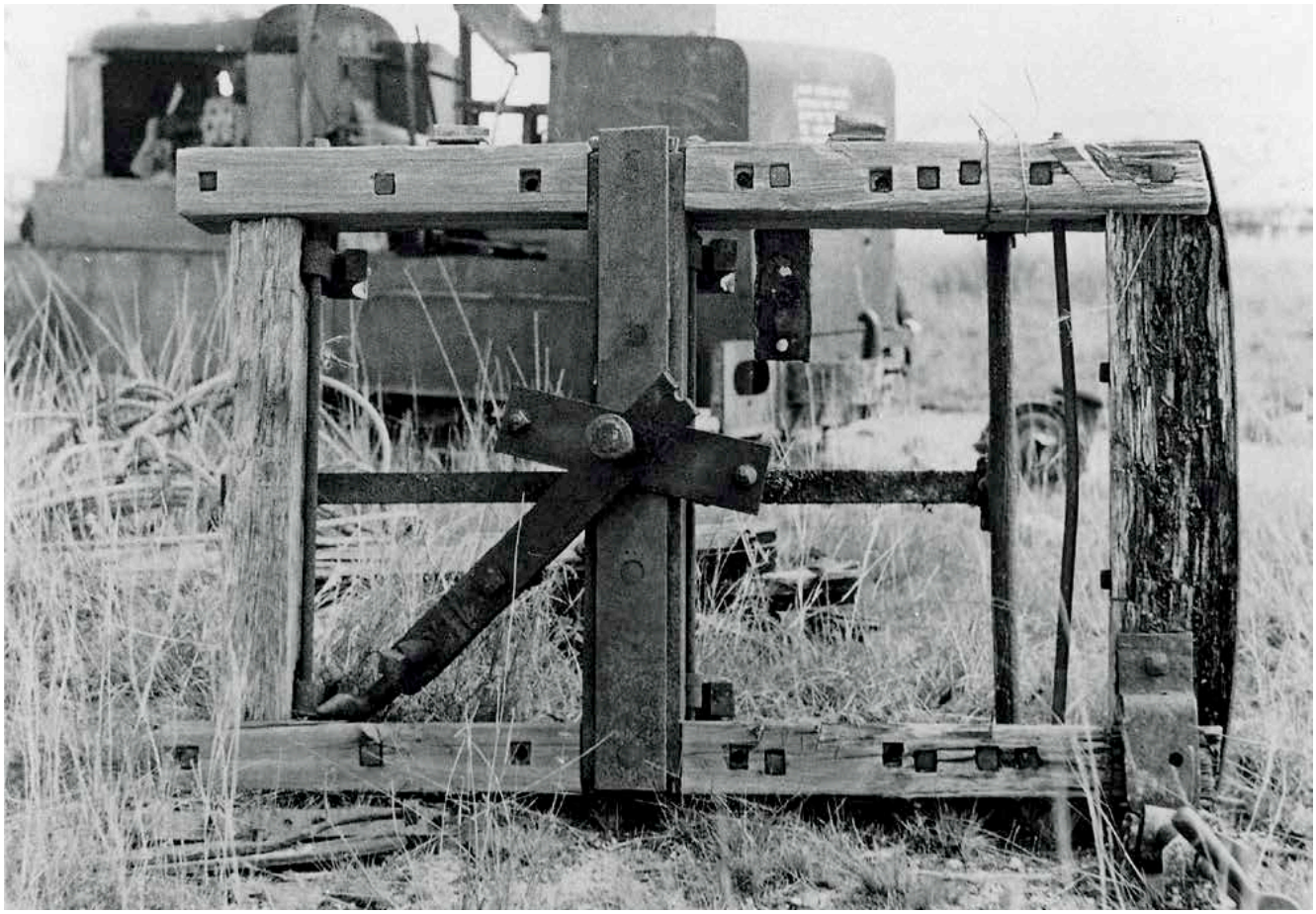
Year	Output (tons)
1917–18	c.350
1930–31	1,083
1945–46	3,341
1946–47	3,303
1947–48	4,174

Home Rule light railways

Early extraction was by means of shafts and drives and an inclined tunnel, at a grade of 1 in 4, provided light railway access to the working faces. The incline was worked by a haulage engine and a drier and 300 ton storage bin were erected at the top tunnel mouth.[7]



The converted Krauss/Leyland at Home Rule, c.1973. *Photo: R. Frier*



Looking at the top of a timber framed wagon bogie at Home Rule, with the converted Krauss/Leyland in the background, c.1973. Photo: R. Frier. Overall dimensions were 5ft long x 3ft 2in wide, with the frame side timbers being 4in across x 6in deep. The normally vertical mechanism for winding down so applying the brakes to all four wheels is shown lying on the ground in the bottom right corner.

Newbold seems to have transferred the Krauss steam locomotive to the company brickworks at Thirroul in about 1938. There the company removed everything from above the locomotive footplate. The boiler was replaced with a large, World War I, four cylinder Leyland petrol lorry engine. A new chain drive was fitted to drive the rear axle, and a new cab fabricated. The Krauss/Leyland may have been used in the fireclay pit at Thirroul.[8]

During 1944–45 Newbold General Refractories Ltd relocated some of its 2 ft gauge light railway equipment, notably the converted Krauss/Leyland locomotive and some bogie open wagons to its clay pit at Home Rule. A 2 ft gauge light railway line was installed running from the company clay pit at Home Rule to the Warrobil railway station yard, a distance of about four miles.

Wagons were the timber bodied bogie type that had previously been used on the far south coast. Their bodies were 9 ft 9 in long, 4 ft 1 in wide, and 1 ft 6 in high, with hinged full-length drop down sides, supported by timber underframes. The bogies were also made of timber, and came in braked and un-braked configurations. Wheels were of 12 in diameter and had six curved spokes.

Use of the light railway between the quarry and the government railway station does not seem to have been long lived. The next year, 1945–46, it was reported that: 'The 2-ft. gauge railway and diesel locomotive installed last year have been scrapped and the line pulled up. Motor trucks haul to the siding direct from the bottom of the open cut'.[9] Such a short lifespan might be explained through seeing the line as a limiting factor in transporting output from the pit. This seems unlikely. In 1948 the Department of Mines reported that output was restricted through shortage of railway trucks, which could have limited removal of output earlier as well.

Direct road transport did not seem to find any better favour with the company than the light railway had. By 1946–47 it was reported that:

> The practice of hauling clay direct from the bottom of the open cut to the rail siding [by road truck] has been discontinued, and an incline haulage tramline installed. A winch hoists 2-feet gauge trucks to a bin at the surface from which clay is taken by motor trucks to the siding.[10]

The Krauss/Leyland locomotive and slowly disintegrating bogie open wagons seem to have remained on-site for the next thirty years.

During 1973 Newbolds' donated the converted locomotive to the Illawarra Light Railway Museum Society. However before the museum could retrieve the locomotive, a local museum removed it from Home Rule. The ILRMS was able to prove rightful ownership, and the locomotive arrived at the Albion Park site on 18 June 1975. It was subsequently restored to working order and named *Newbold*.

Acknowledgement

Encouragement from the late Ken McCarthy and field assistance by Grant Fleming is appreciated and acknowledged.

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The metalwork remains of a braked bogie from one of the wagons, behind the loading dock at Warrobil, 17 October 2012. Photo: Grant Fleming

The wood trains of 17 Mile Camp and Gindalbie: Wood for the gold mines

by Rod Milne

The fact that trains once ran as far as the Gindalbie district 60 km north east of Kalgoorlie is surely a miracle in itself, demonstrating just how far the gold mines of the district were required to go to supply their wood needs. Not a great moment for the environment, the great firewood boom of the late 1890s and early 1900s saw vast areas of native bushland exploited to supply the gold mining industries throughout Australia.

Most of the timber out Gindalbie way was mulga, a small tree (Acacia aneura) covering a lot of inland Australia. Peppered amongst the mulga lands were larger, quite statuesque gum trees, notably salmon gum, gimlet and other species, all being used in the voracious wood industry. Each year during the height of the gold boom, a huge tonnage of native wood was railed to key Kalgoorlie stations such as Golden Gate for distribution to mines, with Kanowna's mines also needing supply. There were also sandalwood cutters bringing in this highly valued timber.

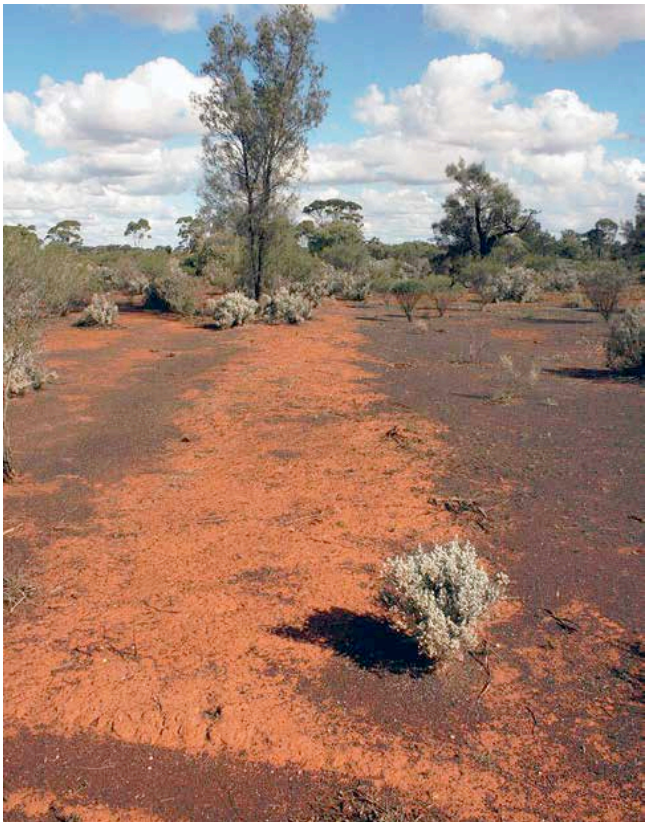
Nowadays with little more than a fork in the dirt road going to Yarri, Gindalbie lost its last building a long time ago, in the form of the dilapidated Gindalbie Hotel. It also had a store, a hall (the famed Miners' Institute), post office and a gaggle of humpies, the poppet head of the big mine just east of the surveyed townsite disappearing quite recently. Sitting on a lonely gentle ridge above the lower terrain through which the wood line passed, Gindalbie's glory days were brief indeed, the brief gold boom spawning a small townsite just south of the wetland, Emu Lake.

The company involved in the wood cutting industry of Kanowna was called the Westralian Timber and Firewood Company (WTFC), another large operator working out of Kurrawang west of Kalgoorlie. The WTFC's firewood lands lay north of Kanowna, beyond a low saddle gap just north of the town out beyond Golden Valley (surveyed in 1902), and the company commenced operations there with the commencement of WAGR services from Kalgoorlie. There, west of the townsite and railway station, it constructed a depot and wood yard, with the new wood railway line running north from there. It was a lengthy system like most WA goldfield wood lines, going as far north as Gindalbie (and a little beyond) as well as east towards another gold mining townsite at Kurnalpi and north west towards Broad Arrow. By the time the system closed in 1908, the little wood trains were going a long way to get their wood.

On Saturday 11 December 1897, Kanowna received its opening Government train from Kalgoorlie, the new track enabling direct wood line access via the WAGR to the gold mines at Golden Gate. The WTFC private line commenced from the end of the main line just beyond the goods yard, a sharp curve and simple points being its formal commencement point. Then it left the WAGR yard and crossed Lowes Street on its way over the WFTC depot and yard.

A rickety line north and east

At the northern end of Kanowna station yard, the wood line made its simple connection with the WAGR, through running of trucks being allowed for many years, at least when the wood line track was in reasonable order. The sharp left hand curve that took the wood line out of Kanowna led to a short straight over to the Westralia Timber and Firewood Company's wood line depot.



Looking south along the rather obvious pindan formation of the wood line, this 2012 view shows the remnant of the Kanowna wood line several miles south of Gindalbie townsite near the former 17 Mile Camp. Even at this stage over a hundred years after the last train ran, dog spikes were found by Bernie Morris. Photo: Rod Milne

Here, the company maintained a basic facility with a small wood line yard, basic loco facilities for its engines, office and weigh bridge. The weigh bridge enabled the company to work out the tonnage of wood coming in off the bush lines, and then being transferred on to various destinations, some by the WAGR. In days gone by, the Kanowna wood line depot site was an obvious one, though the growth of non native weeds in recent years has made the site a hard one to find.

Curving to the north, the wood line then headed out into the bush, bidding farewell to the relatively cosmopolitan, in its time, Kanowna, with its hospital, stores and hotels. Life for those on the wood line was a tough one devoid of such facilities, the wood train providing some transport for basic company supplies. However, the company refused to haul general freight to the store at the 17 Mile Camp, perhaps reasoning that the tonnage of wood hauled by the train would be impacted adversely by hauling too much other loading. In its glory days, the whistle of the daily wood train departures and arrivals would have been heard all over the then bustling Kanowna.

If the wood line at Kanowna could be described as having a "main line', the first 17 miles was it, not that the track conditions particularly warranted such a lofty description. Naturally, the Kanowna-17 Mile Camp section was the initial main stem down which most wood traffic flowed, from which the system branched out to myriad spurs. However, the Kanowna system was somewhat unusual in its development and structure, not resonating the fishbone system that characterised other wood lines. At Kanowna, the wood line system was somewhat more shambolic.

That initial 'main line' ran to the west of the main road north, largely to avoid higher ground including a number of low hills and breakaways in the vicinity of the Four Mile and Golden Valley. It's a sharp drop down from the Kanowna area onto the lower country, where a series of salt pans and lakes stretches east towards distant Kurnalpi. The wood line main stem crossed that series of low salt pans to reach the mulga lands the other side. It was here the main junctions were sited, with wood line spurs heading both north and east.

The one to the east fringed the salt lake country and ran through empty mulga scrub, splitting into two distinct stems in the vicinity of Reidy Swamp, where one long line ran south passing to the east of the well-known Lake Perkollili to end in the scrub around Billabong Dam. There were at least four significant spurs in this area, which is due east of the town of Kanowna, the southernmost extent being near the Patch Dam. The other main stem continued on from Reidy Swamp to end in another series of dead ends on the property "Carmelia", with the easternmost extent near the Garibaldi mine.

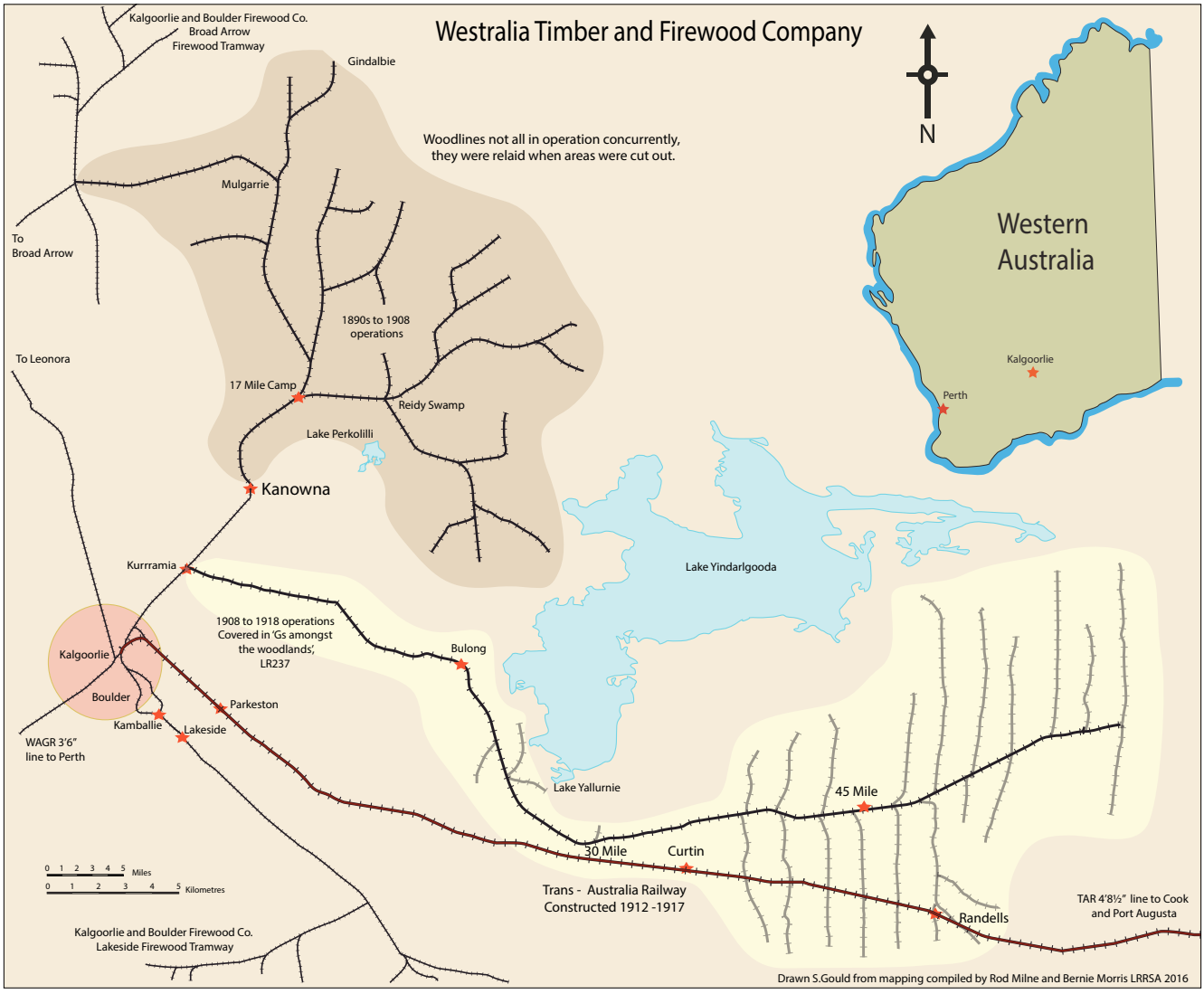
The next major stem ran due north from a junction a little north of the first junction and also boasted a couple of spurs passing near the old gold mining ghost town of Mulgarrie. Indeed, in this area, an extension of the Broad Arrow firewood railway connected with the Kanowna system, allowing through working if needed. Both ran a fair way on, the wood company engines required to go even further to get wood. This was a long stem that reached the northernmost extent of the Kanowna system, terminating several miles north west of Gindalbie townsite in the vicinity of the Gnamma Hole dam.

North east of the junctions to the east and north stems, the main north stem of the wood line headed towards Gindalbie, the alignment much of the way close to the Yarri Road. Indeed, in 1900, a new section of the wood line stem was constructed close by this road, the original route lying one or two miles to the west. Near the Halfway Hill and Black Swan mine, the two alignments rejoined.

The main work camp and depot was called 17 Mile Camp, obviously because it was located this distance from Kanowna. The site of this was several miles south west of Gindalbie, where several wood spurs separated from the main stem, one of them crossing the Yarri Road to serve wood reserves in this area. A map of the system shows a proposed Henderson's spur dated 1903 in the area.

Nearby was what was called 18 Mile Siding, the 17 Mile Camp boasting a general store (MA McCabe and Co) to supply the needs of the timber cutters. This was a branch store of McCabe and Company's store in Kanowna, and until 1907, was supplied by road due to the wood line company's refusal to haul non company supplies on the railway.

This led to a dispute with agitation to the State Government to force the WTFC to provide 'common carrier' access on the line. Meanwhile, the wood company decided to set up its own general store at the 17 Mile Camp, it was said because it was concerned the private McCabe and Company general store was overcharging its cutters.



In 1904, McCabe and Co's store sought a 'gallon licence' for alcohol indicating that there was a serious demand for same from the wood cutters. There was not a lot to occupy the men in their rest time, though a woodchop competition was held on Wednesday 18 May 1904. Gindalbie had a hotel and a miner's institute, but it was three miles up the road.

The long northern spur extended beyond the 17 Mile Camp towards Gindalbie, the wood line bifurcating to split into two dead ends west and south west of the low ridge line upon which the townsite of Gindalbie was gazetted.

In this open flat mulga country, the wood company obtained much of its supply, each area accessed by a temporary spur line laid off the main branch. Once the wood in the area was cut, the whole spur would be lifted and shifted further along to a fresh virgin area and relaid. Thus, the wood line maps that show the extent of the systems are misleading, as most of the spurs did not operate concurrently. The system was a constantly changing one, as spurs were pulled up and shifted to a new area for loading. It was never the extensive 'cane railway' system that the maps seem to suggest.

Track work was decidedly basic and reflected the temporary nature of wood cutting as an industry. The main stem to 17 Mile Camp was maintained at a reasonable standard suitable to allow the daily wood train to run out at a sedate speed, but the spurs were very basic, some using light 20 lb rails known by the WTFC staff as 'snap and rattle'. Derailments regularly occurred, with a variety of 45 lb rails also used, some new and a lot second hand. The track lay almost on ground level, with minimal earthworks and embankments in the flat red soil terrain. In November 1903, the local East Coolgardie Roads Board at Kanowna considered complaints about the poor quality of level crossings on the wood line.

When the wood trains were running, they were used to ferry supplies and water to company woodcutters and sandalwood getters along the way. In the early part of the 20th century, the roads in this area were nigh on non-existent, a permanent way, even in its most basic form as a wood line, was a valuable asset. However, the company did not encourage non-company traffic, perhaps to ensure that the load of the train was devoted mainly to the paying wood traffic.

However, on 9 February 1907 the WTFC opened its own general store at the 17 Mile Camp and supplied it by its own train in the last months the system operated. At Kurrawang and Lakewood, the other wood line company ran its own store where goods could be railed out to the bush on the company train, but Kanowna did not favour this practice at least till 1907 when the company store at 17 Mile Camp opened.

On Saturday 7 January 1905, the wood train conveyed a remarkable object in addition to wood. A large nugget of gold, reportedly weighing 112 ounces, had been found in the bush around the 17 Mile Camp and was railed back to Kanowna. Almost immediately, a gold rush was spawned as alluvial areas were explored in what was called the 'Wood Line Gold Rush'.

Some Gs and an A

At its loco depot at Kanowna, the wood line company maintained a small number of steam locos for its traffic needs. For most of the time the wood line functioned, G class locos were mainly used, though there was an A class in traffic for some time too. The latter loco was called *Day Dawn* and was used in the construction of the Leonora and Laverton lines by the Public Works Department who sold it to the company in January 1903. Essentially, the engine went out to Kanowna from Kalgoorlie once the construction task was complete.

In April 1905, G 127 came to the Kanowna depot, while another loco of the same class, G 123, was hired from the WAGR. These were diminutive former WAGR locos, the As being tiny compared to the Gs, which were themselves minute. In the last years of the Kanowna and 17 Mile Camp operations, G 123 and G 127 would have dominated, with the A class perhaps assisting at 17 Mile Camp. Work consisted of a daily wood train up bush to the cutting areas in the morning, returning later in the day with loaded trucks of wood.

Alas, we have no details of how the wood line was worked, though one would imagine the two Gs did the bulk of the work. It would be good to know whether *Day Dawn* worked much, perhaps as the "bush loco" at 17 Mile Camp.

The area being a dry one indeed, railing water was a significant event for both loco and domestic purposes. The company fleet contained a number of water trucks taken out each day to supply the bush camps and other settlers. The load of the morning wood train included these as well as a good rake of open trucks for wood traffic. Tacked on the end was accommodation for company workers and supplies, the train essentially functioning as a mixed train, albeit a private one. As stated before, the company was not a 'common carrier' and seemed reluctant to haul other traffic than for its customers and needs almost to the very end.

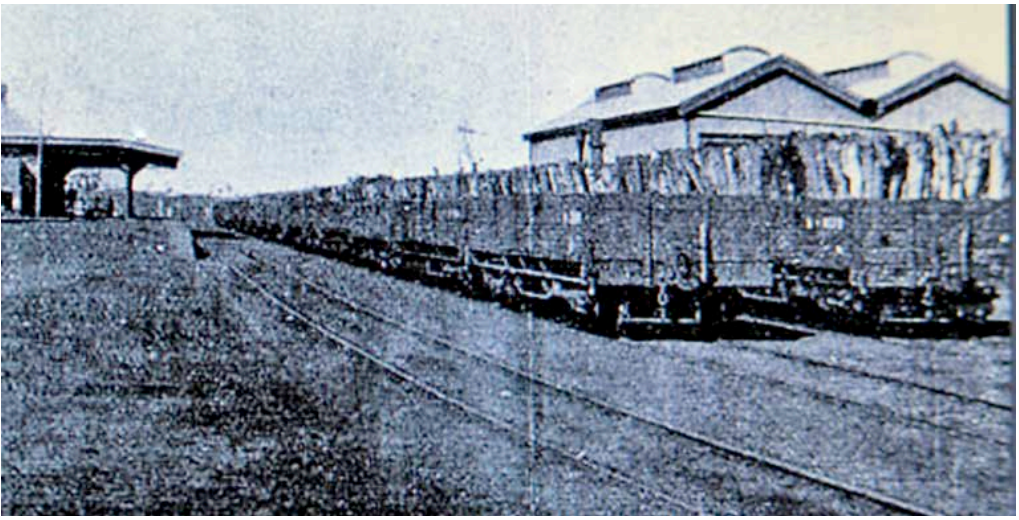
The companies usually used a loco at the bush camp at 17 Mile to gather up the wood off the spurs for the daily wood train to Kanowna. The bush camps themselves were very humble places, lonely and isolated localities suitable only for the more hardy of men. If only those lonely clearings in the mulga could talk, and tell of times long gone when the mulga rang to the sound of axes and wood being loaded into trucks for the gold mines.

Mulga and other wood was stacked in open wooden trucks, there being provision for through working of WAGR trucks which could then run south of Kanowna if needed on the Government system. The R class was a common bogie wooden open truck but four wheelers also were used too. A view of Kanowna station yard in the heyday shows two tracks full of bogie wooden wagons, each containing wood stacked almost vertically to optimise the tonnage. Regular inspections were held by WAGR officers of the wood lines to ensure that the permanent way was of sufficient standard for Government trucks.

The wood camps were dangerous places to live and work, where snakes abounded and accidents were common. As with the Kurramia wood line which provided a regular supply of patients for the Bulong hospital, the Kanowna wood line had the same relationship to the Kanowna "White Feather" hospital. It was not uncommon for the afternoon wood train back to Kanowna to convey an injured man to the hospital. Some were critically injured, it being a hard life at the bush camps.

Two sad cases are reported in the last years of the Kanowna wood line, both with fatal results. On Tuesday 19 November 1907, an employee of the company was killed when the wood train was shunting at the 18 Mile Siding. As the train was detaching four trucks, he fell off one and was dragged underneath the train. Previously in early 1906, another man had lost his life in a similar situation, the train not able to get him to hospital to save his life.

Wood traffic conveyed between the Kanowna line and the mines around Golden Gate reached a level at one stage that serious consideration was given to the idea of creating a triangular junction on the eastern side of Kalgoorlie so traffic could run direct to the Kamballie line bypassing Kalgoorlie. From the point of view of topography, it is a challenging place



The WAGR terminus at Kanowna dealt with a large tonnage of firewood traffic from the wood line, and these trucks are depicted standing in the middle roads between the station and overline goods shed. The WAGR allowed of through conveyance of trucks between the private and public tracks. *Photo: R Milne Collection*

to create a fork line, the ground falling sharply from both the Kanowna and Golden Gate lines into Kalgoorlie. In those days, the line was double track from Kalgoorlie out to Kamballie, an extraordinary thing in itself. Still, the fact that survey work was actually done with the aim of connecting Kanowna and Boulder directly shows just how much traffic was passing between the two lines in that brief boom era.

The last whistle from Gindalbie

The voracious appetite of the gold mining industry for wood supplies caused huge areas around Kanowna to be denuded for its needs. Remarkably, the wood cutters ended up working out at distant Gindalbie and Kurnalpi, such was the rampant need for wood supplies. Within fifteen years, the wood line company was looking for new areas to desecrate, though it seems the demise came unexpectedly, given the company's opening of a new general store at the 17 Mile Camp in February 1907 in the year before the Kanowna wood line closed. Barely seven months later, the company relocated its depot and office to a new site at Kurramia in September 1907, though operations lingered on at Kanowna till February 1908.

It is not known when the last train ran in the Gindalbie district, but it was probably about 1908 when the last wood was cut and the company packed up to move to Kurramia. At the very least, engines went to Gindalbie to lift the track and gather it all back to Kanowna and the new depot at Kurramia.

Lock, stock and barrel, the entire operation was taken down to Kurramia where a new main depot was established. Obviously rails and probably sleepers and dog spikes were also taken along as well, though the relatively large numbers of spikes still in the mulga near the 17 Mile Camp and Gindalbie in 2012 suggest that not everything was taken. The wood industry was still in a strong enough economic state to leave things like dog spikes behind.

At the new depot at Kurramia, the Kanowna locos were re housed in a new shed. It is indeed an irony that the Kurramia operation was set to last fewer years than at Kanowna but this demise was largely a result of the collapse of the gold mining industry at the time of the First World War.

1908 was one of the last good years for Kanowna. The wood depot left town, but by 1917, the railway station was unattended and people were leaving in droves. In remarkably short time, the once bustling town was as good as deserted. By the time Bernie Morris was a young man in the early 1950s, the hotel and two inhabited shacks were all that remained.

Remarkably, as late as the winter of 2012 when Bernie followed the old route, there were places close to the Yarri Gindalbie road where the old formation was obvious, with dog spikes still in place. Given the fact the system had been shifted by 1908 to Kurramia, it is another of those miracles about this empty country that relics can remain untouched for years.

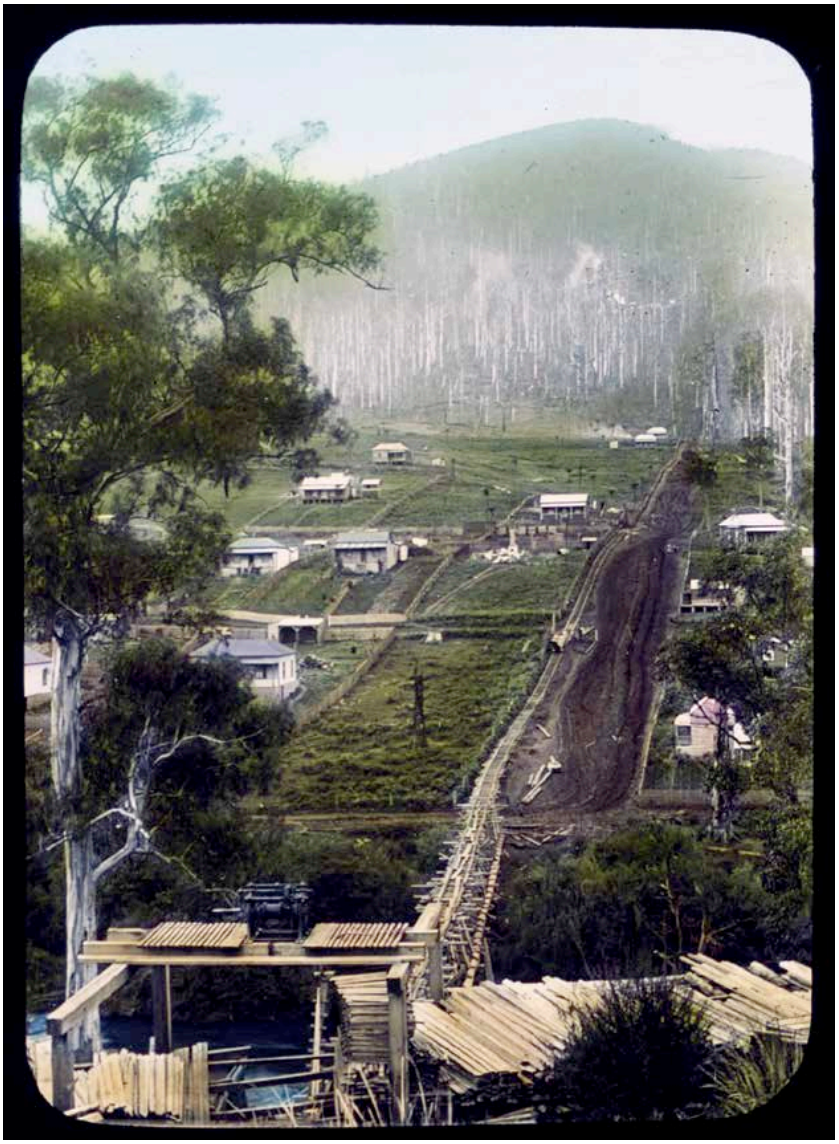
You could almost imagine those far off days of the early 20th century, when G 123 and G 127 rattled along through the empty mulga scrub bringing in the wood for the local gold mining industry, and cutters lived hard lives devoid of the so called improvements of civilisation. It was no wonder that sly grog flourished in the harsh emptiness of the wood camps. In those days at least, it was no country for women.

References and acknowledgments

I wish to particularly thank Bernie Morris for showing me around the wood line and Jeff Austin for his invaluable book on the subject of the wood lines of the area, about which there is still not much known. Ideally, more of the old drivers who worked out of the WTFC depot at Kanowna would have been interviewed before they passed on, so that a lot of the gaps in our knowledge could have been filled in, but these men were old by the 1940s. It would be wonderful to know details of working the cross country line to Broad Arrow and also the long spur east towards Kurnalpi. Unfortunately, the very short life of the Kanowna wood line ensured that records on it would be skimpy to say the least.

The former weighbridge pit at the Kanowna wood line depot was very obvious in this 1983 scene looking east towards the interchange with the WAGR. *Photo: Jeff Austin*

Richards' Incline 1908, Warburton, Victoria



A wonderful hand-tinted view from the Rev. John Flynn lantern slide collection held by the National Library of Australia. It depicts Richards' incline alongside a mud-churned Brisbane Street at the east end of Warburton, in mid-1908. The state of the road illustrates why tramways were particularly necessary and prolific in hill country in the decades following initial settlement. All-weather roads were few and expensive. Tramways dealt with the mud and allowed the transport of bulk cargo where it would have been practically impossible in their absence. Nevertheless, the glutinous state of the road was partly due to the movements of the bullock wagon that brought poles and timber down from the sawmill in its early months of operation, during the construction of the inclined tramway and bridge.

The remarkable trestle bridge at the base of the haulage (see *Mountains of Ash*, page 60, LRRSA, 2001) was constructed in 1907 to give access to a timber stacking point alongside the road on the south side of the Yarra River. Complaints about obstructing the road led, in 1908, to the bridge's height being raised and a drawbridge inserted to allow timber to be carried over the road. The height allowed low-profile horse drawn vehicles, as well as timber trucks on the Mississippi tramway, to pass beneath without needing to raise the drawbridge. However, instances of horses bolting, whilst a rumbling tram truck passed above them, forced another vertical extension in 1910. This brought the bridge to a height of 13 metres above the Yarra in normal flow and carried the tramway to a point alongside the railway siding above the south side of the road. The incline and bridge were in use until the mill closed in 1913.

This scene depicts the bridge in its mid-phase when access to the stacking site was via the drawbridge. The winch atop the scaffold in the foreground and the ropes leading from it, would appear to have been used to raise and lower the drawbridge, which is in its normal, down position in this view.

The timber stacked at lower left and right of the image sits alongside the timber siding at the east end of Warburton railway station yard. The end of the tramway (not visible) is beneath the timber racks directly below the winch. The planks were manhandled from the tram onto the racks where they were stacked according to size.

On the opposite side of the river a number of poles, probably leftovers from the work of raising the height of the trestle bridge, lie awaiting collection.

Of particular interest is the timber truck on the tramway in mid-scene. You could easily take the view that it is being lowered to the bridge but this may not necessarily be the case. A solitary individual is standing next to the truck seemingly having offloaded boards onto the ground. A planked level crossing of the tramway is visible above the truck and it is possible some work was being done on it. However, also a possibility is that the timber is destined for the adjacent house block with its chimney standing sentinel and marking the position of a structure most likely destroyed in the massive bush fires a decade earlier. The block was purchased by sawmiller Bill Richards and it was here where he raised his fine residence during the latter part of 1908. The distinctive house stands prominently at the east end of Warburton to this day.

Further up the rise of Brisbane Hill is a forest of dead trees, bearing further testimony to the devastation that the 1898 fires wrought. The absence of foliage on the grey and blackened trunks allows a glimpse of Richards' sawmill and its outbuildings, with smoke and steam rising to the west. Behind the mill sits Mount Victoria from where the logs for Richards' sawmill were drawn and then further into the distance towards the upper-centre of the image can be seen the lofty heights of Mount Donna Buang.

Overall it is a brilliant image that captures the extent of the 2.6 km long incline and the unique bridge at its base. It showcases interesting elements of the incline terminus alongside the railway siding but also, most wonderfully, the character and splendour of the east end of Warburton, against the rising slopes of Mount Victoria, during the town's developmental period soon after the opening of the railway.

Mike McCarthy

Book Reviews

Engaging the Giants

A history of sawmills and tramways of Tasmania's Southern Forests

by Scott Clennett

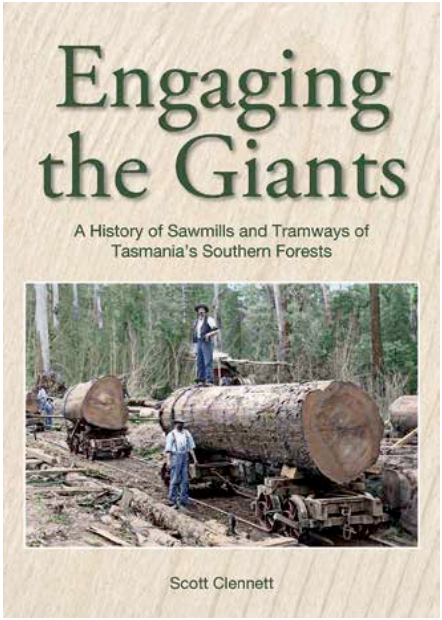
Published by LRRSA. Hard cover, 240 pages, A4 size 170 photographs, 21 maps, bibliography, references, and index.
Available from the LRRSA online bookshop -$60.00 plus postage ($45.00 plus postage for LRRSA members)

To date, far too little has been published on the fascinating and complex history of Tasmania's timber industry, sawmills and tramways. Scott Clennett has gone a long way to remedy this situation for the forests of southern Tasmania in this, his first book, *Engaging the Giants*. He has an impeccable timber pedigree: he is the grandson of an early timber pioneer, William Longstaff Clennett, who founded a family sawmilling business that endured for over 100 years and was still actively milling timber at Dover as late as 2005. Scott grew up with sawdust in his blood, and recalls seeing the last of the logging tramways in operation as a child. Those sights and sounds sparked off a life-long interest in the history of the mills, bush trams and mill communities of the Southern Forests that has culminated in this impressive book. It is to be hoped that it will not be his last.

Engaging the Giants covers the history of the forests of southern Tasmania bordering the D'Entrecasteau Channel, the island-sheltered seaway that stretches from Cataraman in the south up to Hobart's Derwent Estuary. The coast line there is unforgiving and the hinterland is steep and rugged. But in the early days of European settlement it was densely forested with high quality hardwoods and softwoods, the giants of those days. To exploit this wealth, the early timber pioneers established toe-holds along the coast in places that offered an anchorage for their cockleshell vessels. Here they built their first sawmills and began to push their logging tramways up into the hills.

The region's timber tramway era began in the convict era with the establishment of a Probation Station at Southport in 1841. Then followed a 100-year saga of timber-getting and sawmilling that involved over 35 different sawmills and in excess of 530km of timber tramways. Timber was of course the dominant freight, but there was also a little limestone and coal. Short tramways served the short-lived Catamaran coalfields and the Ida Bay Tramway hauled limestone destined for the Electrona carbide works.

Sawmills ranged from relatively small family affairs up to the two huge super mills at Dover and Kermandie. There was an equally wide variety of timber tramways; from simple spar-railed affairs thrown together in best bush-engineering style, all the way through to fully-fledged light railways with steel rails laid on well-engineered formations. Tramway gauges ranged the gamut from 2 ft 6 in up to 6 ft. Horses provided the motive power for early tramways but were increasingly supplanted by steam power as the years progressed. Over a dozen different steam locomotives found employment, ranging from homemade constructions up to a pair of American Shays. Internal-combustion locomotives made an appearance after World War 1.



The first five chapters of Scott's book set the scene in southern Tasmania, from its first sighting by Abel Tasman in 1642, through turbulent political and economic events that buffeted the timber industry, and on into the physical world that shaped the development of the isolated sawmilling settlements. Here, the author has captured much of the essence of the hardy forest communities and their total dependence on water transport to market their timber.

The descriptive meat of the book is contained in the next twelve chapters. Each chapter covers the history of the mills, tramways, communities and owners within a particular area, these being generally defined by the tentacled spread of the various tramway networks. With so many mills and tramways in the southern forests, this treatment provides a near-seamless coverage of the study area. There is some overlap given the often tangled web of owners, mills and tramways, but overall this approach works well. Each chapter also contains one or more of Mike McCarthy's detailed contour maps to illustrate the location and layouts described in the text. The book is profusely illustrated with over 170 well-captioned historical black-and-white and contemporary colour photographs.

The book concludes with a comprehensive suite of appendices, including a chronological summary of the various enterprises, detailed engineering notes on track construction, gauge and wheel-sets, field and mapping data, and a list of locomotives and rail cars. There is also an interesting, 90-year old essay penned by the author's grandfather in which he espoused his well-founded views on Tasmanian forestry. There is a comprehensive bibliography, and the text is copiously referenced and well-indexed.

Are there any drawbacks to the book? While it would be uncharitable to pick fault for the sake of picking fault, there are three aspects which this reviewer felt that, if addressed, would further enhance this already impressive publication.

Engaging the Giants is intimately concerned with the giant trees that were cut, milled and marketed, yet it is not clear from the text what species they were. In NSW, for example, the hardwood species available to a mill would dictate what market it would be selling into – piles, poles, railway sleepers, bridge girders, wharf decking, etc. A similar situation applied to softwood species. Mills lived or died by their ability to sell into markets that might be over-supplied or had access to cheaper alternatives. A short discussion of the forest species in the southern forests would not have been out of place, as well as more detail on which timbers the major sawmills were cutting and the markets they were supplying.

Locomotive aficionados may probably wish that more detailed descriptions and histories of the many often eccentric locomotives had been supplied, though the author does concede that such treatment is a very broad subject that requires further research before publication.

The insertion of newspaper quotes into the text, courtesy of Trove one suspects, was at times a little overdone and tended to interrupt the flow of the narrative.

Nevertheless this is an impressive book, a labour of love and the product of years of research and detailed field work by a dedicated author. Highly recommended. *Ian McNeil*

There's a good laugh as Broome's ragtime choo choo chuffs along the jetty

BROOME'S BOAT TRAIN

by W. J. Dawson

THERE is something attractive about Broome's boat train. Maybe it is the historical aspect. If so you will picture wealthy pearlers, Japanese and Malayan divers and Koepanger tender boys sitting upright in the uncomfortable alfresco coaches. Or you might like the friendly, unhurrying manner of the train's crew, Charlie and Parry, guard and driver, respectively. Take a round trip with us on this relic of the past.

We boarded one of the two antique coaches at the goods sheds. Parry threw three shovelfuls of coal into the Kimberley's boiler (Kimberley is the name of the fussy little engine) and acknowledged Charlie's green lantern signal with a business-like "peep" of the whistle. Charlie approached us and hopefully opened his bag.

"We're transit Air Force personnel", parried our sagacious sergeant, "we don't pay".

"Blimey", replied Charlie ruefully, "its always the same. Even when I look like taking a few fares I'm cheated". The Kimberley gave three vicious tugs at the obdurate coaches before the train squeaked tiredly into motion. Charlie wanted to talk trains.

"I don't know why the Harbour and Lights Board run the train down town. The fares I take wouldn't buy the grease for the pistons. Of course, the Kimberley drags a lot of frozen beef from the meatworks when ships are in port. The total length of the track is about 1½ miles and the fares are 1/3 return and 9d single, no matter where you get on or off. Top speed is 8 miles per hour. Trucks cover the line with sand and make bends dangerous. Why, we'd jump the track if we attempted high speeds!"

We stopped opposite a hotel. Parry and Charlie with a curt "back in a few minutes" sauntered towards the shaft of light which cut the darkness outside the bar. We assumed this was a train crew prerogative.

We moved off ten minutes later and approached Chinatown. The track, which had so far been straight, now took a right hand turn before commencing the circuit of Broome's historical and decrepit section of the town. From a hotel famous for its connection with the pearling trade, four figures lurched out and boarded the train. Charlie once again opened his bag, but the newcomers raucously informed him that they had no intention of paying. Charlie got tough and told them they would have to cut their fare out by assisting him with the mail at the Post Office.

Everybody detrained at the Post Office. Someone wanted to ring up and another said he was going to send a telegram.

"Won't be long Parry", yelled Charlie over his shoulder as he departed with the gang of helpers. By the time the nine bags of mail had been loaded everybody had apparently finished his business and once again the Kimberley impressed with a spiral of black smoke as we moved off.

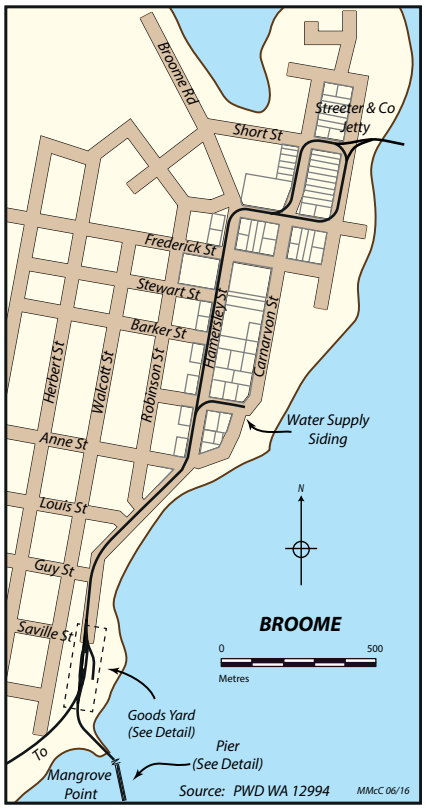
A stout old lady with her luggage awaited us at the hotel at which the crew had taken their refresher. Willing hands helped her up the high step and she showed her appreciation by insisting on Charlie keeping the 3d change out of the 1/- which she tendered.

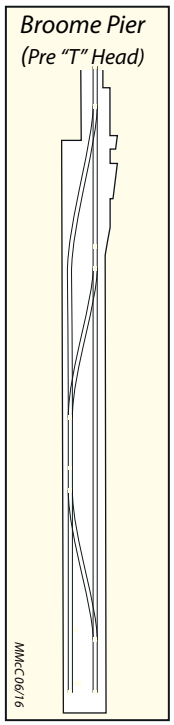
We swayed onto the decaying jetty and Charlie tactlessly told us of the time a pile collapsed beneath the train. Our journey came to an end where the Koolinda, like a Hollywood model, lay high and dry alongside the wharf.

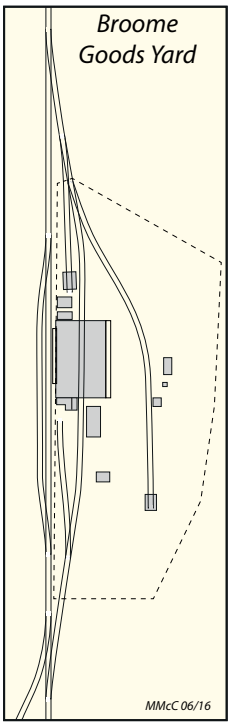
If you happen to be in Broome don't fail to see the town from the Kimberley Express. And don't worry if you haven't got a fare. Charlie will let you ride free providing you help him with the mail!

From the Western Mail, *(Perth, WA) 13 December 1945, page 61, reproduced in the same style as the original article. This article implies the tramway was operating in 1945. This conflicts with other reports which state the tramway was out of use between 1942 and 1946 — see* Light Railways *No.56, page 9.*

Kimberley, *Andrew Barclay (1754 of 1922) 0-4-0T locomotive on the Broome tramway. Photo: Victorian Railways H1717*







Field Reports

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

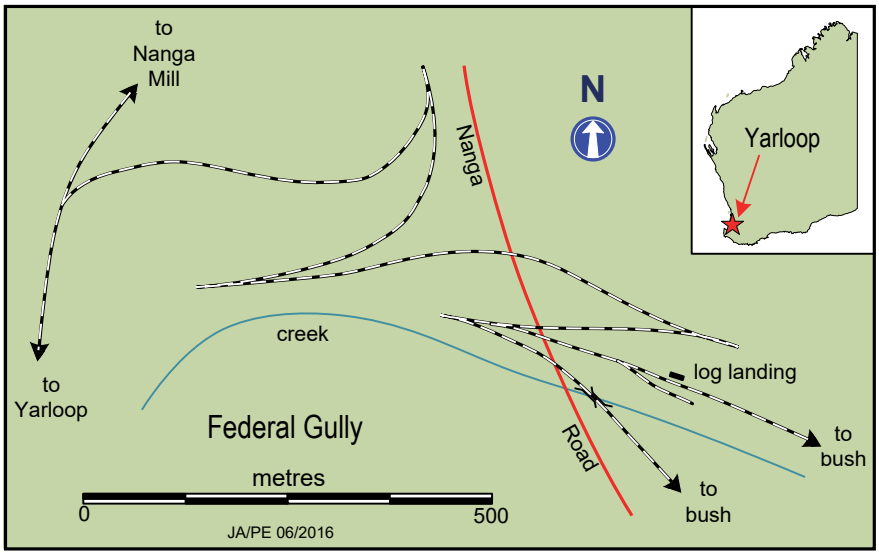
Yarloop post-fire survey, WA
Gauge 1067 mm

The fires which destroyed the township of Yarloop in January 2016 also burnt through a large area of forest that was once traversed by numerous timber railways. These railways were operated by Millar's Karri and Jarrah Company (later Millar's Timber & Trading Company) from its mill and workshops at Yarloop, to the mills and Jarrah forests in the Darling Range.

The fire started about 5 km south of the old mill site at Nanga Brook and then travelled south-west on a 12 km wide front to Yarloop and beyond. The burnt area covers about one third of the forest logged by Millar's, and includes the formations of most of the main lines and some mill sites. The townsite of Yarloop is still closed to the public, but the opportunity was taken to investigate the forest areas on several field trips in April and May 2016.

Many of the old railway formations have already been converted into forestry tracks, especially the main lines. These had been driven over between 1975 and 1984 and, while the tracks were generally good, the vegetation was usually dense and overhanging. Notes were taken at the time of spur lines, log landings, bridges, etc, and these proved useful for the current work. A sketched plot of the burnt area on the Millar's track plans highlighted a number of promising sites to visit. A check of Google Maps, however, revealed that large tracts of the burnt area had been mined by ALCOA for bauxite in the last thirty years and thus eliminated some of the railway formations. This mining activity had also changed the road network and made access to some sites difficult or impossible. Having a GPS unit plotting our route through the area was invaluable.

The initial trip in April was a reconnaissance to look over a broad area, clarify access, and identify interesting sites. The starting point was near the origin of the fire, south of Nanga Brook, where Millar's constructed zig-zag formations in three successive gullies. One of these, Leppers Gully, was walked over and sketched in 1975 but the other two, Christmas Creek and Federal Gully, had not been visited previously. Christmas Creek turned out to be outside the burnt area, so our GPS mapping was concentrated on Federal Gully.



Side tanks off a Hudswell Clarke locomotive, dumped on South Junction Form, 15 April 2016.
Photo: Jeff Austin

Side tanks from a Double-Fairlie locomotive (with smokebox at rear left) at Bancell Brook, Yarloop, 7 April 2016.
Photo: Jeff Austin

The major road through the area, Nanga Road, crosses this gully so access was very easy. Millar's had a staff station and crossing loop at 'Federal Gully' and this was about 1 km north. The zig-zag dates from about 1906-10, has four dead-ends, and drops 33 m in elevation from the

top to the bottom. There are the remains of a log landing near the bottom and a small bridge which once carried a spur further south into the bush. A short length of rail, fishplate and dog spikes were found, but in very poor condition.

The spur line to Leppers Gully branches off at the Federal Gully crossing loop. It swings away on a broad curve, with a log landing and cutting a short distance along. This railway also dates from around 1906-10 and the relics were also in poor condition. Unlike Federal Gully, the sleeper indentations were quite pronounced along some sections here, where normally they would have been eroded away in the sandy soil. The zig-zag only had two dead-ends, in a compact area which included a log landing, two creek crossings and a short spur to another log landing. The creek crossings consisted of large logs laid across the creek to form a culvert and back-filled over the top with soil. Over the years the logs have burnt and the soil above washed away. The track layout was again picked up by GPS.

The next site visited was the old Hoffman No 1 mill site. This mill was built 10 km east of Yarloop in 1897 and reached by a zig-zag railway over the Darling Escarpment. A branch off this line went to the other early mill at Waterous, 5 km further north. The Hoffman site was also completely burnt in 2016. The mill, coincidentally, had been burnt down in 1917 and never rebuilt, instead being replaced by a new mill 14 km east at Hoffman No.2 in 1922. The large concrete foundation of the mill engine was prominent in the middle of the site, with deep trenches under what was the floor of the mill. Numerous stump holes were also evident across the mill site. The formations of railways around the mill and out into the forest were also visible, as were signs of domestic life, with much broken glass and old tins. The lower part of the mill is very soft and unstable from the old sawdust heaps. The mill water supply was obtained from a small dam in the nearby creek. The only disturbance to the site has been the removal of soil from what was once the locomotive shed area.

About 3 km north of Hoffman No.1 is the zig-zag en-route to Waterous mill. This was originally the main line, but was bypassed by a new line on easier grades in 1912. The zig-zag only has two dead-ends, with roads built on the top and bottom legs. The middle leg is quite steep and undisturbed. An axle-box cover, inscribed 'WAGR 1897' was found along this section, and confirmed the use of government wagons on the Millar's lines. A drive back down this top leg brought us back to the main line to Yarloop.

The section of main line just to the east of the Yarloop zig-zag is littered with material dumped from the Millar's workshops. Previous trips along this section had uncovered various bits and pieces, ranging from locomotive side tanks to headlights. The fire damage has exposed several smoke boxes in Bancell Brook and pieces of boiler plate not seen before. Nearby are the three side tanks from the ex WAGR double-Fairlie locomotive 'E 7' (Avonside No 1241-2/1879). These tanks had been used to

View across the old mill site at Hoffman No 1, 7 April 2016. *Photo: Jeff Austin*

Concrete foundation of mill engine at Hoffman No 1 mill, 7 April 2016. *Photo: Jeff Austin*

View of log landing on King Jarrah Form, 27 May 2016. *Photo: Jeff Austin*

construct a tender body for the locomotive *Coates* in the 1890s, and were later dumped when no longer required. The side tanks from a Hudswell Clarke locomotive (either *Coates, Noyes* or *Morgan*) were dumped further down the line, but they were not visited this time.

On the following visit, we completed the GPS pick-up at Federal Gully and headed east towards the Murray River. This area is now a popular recreational circuit for 4WD vehicles and the tracks are very rough in places. Frustratingly, some of the tracks are now gated or barricaded-off due to fire damage, so access was limited. North Junction and South Junction Forms follow the west side of the Murray River, south from Nanga Brook mill. This area has impressive scenery as the railway winds along the sides of steep hills, with the broad river below. Unfortunately North Junction Form is closed, but we were able to drive down the South Junction Form. Back in the 1970s there were the remains of timber bridges along this track, but these have all now gone. Apart from dog spikes, fishplates, etc, the only significant relics along this section are the side tanks from a Hudswell Clarke locomotive (again, either *Coates*, *Noyes* or *Morgan*) which were dumped many years ago.

The King Jarrah Form is the main line constructed by Millar's in 1939 along Big Brook. The north end was accessible for about 2 km before a burnt bridge blocked the way. After a lengthy detour, the southern end was followed for several kilometres, until it too was blocked by an ALCOA haul road. This railway was used until the 1950s and the formation, log landings and relics are all well preserved. Numerous fishplates, dog spikes, bolts and lengths of rail were sighted, all in good condition.

After four visits the forest has begun to return to its pre-fire state, aided by early winter rains. The leaf debris is quickly covering the burnt ground and the zamia palms and grass trees are flourishing. The blackened trunks of the eucalyptus trees are covered in green shoots and the birds and animals are once again to be seen and heard. The hills that long ago echoed to the sounds of locomotives and winches now hear only the sounds of nature and the distant rumble of the ALCOA mines. For us, this was a rare chance to see long lost logging railways.

Jeff Austin 05/2016

Hitt's Tramway, Lardner Creek, Gellibrand, Victoria
Gauge 914 mm

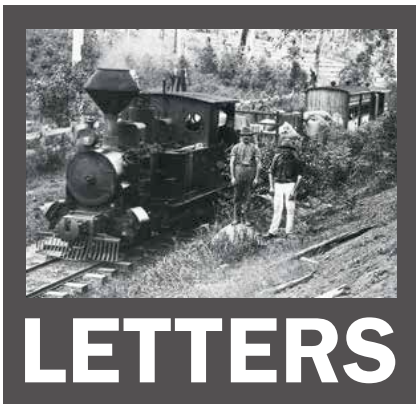
A traveler on the old Beech Forest road not far out of Gellibrand can see a tramway formation way off in a north-easterly direction running through a paddock on a slope above Lardner Creek. This formation has an interesting history. In the period 1903 to 1926 there was a 3 ft gauge horse hauled timber tramway running from the Gellibrand railway station south east for over 5 km to a mill site situated at the junction of the east and west branches of Lardner Creek. The tramway was used by three sawmilling companies. The first was the Beech Forest Sawmilling Co., which installed the tramway in 1904. This company originally intended to run the tramway from the mill to the railway line about 2 km south of Gellibrand and install a siding there, but the cost quoted by the Victorian Railways was prohibitive, so the tram was laid right into the station yard at Gellibrand. The mill worked until 1906.

In 1914 Condon Bros of Kawarren won a contract to supply a quantity of 23 m piles for harbour works, and sought these timbers along the Lardner Creek valley. Condons gained a Shire permit for a tramway from Gellibrand to the site, and moved to the former Beech Forest Sawmilling Co area to start work. It is presumed that Condons rehabilitated the tramway as there is no sign of another alignment along the route. The pile operation ran to 1916 when the contract was filled. Condons then abandoned the area.

In 1920 Arthur, Jack and Harry Hitt relocated their mill from Kawarren to Lardner Creek on the exact same site as the Beech Forest Sawmilling Co. and, like Condons, secured a permit for a tramway from the railway station to the mill site. The tramway was reconditioned and put back into use. Hitts worked two mills, the first being on the earlier mill site, and then the tramway was extended further along the valley to another mill. The Hitt operation worked until 1926 when the site was abandoned.

Norman Houghton 05/2016

Hitt's tramway running across the far hillside above Lardner Creek. *Photo: Norman Houghton*



LETTERS

Please send letters to:
Editor: Richard Warwick
PO Box 21, Surrey Hills, Vic 3127
e-mail: editor@lrrsa.org.au

East Bay Neck and its light railways (LR 249)

I am writing to add a couple of footnotes to the article by Jim Longworth and Phil Rickard on construction of the Dunalley canal (*Light Railways* 249). As the authors note, the Hobart *Mercury* of 10 October 1904 (p8) reported that the Sandfly Colliery Company (SCC) had purchased a locomotive, 47 wagons and 35 tons of rails from Henrickson and Knutson. This information was repeated at the first meeting of SCC shareholders on 15 December 1904 (*Mercury* 16 December 1904 p6). However it may have been some time before the Dunalley Krauss actually began work on the Sandfly line. The next reference I can find to it is in an SCC advertisement seeking purchasers for an additional 2,000 shares in the company (to finance completion of the tramway), which appeared in the *Mercury* for 22 July 1905 (p12). This noted that a locomotive, rolling stock, rails and fastenings had been purchased and were now at the North-West Bay end of the line. It also noted that the SCC had laid rails for only about 50 chains from the North-West Bay end and for about three quarters of a mile from the mine end, which would have provided little if any work for the Krauss.

The SCC mine manager reported regularly on construction of the mine and tramway, but rather surprisingly I have found only two references to the use of the Krauss. The report of 24 March 1906 (*Mercury* 28 March 1906 p5) said that rails now extended for 3 miles 28 chains from North-West Bay. Due to the cost and inconvenience of carting water for the locomotive a pump and tanks had been installed at Poverty Gully (3 miles from the Bay). The pump was now ready and would be powered by steam from the locomotive. The report of 7 April 1906 (*Mercury* 11 April 1906 p6) said that rails were now laid for 4 miles 44 chains from the Bay, but progress had been much hindered during the past fortnight by rain damaging the soft sand ballast, resulting in the track being unable to carry the locomotive. Better ballast would be available when the line reached 6 and 7 miles. Track laying was finally completed in August 1906.

I have also found a few more references to the tramway on the long jetty at the western (Norfolk Bay) end of the Dunalley canal. The jetty was discussed by the Hobart Marine Board on 25 July 1911 (*Mercury* 26 July 1911 p2). The Board had fenced off the jetty because it was unsafe, but this had upset the auctioneers who conducted cattle sales on Tasman Peninsula. Warden FH Piesse, who was also manager of the Huon, Channel and Peninsula Steamship Coy (which provided passenger and cargo services from Hobart to Dunalley and Tasman Peninsula ports), said that the jetty piles were in good order and if it was re-decked it would last for years. He said it was likely that his company's steamers would soon have to use the jetty again, due to the difficulty of getting in to the new wharf alongside the canal. The Marine Board decided that people could use the jetty provided that they provided the Board with an indemnity.

In October 1912 (*Mercury* 14 October 1912 p4) the proprietor of the Lufra Hotel at Eaglehawk Neck complained to the Sorell Council that the trolley on the Eaglehawk Neck jetty tramway was running on only three wheels and that 'it was no joke to convey goods along the jetty on it'. He asked that the trolley on Dunalley jetty be transferred to Eaglehawk Neck, since it was of no use at Dunalley. The Council decided that it had no authority to transfer the trolley, but noted that there was a spare pair of wheels 'at the Sounds', which could be used at Eaglehawk Neck. They must have repaired the Eaglehawk Neck trolley somehow, as Sorell Council noted in January 1921 that it badly needed new wheels (*Mercury* 21 January 1921 p3).

As the authors mentioned, the *Mercury* of 5 March 1913 (p4) noted that the Dunalley jetty had been a bone of contention for some time. It had fallen into disrepair and the Hobart Marine Board had posted a notice disclaiming any responsibility for accidents. A meeting of the Marine Board the previous day had considered a letter from the Public Works Department proposing to remove the iron rails and other material, as the jetty was no longer required for public purposes. Warden FH Piesse said that if they could be assured that there was always eight feet of water at the canal wharf the jetty might as well be taken away. However there was not always eight feet of water at the canal wharf and the jetty had to be used, safe or unsafe. The rails might as well be taken away, but they needed the decking to walk passengers and sometimes cattle.

In May 1916 FH Piesse wrote to the Sorell Council stating that there was an 'awkward distance ' of more than 70 yards between the store and the jetty at Dunalley (my interpretation of this is that the line would run to the old jetty from the shed at the canal wharf). He asked the Council to lay a tramway between the store and the jetty, with the Huon, Channel and Peninsula Coy providing a truck to run on it. The Council deferred the matter pending receipt of a petition from Dunalley residents (*Mercury* 15 May 1916 p8).

Jim Stokes
Via email

East Bay Neck and its light railways (LR 249)

I received the latest edition of *Light Railways* yesterday and was struck by the leading article on the Denison Canal. The canal was certainly officially opened on 13 October 1905 when the river steamer SS *Dover* conveyed the official party through the canal.

The photo on page three does not look at all like SS *Dover*. I have sourced a picture purporting to be the official first passage of the canal by SS *Dover*. Both pictures show no resemblance to the vessel in *Light Railways*, which I have subsequently identified as SS *Huon*, built in 1882 at Port Cygnet and wrecked in Pirates Bay in 1923.

I also query the spelling of Blackmans Bay/ Blackman's Bay. I have always known this stretch of water as Blackman Bay, having lived for many years at Blackmans Bay, a seaside suburb south of Hobart near Kingston.

Aside from these two points, it was an interesting and informative article. I was especially interested in the Krauss locomotive B/N 4526 of 1901, having been unaware that it was involved in the canal construction prior to use at the Sandfly Colliery.

Simon Hutchinson
Via email

Editor's Note

The authors of the article advise that they sourced a page from the *Weekly Courier,* Launceston dated 21 Oct 1905 showing two photos by well-known Hobart photographer John Watt Beattie, from the opening day. The photos show that Beattie, or his assistant, has set up his tripod on the bend in the canal and photographed the *Dover* approaching, swiveled the camera, and then photographed the receding *Dover*. Examination shows it is the same vessel in the approaching photo that Simon provided. The *Weekly Courier* photos are sharp enough to conclusively confirm it is the same vessel approaching as it is receding – they were examined when the caption was written. Also, Beattie says it is the *Dover* in both photos.

Lake George Mines Ltd., Captains Flat, NSW

The underground rail system once used in the Lake George Mine at Captains Flat was an unusual gauge of 19.75 inches, latterly referred to in Company documentation as 20 inches. While writing the book on the subject *Riches Beneath the Flat* this author searched, without success, to try to find the origin of this odd gauge used at the mine.

Recently I visited Pennsylvania, USA to attend an exhibition over the weekend 21-22 May near the town of Centreville. The industrial locomotive preservation group *American Industrial Mining Company* operates a coal mining exhibit, which features an operating Plymouth diesel loco and Jeffrey trolley wire loco, twice a year at the nearby fairgrounds.

The co-founder of this dedicated group, Pete Jedlicka has a collection of builder's photograph albums of various American mining locomotive manufacturers. One

such album is that of the Mancha Company. There was a photo of the two Mancha battery loco's that went to Lake George Mines at Captains Flat but unfortunately the gauge was not recorded amongst the technical details on the reverse side of the photo.

However, there was a photo of a battery loco that went to the silver-lead-zinc mines at Fresnillo, Mexico. An American, Mr Thomas ('Ted') Baker, the Lake George Mines consulting engineer and later managing director had been employed as general manager at the Fresnillo mines for the parent British company that owned Lake George Mines.

On the reverse side of the Fresnillo photo there were typed technical details of the loco but written in pencil was the gauge – 20 inches. Eureka, the mystery was solved! Ted Baker had brought the track gauge of Fresnillo, Mexico to Lake George Mines, NSW.

Ross Mainwaring
Via email

Letters to the Editor (LR 250)

I was amused to read Adrian Gunzburg's reference in LR 249 to Charles Small's use of voluntary or conscripted research assistants for his Australian locomotive lists, as I have come across a similar Small strategy in Tasmania. Many years ago John Buckland passed on to me a detailed 1963 research report to Small on Tasmania. Unfortunately it does not include a signature block, but the context of the letter suggests that the researcher may have been Mobil's manager in Tasmania. Small certainly kept him busy, his investigations including Catamaran, Douglas River, Forester and Beaconsfield. He interviewed various former residents of Catamaran, Forestry staff and also a lady he described as Mrs Joe the Junk, the wife of a Hobart scrap merchant. He also did quite a lot of research in the Tasmanian Archives, although he suggested that next time Small visited Hobart he should spend some time in the Archives himself!

None of this detracts from the fact that the Small lists were a major contribution to Australian light railway history and I recall how pleased I was to see them and to have an opportunity to contribute information to them. However I agree with Adrian that it would be nice to see Small's research assistants receive some belated recognition and I wondered if any reader could identify his Tasmanian correspondent.

Jim Stokes
Via email

Editor's Note

In 1968 Mr Small donated some of his work to the Society. Below is an extract from LR 22, Summer 1968, page 17:

A Great Gift to the Society

Mr C S Small, an American friend of the Society, was so interested in the advances made by the Society into research of the Victorian private lines that he donated a copy of his fifty-three page list of the Light Railways of Tasmania, to aid the society in compiling a history of Tasmania's fascinating lines. The list was compiled by Mr Small from ARHS Bulletins, Light Railways, and other correct and up-to date information that he has collected himself. It contains details of the locomotives of private lines throughout Tasmania and of the Government lines of the West Coast. It lists the details of some one hundred and forty steam locomotives, with cross references where a locomotive worked on more than one line; details the history of each one both within and outside Tasmania, with theories suggested where all details are not definitely known; dimensions of the locos where known, and dates when the lines were opened and closed, etc.

It is the only copy of the list in Australia and provides a wonderful basis for members of the society to add to and use as a reference. The list is to be held by the Secretary but the aim of the society is to make it available to as many members as possible who feel that they can make useful amendments. Because it is a Tasmanian list, VLRRS Tasmanian members are being allowed to have the first use of it, but when they have finished, other members can apply for a loan. There will be a time limit of two weeks and special security arrangements have been made relating to its use. We are deeply indebted to Mr.Small for his valuable gift and we will keep him informed as to all amendments members can make to it.
M.P.

Mystery Electric Locomotive (Tasmania) (LR 246)

I refer to my letter in LR248, in which I describe the HTC's wharfage as consisting of an approach pier and a main berth at right angles to it. Subsequent reference to to an old drawing of the then-proposed tramway layout at the Whale Point site of the Huon Timber Company indicates that main berth was at about a 60 degree angle to the approach pier, and thus the footprint took the form of a more open reverse-L. This is borne out by another old photo of the wharfage.

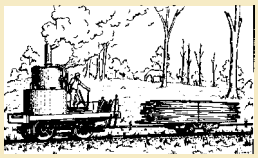
While this does not solve the 'Mystery', it would indicate an easier rail transition from pier to berth than I had surmised, and the suggestion of a turntable would seem unlikely.

With respect to the log hauler and locomotive built in Hobart for Chesterman & Co. at Raminea, the builder's and locomotive's name should have been spelled 'Buyers', and not 'Byers'.

Scott Clennett
Via email

ADDENDUM

In *Light Railways* 249 the photographic credits were unfortunately omitted on page 22 as follows:
"Dunwich Jetty 1931, North Stradbroke Island" State Library of Queensland, John Oxley Library image 33504
and on page 23: "Babinda Mill 1929, FNQ" National Library of Australia, Fairfax Archive image PIC/15611



LRRSA NEWS

MEETINGS

ADELAIDE: "SA light rail package and the SA light rails centre"
We will discuss the SA light rail package, the SA light rails centre project and suggestions for cover photos for LR. News of light rail matters will be welcome from any member. Please contact Les Howard on 08 8278 3082 or lfhoward@tpg.com.au if you are planning on attending.
Location: 9 Craiglee Drive, Coromandel Valley
Date: Thursday 4 August 2016 at 8 pm

BRISBANE: "Iberia in the 1960s"
David Rollins will be showing his slides/photos of Iberia in the 1960s.
Location: BCC Library, 107 Orange Grove Road, Coopers Plains.
Date: Friday 19 August 2016 at 7:30pm

MELBOURNE: "AGM and From the Ray Graf collection – part 1"
Following the Annual General Meeting, a range of colour slides will be shown utilising our vintage steam-powered slide projector (celebrating its 40th birthday). The slides will cover an eclectic mix of locations both within Victoria and the Greater Victorian Economic Zone of Influence (i.e. southern NSW) including a number of tunnelling, tourist and industrial operations, now all long-gone.
Location: Ashburton Uniting Church Hall, Ashburn Grove, Ashburton.
Date: Thursday 11 August 2016 at 8:00 pm

SYDNEY: "Industrial Railways of Malaya"
Ray Gardiner will be presenting a photographic evening encompassing the many and varied industrial railways of Malaya. The late Peter Hodge and John Benson photographed some of the railways from 1969 and Rob Dickinson has very kindly sent Ray high definition copies of this most interesting subject, which includes palm oil plantations, logging and mineral lines. Steam and diesel locomotives are featured. This will be an interesting evening for industrial rail enthusiasts.
Location: Library and Community Hub, Corner of Condor St and Railway Parade, Burwood in the first floor room. Free Council car park in front of and behind building.
Date: Wednesday 24 August 2016 at 7:30pm

Industrial Railway NEWS

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

QUEENSLAND

BUNDABERG SUGAR LTD, Millaquin Mill

((see LR 248 p 22)
610 mm gauge
EM Baldwin B-B DH *Fairydale* (10048.1 6.82 of 1982) and the police have featured in an article in the local newspaper warning people to be aware of trains at level crossings during this year's crushing season. The start of crushing at this mill was put back two weeks by a fire in the bagasse handling system on the night of Friday 10 June.
NewsMail 9/6/2016, 13/6/2016, 14/6/2016

GLENCORE plc, MOUNT ISA MINES LTD, Mount Isa

(see LR 249 p 25)
1067 mm gauge
The first haulage established on 15 Level was a simple push-pull system using 20 tonne diesel locomotives and 7.1 cubic metre side tipping Granby trucks.
The locomotives used on the 17 level haulage commissioned in 1969 were 20 tonne Greenwood and Batley electric and battery electric units used in tandem and hauling rakes of up to sixteen 400 cubic feet Hudson Rockflo trucks. By 1979, the rails and overhead had been removed from the haulage drive. The access and service drive was still in use and personnel transport was in enclosed cross bench cars hauled by a battery electric locomotive.
In 1984, 19 level was using 20 tonne battery electric locos in tandem hauling 11.3 cubic metre bottom dump Hudson trucks.
Tony Weston 4/16; Anon, Trends in mechanisation at Mount Isa, *Mine and quarry mechanisation,* Magazine Associations, Avalon Beach, 1968, p 183; *Mine and quarry mechanisation*, 1969, pp 89-91; Dixon, M W, Some recent changes and innovations at Mount Isa mine, AusIMM Conference, Darwin, Australasian Institute of Mining and Metallurgy, 1984, pp 249-258

ISIS CENTRAL SUGAR MILL CO LTD

(see LR 247 p 22)
610 mm gauge
EM Baldwin B-B DH 10 (7267.1 6.77 of 1977) was seen with the ballast hoppers at Horton yard on 14 May. Walkers B-B DH *Isis No.1* (602 of 1969 rebuilt Walkers 1991) has been repainted in the mill's all over yellow livery this year leaving just Walkers B-B DH locomotives *Isis No.5* (617 of 1969 rebuilt Isis 1998) and *Isis No.6* (610 of 1969 rebuilt Isis 2002) of these locomotives in the old yellow and cream colours.
Isis is looking to source cane one hundred kilometres inland from the mill in the Gayndah area and will start cane variety trials there this year. If proved feasible, the company will spend 10 million dollars building a rail line and increasing capacity in the mill. There is potential for 500,000 tonnes of cane to come from this area and the mill is looking to rail haul it using closed Queensland Railways lines and a new interconnecting line. The choice of gauge between 610 mm and 1067 mm is undecided at present.
Brian Bouchardt 5/16, 6/16; ABC Rural 27/5/2016

MACKAY SUGAR LTD, Mackay mills

(see LR 248 p.22)
610 mm gauge
EM Baldwin B-B DH *Shannon* (7126.1 5.77 of 1977) was seen with the fifty new Racecourse Mill 5-tonne bins at Stotts Loop on 18 May. They were being tested on the new bin tag reader and hot box detector which was also being calibrated. During the slack season, Clyde 0-6-0DH *Palms* (70-708 of 1970) was repowered with a new Mercedes Benz motor and Allison transmission. This now makes three Mackay Sugar locos which have this motor and transmission combination.
During preseason steam trials on 24 May, one of Marian Mill's boilers suffered a furnace explosion. It is not expected to be back online until August with the mill operating at a reduced crushing rate until then. The probable knock-on effect will be the transfer of cane from the Marian area to Farleigh Mill until the former is back up to full capacity.
Mackay Sugar will be able to manage with three less locomotives this crushing season by asking the harvesters on one line at each of its three

Top: *Racecourse Mill's EM Baldwin B-B DH* Shannon *(7126.1 5.77 of 1977) at Stotts Loop with a rake of new 5 tonne bins on 18 May. Photo: Mitch Zunker* ***Above:*** *Racecourse Mill's EM Baldwin B-B DH* Shannon *(7126.1 5.77 of 1977) delivering empties in the Homebush area on 29 May. Photo: Scott Jesser*

mills to move its hours of operation from what it normally is. Coincidently, three Clyde 0-6-0DH locomotives were decommissioned in June and moved to the storage shed at North Eton. They are *Te Kowai* (56-103 of 1956) with a cracked jackshaft, 12 *Nellie* (58-188 of 1958) with a tired motor and *Racecourse* (65-440 of 1965) surplus to requirements. Clyde 0-6-0DH *Broadsound* (70-710 of 1971) which was no longer needed as a day shift loco at Racecourse Mill, has become the spare locomotive in place of the *Racecourse*.

A haulout tractor collided with a locomotive at Racecourse Mill's Sunnyside siding on Homebush Road on 14 June. The tractor received extensive damage while damage to the loco was only minor and about fifteen empty bins were derailed. The tractor driver received minor injuries.

Mitch Zunker 5/16, 6/16; *Daily Mercury* 16/5/2016, 24/5/2016, 2/6/2016, 14/6/2016

MOUNT ISA MINES LTD, Hilton Mine

(see LR 249 p 25)

1067 mm gauge and unknown gauge

Rail haulage here had been converted to a trackless operation by 2003.

Anon, Information memorandum in relation to a recommended scheme of arrangement of all the shares of MIM Holdings Limited by Xstrata Holdings Pty Limited, a wholly owned subsidiary of Xstrata plc, MIM Holdings Limited, 2003, 361 pp

MSF SUGAR LTD, Mulgrave Mill

(see LR 249 p.25)

610 mm gauge

EM Baldwin B-B DH 32 *Liverpool* (10385.1 8.82 of 1982) was returned to South Johnstone Mill by road transport on 31 May following a rebuild there during the slack season. Seen out the back of the locoshed on 2 June was the cab from one of the Clyde 0-6-0DH locomotives 14 (56-86 of 1956) and 16 *Kamma* (56-96 of 1956). Clyde 0-6-0DH 25 *Cucania* (63-289 of 1963) was the truckshop shunter. Also on 2 June, Com-Eng 0-6-0DM 5 (A1005 of 1955) was seen on navvy duties in company with the Plasser Australia KMX-12T tamping machine (432 of 1997) just north of Babinda.

Abby Mohammed 5/16; John Charleton 5/16; Carl Millington 6/16

MSF SUGAR LTD, South Johnstone Mill

(see LR 249 p 26)

610 mm gauge

An album of photos posted on 23 May to the Bradken Facebook web page depicts new bins manufactured by it at its Boogan factory. One of the photos shows South Johnstone Mill's EM Baldwin B-B DH 25 (6470.1 1.76 of 1976) outside the factory with a rake of 6 tonners, presumably for this mill. A couple of other photos show EM Baldwin B-B DH 26 (7244.1 8.77 of 1977) heading off from the factory with a rake of 10 tonners bound for Tully Mill.

EM Baldwin B-B DH 32 *Liverpool* (10385.1 8.82 of 1982) returned by road transport from Mulgrave Mill on 31 May. It has been rebuilt with a Mulgrave style cab and hood, painted in Mulgrave green and yellow livery and fitted with RSU remote control gear.

Top: *Mulgrave Mill's navvy loco, Com-Eng 0-6-0DM 5 (A1005 of 1955), parked at Tuligi siding near Babinda on 2 June. Photo: Carl Millington*
Above: *Upstream from South Johnstone Mill, EM Baldwin B-B DH 24 (5477.1 8.74 of 1974) propels empty bins across the old South Johnstone River bridge for collection by a loco on the opposite side on 27 June. Photo: Luke Horniblow*

Com-Eng 0-6-0DH multiunit locomotives 8 (AA1543 of 1960) and 9 (AH3979 of 1964) are expected to return to service in late June following rebuild with new Mercedes Benz motors and Allison transmissions. Clyde 0-6-0DH locomotives 2 (55-56 of 1955) and 3 (56-90 of 1956) are also being rebuilt with new Mercedes Benz motors and Allison transmissions and are expected to be ready in July or August. These two locomotives have reverted to the identities they had at Babinda Mill prior to their sojourn at Mulgrave Mill. All four of these locomotives have been fitted with Mulgrave style cabs and hoods, painted in the Mulgrave green and yellow livery and fitted with RSU remote control gear.

The spans and piers of the Miskin Creek bridge were replaced by a new steel structure during May. The old main span is said to be ex Queensland Railways.

Items seen on a visit to the mill on 2 June included Clyde 0-6-0DH 18 (56-83 of 1956) on the truckshop shunt and the experimental bogie bin on the old transhipping shed line. The former canetainer chassis that have been used as mill equipment transporters were not to be seen. Clyde 0-6-0DH 13 (59-203 of 1959) and the brakewagons that are usually stored at Silkwood each year were seen in the navvy yard. Clyde 0-6-0DH locomotives 15 (66-491 of 1966), 16 (56-93 of 1956) and 17 (55-57 of 1955) are based at Silkwood this crushing season.

Bradken Facebook web page 23/5/2016; Abby Mohammed 5/16; John Charleton 5/16; Jason Sou 6/16; Carl Millington 6/16

TULLY SUGAR LTD

(see LR 249 p 26)

610 mm gauge

An album of photos posted on 23 May to the Bradken Facebook web page depicts new bins manufactured by it at its Boogan factory. A couple of photos show South Johnstone Mill's EM Baldwin B-B DH 26 (7244.1 8.77 of 1977) heading off from the factory with a rake of 10 tonners bound for Tully Mill.

The expected very early start to the crushing season of 31 May did not materialise owing to wet weather. In contrast to the other multiunit locomotives here which run elephant style, Com-Eng 0-6-0DH locomotives *Tully-11* (AD1347 of 1960) and *Tully-16* (AH4484 of 1964) have been running back to back since 2010.

Luke Horniblow 5/16; *Tully Times* 26/5/2016; Bradken Facebook web page 23/5/2016

WILMAR SUGAR (HERBERT) PTY LTD, Herbert River Mills

(see LR 249 p 26)

610 mm gauge

One of the few remaining vestiges of the 610 mm and 1067 mm dual gauge system at Victoria Mill disappeared during the slack season with the replacement of a dual gauge level crossing at

Top: *Lined up at the Victoria Mill locoshed on 27 May and ready for the start of the 2016 crushing season are EM Baldwin B-B DH* Rynne *(5423.1 9.74 of 1974 rebuilt N&P 2009), Clyde 0-6-0DH* Dalrymple *(70-709 of 1970), EM Baldwin B-B DH* Adelaide *(7070.2 4.77 of 1977), Clyde 0-6-0DH* Centenary *(64-381 of 1964) and Solari bogie brakewagon* BV12 *(built in 1994). Behind at the left is EM Baldwin B-B DH* Gowrie *(7135.1 7.77 of 1977). Photo: Christopher Hart*

Above: *Ready to leave Victoria Mill on 10 June with sugar bins destined for a preseason run through the tipping station at Lucinda is Macknade Mill's Clyde 0-6-0DH 11 (65-383 of 1965). Photo: Christopher Hart*

Above: *On 12 June, Inkerman Mill Com-Eng 0-6-0DH* Koolkuna *(AM4993 of 1965) makes its way to Powers Junction on the main line south. Photo: Luke Horniblow*
Below: *Pioneer Mill's Clyde 0-6-0DH* Colevale *(65-438 of 1965) and Walkers 0-6-0DH* Aramac *(583 of 1968) in the full yard on 12 June. Photo: Luke Horniblow*

Sachs Lane on the Gairloch line by a 610 mm gauge crossing. Known remains are now limited to the double track level crossing on Victoria Mill Road, trackage buried under the navvy shed car park and some trackage set in concrete within the mill.
Invicta Mill's Tamper STM-XLC tamping machine (built in 1993) was on loan to Wilmar's Herbert mills from 16 May to early June.
Ninety new 11 tonne bogie bins and not the one hundred previously stated have been built for the Herbert at one of Wilmar's Burdekin mills this year. Assembly work started in the Victoria Mill truckshop in late May and is expected to continue into the crushing season. Forty-five new sugar bin chassis and bogies were built at the Wilmar workshop in Ingham this year with final assembly and fitting of boxes from the old chassis being done at the Macknade Mill truckshop. This work was completed by late May. Most of the flat wagons created by the removal of the boxes have gone to the navvies and are now stored in its sidings at Victoria Mill. Several have been retained at the Victoria sugar hopper as a source of spare parts for the sugar bins with old chassis.
EM Baldwin B-B DH *Darwin* (6171.1 9.75 of 1975) is expected to be based at Macknade Mill this year with EM Baldwin B-B DH *Wallaman* (6400.3 4.76 of 1976) staying at Victoria Mill. The *Darwin* now has a rear mounted air conditioner replacing that on the roof so it can fit under the road bridge at Cordelia. Work on the refurbishing of Macknade Mill's EM Baldwin 0-6-0DH 14 (6/2490.1 7.68 of 1968) is not expected to be completed in time for the start of the crushing season as it is waiting on the return of its rebuilt final drive. The old motor and convertor from 14 have gone into Clyde 0-6-0DH *Canberra* (65-433 of 1965) which remains based at Macknade. EM Baldwin 6 wheeled brakewagon *BVAN 2* (7065.5 6.77 of 1977) was refurbished including repainting during the slack season and an additional two tonnes of steel plates was added to the deck bringing it up to 18 tonnes in weight. The new Chinese built bogie brakewagon (built in 2015) at Victoria Mill has been paired up with EM Baldwin B-B DH *Rynne* (5423.1 9.74 of 1974 rebuilt N+P 2009) and the ex Macknade Mill Solari bogie brakewagon *BVAN 3* (built in 1994) formerly with this locomotive is expected to be paired up with the *Wallaman*.
Luke Horniblow 5/16; Editor 5/16, 6/16

WILMAR SUGAR (INVICTA) PTY LTD, Invicta Mill, Giru
(see LR 249 p 26)
610 mm gauge
The Tamper STM-XLC tamping machine (built in 1993) was on loan to Wilmar's Herbert mills from 16 May to early June.
Luke Horniblow 5/16, Editor 5/16, 6/16

WILMAR SUGAR (KALAMIA) PTY LTD, Kalamia Mill
(see LR 249 p 26)
610 mm gauge and 1067 mm gauge
Clyde 0-6-0DH *Colevale* (65-438 of 1965) and ballast hoppers were seen here on loan from Pioneer Mill on 6 May. They were being used to lay ballast on the relaid sugar hopper 1067 mm gauge balloon loop at the mill and all were road transported from Pioneer Mill. The Plasser Australia VTO6-16 tamping machine (41 of 1973) from Pioneer was on loan to do the tamping on this job during May and was also road transported between the two mills.
Luke Horniblow 5/16; Lee Fabbro 5/16

WILMAR SUGAR PTY LTD, Pioneer Mill, Brandon
(see LR 246 p 25)
1067 mm gauge
Clyde 0-6-0DH *Colevale* (65-438 of 1965) and ballast hoppers were seen on loan at Kalamia Mill on 6 May. The Plasser Australia VTO6-16 tamping machine (41 of 1973) was also on loan to Kalamia Mill during May. Walkers 0-6-0DH *Aramac* (583 of 1968), damaged in a level crossing collision in 2015, has returned to service for this year's crushing season.
Luke Horniblow 5/16, 6/16; Lee Fabbro 5/16

WESTERN AUSTRALIA

COCKBURN CEMENT LTD, Parkeston
(see LR 231 p 25)
1435 mm gauge
Ex BHP Newcastle Steelworks Goninan Bo-Bo DE 49 (013 of 1961) was seen at work here on 25 June. Also on site as a spare parts reservoir is Goninan Bo-Bo DE (014 of 1961), formerly 50 at Newcastle Steelworks.
Walter Rowe 6/16

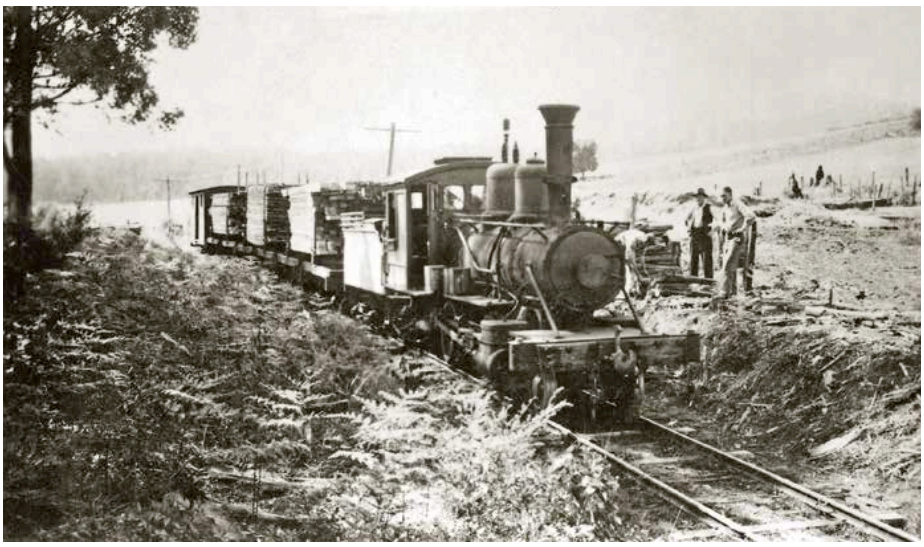
OVERSEAS

FIJI SUGAR CORPORATION (FSC)
(see LR 249 p 27)
610 mm gauge
Penang Mill will not be operating for this year's crushing season and possibly the 2017 crushing due to severe structural damage from Cyclone Winston and the cane from this mill will be crushed at Rarawai Mill. Fiji's Prime Minister says that the FSC will provide road transport for farmers' cane from the Penang Mill site to Rarawai Mill. The farmers still have to get their cane to Penang Mill to access this service. They can also transport their cane direct to Rarawai Mill and the FSC will cover the cost of the extra distance travelled. When it reopens, Penang may be operating as a syrup mill only.
Sigatoka cane farmers are citing escalating transport and labour costs plus lack of consultation by FSC as the reason for the demise of cane growing in the area. In August 2010, FSC said that cane from Sigatoka had to be transported by lorries which added significantly to growers' transport costs and was not covered sufficiently by subsidies. FSC states that in its strategic action plan for the next five years, it plans to fix up the rail system because it is aware that lorries are a big cost.
Trade unions are claiming that it is not viable to transport cane by road from Penang to Rarawai owing to a lack of and age of lorries with the rail system unable to help out because of neglect and lack of proper maintenance. They claim that this is a similar situation to the closure of the rail system to Sigatoka with this causing the downturn in cane production there and not the farmers as claimed by the FSC.
Labasa Mill had started this year's crushing by 16 June.
Fiji Sun Online 7/5/2016, 15/6/2016; *The Fiji Times* Online 12/5/2016; *The Fiji Times* 14/6/2016, 15/6/2016, 16/6/2016, 17/6/2016; Fiji Broadcasting Corporation 12/5/2016; fijivillage.com 16/6/2016

PT FREEPORT INDONESIA, Grasberg Mine, Papua Province of Indonesia
(see LR 249 p.27)
1435 mm gauge
More details of the Grasberg underground mine rail haulage system were recently published in conjunction with the Seventh International Conference & Exhibition on Mass Mining (MassMin 2016) held in Sydney during May. Government permitting of the rail haulage system has been delayed although the excavation of the tunnels, the chute galleries and unloading station coarse ore bin for the first section of the haulage have been progressing. The construction of loading chutes has not been restricted as these are part of normal operations. The primary access to the mine will be the 6 kilometre Ali Boediardjo adits with rubber tyred equipment delivering personnel and materials to an internal service shaft at the 2535 metre level. The service shaft will hoist personnel and materials up to the 2760 metre haulage level, 2830 metre extraction level and 2850 metre undercut level. Materials in containers will be transferred at the 2535 metre level to rail flat cars for hoisting and shunting by Zephyr Lok 1600 locomotives to the warehouses, maintenance facilities, explosives magazine and concrete batch plant on the other levels. Zephyr Lok 2000 locomotives will be dedicated to the haulage level and have air braking capacity to handle flat cars and ballast cars but cannot pass through the unloading station or pull a complete train.
The Schalke locomotives here are fitted with IGBT-controlled traction converters making it possible to control each wheelset individually. They can be run as straight electric locomotives using overhead catenary or as battery or diesel locos using power packs which can be swapped out in less than an hour.
Tony Weston 6/16; *Engineering and Mining Journal* March 2016, May 2016; Hariyadi, A, Castro, M, and Fisher, J, Automated train ore transport, *Proceedings Seventh International Conference & Exhibition on Mass Mining* (MassMin 2016), Australasian Institute of Mining and Metallurgy (AusIMM), Melbourne, 2016, pp 563-569; Pasek, I, Firdausi, H, Chenier, T, Development of the ore handling system at the Grasberg block cave mine, Indonesia, MassMin 2016, AusIMM, Melbourne, 2016, pp 599-607; Pascoe, N D, Mead, B, and Vega, H, Grasberg block cave haulage project design and construction update, MassMin 2016, AusIMM, 2016, pp 585-597.

Above: *Pioneer Mill Walkers B-B DH Jardine (592 of 1968) is about to pass under the Bruce Highway as it nears the mill on 12 June. Photo: Luke Horniblow*
Below: *On loan to Kalamia Mill for ballasting work on the 1067 mm gauge sugar loading loop is Pioneer Mill's Clyde 0-6-0DH* Colevale *(65-438 of 1965) on 6 May. Photo: Luke Horniblow*

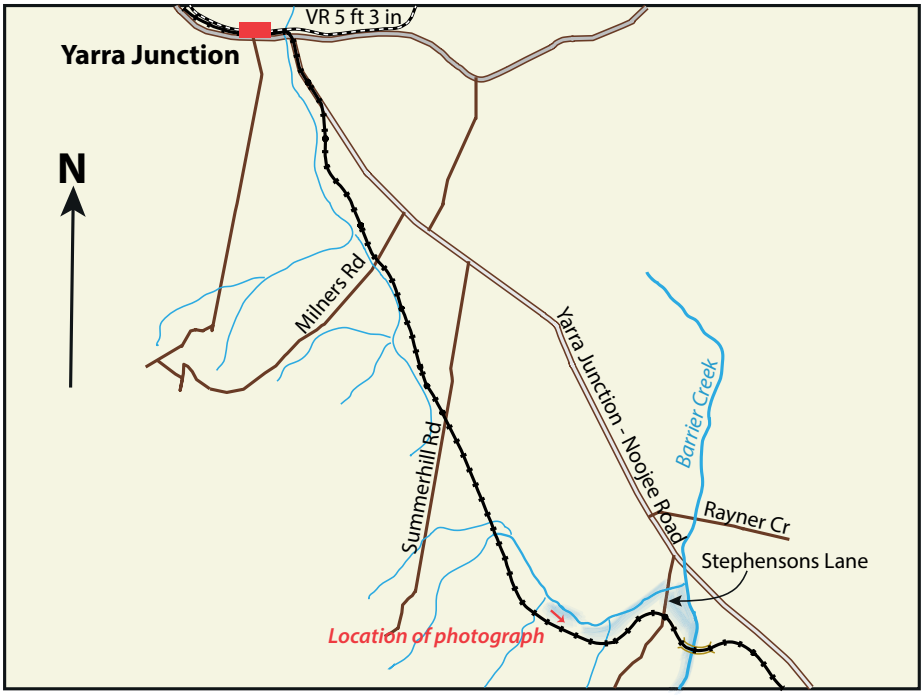
Little Yarra takes wood at Barrier



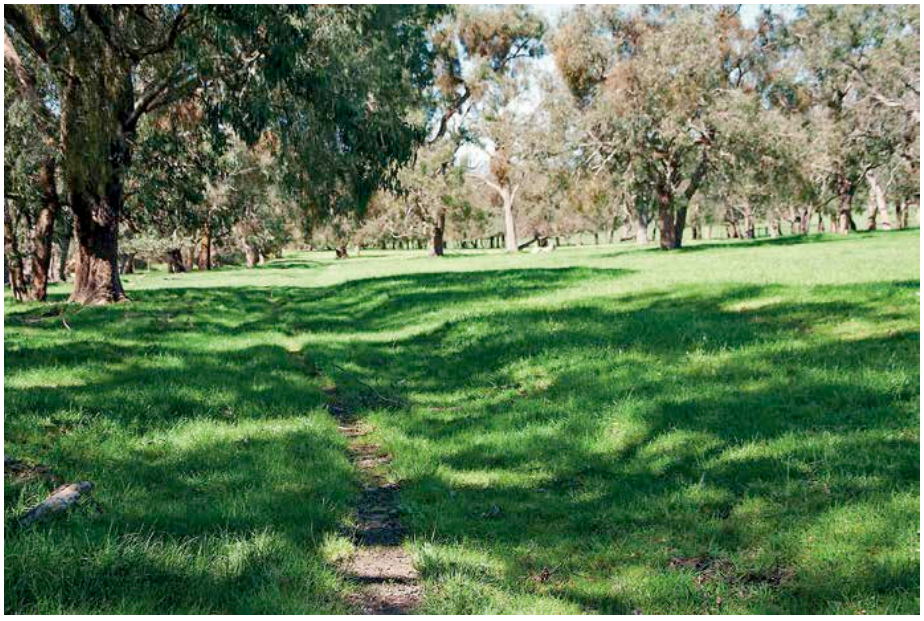
Pictured at the right is a rather weary looking 3 ft gauge Baldwin 2-4-0 locomotive *Little Yarra* (B/No. 37718 of 1912) taking on wood somewhere on its journey from Powelltown to Yarra Junction. John Buckland took the picture in the late 1930s or early 1940s. Locomotives on the Powelltown tramway burnt wood, and there were a number of wood loading points on the way.

Until recently the location of the picture was not known, but the topography looked like somewhere in the Barrier Creek–Yarra Junction area, where the tramway went through private property away from main roads.

Thanks to the co-operation of the landowner, in September 2014 Mike McCarthy, Phil Rickard and I were able to inspect the route of the tramway between Summerhill Road and Stephensons Lane. In the process of that investigation we found what appears to be the location where this photograph was taken. The embankment on the right is there and topography is similar. The location is indicated with a red arrow on the map.



Little Yarra has just traversed the most curvy part of its trip, with a ten chain curve, followed by a seven chain curve over the 19 span bridge crossing the Barrier Creek morass, followed by another seven chain curve, and an eight chain curve, to reach the location shown in the picture. It now has a few gentle curves ahead of it, before reaching Yarra Junction township.



The prime purpose of our exploration was to try and determine the exact location of the siding at Barrier, and we were expecting to confirm the location where the lower picture on page 6 of the booklet *Powelltown Tramway Centenary* 1913–2013 (LRRSA 2013) was taken. In this we were disappointed. We came to the conclusion that this photograph did not depict Barrier siding and was not taken anywhere between Summerhill Road and Stephensons Lane. By a process of elimination we now think it might be No. 1 Siding but the exact location of that siding is also not known, and is also on private property.

Frank Stamford

RESEARCH

Please send contributions to:
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1921 Census extract

The link below is taken from the Australian Bureau of Statistics (ABS) website. It is an extract on private railways as written for the 1921 census report, now digitised and downloadable from the ABS. For researchers interested in a broad view of private railways across Australia, this document does an excellent job of summarizing key aspects of private railway construction and operation. There could be much to learn from reading through previous and subsequent census reports, the ABS website offers a range of scanned historical census documents and specialised reports.

Certainly, the total mileages of private railways varied dramatically between states in 1921, with South Australia (50 miles) and Victoria (70 miles) at the bottom, Western Australia (854 miles) and Queensland (1261 miles) topping the list.

One curious fact highlighted in the report is that the Tarrawingee Flux & Tramway Company tramway, near Broken Hill in NSW, was taken over by the NSW Government in 1901 following cessation of limestone flux traffic to the Broken Hill smelters. The NSW Government Railways probably did not want anything to do with the small isolated line and contracted operation and maintenance to the Silverton Tramway Company to operate. Thus even NSW (reluctantly) had a small piece of Government owned 3 ft 6 in railway. See tinyurl.com/LR250-ABS

Scott Gould and Chris Wurr

Contractor's diesel locomotives in New Guinea

New information continues to be published online allowing the up-dating of older copies of the locomotive works lists of some of the more obscure international builders. This enables some further light to be thrown on previous entries in published works where such detail had not been available at press-time.

One such example is for the Swedish builder AB Gävle Vagnverkstad, Gävle (AGV)[1] which had also been known as AGEVE. This builder mostly supplied small diesel locomotives and battery locomotives for the underground mining and construction industry. Although now out of business, the designs and goodwill were passed to the current Swedish builder of tunnel locomotives Grängesbergs Industrivaru AB, Grängesberg (GIA) who still service the older units.

Earlier lists of this builder were summaries of customer listings used as testimonials for the product range and somewhat short on detail. With the transcription of the original analogue production record cards of the builder still held by GIA, new information has been added. In addition to the full completion dates, technical detail includes engine serial numbers, gauge at delivery and customer ordering history.

The entries of interest concern AGV deliveries to Papua New Guinea for the Ramu I Hydro Electric Power scheme. In the book *End of the Line: A History of Railways in Papua New Guinea*[2] mention is made of the 2400 m 'drill-and-blast' tail race tunnel constructed by Hyundai Construction at Yonki in the Eastern Highlands district from 1972. It is suggested that the gauge of the construction railway was 914 mm and that at least two locomotives were used.

Examination of the updated AGV list shows that three of its Model Type DHL-30-M8 were supplied to a contractor named U-Young for the Ramu I project. The three 8-tonne diesel locomotives with serial numbers 529, 590 and 591 were all shipped from AGV in July 1972 with 50kW Deutz F4L912 engines. The transmission is not specified, but hydrostatic pump/motor drives were being widely adopted by this time for the smaller size units. The record card shows the gauge as being 762 mm and that these were supplied as 'cab with door'. Most of the AGV production for underground work was supplied with open cabs without roof.

For the big South Korean-based main contractors, it is common practice to sub-contract the tunneling portion of a larger overall contract to a smaller specialist in 'drill-and-blast' techniques, or in later years the TBM drives. It is thought that the contractor named 'U-Young' in the AGV entry is actually the Korean firm You-One, later reformed as Ultra Construction.

1. http://industribanor.se/dokument/genomg%C3%A5ngna-maskinkort
2. B McKillop and M Pearson, *End of the Line: A History of Railways in Papua New Guinea*, University of Papua New Guinea Press, Port Moresby, 1997 p.118

Philip G Graham with information from John Browning

More aerial viewing tools

Following the research article Aerial viewing tool, from *Light Railways* 248 April 2016, Craig Palmer from Wollongong Council followed up with more tools that can be used for research:

1. The 1977 spy glass story mapis at arcg.is/21etHzy . This works in the same way as the 1948 map but uses a high resolution 1977 base map.
2. The 1943 Sydney aerial photography available from SixMaps (NSW Government mapping service), It has a nice slider option to fade between two configurable backgrounds. See maps.six.nsw.gov.au/
3. Elevation profiler. While certainly not a unique tool, you can draw a route to create an elevation profile of it. Although it is titled as Wollongong, it covers not only all of Australia, but the entire planet. Click on the tiny ruler icon towards the bottom right of the screen to commence drawing a route. Go to tinyurl.com/LR250-Elevation-Profile

John Kerr notes online (QLD)

Queensland railway enthusiasts will be excited to discover that the State Library of Queensland has digitised an eight volume set called *Notes on Queensland railways* which was compiled by respected historian John Douglas Kerr between 1966 and 1972. Kerr's notes were compiled from a multitude of resources including newspapers, periodicals, annual reports, parliamentary papers and railway timetables. These eight volumes can be viewed in their entirety through its OneSearch catalogue http://buzz.mw/baxbz_n

The notes are mostly focused on Queensland Railways, but there are also many references to tramway operations. The notes have been Optical Character Recognition (OCR) converted, thus text searches will reveal information without too much searching, but as always, these are dependent on the quality of the OCR conversion. With potentially thousands of pages to search, the notes are a goldmine of information for the intrepid researcher.

Research Editor's note: After somewhat frustrated attempts at downloading, I finally succeeded in 'printing' the file as a PDF using the print button located within the viewer screen. A word of warning though, as these files are uncompressed copies of his notebooks. The first volume ended up as a 570Mb PDF once I had opened it in the viewer window and then 'printed' the 592 page file. While there is a 'download' button within the viewer window, I had no luck using that feature however different computers and browser software may well result in a different outcome.

State Library of Queensland, Peter Cokley and Lynn Zelmer

Engineering Heritage

Engineering Heritage Australia is a division of Engineers Australia and the historical interests of the organisation have many parallels with the LRRSA. Its works include a substantial quarterly newsletter, downloadable from its website, an annual conference and regular public talks on engineering history from all over Australia. Its most recent edition, April 2016, features articles including the Mt Lyell Abt railway and a history of Thompsons of Castlemaine. The editorial offers some interesting reflection on the organisation's experiences using Yahoo groups for communication. From its experiences, it is a positive of the LRRSA yahoo group that strong communication has continued over the years. See www.engineersaustralia.org.au/engineering-heritage-australia/

SA LRRSA minutes

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

610 mm gauge

At the recent AGM one of the things discussed was the acquisition of a 40 ft turntable from the ARHS at Rosewood for installation in the future. While a turntable is a long term requirement, 40 ft turntables are rare and this one is in good condition. The recent rollingstock audit showed the railway is getting more wear on one side of the rollingstock than the other, therefore the turntable will be of benefit generally, not just for locomotives.

When hydro tested, there was found to be a leak in the new stay on the Perry. This was not totally unexpected due to the awkward location hindering the sealing welding process. The boiler has since been raised slightly out of the frame, the stay re-welded, and a successful hydro test conducted.

Work on *Melbourne* is progressing well. The boiler has been turned and work can now be completed on the other side. Once the new loco shed is complete, the new boiler tubes can be delivered and retubing work can commence. Work is also progressing well on the tender, with the bogies now waiting on the new castings to be supplied and machined.

The existing three sets of 42 lb/yd points between the mainline and the future storage shed have been relaid with steel sleepers. Cutting and fitting the long steel sleepers for the point throw-over levers was a challenge as each sleeper had to be cut to a unique length to suit its final location. With the impending arrival of a crane on site, preparations were made to allow additional 42 lb/yd rails to be lifted onto bolster wagons so they can be used to connect to the future shed. Similarly, preparations were made to retrieve a fourth set of points currently stored at the start of the compound. These points will also be overhauled and installed when the tracks to the locomotive storage shed are reinstated to provide for a future connection to the adjoining property. When the shed is completed, these points will be jacked up to the correct levels to align with the shed floor and ballast placed and packed.

Durundur Railway Bulletin Volume 37 Number 339 May/June 2016

DREAMWORLD - Farewell Ian Lindsay

Friday 20 May 2016 marked the end of the line for Ian Lindsay, a former steam locomotive driver at Dreamworld, with his funeral being held in the chapel of Traditional Funerals at Burpengary. Ian, widely known as 'Bish', drove and maintained the two steam locomotives at Dreamworld from 1984 to 1994.

At a very early age, Ian developed an interest in trains, which became a life-long passion. A man of many interests, including motor bikes and large-scale model trains, Ian was a qualified fitter and turner and an acknowledged authority on the mechanics of steam engines. Ian's knowledge and skills were of a high standard and he could be relied upon to share his expertise and advice with like enthusiasts in railway preservation groups.

Fittingly, six current and former steam engine drivers from Dreamworld – perhaps the largest-ever assembly – attended the ceremony. They were Peter Gough (1986 to present), Bob Gough (1986 to 1988), Mark Gough (1997 to 2003), Bill Oliver (1985 to 1990), Teddy Hancox (1995 to 1996, also May 2003 to December 2014), and Paul Jones (May 2005 to November 2013). Casey Hancox (December 2003 to April 2013) was unable to attend and sent his condolences.

His friends in the railway fraternity will sorely miss Ian's parting. He leaves a wife and family of children and grand children and 7 great grand children and we extend our sympathy to the family in their loss.

FRIENDS OF ARCHER PARK STATION AND STEAM TRAM MUSUEUM, Rockhampton

1067 mm gauge

Work is still progressing on carriage CWM21 with the NEATO Employment Services workforce; new floor boards have been laid and window sills sanded and undercoated. The Rollingstock Supervisor has found six photographs of the carriage when it came to Archer Park about twelve years ago when it was put on display for a short time. The photographs showed a better looking carriage then than when it came to Archer Park a few months ago.

Tram Tracks Volume 10, number 3, June 2016

SOUTH AUSTRALIA

MILANG RAILWAY MUSEUM, Milang

On 27 June at Milang the Governor of South Australia is coming to present the Museum's registration certificate and to open the SAR 351 driving experience.

Some History Festival events have also been presented including one titled Railway Chaos which was a multimedia presentation describing all that went wrong with South Australia's railways from the bad decisions which led to three different track gauges, the travelling nightmares which resulted through floods, strikes, accidents and bushfires, up to electric trains which cannot get to their maintenance depot. This was presented at the Milang Railway Museum on Sunday 15 and 29 May. Probably all railway systems could present a similar show.

Peter Lucas
Milang Railway Museum

Doreen Lindsay meets the Dreamworld Drivers – (standing L to R) Mark Gough, Bob Gough, Peter Gough, Teddy Hancox, Paul Jones, with Bill Oliver seated. *Photo: Bob Gough*

Red Baldwin 4-6-0 (USA Builders No. 45215 of 1917) that started working at Dreamworld in 1981 together with Green Perry 0-6-2 (Builders No. 5643) at Dreamworld at an unknown date. The Perry was donated to the ANGRMS Woodford Railway and is currently under restoration there. Bob Gough drove both these Locomotives between July 1986 and December 1988. *Photo: Ian Lindsay collection*

VICTORIA

WALHALLA GOLDFIELDS RAILWAY, Walhalla

762 mm gauge

In May and June a group of workers from the WGR attended Newport Workshops to recover components essential to the DH locomotives and railmotor projects from the Hitachi carriages which are to be scrapped. Equipment recovered included W type triple valves that only need servicing every five years instead of yearly, replacement air reservoirs to enable the railway to get rid of the non-compliant concave ended reservoirs on the locomotives and carriages, enough driver's seats for the locos and railmotors, enough park brake operating valves and cocks for the DH locos and railmotors, enough pressure relief valves to have a couple of working spares for the locos, enough gauges to convert most of the fleet to metric (kPa) from psi and various other useful material.

On the class 10 locomotive, a new set of batteries has been fitted to overcome what at first appeared to be a total disablement on the way home after the last run of the day. Since the battery replacement, there have been no further problems except for difficulty starting on cold mornings.

The Fowler is still running well but is still awaiting the start of a new coat of paint. The Kasey has no problems except for its thirst for hydraulic oil.

A secure location for storage under cover for both DH locos and the X1 trams/railmotors has been found and inspection of the premises indicates the location will be perfect for both projects.

The bogie from 1NQRW was borrowed and placed under the combination carriage /guards van which was returned to service. The wheelsets removed from the bogie under 1NBCW were taken to Puffing Billy for reprofiling, however the wear which has occurred over time has rendered the wheelsets unusable as insufficient metal remains on the tyres to permit another machining. As other works are intended for the NQRW (aka the Flat wagon), the bogie will be rebuilt using other spare wheelsets. At this stage, the longitudinal seating arrangement is being revised so that all seated passengers will be able to view both sides of the picturesque rail trip. The old canvas roof is also being replaced with a cream coloured laserlite.

The compressor shed at the rear of the loco shop has been completed with a great deal of earthwork involved. A new oil store is being constructed beside the compressor shed.

At the Walhalla carriage shed new wider doors have been installed for better shunting access.

*Dog Spikes and Diese*l May/June 2016

PUFFING BILLY RAILWAY, Belgrave

762 mm gauge

April passenger numbers continued the strong trend of previous months with 36,789 passengers carried which is another all-time record for April. Given it was a non-Easter April this is particularly impressive. April exceeded the prior year by 6,252 passengers, an increase of 20.4%. Total passengers to date now totals 361,563, an increase of 55,255 or 15.8% above the previous year. Total patronage over the past twelve months to the end of April totals 405,026 another major milestone for the Railway.

Work continues on the detailed construction drawings for the new NBH and NBHC type vehicles. It is anticipated that these will be completed by about the end of May. In addition, productive progress is taking place on the finalisation of the design for the new bogies.

Work continues towards completion of the Railway's Masterplan. The only major change to the Land Use Plans which were previously open to comment is the proposal for long term relocation of the Menzies Creek Museum to Emerald. The revised proposal is to relocate to Gembrook in lieu of Emerald. This decision has been made for a number of reasons but primarily it is about providing an attraction for passengers to Gembrook in the longer term plans.

Saturday 4 June saw the running of the second of this year's season of Commissioners' Trains with a variety of locomotive haulage, including the Climax, an NA and then a double header with two NAs.

Another Commissioners' Train will operate on Saturday 3 September and The Twilight Train, featuring the Climax from Menzies Creek to Lakeside, will operate again on Saturday 8 October 2016.

Puffing Billy Monthly News June 2016 No.515

The Walhalla Goldfields Railway locomotive DH37 stands on its short length of 1067 mm gauge track in the snow at Walhalla, 24 June 2016 during a week of unusually cold weather in south-east Australia. *Photo: Lynda George*

ALEXANDRA TRAMWAY MUSEUM, Alexandra

610 mm gauge

On the Market Day on Saturday 12 March the ATT's 'Little Malcolm' train rides ran continuously, taking 130 passengers in three hours.

The running day that followed on Sunday 13 March was just as successful, with over 100 passengers being carried, most in the morning, when the platform was almost constantly crowded. The John Fowler steam locomotive performed magnificently on a steady supply of old red-gum sleeper ends which have to be cut up on each running day as unfortunately the Railway can no longer store stocks of locomotive wood for any length of time because of repeated firewood thefts.

On Saturday 12 March Hudswell Clarke 1098 of 1915 was pulled from its position in the former Ruoak shed. The locomotive was jacked up and placed on temporary bogies so that the wheelsets could again be dropped out to pack the axleboxes with lubrication-absorbing wool and to ready the frames for painting. Once this work is completed the locomotive can again be re-wheeled and the work of refitting the motion can proceed. Some preparatory work was also carried out on the locomotive tender. While the loco was out of the shed, the opportunity was taken to have a good tidy-up so that locomotive parts can be more readily located. The first set of tender wheels has also been re-profiled.

Also on Saturday 12 March, the 1943 ex-Army '1000' series Malcolm Moore 4wPM was dismantled and separated into its major components – wheels, frames and body structure. On the following day it was towed out of storage and the components loaded onto a truck for transport to Emerald where further work on the locomotive will be carried out. Although weather-worn, this locomotive is new 'out of the box' and only requires an engine to return it to service. Unfortunately the number of the locomotive is unknown.

A new battery has been obtained for Cheetham No.1 and in time it is hoped to make this small but interesting locomotive finally operational, twenty years after it left Cheetham's Laverton works.

For the Easter Gala, the John Fowler steam locomotive was lit up early and was ready on the platform at 10.00am for the first passengers. It ran non-stop all day. The small steam engines, hay bailer, wood cutter, and heritage petrol and diesel engines were manoeuvered into the allotted area, where they were displayed with some working engines.

During the evening there were train rides with the Kelly and Lewis 5957 diesel operating. On Saturday, steam locomotive John Fowler 11885 was coupled-up cab leading, which meant the people in the carriages were looking at the smoke box door instead of the usual fire box. Over the whole three days nearly 500 passengers were transported.

WESTERN AUSTRALIA

BENNETT BROOK RAILWAY, Whiteman Park

610 mm gauge

The lead up to Ashley day was hectic and primarily involved getting the 0-4-2 Perry in steam and inspected. This involved the replacement of the smokebox door. The 0-6-2 Perry is now mobile with the driving wheels re-fitted. This will enable the crew to start refitting all the motion and linkages, drain cocks and to start planning the fitting of couplings and vacuum. The generator on the Dorman Planet has unfortunately failed and is not repairable. This was run via a gear off the flywheel. A drive adapter is being manufactured to enable an alternator to be belt driven from the same point.

The Atlantic Planet has been running the majority of the weekend services with only a slightly higher brake shoe wear and some horn valve mounting bolts the only major items requiring attention.

Ashley day on Sunday, 22 May, was the second best day financially on record with 2,750 tickets sold, 2,000 of them pre-sold. The Third Ashley Book by Ken Watson was ready for Ashley day. The story is "Off the track!" and is about Ashley derailing on the loop, and how it is re-railed.

Bennett Brook Railway Newsletter June 2016

OVERSEAS

NEW ZEALAND

At the recent FRONZ conference, the Monday day trip was a pilgrimage in honour of the creator of the unique Driving Creek Railway and pottery. The Railway is the vision of one man, artist and engineer, Barry Brickell, who sadly died in January 2016. Barry had invited FRONZ to hold a conference at Coromandel a short time before he died so the Conference managed the next best thing, a conference visit to his magnificent creation.

FRONZ Journal No 155 June 2016

GREAT BRITAIN

HUNSLET 1215 PROJECT, Killamarsh

610 mm gauge

The final countdown is well underway for ex-Bingera and Invicta Mills 1215 and the pace of the restoration continues to accelerate into the latter phases of its re-assembly. Working days are being held every Tuesday and Thursday, with many extra days put in to the project as the finish appears.

After the hiatus of activity installing the bunker and the side tanks, completion of work on the bogie and the arrival of the new boiler and the fitting the cab top in early May, things have settled down again somewhat and the restoration crew is now back to a routine of making steady progress on a number of jobs with nothing too dramatic to show for them.

The bogie is finished now and has been placed back under the locomotive. The team was recently able to borrow the 25 ton jacks again from Loughborough and jacked the boiler up on to a new stand so work could continue on the ash pan. After that the jacks were used to lower the loco on to the track. All the brake pull rods and cross beams are now on the loco so the brake harness is now also completed.

Work on the air brake piping is almost completed; this is a difficult task and the team has to be careful where it routes the pipes. 1215 never had train brakes fitted so the pipe runs need to be discrete and yet accessible enough for maintenance, but they also need to be placed where they will not interfere with other parts. Access is also tight as the pipe runs are mostly going down the middle of the loco between the frames. The vacuum piping is also well underway now and all of this will be completed soon, apart from the final pieces in the cab which will have to wait until the boiler is in situ.

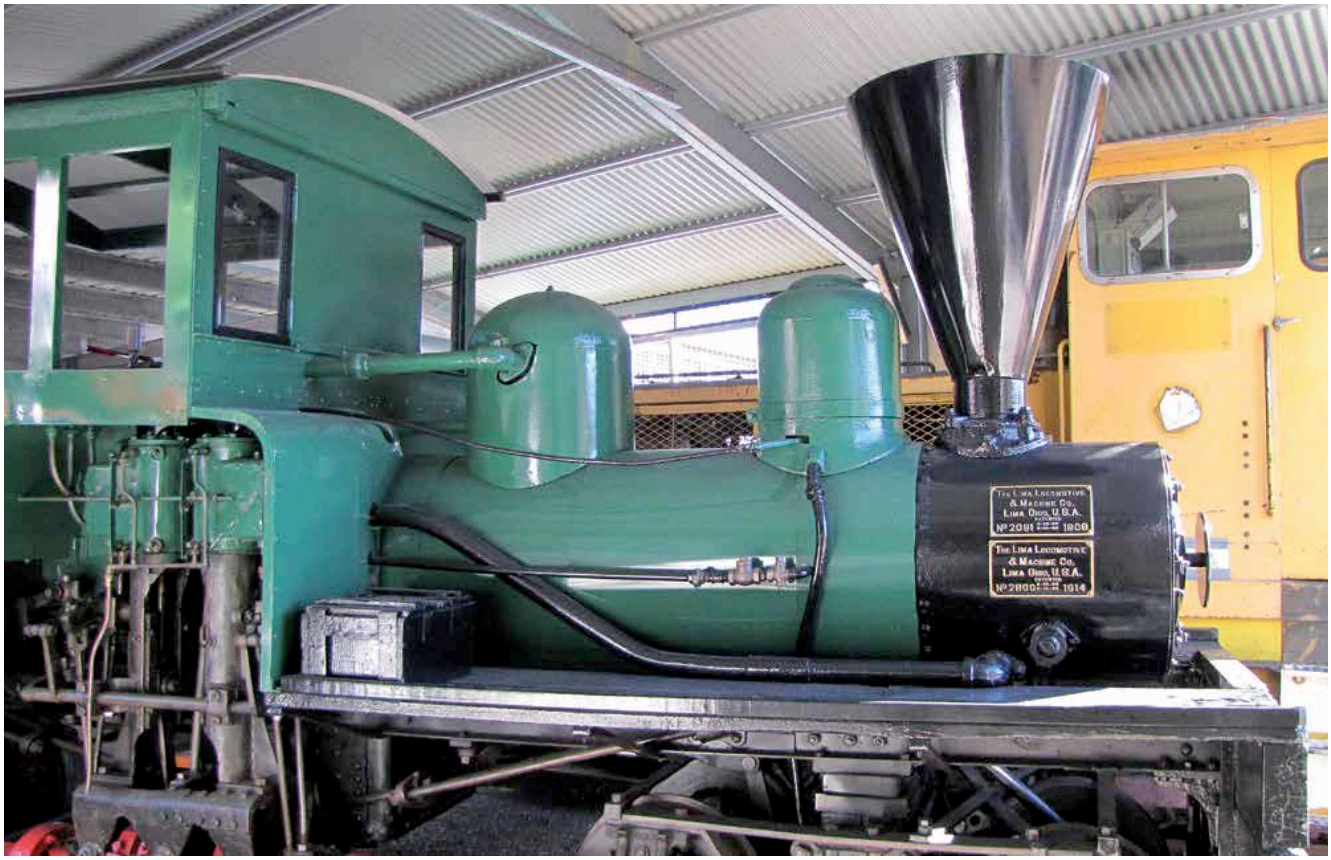
The new boiler for 1215 was delivered to the workshop on the 4 of February 2016. New fire bars and fire bar carriers are on order from the pattern maker and the foundry and are expected soon. The new ash pan is also now making serious progress and a support for the boiler has been built from various supports which now permits access to fit the fire bars, carriers and the ash pan prior to the boiler steam test and its eventual return to the frames. That day will be the turning point in the history of the restoration of Hunslet loco1215.

Next steps include a complete tidying up, the painting of the main frames, inside and outside, the assembly of the valves and buckles plus neck rings and guides, the making and fitting of new cylinder cladding plates, completing work on fitting the air brake system piping, completing work on the vacuum system piping, fitting new pistons, rings and rods – all now at the workshop ready for fitting, fitting newly machined valve parts e.g. radius rods, making up new shaped boiler cladding for the Belpaire shoulders, making and fitting boiler bands and boiler cladding sheets, completing work fabricating the new ashpan and making the cab roof section a snug fit.

Completion of the project will all come down to funding now, and a last top up of funds is urgently required to allow completion of the remaining work. There are still a few significant expenditures to make before 1215 is complete. The target is to have the locomotive back in steam again later this year – the centenary year.

The locomotive will appear as it was in 1916 – in matt black as R O D 303. It will have the cast iron builder's plates and 303 plates fitted to the bunker and tank sides respectively and a great deal of effort has been made to make sure that there are the correct number and pitch of rivets on the tanks, boiler, cab and bunker sides. The buffer beams have now been painted black in line with the WW1 1916 appearance.

Killamarsh Chronicle Issue No 35 June 2016



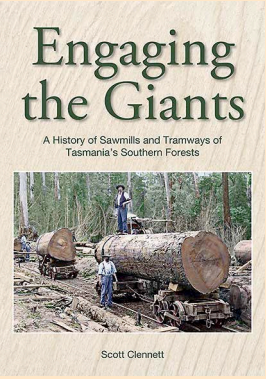
The Moreton Central Sugar Mill Shay locomotive is now located at the Nambour Museum where volunteers have given it a cosmetic restoration including the fitting of a new smoke box and new cabin sides. Before the transfer to the museum, the builder's plates from both locomotives were lost. Clive Plater from the museum ordered replica plates from the USA and they were finally fitted on Saturday 25/6/2016. Two plates were ordered and fitted; numbers 2091 and 2800 to acknowledge the amalgamation of the two locomotives. *Photo: Clive Plater*

New from LRRSA Sales ...

Engaging the Giants

A history of sawmills and tramways of Tasmania's Southern Forests

By Scott Clennett — Published by the LRRSA



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Describes a complex series of timber tramways which operated in southern Tasmania during the period 1850 to 1974. It covers the area from Franklin (45 km south of Hobart) to Cockle Creek - the most southerly settlement in Tasmania, and includes Bruny Island. Details of the ships and barges which carried the products of the sawmills are given, together with an insight into the living conditions and the innovative methods that were used to solve many problems. Gauges of the timber tramways varied from 2 ft 6 in to 6 ft, but the most common gauges were 3 ft 6 in and 4 ft 6 in.

Over a dozen steam locomotives were used, including two Shays, and many of ingenious local manufacture. Three Hobart engineering firms supplied steam and internal-combustion locomotives (of unusual designs) to many of the sawmillers.

The maps, prepared by Mike McCarthy, show the tramways, mills, roads, waterways, and contours.

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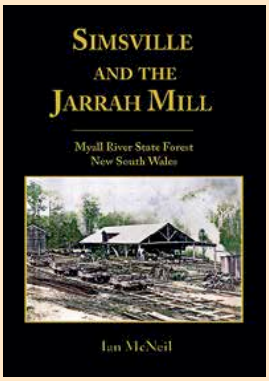

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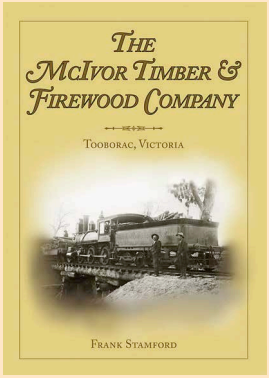

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