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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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Editorial

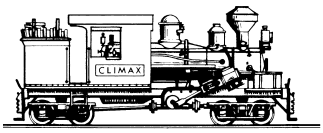
Most modern management textbooks will tell you that a group of people working effectively together as a team will produce results far outweighing those of the individuals working separately. The production of *Light Railways* each edition is a result of a huge team effort of a number of individuals located throughout Australia.

The Editorial team listed on the left hand side of this page are scattered across many States, yet every second month we seamlessly produce a high quality magazine. This is possible because of the wonders of the internet and emails, but more importantly because of the dedication and commitment of the editorial team members. We receive manuscripts for articles from a wide range of contributors from across Australia and the editorial team review and edit them as required. The editors collate all of the material for Research, Field Reports, Industrial Railway News and Heritage and Tourist, but it all comes from a wide range of contributors.

So, what you are now reading is the result of a huge team effort by a large number of people, all working together as a well-oiled machine.

Richard Warwick

Front Cover: *Beautifully presented, and hauling a rake of colourful passenger cars, Davenport 0-4-0ST* Kiama *(1596 of 1917) in operation at the Illawarra Light Railway Museum Society's running day on 12 August 2012. After a varied life in NSW industrial service, this typical small American industrial locomotive was saved in the 1950s through the efforts of Bruce Macdonald and has been at Albion Park for the last 38 years. It was rebuilt to incorporate parts of Davenport 1513 in 1938, and continues to delight many today because of the dedicated efforts of ILRMS volunteers. Photo: John Browning*



Light Railway Research Society of Australia Inc. A14384U
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www.lrrsa.org.au

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 GNTCo's A-class Climax in new condition, sporting its original headlight. The light engine run with the number of men aboard, including the gentleman in the white coat, suggests this could have been a commissioning trial on the line after it arrived in March 1914.
Photo: Neal Yates collection per David Fayle

The Great Northern Timber Company Limited, Woolgoolga NSW

by Ian McNeil

Foreword

Overseas exports of NSW hardwoods boomed in the years leading up to the First World War. The lucrative trade encouraged timber companies to invest in sawmill and tramway infrastructure, and to set up large scale operations. This was facilitated by changes to forestry regulations which enabled companies, for the first time, to obtain exclusive cutting rights over large areas of forest.

Two companies took advantage of the new regulations to acquire exclusive cutting rights in the extensive hardwood forests behind Woolgoolga. The first was the British Australian Timber Company which already operated a sawmill and timber tramway in Woolgoolga.[1] The second was the Great Northern Timber Company Limited (GNTCo), set up especially to exploit a newly acquired concession area. It invested heavily in property and infrastructure to produce hardwoods for New Zealand markets. Had it not been for the intervention of the First World War, it may well have become one of the largest timber operations on the NSW North Coast.

The Woolgoolga forests

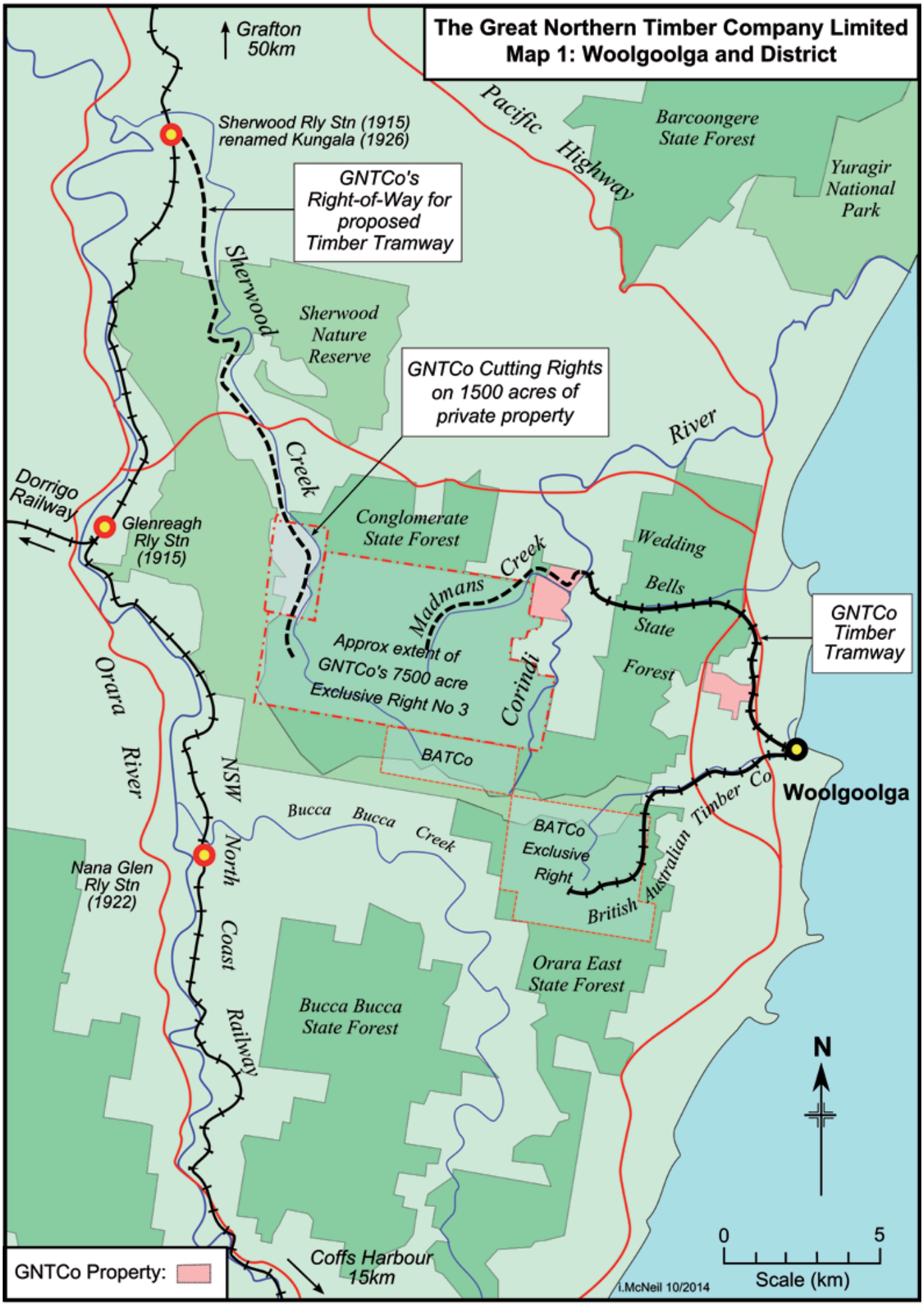
On 16 May 1908 assistant forester Edward Harold Fulcher Swain (who later became NSW Forestry Commissioner, in 1935) gave evidence to the 1907 Forestry Royal Commission of Enquiry at a hearing in Coffs Harbour courthouse. In his submission he described the great wealth of timber in the Woolgoolga district: [2]

"*The forest areas of the Bellingen-Woolgoolga division are comprised of essentially hardwood growth lying along the coast, between the sea line and [the Great Dividing Range]. The greatest quantity of timber lies along the approximate centre of this belt, whence it emerges towards the west through bushy gullies and steep hardwood ranges into the typical brush growths on the tableland. Towards the sea coast the timber dwindles into open blackbutt and red mahogany forests increasing in scarcity as it nears the sea, and culminating in a fringe of tea-tree scrub that hugs the coastal flats. In hardwoods, blackbutt is easily the predominating species, but blue and flooded gum are in abundance; red and white mahogany, bloodwood, tallowwood, grey gum can also be procured, while red and grey ironbark, and spotted gum is got at Woolgoolga.*"

Forester Swain went on to strike a cautionary note:

"*The forest belt has been greatly disintegrated by settlement clearing between Bellingen and Woolgoolga. Much ruthless ringbarking has taken place in the past, and along Bucca and Corindi creeks, the Orara and Bellinger rivers and their tributaries, miles and miles of skeleton forest country only remain to show the one-time completeness of the forest growth. Prospects for the future are no more reassuring, for our North Coast hardwood forests are not within one third of keeping pace with utilisation…*"

Nevertheless, large areas of virgin hardwood forests remained behind the coast range that hemmed in Coffs Harbour and Woolgoolga. Access was difficult, so only the most valuable timbers such as red cedar had been cherry-picked in the past. These forests now attracted the attention of big timber companies interested in the lucrative hardwood timber export trade. To get the timber out required capital investment, but they wanted some form of legislative protection against interference from independent timber cutters before investing.



The NSW Forestry Act of 1909

One outcome of the 1907 NSW Royal Commission into Forestry was the passing of the 1909 Forestry Act, gazetted on 11 November 1909. Section 15 contained the provision that offered the sought-after protection: [3]

The Minister may, after open inquiry and report by the local Land Board, when the land in question is difficult of access or where the getting of the timber or products thereon would entail heavy expenditure, grant exclusive rights to take timber or products, or any specified description thereof, on specified areas of State forests, timber reserves, or, with the concurrence of the Secretary for Lands, on Crown lands reserved from sale; but such right shall not be granted in respect of an area exceeding ten thousand acres, or for a period exceeding fifteen years.

This was a radical departure from the status quo, where inexpensive licences costing half-a-crown each were issued to individual timber cutters, with royalties charged on any timber they cut on Government lands. It created considerable controversy and a storm of opposition from timber cutters, bullock teamsters and small sawmill owners who saw their livelihoods threatened.

The NSW Minister for Agriculture, Mr Perry, defended the new policy in a lengthy explanation given on 29 November 1910. In part he said: [4]

Section 15 had been designed to meet the case of forests which could not be worked except by persons who were prepared to spend a considerable amount of capital. The fullest safeguards had been provided against forest land being taken up merely for speculative purposes. On the other hand, where a man was prepared to invest his money in laying down tramways and putting up sawmills with the object of working a forest that was going to waste, an exclusive right would be granted to him, so as to afford protection for his investment.

The exclusive right would protect his interests to the extent of safeguarding him against being blackmailed by persons who were inclined to take advantage of his enterprise by coming into the forests where his works had been constructed and cutting the timber. He knew of cases where men had constructed tramways into forests, and others had come along and felled the trees for miles along the route of the tramway and blackmailed the owners of the line.

Exclusive Rights were not granted lightly. Thirty-six applications were lodged within two years of the Act being passed; only five were granted with four of these being in the Coffs Harbour district. [5]

Exclusive Right No.3 – The Mackay Syndicate

The Bellingen Land Board received five applications during 1910 for Exclusive Rights in the Coffs Harbour District.[6] The first was from the British Australian Timber Company, which already had well-established sawmills at Woolgoolga and Coffs Harbour. Two came from independent sawmillers, Henry Hollibone and George Plummer, for concessions behind Bonville and Coffs Harbour respectively. The fourth application, for 10,000 acres behind Bonville and Boambee, came from a syndicate of businessmen, which was subsequently registered as the Coffs Harbour Timber Company.

The fifth application, for 10,000 acres north-west of Woolgoolga, came from the Mackay Syndicate which was made up of the following businessmen:

- James Towers Bull, a Coffs Harbour real estate agent and an ex-journalist from the Sydney Telegraph newspaper. He appears to have been the early driving force behind the Syndicate.
- Thomas Courtney, associate editor and chief political writer of the *Telegraph* newspaper in Sydney and a colleague of James Tower Bull.
- Richard Daniel Barry, a Newcastle businessman with extensive coalmining and brewing interests. He had previously held an option over Henry Edgar Day's timber propositions at Boambee.
- Alexander Clarke Mackay who had recently resigned his position as the district manager of the British Australian Timber Company's Coffs Harbour and Woolgoolga sawmills. He became the public face of the Syndicate.

The Bellingen Land Board convened on 11 January 1911 in Coffs Harbour courthouse to consider the applications. The courthouse was packed, with the applicants, their solicitors, their opponents and the curious public competing for space. After a marathon 8-day hearing the Board delivered its findings on the five Exclusive Right applications placed before it.[7]

It reported in favor of the applications made by the British Australian Timber Company, the Coffs Harbour Timber Company Syndicate and the Mackay Syndicate. In respect of the Mackay Syndicate's application, the following points were made:

1. *That the area applied for is modified to 9000 acres. It comprises country of sandstone and slate formation, contoured in parts by sandstone cliffs, and is situated from 4½ to 6 miles from Woolgoolga. It is difficult of access, internally and externally.*
2. *That the getting of timber in the said area must entail heavy expenditure, but such is necessary to make the undertaking profitable.*
3. *We report that an area of Crown lands of about 700 acres will be partly required for construction of tramlines for access to said area from Woolgoolga, and we are of the opinion it should be reserved from sale in the interests of forestry. Owing to the difficult country between the area applied for, a tramway will be necessary to get the timber out. Survey and construction of tramway will probably take about 15 months.*

The Bellingen Land Board passed on its findings to the NSW Minister of Agriculture, Mr. Trefle, who granted Exclusive Right No.3 to the Mackay Syndicate on 24 June 1911.[8] It covered 7500 acres within Forest Reserves 44524, 27725, 46441 and 46670 for a 15 year period commencing 20 June 1915. This area, now part of the Conglomerate State Forest, sat astride the coast range which locally reaches heights over 400 metres above sea level. It covered the headwaters of Madman's Creek on the east side of the range, and the headwaters of Sherwood Creek on the west side.

Formation of the Great Northern Timber Company Limited

The Mackay Syndicate did not have the necessary capital to exploit the timber on its Exclusive Right. To secure finance, it went into partnership with RS Lamb and Co, an established firm of merchants and ship owners specialising in the New Zealand – Australia timber trade. On 9 May 1913 the partners registered the Great Northern Timber Company Limited (GNTCo) in NSW with a capital of £30,000 in £1 shares.[9]

The issued capital was made up of 8,000 'A' shares, 17,000 'B' shares and 5,000 'C' shares. The Directors issued themselves preferential 'A' shares and were first in line for dividends. 'B' and 'C' shareholders got what was left over.

The Board of Directors were:[10]

- Robert Spence Lamb, Claude Campbell Hall Gibbons and Daniel Finlayson; owner and directors respectively of R.S. Lamb & Co.
- Mackay Syndicate members James Towers Bull and Thomas Courtney.
- Albert Edward Davey Long, Coffs Harbour real estate agent and James Towers Bull's business partner.
- Henry Hollibone, an experienced Dorrigo sawmiller and an unsuccessful applicant for an exclusive right in his own name.

Claude Campbell Hall Gibbons, Robert Lamb's son-in-law, was elected managing director for a 5-year term with an annual salary of £600 plus travelling expenses. The two other members of the Mackay Syndicate, Richard Daniel Barry and Alexander Clarke Mackay, were not on the Board but are believed to have been shareholders.

The GNTCo had its head office at 52 Pitt Street, Sydney, three doors down from the offices of RS Lamb & Co. It also purchased a 320 acre estate, *Edwells*, on the outskirts of Woolgoolga, and it is believed that this was used to accommodate visiting directors.

The GNTCo's Woolgoolga sawmill.

The GNTCo applied to lease 12 acres of the old Police Paddock, near Woolgoolga Jetty, on which to erect its sawmill. This was granted on 1st August 1913 as Special Lease 1913-8 Grafton for a 14 year term at £30 a year.[11]

Construction of the sawmill began in September 1913 with the driving of 300 wooden piles to support the mill building. During the next few months steamers brought in large shipments of machinery to Woolgoolga wharf for the company's new mill. The main building was a two-storied affair, 220ft long by 57ft wide, with the top floor some 22ft above the basement. It was a big structure, said to be one of the largest in NSW at the time.[12]

The sawmill was lavishly equipped with a planned output of 100,000 superfeet of hardwood timber per week. The centrepiece was an imported 'Berlin' 8ft bandsaw, the only one in NSW outside of Sydney capable of breaking down hardwood logs. Two large steam engines powered the mill; a Tangye with 14 inch cylinders for the bandsaw, and a second engine to drive the saw benches and the planing machine.

Logs for the mill were delivered by locomotive and bullock teams to a large log yard, built to allow the logs to roll by gravity to a slipway. Steam-driven log kickers and a cross-cut saw cut logs to required lengths and a steam winch fitted with an endless chain drew them up the slip way to the waiting bandsaw on the top floor of the mill.

Flitches from the bandsaw travelled on line rolls to be cut to size at the secondary saw benches with the sawn timber going by line skids to the sorting tables. A trolley line on an elevated platform conveyed sorted timber to a crane station where it was loaded onto tramway trucks to go to the jetty for shipment. The sawn timber mill sidings junctioned at a turntable in front of the mill to facilitate shunting of empty and full trucks. Waste timber and sawdust was taken away by chain conveyor and was used to fuel the boilers.[13]

The mill was opened on 29 May 1914 with great fanfare attended by over 200 notables and residents from near and far. The mill management proudly demonstrated the log handling equipment and its centrepiece bandsaw which effortlessly produced slices of timber down to 1/8 inch thickness from one huge log.[14]

The GNTCo made arrangements with the British Australian Timber Company for tramway access to Woolgoolga Jetty. The outlet tramway from the mill joined that company's jetty line at the intersection of Beach Street and Wharf Street. Sawn timber from the mill was hauled by draught horse (locomotives were not permitted to run on the jetty) out to waiting ships.

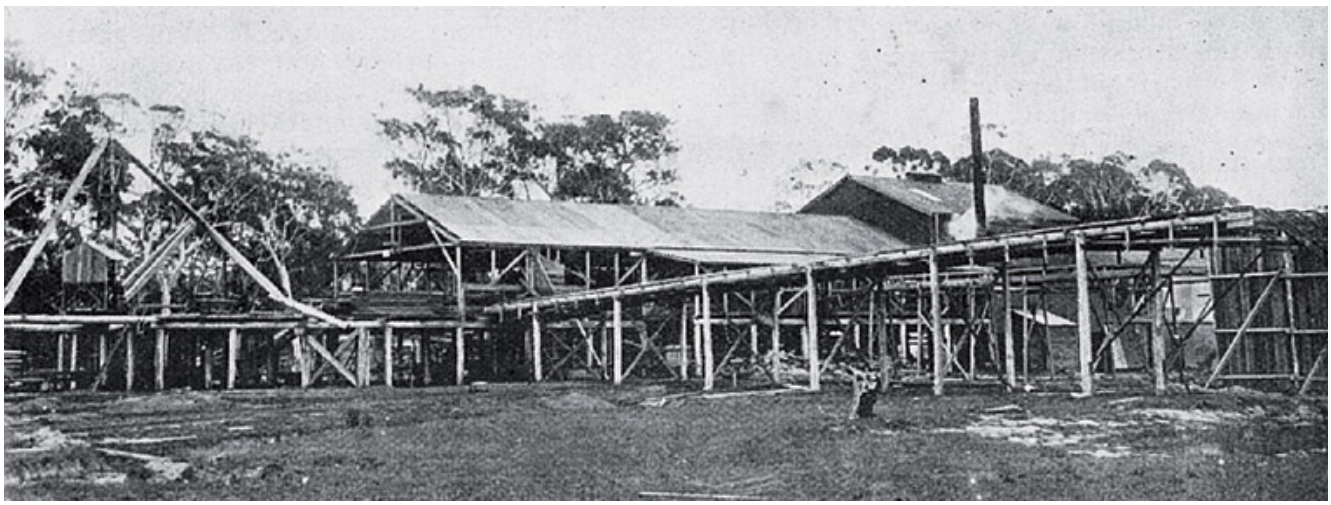
The GNTCo's logging tramways

Back in March 1911 the Mackay Syndicate had engaged a surveyor to locate suitable tramway access routes into its Exclusive Right.[15] This 7500 acre concession area sat astride the coast range which reached heights of over 400 metres above sea level in places. Because of this the surveyor, a Mr. Jobson, recommended two access routes.

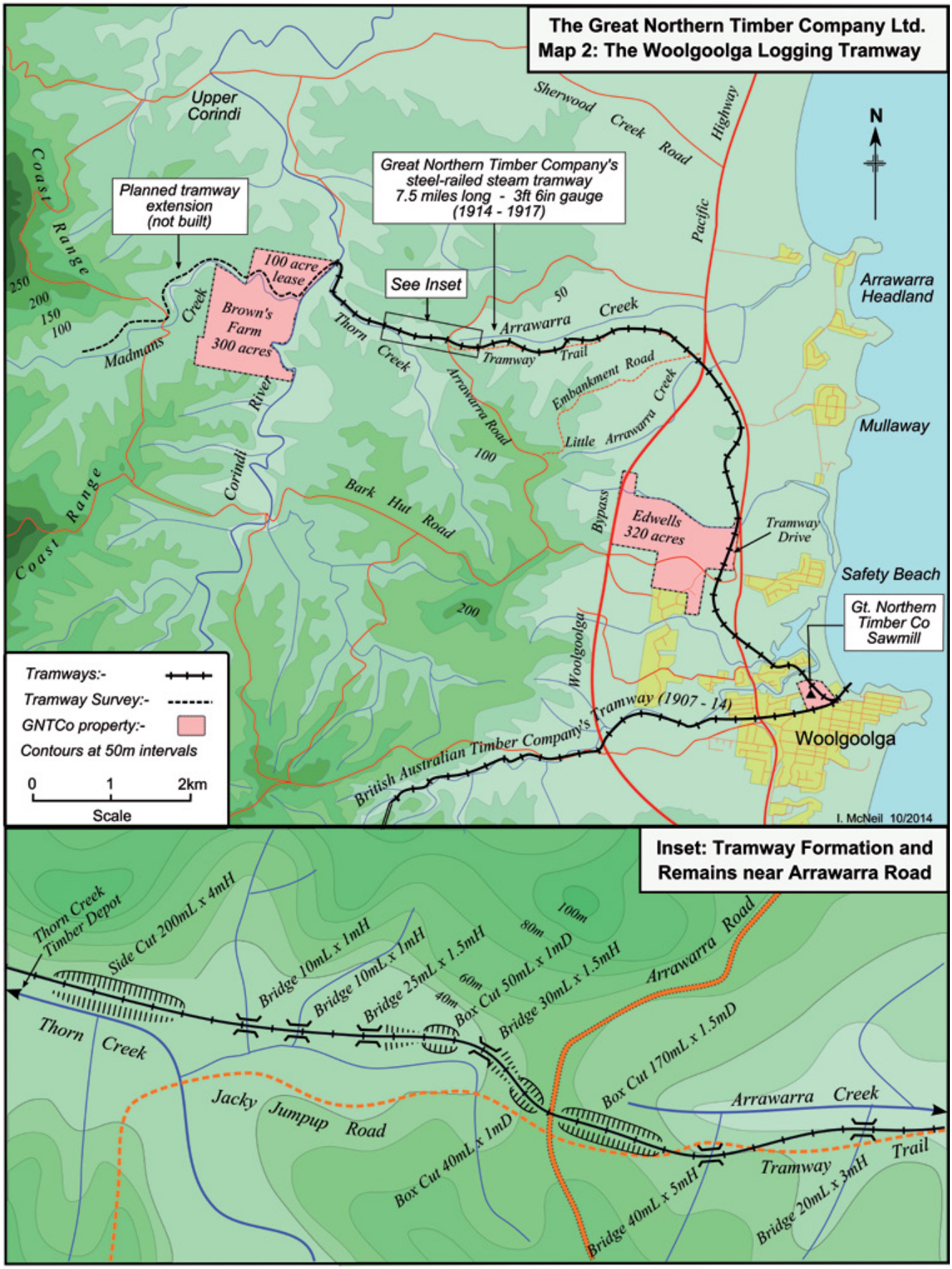
The first was a 12 mile tramway from Woolgoolga village to the headwaters of Madman's Creek on the eastern flanks of the coast range. Timber from this line would go to a planned sawmill in Woolgoolga and then be exported by ship from Woolgoolga Jetty.

A second tramway was planned to access timber on the western flanks of the coast range around the headwaters of Sherwood Creek. A nine mile line was to follow Sherwood Creek downstream to reach the NSW North Coast Railway, then under construction, at the site of the future Sherwood Railway Station.

Surveyor Jobson's recommended routes crossed both private property and Crown Lands. In December 1911 the Mackay Syndicate announced that all the landowners along both routes had signed leases for the construction of a tramway through their properties.[16] Once the GNTCo was registered, it applied to the Lands Department for permission to cross the Crown Land portions. This was granted as Special Lease 1913-17 Grafton on 1 July 1914, covering some 37 acres of easements on both sides of the coast range.[17]



The GNTCo's big sawmill at Woolgoolga, now the site of Woolgoolga Bowling Club. A feature of the mill was its timber handling facilities. Sawn timber was trolleyed out along the elevated platform to the shear legs crane at the left and loaded directly onto tramway flat trucks ready to go to the jetty. The elevated platform in the right foreground may have been for the disposal of waste timber. Photo: Neal Yates collection per David Fayle



Anticipating approval of its tramway lease, the company hired a gang of navvies to begin work on the Woolgoolga tramway. By September 1913 the first two miles had been cleared and a bridge gang had started work.[18] By mid-January all the earthworks between Woolgoolga and the Corindi River had been completed. Next month shipments of steel tramway rails began arriving on Woolgoolga Jetty.

Rail laying was delayed until the tramway lease was approved on 1 July 1914. Four miles of tramway had been completed when World War I forced the sawmill to close in mid-September.[19]

Despite this setback, tramway construction was pushed ahead and reached the Corindi River by mid-1915. In all some 7½ miles of line were constructed. The right-of way for the tramway continued for another 4½ miles up Madman's Creek into the company's concession area.

The GNTCo's logging tramway was built to 3ft 6in gauge with light-weight steel rails spiked to bush-cut sleepers. Leaving the sawmill, the line crossed Jarrett, Woolgoolga and Poundyard Creeks in quick succession on low level wooden bridges. It went through what is now Woolgoolga Sportsground and crossed the Pacific Highway near its intersection with Centenary Drive. The line then generally paralleled the highway north for some three kilometres through gently undulating terrain covered in tea-tree scrub to Arrawarra Creek. Turning west, the tramway followed this creek upstream to its source near Arrawarra Forest Road. Crossing the road the tramway picked up the headwaters of Thorn Creek and followed it downstream to its junction with the Corindi River.[20] The tramway was built through relatively undemanding country; there were no sharp curves or heavy gradients, and the earthworks were correspondingly light. Bridges were generally low-level affairs across shallow side creeks.

Adjacent to the Corindi River railhead, the GNTCo purchased Brown's Farm, a 300 acre property of partly cleared timber country on the south bank of Madman's Creek. It also leased another 100 acres of forested Crown Land on the north bank of Madman's Creek to use as a timber depot.[21]

The GNTCo's planned second tramway was to run from the site of the future Sherwood Railway Station to its Exclusive Right concession area around the headwaters of Sherwood Creek, on the west side of the coast range. To increase its timber reserves, the company also purchased the rights to the standing timber on 1500 acres of private property on Sherwood Creek. Additionally the company also proposed to build a sawmill next to Sherwood Station.

This second tramway and associated sawmill were never proceeded with and perhaps it was just as well. The NSW North Coast Railway was extended south from Grafton through Sherwood Station to Glenreagh and opened for traffic on 12 October 1915. However, the continuation from

Glenreagh south to Coffs Harbour was delayed through a combination of financial constraints and engineering difficulties and did not open for traffic until 17 July 1922. So any plans the GNTCo might have had for railing its timber from Sherwood to Coffs Harbour Jetty for export would have gone out the window.

The GNTCo's Climax steam locomotive

The GNTCo purchased a new 12-ton 3ft 6in gauge A-class Climax geared steam locomotive from the Climax Manufacturing Company in Pennsylvania, USA, for its logging tramways. The locomotive was landed on Woolgoolga Jetty in the week prior to 24 March 1914.[22] It was an early wooden-framed model fitted with a round water tank at the rear. Its builder's number and exact year of manufacture are not known; the Climax Manufacturing Co records were not preserved when the company was sold in 1928 and locomotive production ceased. According to Steve Hauff[23] the locomotive was built in 1911 for stock, and had sat 'on the shelf' for two or three years waiting for a buyer.

The GNTCo's Climax was a standard lightweight A-Class 'Climb' production model. Two 7-inch diameter vertical cylinders drove an engine shaft fitted with a pair of steel spur gears. These meshed with a corresponding pair of gears on the line shaft giving two different speed ranges; a 9:1 ratio for low speeds up to 5 mph, and a 4.5:1 ratio for higher speeds up to 10 mph. Power was transmitted to each of the four axles via the line shaft which drove crown and pinion bevel gear sets. Maximum speed in low range was 6 mph, and in high range, 10 mph. With boiler pressure set at 150 psi the tractive effort was rated at 13,200lb in low gear and 6,600lb in high gear. Climax locomotives could negotiate sharp curves and steep gradients with ease, while the fully-sprung design of the 4-wheel bogie trucks enabled it to run on poorly-laid and light-weight track.

The Climax saw relatively little use on the GNTCo's logging tramway. It arrived late in March 1914 and was used mainly on tramway construction duties until mid-1915. Most of its log-hauling duties occurred during the sawmill's brief revival between August 1916 and July 1917. It was during this period that the Climax was involved in its only reported accident. An employee, Walter Day, was crushed by the locomotive and was taken to Grafton Hospital in a serious condition.[24]

The GNTCo went into voluntary liquidation on 30th July 1917.[25] The company's assets including the Climax locomotive were advertised for sale in October 1917,[26] and the plant was purchased by Hepburn McKenzie's company, H McKenzie Ltd, for its Fraser Island timber venture in Queensland. During July 1918 contractors dismantled the sawmill and lifted and stacked the rails at Woolgoolga Jetty.[27] Over the next few months McKenzie shipped the locomotive, tramway trucks, rails and sawmilling plant to Fraser Island.

McKenzie also purchased the British Australian Timber Company's locomotive from its closed Woolgoolga operation. This was the elderly 0-6-0ST Murray & Paterson (206 of 1866) which had been sitting disused at Woolgoolga since that company's sawmill had shut down in September 1914. McKenzie intended to use the Climax to haul logs off the steeper branch lines inland and make up loads for the faster Murray & Paterson to haul back to his sawmill at South White Cliffs on the coast.[28]

McKenzie's plans for large scale operations did not eventuate and it appears the Climax saw little use on Fraser Island. When Sir Allen Taylor's representative was shown over the operation in August 1920, he noted that Climax was in need of repairs.[29] Old hands at Briggsvale, the Climax locomotive's next home, said the sand on Fraser Island played havoc with the locomotive's gears and wore them out in a matter of months.[30]

Thanks in part to the intransigence of the Queensland Waterside Worker's Federation, H Mckenzie Ltd lost heavily on the venture and liquidated it in May 1926. The next month a mammoth auction sale was held on Fraser Island. Assets costing tens of thousands of pounds were sold for a song. The Haughton Sugar Company bid £220 for the Climax which was accepted subject to approval. Apparently approval was not forthcoming because the locomotive remained on Fraser Island.[31]

The Climax locomotive, now missing its headlight, at the head of a short log train crossing Jarrett Creek, Woolgoolga, and about to enter the sawmill circa 1916. According to ex-employee Harold Thompson, each log truck had a little platform on the back and a hand brake, which could be wound on. His description indicates the GNTCo may have purchased Climax patent log trucks, but the photo quality is not good enough to confirm this. *Photo: Neal Yates collection per David Fayle*

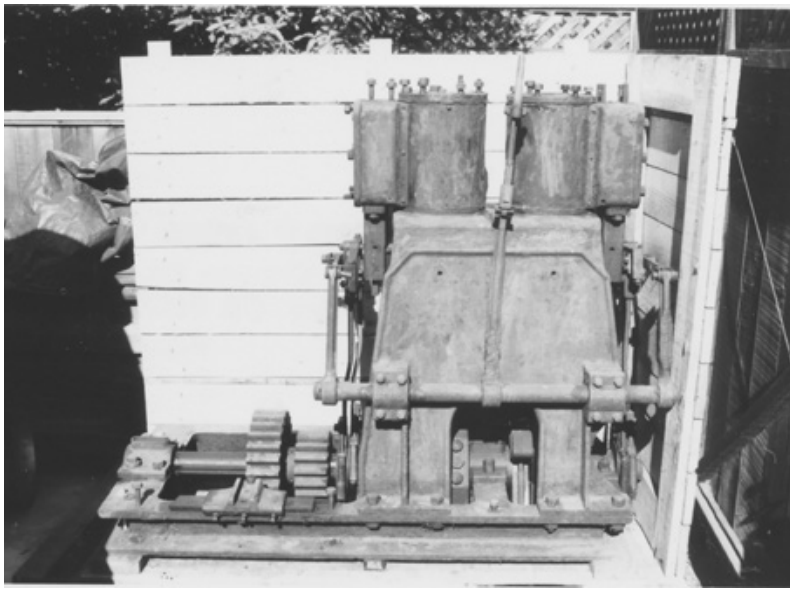
Above: The ex-GNTCo Climax on H McKenzie Limited's timber tramway on Fraser Island, Queensland circa 1920. The distinctive diamond-shaped spark arrestor funnel has been replaced by a utilitarian model which gained the locomotive a reputation as a fire-starter. The sand on Fraser Island was said to have been particularly hard on the locomotive's bevel gears, wearing them out in a matter of months. Note the primitive timber worker's huts in the background. Photo: P Sellars collection

Below: The ex-GNTCo Climax on the Briggsvale Tramway circa 1930. The Climax was fired on coal at Briggsvale and the timber panelling next to the boiler has been raised to form a coal bunker. The original round water tank has been replaced by a square steel one.

Photo: I. McNeil collection, source unknown.

The Queensland Forestry Department purchased McKenzie's tramway assets on Fraser Island in June 1926 but only used the Murray and Paterson locomotive to operate the line. The Climax sat basically disused until George Largie Briggs from Briggsvale near Dorrigo in NSW got word of it. He purchased it in 1928, had it re-gauged to 3ft gauge to suit his Briggsvale Tramway and operated it until his tramway closed in 1942.

In 1946 the Climax and tramway rails were sold to a Sydney firm, EA Marr & Sons, who scrapped the locomotive. The engine unit was preserved by EM Baldwin of Castle Hill, NSW, and eventually sold in 1987 to Richard Dunn, a California enthusiast, for possible restoration.[32]



Top: *The ex-GNTCo Climax derailed and rolled at Skookum Gully on the Briggsvale Tramway in January 1934. The wooden cab and timber panelling were crushed necessitating a complete rebuild. Photo: WT Vaughan*

Above: *The ex-GNTCo Climax showing the rebuilt wooden cab after the 1934 derailment. The raised timber panelling beside the boiler has been extended to hold more coal. The original panelling around the front of the locomotive has not been replaced. Photo: Forestry Commission of NSW.*

Left: *The ex-GNTCo Climax two-cylinder engine unit preserved by Californian enthusiast Richard Dunn. The two gear wheels which gave the Class A Climax its two-speed capability are clearly visible on the main shaft. There was a matching pair on the line shaft which transmitted power to the track bogies. Photo: Richard Dunn*

The First World War and closure

Although the official opening ceremony of the GNTCo's sawmill took place on 29 May 1914, it may have been premature because machinery trials were still underway in July. Construction of the logging tramway was also behind schedule; by mid-September the line was only four miles out from the sawmill, still inside coastal tea-tree scrub and a long way short of the rich timber stands in the company's Exclusive Right.

On 4 August 1914 Great Britain declared war on Germany. The British Empire including Australia was drawn in to the horrific conflict. Almost overnight the export timber trade ground to a halt. To make matters worse the NSW Government stopped purchases of all but essential railway sleepers, poles, piles and girders. Many sawmills closed and large numbers of men were thrown out of work.

Large sawmills geared to export markets were hardest hit, the GNTCo amongst them.

On 3 October 1914 the company closed its sawmill. The employees were given the opportunity of working on the tramline, construction of which was still being pushed ahead. The company was able to negotiate a suspension of the conditions of its Exclusive Right citing dislocation of the industry caused by war and shortage of labour to continue construction of the tramway to develop the area.[33] It also sought to increase its registered capital by issuing another 10,000 £1 shares.[34]

Conditions improved sufficiently for the mill to re-open on 5 August 1916, with the company advertising for carpenters, bushmen and navvies, "with good wages for good men."[35] Unfortunately the revival was short-lived and twelve months later, on 30 July 1917, the company went into voluntary liquidation. Within days the liquidators placed advertisements in the Sydney press inviting tenders to purchase the company's assets, listing among other things: "an up-to-date 8ft band-saw mill close to the jetty, tram laid 7½ miles, Climax loco and trucks."[36] The company's Exclusive Right was cancelled for non-fulfillment of conditions.

Potential buyers appear to have been thin on the ground. There were no takers until July 1918 when Sydney timber merchant Hepburn McKenzie purchased the whole plant. His company, H McKenzie Ltd, had leased 10,000 acres on forest on Fraser Island in Queensland. Over the next few months the GNTCo's Woolgoolga sawmill was dismantled, the tramway rails were lifted, and the plant including the Climax loco was shipped to Fraser Island.

Sydney auctioneers Richardson and Wrench Ltd held a public auction in January 1919 to dispose of the GNTCo's property – the 320-acre Edwells estate just outside Woolgoolga, and the 300-acre Brown's Farm on the Corindi River. Also up for auction were the Woolgoolga and Sherwood Creek tramway rights-of-way, and the rights to 1500 acres of standing timber on Sherwood Creek.[37]

Albert Johnson, representing the firm of Johnson Brothers who had recently purchased the British Australian Timber Company's No.2 sawmill at Woolgoolga, purchased the tramway right-of-way on Sherwood Creek. Few other details of the sale of the GNTCo's assets have come to hand, but it appears that the company's investors lost heavily. Sir Allen Taylor, one of the dominant hardwood timber men of the time, commented a couple of years later that one of his competitors, Saxton & Binns Ltd, had lost thousands of pounds on the GNTCo venture.[38]

Harold 'Peter' Thompson's recollections

When the GNTCo re-opened in August 1916 it advertised for carpenters, bushmen and navvies. One of the men to answer the advertisement was 21-year old Harold 'Peter' Thompson, a young butcher from Corindi who had been knocked back for Army Service due to an old foot injury. He was 89 years old when Dr John Kramer interviewed him at his home in Woolgoolga in 1984. His recollections are the only first-hand account of working for the GNTCo to have been preserved:[39]

My father ran a butcher boat on the Clarence River for Messrs Macauley and Macleod, the local butchers. These boats were the only way to deliver meat around the district; we used to take meat to cane farmers and settlers. It was a time of a lot of floods which resulted in economic hardship for many. So he brought our family down to Corindi to try his luck there. I was also in the butcher's trade, a master slaughterman, I could dress a beast in 15 minutes, but I didn't particularly like this type of work.

When I worked for the GNTCo, my job was to load logs onto tramway trucks at the terminus. We also loaded logs at two other depots on the line, at Arrawarra Creek near Embankment Road and at Thorn Creek. They were cutting anything they could get at that stage - brushbox, ironbark, pine, tallowwood etc. Logs were brought to the terminus by bullock team. Loading was done using the steam loco. It ran forward with a line attached to the log. The line ran around a right angle via a pulley and pulled the log up a ramp onto the wagon. Each wagon had a little platform at the back where someone could ride and a handbrake which could be wound on.

There were no sidings at the terminus. The loco used to push the empty trucks on the way out, and pull them home. Normal load of the train was five wagons, each containing 7 to 8 logs, between 35 to 40 logs per train. Without stopping it took about one hour to get from the terminus to the mill. Going out with empties took perhaps 15 minutes less.

The usual crew on the log train was Adam 'Mick' Wolff, the driver, and two brakemen – me and my mate Percy Tuckey. There was no fireman; Adam had to do everything himself. Sometimes when it was wet the loco would slip and Percy and me would have to walk ahead sanding the rails.

I can't remember what type of loco it was, a slow but powerful one, it came new to Woolgoolga. It burned wood and had wooden brake blocks. You had to be someone to get to ride on the loco, old Mr. Foot the boss, he was often on the loco.

The loco never went out onto Woolgoolga Jetty; two big draught horses pulled the wagons out onto the jetty - I used to have to shoe the bastards – Sunday morning work! There were two cranes on the Jetty, one at each end, both fixed, not travelling. The outer crane was also used for pile driving by means of a rope; we drove a lot of piles in my time. Con Graham was the wharfinger for years and years, his father held the same position in Coffs Harbour earlier.

Some of the ships that visited Woolgoolga regularly were the Fitzroy, Dorrigo, *and* Abel Tasman. *The* Abel Tasman *used to take timber regularly to New Zealand from the ports of Grafton, Woolgoolga and Coffs Harbour. When loading at Woolgoolga not much would be put at the front of the ship so as to prevent the bow hitting the sand; the load would be topped up at Coffs Harbour. Captain Turner was the master of the* Abel Tasman*; sometimes he would invite me on board for tea. The first mate was Peter Dalzell, and the second mate Allan Deeds.*

There were 20 to 30 blokes at the mill. Mr. Saxton was the headman at the mill; he was drowned in Sydney, soon afterwards the Company went into liquidation.

I helped dismantle the line with Danny Younger, Bob Green and a few others. The rails were light-weight 30 foot lengths – I could just lift one – they were new, may have come from BHP. There were no points along the line. The mill was dismantled, the track pulled up and everything was sent to Fraser Island off the Queensland coast.

Extant remains in 2014

The bustling modern town of Woolgoolga bears no resemblance to the undeveloped little bush village of a century ago, so it is not surprising to find that all traces of the GNTCo's big sawmill disappeared long ago. The old mill site is now occupied by the Bowling Club and the Beachside Caravan Park. The only evidence of the company's presence in the town are the stumps of a few tramway bridge piles in Jarrett and Woolgoolga Creeks.

The best-preserved remains of the tramway were found inside Wedding Bells State Forest, near Embankment Road, and where the line paralleled Arrawarra and Thorn Creeks. Shallow box cuts, lengthy stretches of low earth formation, and bridge timbers complete with iron spikes are well represented along this section. The most scenic length is a 200 metre long by 4 metre high side-cut ledge alongside Thorn Creek.

One disappointment was our inability to find any trace of the big Corindi River tramway bridge. The completed line was surveyed for the Lands Dept in August 1915. The survey plan shows a bridge with the tramway railhead on the river's west bank. Given the presence of surviving bridge timbers at many smaller creek crossings, we were optimistic of finding something. We identified the logical bridge site, but a century of clearing and agriculture, not to mention flood debris high up on the steep river banks, appears to have destroyed any evidence.

Parts of the route of the old tramway have been preserved in road names; Tramway Drive is near the Safety Beach turnoff on the Pacific Highway, and Tramway Trail parallels Arrawarra Creek for much of its length.

Top: *The century old remains of a small tramway bridge spanning a shallow gully beside Thorn Creek in 2014. Headless iron spikes (inset) were found with many remnant girders, bed logs and sleepers at bridge sites along sheltered stretches of tramway in this area. Photo: Ian McNeil*
Above: *Ancient girders and decayed sleepers of a small tramway bridge across Little Arrawarra Creek in 2003. Unfortunately the construction of the Woolgoolga Highway Bypass destroyed the site. Photo: John Kramer.*

Acknowledgements

My gratitude again to Taree-based field researcher Mick Allison for his assistance, bush skills and the use of his 4WD during the 2014 field mapping excursions. When tramway formations are lost in flat, disturbed or heavily overgrown terrain – as they often are - a second and better pair of experienced eyes is invaluable.

My thanks to Dr John Kramer for access to the photographs and research material he has collected over the years; to David Fayle of the Woolgoolga Heritage Committee for access to photos from the Neal Yates collection; to Joy Richardson from the same organisation for guidance around the historic sites of Woolgoolga, and to Mark Fry for his Climax photographs.

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A hand-forged square cross-section iron nail embedded in an old bridge girder beside Thorn Creek. They were used to spike sleepers onto bridge girders. *Photo: Ian McNeil*

OLD CAPE PATTERSON TRAM LINE.
May Have Rails Torn Up.

While at Cape Patterson (sic) on Friday, Sir Alexander Peacock, the Premier, noticed that about a mile of railway track was not used, and he intends to make inquiries with a view to having the rails transferred to a line in course of construction.

Sir Alexander Peacock was informed that the mile of railway or tramway was constructed to convey coal from a mine which had been opened up to a limited extent, to small steamers at the cape.

"I gathered," said the Premier, "that this little line was intended to be part of the Cape Patterson to Kilcunda railway, in which the late Mr Nathaniel Levi, M.L.C., took an interest. I do not know whether the Railway Department lent or leased the rails to the company, or whether there was a sale".

"In any case, rails are now difficult to obtain, even at high rates, owing to the war, and it would be better to transfer those at Cape Patterson to a track where they would be useful. If the Government has to purchase the rails, it will do so, but there is no sense in letting them rust." [1]

At face value it might have seemed a reasonable idea, but there was more history behind the rails than the Premier knew. Originally from the Geelong and Melbourne Railway Company, which commenced operation in 1857, the Barlow rails were not loved by the Victorian Railways (VR), which had taken over operation in 1860, and were soon disposed of. The rails were then purchased by the unsuccessful Cape Paterson Victorian Coal Company, which had attempted to mine coal in the region in the early 1860s. By the time the Premier spied the rails, they were 60 year old, third hand, redundant rail technology and rusty. Just to keep him happy, the VR sent out a draughtsman to investigate. The report confirmed the rail's unsuitability.[2]

1. 'Old Cape Patterson Tram Line', *Dandenong Advertiser* and *Cranbourne, Berwick and Oakleigh Advocate,* 1 March 1917, p2.
2. M McCarthy, 'Cape Coal', *Light Railways*, No.197, Oct 2007, pp11-17

Pressing matters at Wineries In LR 239 (October 2014) Johanna Whiteford reported on a rail-mounted grape crushing mill at Middle Swan, in Western Australia. Continuing the winery theme, the following photographs of some South Australian operations may be of interest

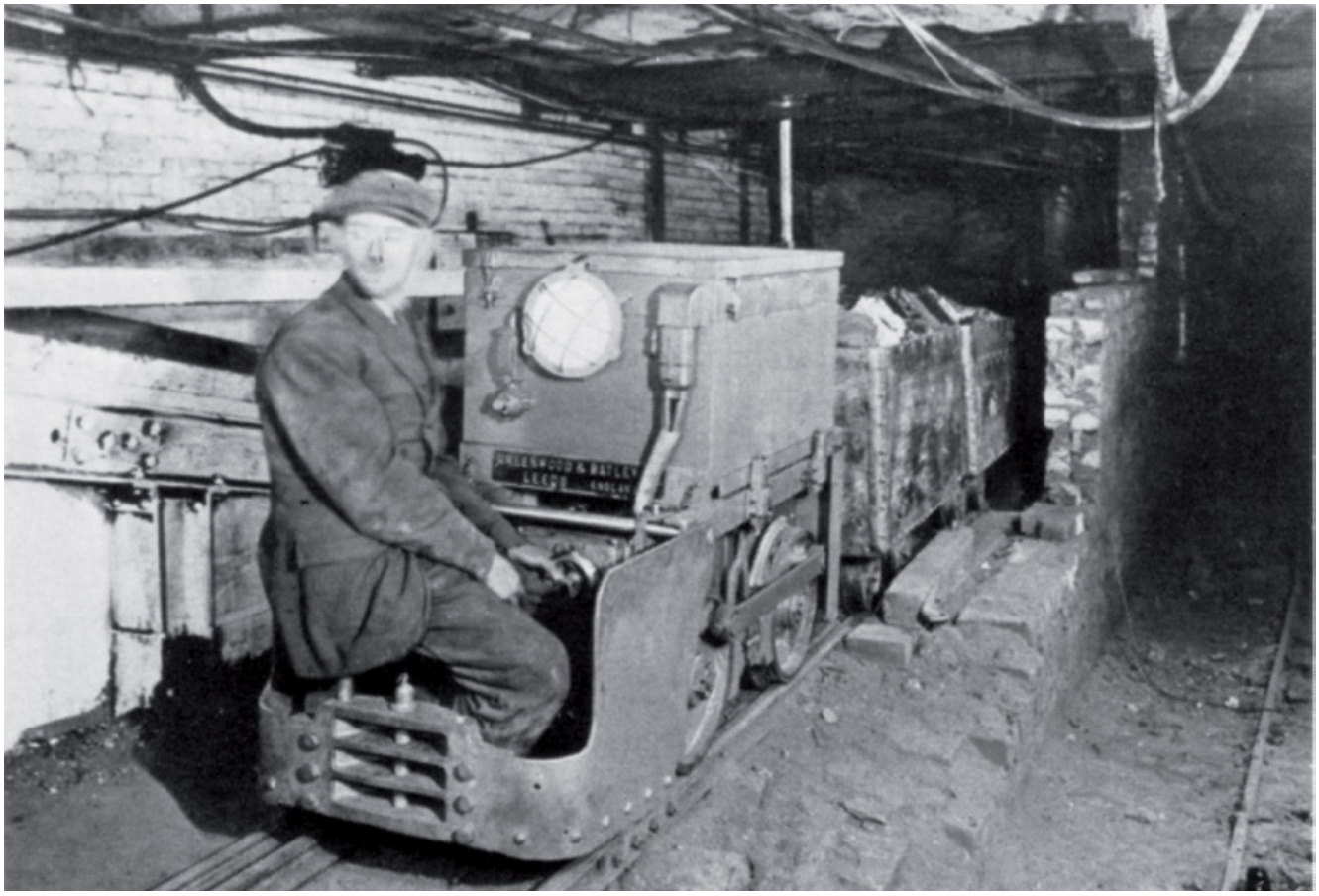
Grape Press, Auldana winery, Barossa Valley (above) The use of narrow-gauge tramways in wine cellars for the movement of maturing barrels of wine is fairly well known, but here we have another interesting use of tramways in wineries during the 20th century – that of moving the wooden basket presses into the press room for the pressing of the 'must' (de-stemmed punctured grapes) and extraction of the grape juice. The 'basket' of a basket press comprises iron rings to which are fixed waxed wooden uprights. The iron rings hinge open to allow removal of the grape 'marc' – the grape skins and seeds left after the juice has been pressed. The wheeled base is of iron with a trough to collect and drain off the pressed juices. The average traditional basket press, capable of holding several tons of grapes, is filled from the top. A massive wooden lid is then fitted and by applying pressure, either manually (via a spiral thread and long poles), or hydraulically, the lid is pressed slowly down with ever-increasing pressure to squeeze the remaining juices (up to a point) from the must. The treatment for white and red wines is usually different, whites being pressed before fermentation and reds being pressed following fermentation.

Phil Rickard
State Library of South Australia B 62606

Right: Sevenhill Winery, Clare Valley, 3ft 6in gauge? c.1950. SLSA B 19183

Left: Dorrien Winery 1925 (between Tanunda and Nuriootpa). Four men working at a grape press. SLSA B 69036

Lower right: Tatachilla, McLaren Vale, c.1910 Removing the grape marc following pressing. SLSA B 41701



Australia's first Greenbat locomotives were a batch of three (1169, 1170 & 1171) 1ft 8in gauge 0-4-0 battery locomotives for Lake View & Star at Kalgoorlie, Western Australia. The first was trialled underground at Nostell Colliery near Wakefield in West Yorkshire, where it is shown here in early 1930. *Photo: Hunslet Archive*

Greenbat electric locomotives in Australia

by the late JL Buckland

The range of specialised battery and electric mining locomotives made by Greenwood & Batley Ltd, Albion Works, Leeds, England - acquired by Hunslet Holdings in May 1980 - includes 135 built to the order of Australian users between 1927 and 1980. Of these all but seven were battery-powered.

In 1986 the Industrial Railway Society published a comprehensive book listing all the 'Greenbat' locomotive production from 1927 on, compiled by AJ Booth from official company records, from which the following Australian content has been extracted.

In the transport field, the company's first known involvement was the building of the Beaumont four-cylinder compound compressed air tramcar in 1876 which was tested in Edinburgh. Then in 1878 the company built the Loftus Perkins tramway locomotive weighing six tons with a triple expansion water tube boiler with a vertical engine, which was tested unsuccessfully on the Leeds tramways.

This early experimental work led to Greenwood & Batley entering the tramway field, with some of the steam trams used in Leeds between 1880 and 1901 being fitted with boilers and tubes constructed at the Albion Works. In 1892 it constructed two electric tramcars for Brighton Corporation (England). This research and development resulted in the company winning a contract for 25 double-deck open top tramcars for Leeds Corporation. These were the first electric tramcars in Leeds and lasted until 1929.

Labour-saving electric power trucks, which Greenwood & Batley introduced into the UK in the early 1920s including the forerunner of the modern fork-lift. Having gained experience with battery electrically-powered road machines, it was only a matter of time before the company turned its attention to rail traction. In 1927, five small battery-electric narrow gauge locomotives were built for the Mersey Tunnel project. These proved so successful that several repeat orders resulted, encouraging the company to start production of locomotives on a large scale.

The first wire electric locomotives were built in 1929 for a Chinese mine, the first export order for locomotives. Between 1928 and 1980 the company built a total of 1367 locomotives for 40 different countries. Between 1953 and 1966 a considerable number of orders were sub-contracted to the Logan Mining Machinery Co of Dundee, Scotland, who also built just over one hundred of its own locomotives, using Greenbat designs under a manufacturing agreement between them.

Greenbat locomotives were also built abroad under licence: in South Africa by Robert Hudson & Sons (Pty), Johannesburg and Fox Manufacturing Co., of Smithfield, NSW, who are known to have built at least five locomotives for Mount Isa Mines since 1971. The total of 1367 Greenbat locomotives built includes 65 specialist electric locomotives for coke oven service.

Battery-electric, overhead-wire electric, cable reel electric and combined battery and wire electric locomotives were built (plus one diesel) and with very few exceptions were four-wheel locomotives. Locomotives subcontracted to Logan

Mining & Machinery Co are as indicated in the listing which includes works contract number, works serial number, despatch date, gauge and details, from which the following list of those supplied to Australian buyers has been extracted.

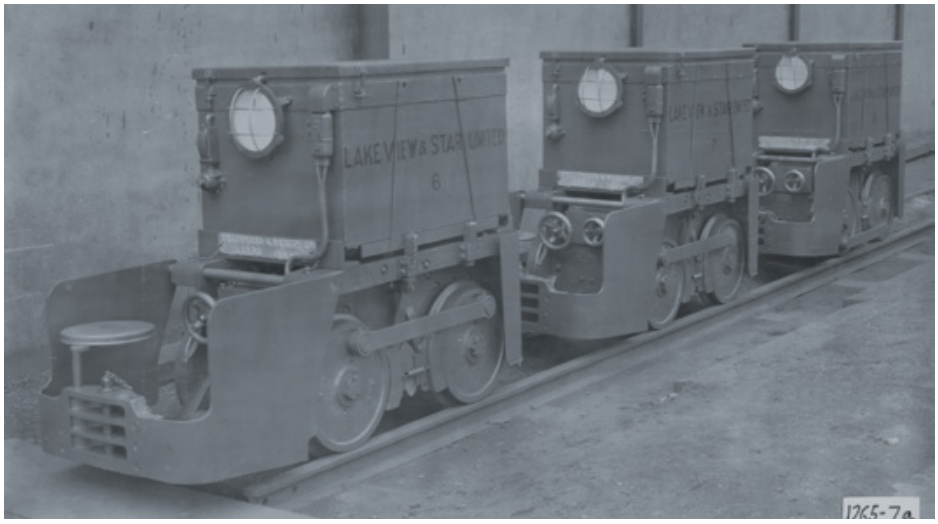
Nearly all the locomotives are recorded as being ordered on behalf of the final customer by an agent or holding company. William Adams & Co Ltd acted as agents for a large number of Australian orders. Where no final customer is given, some of the orders from Adams may have been for stock in anticipation of an order. Information in brackets has been added using local information and any further details from readers would be most welcome.

Details were extracted from the book 'Greenwood & Batley Locomotives' by AJ Booth, published in 1986 by the Industrial Railway Society. Thanks are due to Richard Horne, London, who supplied the copy to the author.

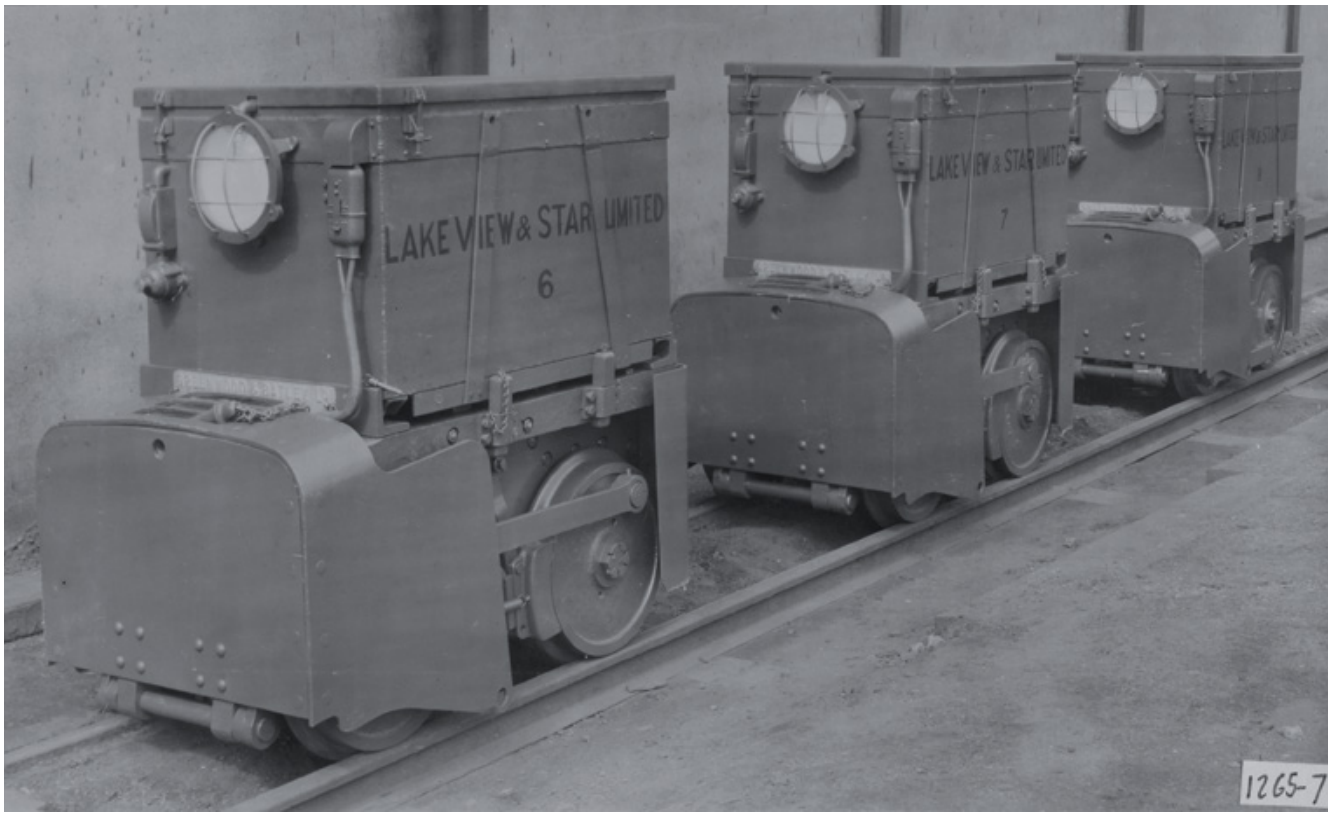
***Editor's notes** – This article has been on the editorial files for many years but was not able to be considered for publication because of difficulties in obtaining the relevant images. These have now been made available by the Hunslet Archive at Statfold Barn in England. Thanks are due to Andrew Smith and Mike Swift for their assistance.*

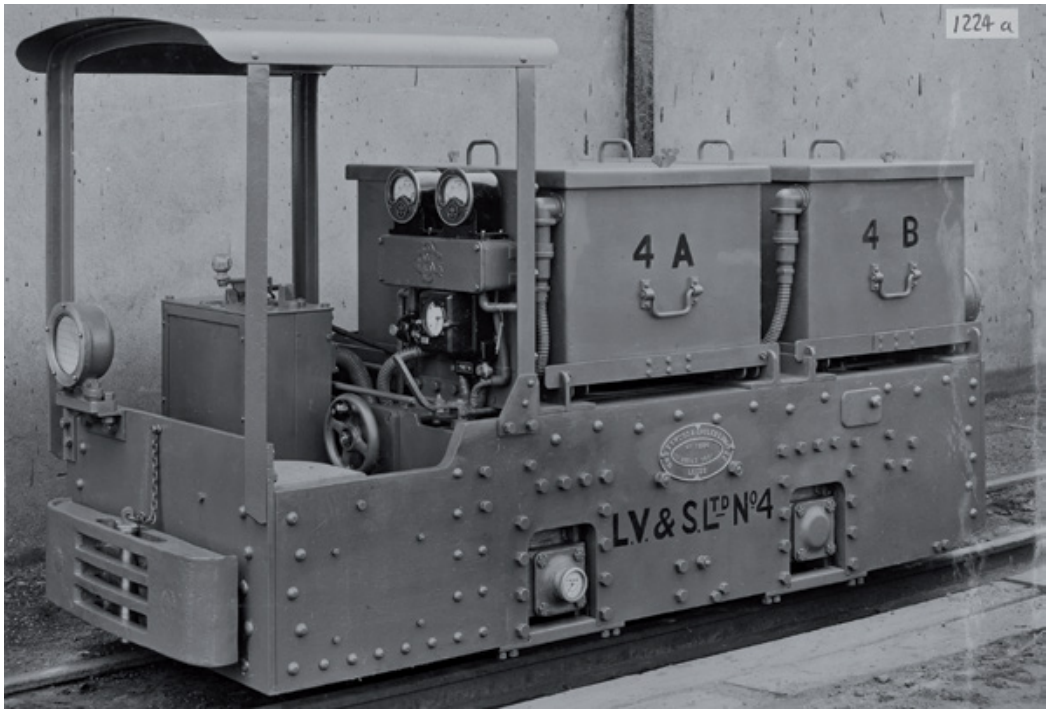
All the locomotives listed were four-wheeled. Photographic evidence indicates that 1169-1171 and 1265-1267 (and by implication 1319-20) were fitted with connecting rods and were therefore 0-4-0BE. As far as is known, the other battery locomotives, and all the trolley locomotives, were 4w. Trammer locomotives were the smallest type, designed for lowering down narrow mineshafts with the driver's position folding away to reduce size. The horsepower of motors is shown. All units had single motors unless indicated otherwise.

A few Greenwood and Batley locomotives in Australia do not appear on the list. Two 2ft gauge rail versions of the Greenbat electric truck were used at the HMAS Penguin Naval Establishment on Pittwater in Sydney Harbour. One carried works number 3209. They were numbered in a separate series with the electric trucks. Two modern 4wBE locomotives thought to have been built by Greenbat were noted at Gympie Eldorado Gold Mines Pty Ltd in Queensland during 1991. They may have been imported second-hand.

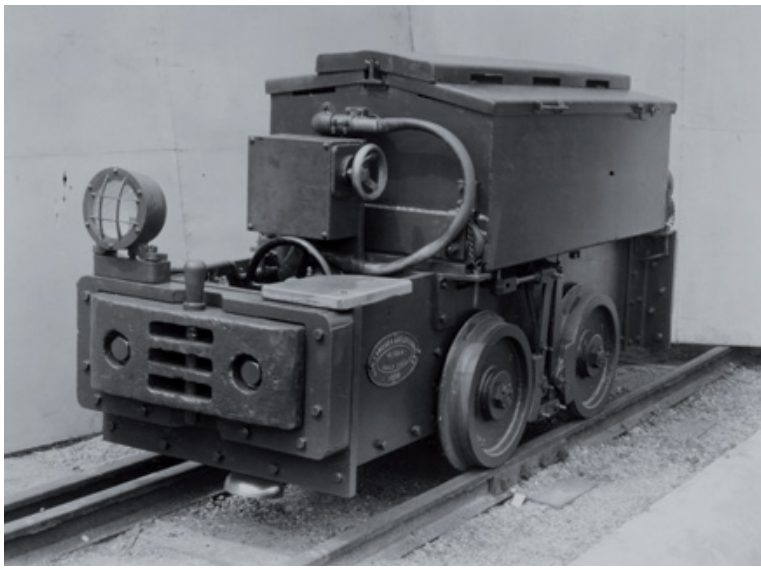


***Left and below:** These three 1ft 8in gauge 'trammer' battery locomotives (1265, 1266 & 1267) were built in 1932 for Lake View & Star (numbers 6, 7 & 8) and had the fold up driver's position to enable them to be lowered down restricted mine shafts. Photos: Hunslet Archive*



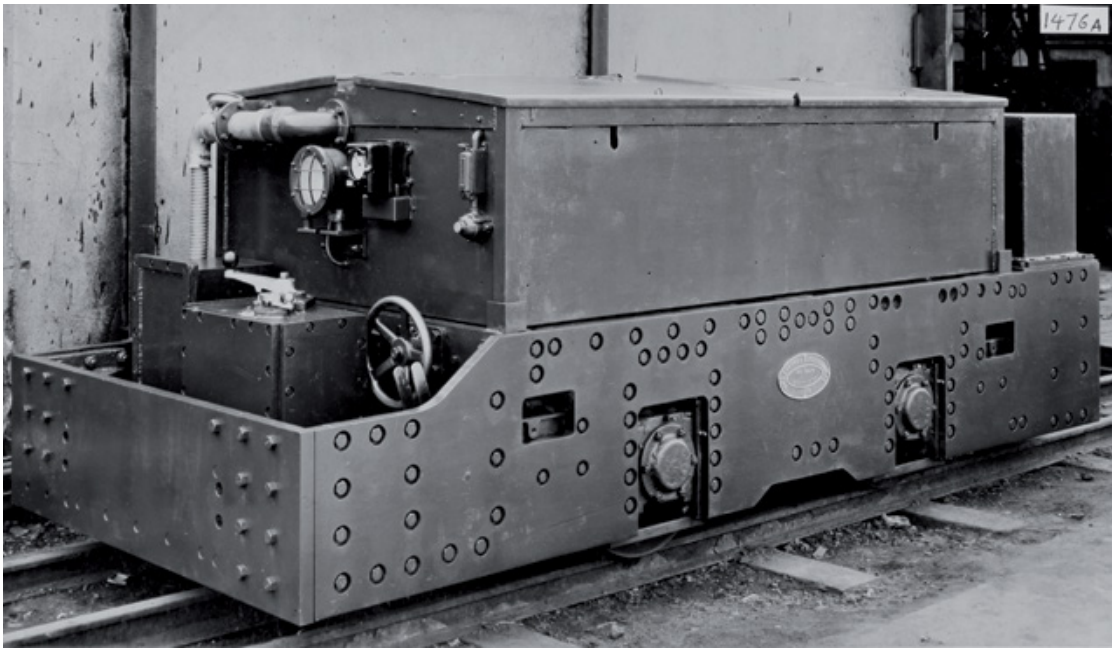


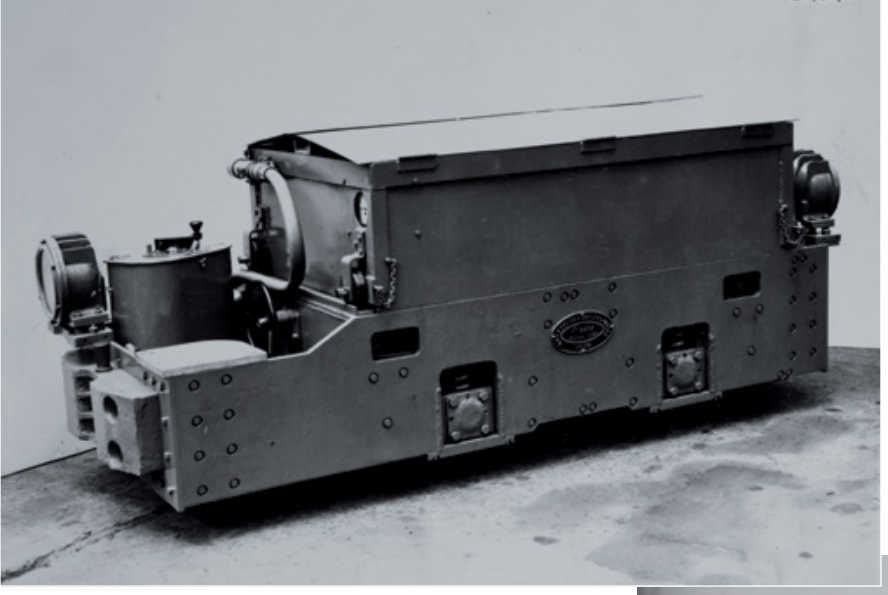
Above: *New Consolidated Gold Fields were good Greenbat customers, placing orders for locomotives in many countries. This 1ft 8in gauge battery locomotive for Lake View & Star (1224) was one of a pair supplied in 1931. It was painted grey with L.V.& S.LTD No.4 on the side in black. Photo: Hunslet Archive*



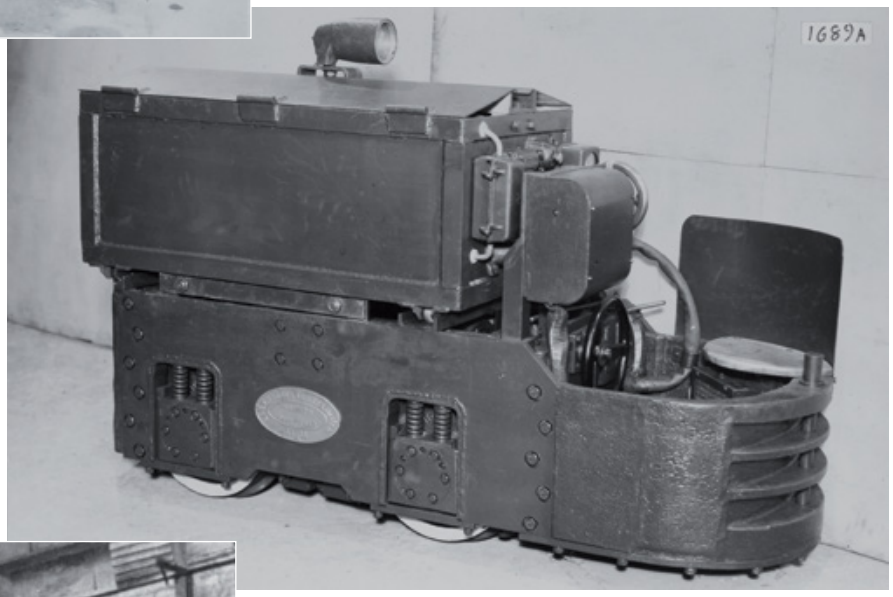
Right: *Ordered by agent William Adams was this 3-ton 2ft gauge battery locomotive for Broken Hill South (1644), one of a pair supplied in 1940. The bell under the headstock was rung with a foot pedal. This tiny battery-electric locomotive (1689) operated on about as narrow a gauge as could be used for commercial purposes – 1ft 3in gauge. It was one of a pair supplied in 1940 for the North Broken Hill mine in NSW. Photo: Hunslet Archive*

Below: *An 8-ton 3ft 6in gauge flameproofed battery locomotive for BHP Ltd's Lambton Colliery in NSW (1476), one of a pair supplied in 1937. The countersunk bolt heads were a characteristic of Greenbat frames, with no less than 90 of these in the right hand side alone! Photo: Hunslet Archive*

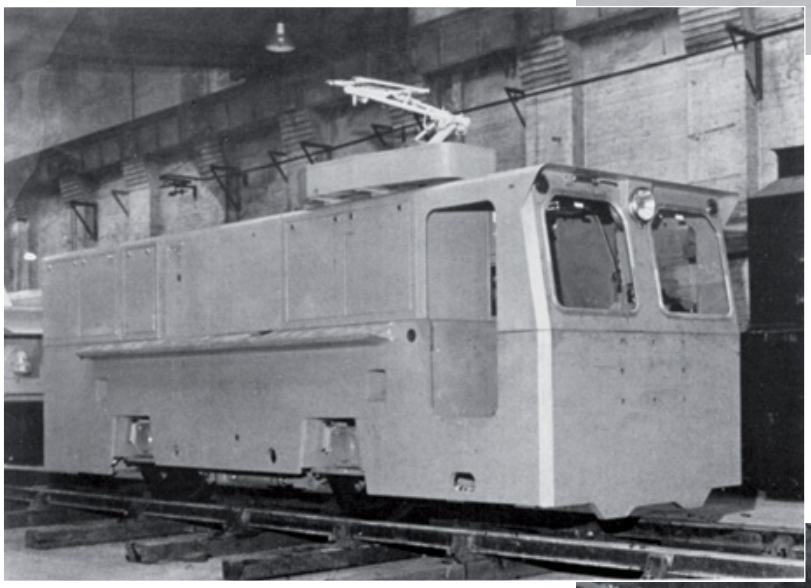




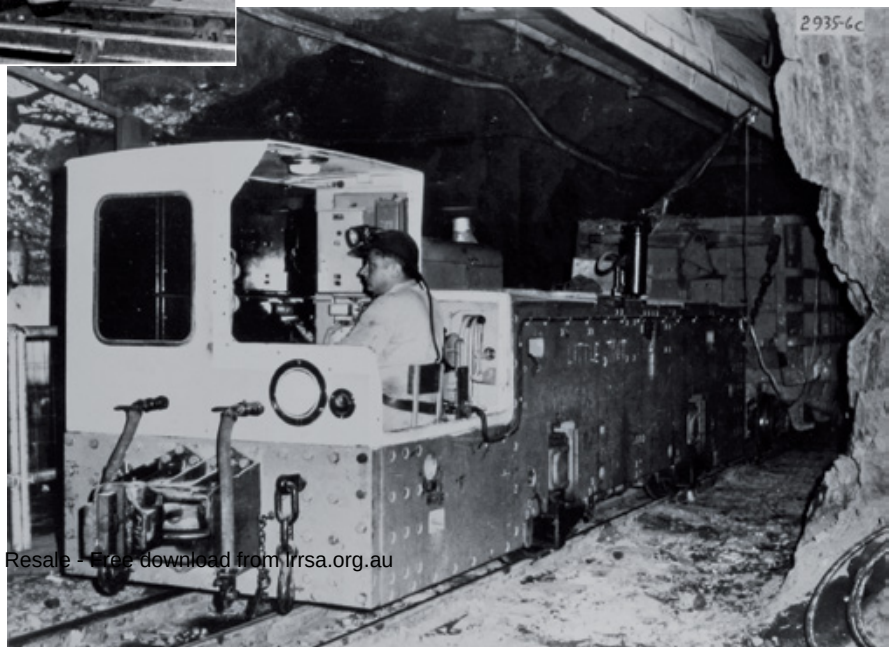
Left: *William Adams ordered this 3-ton 2ft gauge battery electric locomotive (2404). It was one of two supplied in 1952 to Great Western Consolidated Gold Mines in Western Australia. Photo: Hunslet Archive*



Right: *This tiny battery-electric locomotive (1689) operated on about as narrow a gauge as could be used for commercial purposes – 1ft 3in gauge. It was one of a pair supplied in 1940 for the North Broken Hill mine in NSW. Photo: Hunslet Archive*



Left: *A pair of locomotives were supplied to this order for Mt Isa Mines in 1968 and had dual pantograph and battery power. They were 20 ton locomotives on 3ft 6in gauge designed to operate at each end of the ore train, with control by radio from the leading cab or remotely. They operated on a Fly-Rail system on 19 Level hauling bottom dump cars. The radio control concept was ahead of its time and operation soon changed to double-heading at one end of the rake. A further eight locomotives of this type were subsequently built under licence by Fox and Gemco in 1971-3. Photo: Hunslet Archive*



Right: *This trolley wire locomotive (2935) was one of an initial order for two on 3ft 6in gauge ordered by Mines Trading Co Ltd in London for Mt Isa Mines Ltd. They were supplied in 1959, weighed a nominal 20 tons, and were designed for Granby car haulage on 15 Level. The completely enclosed cab evidently was not air conditioned as in service half of it was cut away. Photo: Hunslet Archive*

GREENWOOD & BATLEY LOCOMOTIVES SUPPLIED NEW TO AUSTRALIA

Contract number	Works Nos.	Despatch date	Gauge	Type	Agent	Customer
80265	1169-1171	8/3/30 Q	1ft 8ins	BE 4½ hp	NC	Lake View & Star Ltd., Fimiston, WA
80374	1224-1225	7/7/31 Q	1ft 8ins	BE 2 x 6hp 2¾ tons	NC	Lake View & Star Ltd, WA
80408	1245	28/12/31 Q	2ft 0ins	BE 2 x 6hp	NC	Wiluna Gold Mines Ltd, WA
80430	1265-1267	25/5/32 Q	1ft 8ins	BE 4½ hp	NC	Lake View & Star Ltd, WA
80476	1319-1320	9/2/33 Q	1ft 8ins	BE 4½ hp	NC	Lake View & Star Ltd, WA
80691	1398-1399	7/5/35 Q	1ft 6ins	BE 5hp Trammer	AM	Triton Gold Mines, WA
80702	1407	19/6/35 Q	1ft 4ins	BE 4½ hp	NC	Talbot Alluvials Ltd, Vic
80707	1408-1410	4/7/35 Q	2ft 0ins	BE 5hp Trammer	AM	Bendigo Mines, Victoria
80742	1422	31/10/35 Q	1ft 5¼ins	BE 5hp Trammer	AP	Great Boulder GM Ltd, Kalgoorlie, WA
80823	1444 & 1446	14/7/36 Q	1ft 5ins	BE 3hp Trammer	AP	Great Boulder GM Ltd, Kalgoorlie, WA
80841	1453-1454	14/9/36 Q	2ft 0ins	BE 5hp Trammer	AM	Bendigo Mines, Vic
80850	1459-1460	6/10/36 Q	1ft 8ins	BE 4½hp Trammer	NC	Lake View & Star Ltd, WA
80873	1470	14/11/36 Q	1ft 5ins	BE 5hp Trammer	AP	Great Boulder GM Ltd, Kalgoorlie, WA
80889	1475-1476	22/1/37 Q	3ft 6ins	BE 2 x 20hp FLP 8 tons	McD	BHP Ltd, NSW (Lambton Colliery)
80904	1483	22/1/37 Q	1ft 6ins	BE 5hp Trammer	AM	Triton Gold Mines, WA
80911	1486	23/2/37 Q	1ft 6ins	BE 5hp Trammer	AM	-
80930	1491	18/5/37 Q	2ft 0ins	BE 5hp Trammer	NC	Wiluna Gold Mines Ltd, WA
80940	1499	16/6/37 Q	2ft 0ins	BE 6hp 3 tons	AA	South Mine, Broken Hill, NSW
80946	1501	12/6/37 Q	1ft 6ins	BE 5hp Trammer	AM	Triton Gold Mines, WA
80951	1504	16/6/37 Q	1ft 5ins	BE 5hp Trammer	AM	(probably Maude & Yellow Girl Gold Mining Co NL, Glen Wills, Vic)
80972	1511-1512	30/7/37 Q	2ft 0ins	BE 2 x 12hp 5 tons	AA	North Broken Hill Mine, NSW
81069	1578	18/6/38 Q	1ft 6ins	BE 4½ hp Trammer	NC	Lake View & Star Ltd, WA
81120	1588	11/10/38 Q	1ft 5ins	BE 5hp Trammer	AP	Great Boulder GM Ltd, Kalgoorlie, WA
81240	1632	18/9/39 Q	2ft 0ins	BE 2 x 6hp 3½ tons	AP	Western Mining Corporation Ltd, WA
81250	1635	7/10/39 Q	1ft 6ins	BE 5hp Trammer	AM	Triton Gold Mines, WA
81296	1643-1644	13/1/40 Q & 27/1/40 Q	2ft 0ins	BE 6hp 3 tons	AA	South Mine, Broken Hill, NSW
81369	1689-1690	15/7/40 Q	1ft 3ins	BE 5hp Trammer	AA	North Broken Hill Mine, NSW
81370	1691-1692	15/7/40 Q	1ft 6ins	BE 5hp Trammer	AA	North Broken Hill Mine, NSW
81379	1695	22/7/40 Q	1ft 5ins	BE 3hp Trammer	AP	Great Boulder Pty GM Ltd, Kalgoorlie, WA
81399	1701	4/10/40 Q	1ft 6ins	BE 5hp Trammer	AM	Triton Gold Mines, WA
81531	1737	23/6/41 Q	1ft 5ins	BE 5hp Trammer	AM	-
82004	2027-2029	20/6/46	2ft 0ins	BE 6hp 3 tons	AA	Broken Hill South Ltd, NSW
82063	2042-2043	13/11/46	1ft 6ins	BE 2 x 5hp 3½ tons	AA	North Broken Hill Ltd, NSW
82123	2073	21/7/47	1ft 5ins	BE 5hp Trammer	AP	Great Boulder GM Ltd Fenishaw Mine, WA
82136	2077	27/10/47	1ft 6ins	BE 5hp Trammer	AP	Boulder Perseverance Ltd, WA
82255	2129	1/9/48	2ft 0ins	BE 5hp	AM	A1 Consolidated Gold, Vic
82267	2131-2132	2/6/48	1ft 6ins	BE 2 x 5hp 3½ tons	A	North Broken Hill Ltd, NSW
82326	2196	23/12/48 Q	1ft 6ins	BE 5hp Trammer	AP	Central Norseman Gold Corporation, WA
82402	2273-2274	1/5/50	1ft 6ins	BE 5hp	AA	North Broken Hill Ltd, NSW
82456	2305	6/9/50	1ft 5ins	BE 5hp 1½ tons Trammer	AP	-
82500	2340-2341	31/1/51	1ft 6ins	BE 2 x 5hp 3½ tons	AA	North Broken Hill Ltd, NSW
82559	1832	24/5/50	1ft 6ins	BE 5hp Trammer	AP	Central Norseman Gold Corporation, WA
82572	2375-2376	8/10/51	1ft 6ins	BE 5 hp Trammer	AP	Lake View & Star Ltd, WA

Contract number	Works Nos.	Despatch date	Gauge	Type	Agent	Customer
82629	2397	19/9/52	1ft 6ins	BE 2 x 5hp 3 tons	AP	Central Norseman Gold Corporation, WA
82637	2404-2405	23/7/52	2ft 0ins	BE 2 x 5hp 3 tons	AP	Great Western Consolidated GM Ltd, WA
82647	2415	12/6/53	1ft 6ins	BE 5hp Trammer	AP	Gold Mines of Kalgoorlie Aust Ltd, WA
82648	2416-2420	9/3/53	1ft 6ins / 1ft 8ins X	BE 5 hp Trammer	AP	Lake View & Star Ltd, WA
82662	2437-2438	19/4/52 Q	1ft 6ins	BE 5hp Trammer	AP	Boulder Perseverance, WA
82665	2439	31/5/52 Q	1ft 6ins	BE 5hp Trammer	AP	Central Norseman Gold Corporation, WA
82679	2448-2449	2/3/53	1ft 6ins / 2ft 0ins X	BE 2 x 5hp 3½ tons	AA	North Broken Hill Ltd, NSW
82688	2460-2463	3/54	2ft 0ins	BE 5hp Trammer	AA	Zinc Corporation, Broken Hill, NSW
82722	2501	6/11/53	2ft 0ins	BE 5hp Trammer	AM	Melbourne & Met Board of Works, Vic
82732	2507	13/11/53	1ft 5ins	BE 3hp Trammer	AP	-
82793	2574 L	28/9/53	1ft 6ins	BE 5hp Trammer	AP	South Kalgurli Consolidated Ltd, WA
82797	2595 L	8/12/54	1ft 5ins	BE 5hp Trammer	AP	Great Boulder Pty GM Ltd, Kalgoorlie, WA
82827	2607 L	4/2/54	1ft 6ins	BE 5hp Trammer	AP	-
82871	2639-2640 L	31/1/55 Q	2ft 0ins	BE 2 x 9hp FLP 5 tons	AA	-
82902	2665-2667 L	15/8/55	1ft 5ins	BE 3hp Trammer	AP	Great Boulder Pty GM Ltd, Kalgoorlie, WA
82905	2664 L	7/9/55	1ft 6ins	BE 5hp Trammer	AP	South Kalgurli Consolidated Ltd, WA
82908	2674-2680	18/5/55 (1) 23/5/55 (2) 23/6/55 (4)	1ft 5ins	BE 5hp Trammer	AP	The Sons of Gwalia Ltd, WA
82909	2681 L	3/1/56	1ft 5ins	BE 5hp 3 tons	AP	The Sons of Gwalia Ltd, WA
82945	2707-2708	21/3/56	1ft 5ins	BE 5hp Trammer	AP	-
82946	2709-2710 L	11/56 Q	1ft 5ins	BE 3hp Trammer	AP	Great Boulder Pty GM Ltd, Kalgoorlie, WA
82961	2724-2725	11/5/56	1ft 6ins	BE 2 x 5hp 3 tons	AP	Central Norseman Gold Corporation, WA
82962	2726-2733	24/8/56 (4) 16/11/56 (4)	1ft 6ins / 1ft 8ins X	BE 5hp Trammer	AP	Lake View & Star Ltd, WA
83042	2810-2811	2/1/57	1ft 6ins	BE 2 x 5hp 3 tons	AP	Central Norseman Gold Corporation, WA
83051	2822-2826 L	12/11/57	2ft 0ins	BE 2 x 15hp 7/8 tons	AA	Zinc Corporation Ltd, Broken Hill, NSW
83188	2935-2936	28/4/59	3ft 6ins	WE 2 x 120hp 21½ tons	MT	Mt Isa Mines Ltd, Queensland
83284	6007	18/10/60	3ft 6ins	WE 2 x 120hp 20 tons	MT	Mt Isa Mines Ltd, Queensland
83467	6092	7/63 Q	3ft 6ins	WE 2 x 120hp 20 tons	MT	Mt Isa Mines Ltd, Queensland
83516	6110	10/7/64	3ft 6ins	WE 2 x 120hp 20 tons	MT	Mt Isa Mines Ltd, Queensland
420088	420088	7/67 Q	2ft 0ins	BE 2 x 11hp 5 tons	-	Australian Newsprint Mills, Boyer, Tas
420123	420123/1 - 420123/2	9/68 Q	3ft 6ins	WE/BE 2 x 75hp 20 tons	MT	Mt Isa Mines Ltd, Queensland
420363	420363/1 - 420363/2	4/74 Q	2ft 6ins	BE 5hp Trammer 2 tons	GH	(ICI, Deer Park, Melbourne, Vic)

BE = battery electric	A = William Adams & Co Ltd
FLP = flameproofed	AA = William Adams & Co Ltd, Adelaide, SA
L = built by Logan Mining Machinery Co Ltd, Dundee, Scotland	AM = William Adams & Co Ltd, Melbourne, Victoria
Q = Quoted despatch date; all others are actual despatch date	AP = William Adams & Co Ltd, Perth, WA
WE = wire electric (trolley or pantograph)	GH = Graham Handling Equipment Pty Ltd, Moorabbin, Vic
WE/BE = wire electric fitted for battery operation	McD = McDonald, Scales & Co, London
X = adjustable gauge	MT = Mines Trading Co Ltd, London
	NC = New Consolidated Gold Fields Ltd, London

Industrial Railway NEWS

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

NEW SOUTH WALES

GLENCOE AGRICULTURAL TRAMWAY, Springrange

(see LR 238 p.24)
610mm gauge

On 2 March the run round loop and signalling system at Glen Coe Siding became operational. The works involved the manufacture and installation of a left hand turnout at the bottom of the long 1 in 20 grade, laying of additional track to extend the previous dead end siding, and completion of a signalling system. The photo shows the Tulloch 4wDM locomotive (003 of 1959) adjacent to a somersault semaphore signal, with the Works wagon and two four-wheel flat tops on the loop siding. In the far distance at lower centre right is a four-wheel box wagon at the northern extremity of the tramway. Also in view, at centre left, is a Switch Stand with Indicator that controls the turnout. Apart from the ex Victorian Railways somersault blade (arm) and spectacle, that were given to the operator many years ago, both signals were fabricated using steel offcuts obtained at no charge from a local structural fabricator. The somersault semaphore is not a 'home' signal and only indicates the position of an inline 'derail' situated 20 metres further along the road the Tulloch locomotive is on. The signal and derail are controlled by an ex VR red and black signal lever (not in view), using a double wire tension system with the operating cables buried in 40 mm electrical conduit, to avoid damage to the legs of stock on the farm. The system works well, and the operator gratefully acknowledges the support from Russell Savage and Chris Hart with photographs of switch stands, and Mark Bau's Victorian Railway's website (www.victorianrailways.net/) that contains design drawings of somersault signals.
Gary Barker 3/15

QUEENSLAND

DOWNER EDI, Maryborough

(see LR 241 p.18)
1067mm gauge

The workshop shunter Walkers B-B DH DH73 *Hugh Boge* (718 of 1974) was on static display outside the workshop on 17 January as part of the QR 150 celebrations.
Bob Gough 1/15

On display for the QR 150 celebrations at Maryborough on 17 January is Downer EDI's Walkers B-B DH DH73 Hugh Boge *(718 of 1974).* *Photo: Bob Gough*

The Tulloch 4wDM locomotive (003 of 1959) at Glen Coe siding on the Glencoe Agricultural Tramway on 2 March. *Photo: Garry Barker*

Top: *Mossman Mill's spare loco Com-Eng 0-6-0DH* Mossman *(B1719 of 1957) sees some action covering for a loco breakdown on 2 January. Photo: Luke Horniblow* ***Centre:*** *EM Baldwin B-B DH* Daintree *(7303.1 7.77 of 1977) of Mossman Mill traverses an elevated section of track in a siding on 2 January. Photo: Luke Horniblow* ***Above:*** *Mossman Mill's EM Baldwin B-B DH* Daintree *(7303.1 7.77 of 1977) on Junction road rail bridge on 2 January. Photo: Luke Horniblow*

MACKAY SUGAR LTD, Mossman Mill
(see LR 239 p.24)
610 mm gauge
This mill finally finished its 2014 crush around 13 January, the longest crushing of any Australian mill for many years.
Spare loco Com-Eng 0-6-0DH *Mossman* (B1719 of 1957) was in use from 2 January as Com-Eng 0-6-0DH *Faughy* (AL4190 of 1965) was taken out of service on that day owing to overheating problems. Unlike Faughy, *Mossman* was not being used in multiple with Com-Eng 0-6-0DH *Douglas* (AL2562 of 1963).
Luke Horniblow 1/15

MSF SUGAR LTD, Mulgrave Mill
MSF SUGAR LTD, South Johnstone Mill
(see LR 241 p.18 and LR 241 p.19)
610mm gauge
In a surprise move, South Johnstone Mill's three 24 ton EM Baldwin B-B DH locomotives 24 (5477.1 8.74 of 1974), 25 (6470.1 1.76 of 1976) and 26 (7244.1 8.77 of 1977) were transported to Mulgrave Mill on 11 February. Road transport was used owing to the line between the two mills being lifted in places. These three locos are at Mulgrave for the fitting of remote control gear (RSU) to 24 and 26 plus the completion of this work on 25. As well, they are to be repainted in Mulgrave colours plus 24 and 26 will be having work done on their cabs. They may also be fitted with Mulgrave style hoods.
Late in January, the frame of Mulgrave loco Prof B-B DH 22 *Aloomba* (P.S.L.25.01 of 1990 rebuilt South Johnstone 1993) was being sand blasted and painted.
Amongst the locos seen in the Mulgrave locoshed on 20 February were Prof B-B DH 22 *Aloomba* (P.S.L.25.01 of 1990 rebuilt South Johnstone 1993) undergoing a rebuild, Com-Eng 0-6-0DH 9 *Meerawa* (FC3473 of 1964), EM Baldwin 11 *Maitland* (4413.2 8.72 of 1972) and the three South Johnstone Mill EM Baldwin bogie locos. 22 *Aloomba* is being fitted with a new Mulgrave style hood but the original cab is being retained although with modifications. 9 *Meerawa* is being fitted with a new cab and remote control gear (RSU) as well as receiving a repaint. 11 *Maitland* is being fitted with an Allison automatic transmission.
Danny Nolan 1/15; Chris Stephens 2/15; Luke Horniblow 2/15; Andrew Sues 2/15

WILMAR SUGAR (HERBERT) PTY LTD, Herbert River Mills
(see LR 241 p.21)
610mm gauge
Following the Macknade Mill social club Christmas party on 12 December, Victoria Mill's Hudswell Clarke 0-6-0 *Homebush* (1067 of 1914) was stabled in the Macknade locoshed until 22 January when it was towed back to Victoria by EM Baldwin B-B DH *Darwin* (6171.1 9.75 of 1975).
Early in March, Victoria Mill's Clyde 0-6-0DH *Canberra* (65-433 of 1965) was still in residence at the Macknade locoshed.
Assembly started in February of one hundred plus, new 8 ton bins at the Wilmar workshop in Ingham.

Above: *MU Com-Eng 0-6-0DH locomotives* Cook *(AL3372 of 1964) and* Ivy *(AL4181 of 1965) push empties into Mossman Mill's road-rail siding complex for tableland cane on 2 January. Photo: Luke Horniblow* ***Below:*** *MU Com-Eng 0-6-0DH locomotives* Douglas *(AL2562 of 1963) and* Faughy *(AL4190 of 1965) on their way to Mossman Mill with a short rake of fulls on 1 January. Photo: Luke Horniblow*

Industrial Railway NEWS

Most of the components have been sourced from China and as usual, they are being delivered to Rinaudo's siding on the edge of Ingham.
Editor 12/14, 1/15, 2/15

WILMAR SUGAR PTY LTD,
Pioneer Mill, Brandon
(see LR 2 p.)
1067mm gauge
The Bruce Highway overpass of the main line into the mill near what was the BSES was seen to have been completed by 19 February.
Luke Horniblow 2/15

OVERSEAS

FIJI SUGAR CORPORATION
(see LR 241 p.22)
610mm gauge
FSC plans to start construction of a new $80 million mill in the second half of 2015 adjacent to the existing mill at Penang. The new mill will process the cane juice to the syrup or liquor stage only with that syrup being transported to Rarawai Mill for ongoing processing into raw sugar. The existing Penang Mill is stated to be past its economic life and costly to maintain.
FSC is hoping to crush 2 million tonnes of cane at its four mills this year with crushing to commence in June.
Cane growers at Uluisila near Sigatoka are facing high labour and transport costs and have requested that the rail system round Sigatoka be reopened because it was the cheapest mode of transport and didn't need a lot of man power. FSC has assured the farmers that there are plans to restore the rail network over the next three to five years. As well, FSC has recognised that the rail to lorry ratio, currently at 70:30 in favour of lorries has to change to lower costs for growers and improve logistical efficiency. FSC has also stated that work on improving the rail network in parts of Sigatoka, Raki Raki and Ba depends on the growers increasing production in those areas so that it is viable to make the significantly costly improvements.
It has been asserted in online media that FSC deliberately and surreptitiously brought about the unfavourable to rail ratio in order to transfer the cost of transport to growers.
Fiji Broadcasting Corporation 4/1/2015; fijivillage.com 19/1/2015; *The Fiji Times Online* 24/1/2015, 16/2/2015, 2/3/2015

Top: *On 20 February, Clyde 0-6-0DH 18* Barron *(64-379 of 1964) with new track panels and Plasser KMX-12T tamping machine (432 of 1997) cross at River Loops on the Mulgrave Mill system. Photo: Luke Horniblow* ***Centre:*** *Com-Eng 0-6-0DH 9* Meerawa *(FC3473 of 1964) waiting for a new cab in the Mulgrave Mill locoshed on 20 February. Photo: Luke Horniblow* ***Above:*** *In the Mulgrave Mill locoshed on 20 February are the cab of Prof B-B DH 22* Aloomba *(P.S.L.25.01 of 1990 rebuilt South Johnstone 1993) and South Johnstone Mill EM Baldwin B-B DH locomotives 26 (7244.1 8.77 of 1977) and 24 (5477.1 8.74 of 1974). Photo: Luke Horniblow*

LETTERS

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Angourie and Ilarwill quarries, (LR 236)

The map in this field report (page 28) showing the railways at Yamba on the south side of the Clarence River entrance in New South Wales is similar to maps of the Clarence River entrance works in the Department of Public Works (PWD) annual reports from the 1890s.

In these reports the quarry location south of Yamba near Angourie Point is labelled as Green Pt and the railway north from the quarry as the *Railway to Freeburn Island*. Most of the completed works were on the south side of the Clarence. On the north side of the Clarence near Iluka a dashed line to Middle Head with a branch to North Head is labelled *Line from Quarries*.

The PWD report for the year ended 30 June 1900 has a map excluding most of the detail south of Yamba but shows more completed works on the north side of the Clarence near Iluka.

I visited some of these sites in 1983, including the large quarry on Woodford Island near Ilarwill, and wrote brief reports, which were published in the August 1983 issue of *Light Railway News*.

Light railways and aerial ropeways, (LR 239)

An example of a light railway connected to an aerial ropeway was that at the Waratah Gypsum Pty Ltd's Lake MacDonnell gypsum deposit, near Kowulka on the Thevenard to Penong railway in South Australia. Rakes of side tipping trucks were hauled by a Fordson locomotive to an aerial ropeway terminating at the Kowulka railway station. It is described by Winton in the article titled *Mining and treatment of gypsum in South Australia, description of works and plant of the Waratah Gypsum Pty Ltd*, in *Chemical Engineering and Mining Review*, June 5 1929, pp 337-340.

I visited Cement Australia Pty Ltd's No.3 aerial ropeway from the limestone quarries to the cement works at Kandos, New South Wales in 2004. There was a shed near the loading station which I was told had been used by the 4 ft 8½ in gauge electric locomotives working in the original quarry from 1923 to 1947 (letter from G T Fox dated 19/5/78 regarding the quarry rail haulage).

The No.3 aerial ropeway at Kandos replaced the Nos.1 and 2 aerial ropeways in 1989 and was a sophisticated installation with very few operators and some elaborate mechanical features (http://www.cementaustralia.com.au/misc/swfresources/0530_QC_BT(section%203).pdf). This was quite a contrast with the 1930 vintage Williamsford to Rosebery ropeway in Tasmania, which was operating together with the inclined rail haulage from the Hercules lead-silver-zinc mine, when I visited in 1978.

Tony Weston
by email

Transport & Industrial Index locomotives (LR 239)

In response to the article on Index locomotives, I offer distant memories of the Tasmanian Government Railways U class which were converted from the Malcolm Moore 0-4-0DM locomotives built for the Kiewa Scheme. I feel sure that we obtained eight locomotives. We converted six into shunters for our small outstations to which we gave the nickname 'U Boats', as they rocked and rolled on the line. The other two were converted to one metre gauge for a power station in Thailand on behalf of the Australian Government under the Colombo Plan. They were to bring wagons from a coal mine, which I believe was between 10 or 15 miles away. A Thai engineer worked with us, as he was to manage the locos on site. We made a short metre gauge track to test the locos in the workshops at Launceston. The 'U Boats' proved useful for small outstations and in the workshop area. Glen MacDonald and I were two electrical fitters who were responsible for managing all non-mainline locos and railcars on the system requiring electrical repairs, maintenance and modifications at that time.

Thanks for an excellent magazine.

Tony Lee
by email

Innisfail Tramway Hunslet locomotive number 2

Early researchers experienced some difficulty in identifying some of the World War I narrow gauge Hunslet 4-6-0T tanks that came to Queensland to haul sugar cane, partly because of difficulties in interpreting information from the Hunslet records that were accessible at that time. However the

Above: NSW Public Works Department annual report map from 1896 showing the extent of works on the Clarence river training walls, and tramway network supplying the stone.

article by Ray Ellis in 'The Narrow Gauge' number 98 in 1982 put forward what appeared to be an authoritative version. Included among these locomotives was the one numbered 2 on the Innisfail Tramway that had for many years been accepted as builder's number 1242 of 1916 and had appeared as such in the first edition of the Innisfail Tramway book of 1973.

Thanks to Paul Spencer, who recently wrote to LRRSA from Somerset, we are now aware of information that had been obtained from Hungarian archival records some time ago by György Villányi of Budapest. This was that Hunslet 1242 (British Army number 330) had come to Hungary after the war and in October 1922 was in the possession of a railway contractor, Izsó Nagy of Eger in north-east Hungary. Subsequent ownership was by Mezönyeki gravel pits (Mezönyeki Kavicsbánya) in July 1924 and then Oszkár Batori, a contractor engaged in the construction of the Csepel Free Port in Budapest. During World War II its movements are unknown, but it was purchased by the Ludna Valley coal mines (Ludnavölgyi Szénbányak) in north-east Hungary in April 1953. It was sent for scrap in the mid 1950s.

Information subsequently obtained by Paul Spencer from the War Office Locomotive Trust revealed that Hunslet 1242 had been recorded as 'lying in Düsseldorf' in 1920 suggesting that it had been captured by the German Army during the war. Thus a destination in Hungary appeared to be not unlikely.

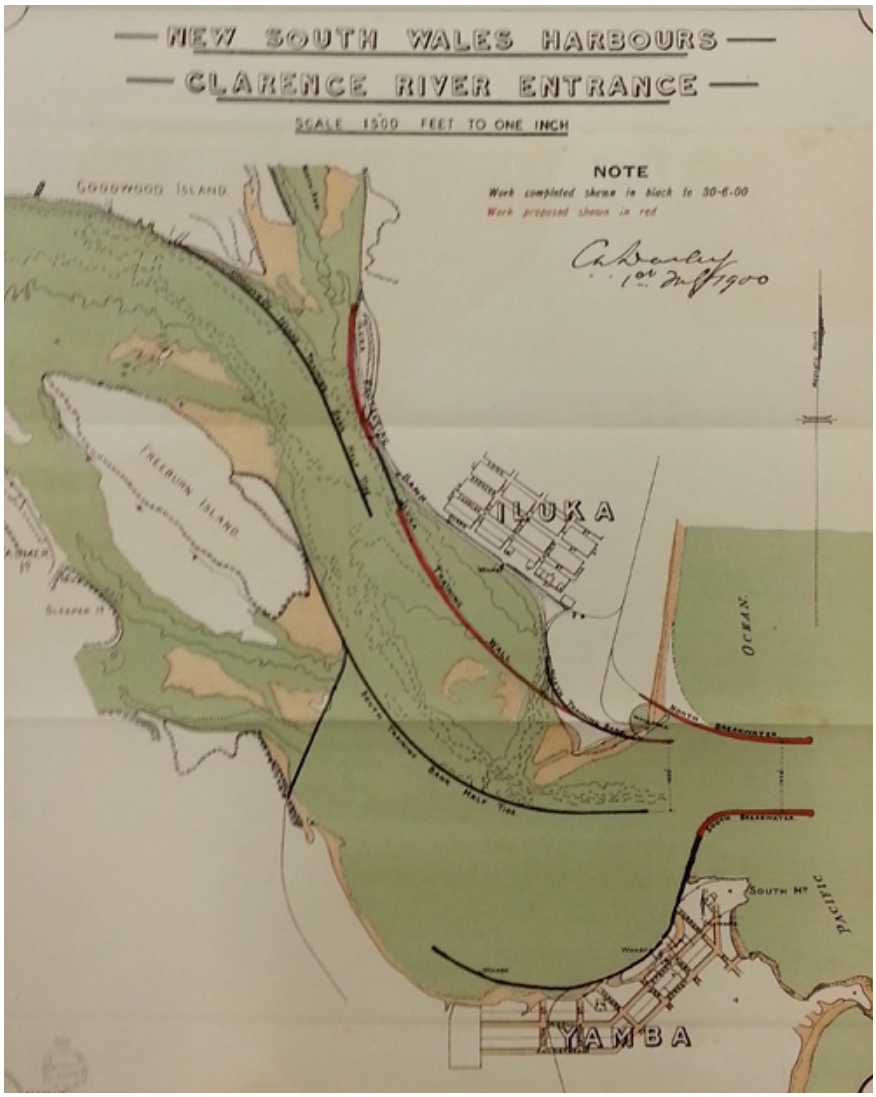
After the war, many of the surviving Hunslet 4-6-0T locomotives were sold for reuse around the world. Among the 15 that came to Australia were a number that were returned to the builder's works in Leeds for reconditioning and resale on behalf of the Engineering Supply Company of Australia (ESCA). The Hunslet archive does not show 1242 as among those coming to Australia. It is unknown to this writer where the number 1242 came from. No reference to it was located in a recent examination of relevant QR records at the Queensland State Archives.

However, there is one anomaly that could explain matters. 1224 was one of those purchased from Hunslet by ESCA but it did not appear in the list prepared by Ray Ellis. It was reconditioned and regauged from 600mm to 2ft in 1924 on Hunslet Order 41755. In the Hunslet records, a note about this locomotive has been added stating 'Proserpine Sugar mill Queensland (1954)' but there is no local evidence of this locomotive having been at Proserpine.

However, if a transcription error occurred in Australia and 1224 was incorrectly recorded as 1242, it could well be that the Innisfail Tramway's (second) number 2 was 1224. It is also worth mentioning that the second number 1 on the Innisfail Tramway was Hunslet 1241, which could have added weight to any misrecording.

So it appears reasonably certain that Innisfail Tramway number 2 was not Hunslet 1242, and fairly likely that it was in fact 1224, which was written off the QR books in 1938.

John Browning
Annerley, Q.



This 1900 plan shows progress, and design change from that on the opposite page. An article is currently being written which will cover the five distinct construction schemes.

'Tom Thumb'
(LR 158, 223, 232, 233, 238)

Although I noted with much interest John Browning's appraisal of our knowledge concerning the origin of the locomotive, *Tom Thumb*, I couldn't help but conclude that John didn't appear to give sufficient weight to the astonishing coincidences in the outline of the story that I provided re John Fowler & Co locomotive 3788. I have now laid out the full story as I know it.

As alluded to by John, Mark Smithers notes that the type of inverted saddletank visible on *Tom Thumb* is only known to have been fitted to one other locomotive, Fowler 0-4-2T, 4020 of 1880 of 2ft 6in gauge. Like 4020, which was built for the Cuban sugar concern Brookes and Co, in late 1879 narrow gauge Fowler 3788 with 4.5in cylinders had been sent to Casas Aulet & Co, which is believed to have also been a Cuban sugar concern.

It appears highly likely that like Fowler 3821, *Little Beauty* of 1879, an 0-4-2T supplied in 20in gauge to E Cespedes (for ingenio el Salvador, Cuba (?)),[1] the gauge employed by Fowler for its early narrow gauge prototype locomotives, 3788 was also of 20 inch gauge. In September 1879, however, three months before 3788 was despatched from the works, Fowler supplied two 2ft 6in gauge sugar cane locomotives for Barbados (3764 and 3765), and by 1880 was supplying 2ft 6in gauge sugar cane locos to Cuba and continued to do so. With other narrow gauges predominant, 20 inch gauge. Fowlers were already oddities. It seems that 3788 was 'returned' for a wider gauge replacement, possibly 2ft 6in.

By mid-1882, Casas Aulet had "returned" 3788 and in December that year 2-4-0T, 4451 was forwarded in its place.[2] Following 3788's 'return', it was sold to one J V Lane.[3] Although described as 'returned', there's no evidence that the engine found its way back to the factory or even England, either prior to or after its sale to Lane. My explanation of events demonstrates I believe that it's virtually certain that 3788 didn't make it back to Britain.

Although historically Cuba's trade with Europe was effectively routed entirely via Spain, that link withered in the 19th century as the USA came to dominate Cuba economically and Boston interests

developed strong shipping links with the country. One concern that operated vessels between Boston and Cuba in the 1870s in addition to South American ports was owned by prominent Boston merchant and Fowler customer, Augustus Hemenway, who also owned a Cuban sugar plantation. Although Hemenway died in 1876, his family continued to operate the shipping line in the 1880s from its Boston base.

With 3788 'returned' by mid-1882 notionally for sending back to England, the first step may have been for it to be sent to Boston for on-forwarding. It's more likely, however, that the locomotive was purposely sent only as far as Boston. Although Fowler accepted its 'return' in what for the firm was an important and rapidly developing new market, it had no interest what-so-ever in incurring extra expense in having second-hand 3788 sent back to England, and in keeping with standard business practice, decided to cut its losses.

Enter Australian mariner, Captain, John Valentine Lane (the "Valentine" was apparently an affectation, although the initials JV appear in the birth details of his children),[4] captain of the 449 ton barque, *Glenfalloch* which berthed at Boston upon her arrival on 14 April 1882.[5] Although Lane was captain of the vessel, it appears that he held that position under her commander Captain, John Saul.[6] Probably using an agent (perhaps the Hemenway concern), 3788 was sold to Lane as either a speculation or with Lane acting as representative for an Australian buyer. The *Glenfalloch* departed for Australia in early June.

The main components of her cargo were some 2,000 cases of oil [kerosene] and 100 barrels of plaster, etc for Launceston and 5,200 cases of oil etc for Brisbane.[7] In reference to a number of vessels including the *Glenfalloch* that were conveying kerosene to Australia around that time, it was noted that all of them were also carrying timber and general cargo.[8] The barque entered Tamar Heads on 26 September 1882 and after one hundred and twelve days at sea anchored in the stream at Launceston the next day,[9] The only detailed listings relating to the *Glenfalloch's* manifest there were some unhelpful snippets in the *Launceston Examiner*,[10] which only concerned items going through customs at that port. A consignment of bark that was loaded for Brisbane for tanning purposes filled at least some of the space in the vessel's hold.

After calling at Brisbane, there was no cargo when the barque reached Lane's home town of Newcastle 'in ballast' on 8 December 1882,[11] the engine evidently having been unloaded during an earlier stop. By the 14th of the month the *Glenfalloch* was being loaded with 610 tons of Newcastle coal at the dyke wharf,★ departing for Valparaiso on 30 December.[12]

Meantime, 3788 had arrived at engineer, Thomas Wearne's Glebe Foundry in Sydney in late 1882 to be readied for operation and presumably the manufacture of three passenger cars. Wearne demonstrated the fairground railway at Glebe on 31 January 1883.[13] A Mr Hassell had purchased the set up with a view to operating it at small shows.[14] Given the short time between the Glenfalloch's arrival at Newcastle and Wearne's demonstration, plus the unlikely event that the passenger cars arrived with 3378 or came from England, the unloading of the locomotive at Launceston for conveyance to Sydney on a local steamer or sailing vessel looks the most likely scenario.

Despite the presence in Sydney of a John Fowler & Co branch office, at some stage Wearne disingenuously attached a tinny builder's plate that indicated that he manufactured the locomotive,[15] when it's quite clear that he only modified it. The notion that he built such a sophisticated locomotive of 8 or 9h/p,[16] intended only for fairground operations, is at best a nonsense.

It is perhaps fitting that with J V Lane's family home being at Newcastle that the fairground railway debuted at the Lambton cricket ground, where a small steam motor and cars were operating on a circular tramway circa the weekend of 17 and 18 March 1883,[17] seemingly as a St Patrick's Day celebrations attraction (Saturday 17 March). That appearance was followed up the next month by a four day stint at the annual Maitland Show.[18]

While operating at the Tivoli Gardens in Waverley in late May, the fairground railway was advertised for sale.[19] With Hassell's name no longer mentioned and the set-up described as a '*Great American Novelty, ENDLESS RAILWAY*', the operation was being offered by the Mutual Loan Office, Hunter Street, Sydney, operated by Adolphus Rogalsky trading as the Mutual Loan & Discount Co.[20] From August until early 1884, only the locomotive was offered for sale, with potential buyers advised of its suitability for a small tramway for colliers,[21] perhaps to try and interest the Erith Colliery at Bundanoon. If so, it didn't work.

Exhaustive research of 1880s newspapers has made it clear that only one small ng locomotive with carriages operating on a circular track was floating around Sydney and the Hunter Valley both before and after the fairground railway found a home at the Sir Joseph Banks Pleasure Gardens at Botany. It commenced operations there on Easter Monday, 7 April 1884 as the *American Tom Thumb Steam Tramway*.[22] The *Tom Thumb* name was a steal from a famous American circus dwarf, General Tom Thumb.[23]

Although Fowler subsequently operated narrow gauge train rides at the 1884, 1885 and 1886 Agricultural Shows in Sydney,[24] they were only short lived promotions using whatever equipment the firm's Sydney branch happened to have on hand.

At Botany, 3788 basically operated only on public holiday long weekends and for the odd special event. Rides were free, mainly enjoyed by the children of the large numbers who thronged to the *Pleasure Gardens*. 3788 was photographed in miniature tram motor guise and the virtually identical type of IST visible in the works photo of 4020 built the year after 3788 and definitely sent to Cuba, can be discerned. The miniature tram photo also shows the engine's outside frame which would have made conversion to a wider gauge difficult. Its tram motor like appearance was in keeping with Wearne's building of standard gauge rolling stock for the government tramways under licence.

Despite no complete listing of the *Glenfalloch's* manifest being available and *Tom Thumb* not being identified in Australia as a Fowler product, or for that matter that of any other manufacturer (ignoring Wearne's patently bogus gambit), it's quite clear that regardless of *Tom Thumb's* seemingly atypical appearance, it was the locomotive that Fowler sold (twice) as 3788! It's also clear that the IST fitted on 3788/*Tom Thumb* was the precursor of the very similar feature on Fowler 4020!

Although the above doesn't comprise an absolute proof, and the precise details of 3788's arrival in Sydney after being forwarded from Launceston remain unknown, in presenting the above chain of events and quite extraordinary coincidences, I believe that on the balance of probabilities I've established *Tom Thumb's* identity and shown how the locomotive came to arrive in Australia.

Ron Madden,
Wagga Wagga

1. *John Fowler & Co Locomotive Works List*, Frank Jux
2. ibid
3. Ibid
4. Email re affectation "Valentine" from Lane family historian, John Oldfield, 25 August 2014 & NSW Births, Deaths & Marriages.
5. *Mayport Advertiser & Weekly Times*, 21 April 1882, p8 (email from Robert Peel, 19/8/14 – author of "Hines Brothers of Mayport the Sailing Fleet,"Vol 1.)
6. "Hine Brothers of Mayport ," Vol 1, Robert Peel, Cooil Publishing
7. *The Argus*, 3 August 1882, p6 - Commercial Intelligence
8. *Sydney Morning Herald*, 1 August 1882, p4 – Monetary & Commercial
9. *Hobart Mercury*, 27 September 1882, p2 - SHIPPING
10. *Launceston Examiner*, 28 September 1882, p2 - SHIPPING
11. *Newcastle Morning Herald*, 9 December 1882, p4 - SHIPPING
12. Ibid, 1 January 1883, p2 - SHIPPING
13. Ibid, 5 February 1883, p2 – from the *Sydney Daily Telegraph*
14. Ibid
15. *Light Railways* No 158, 'Tom Thumb" at Botany, by Jim Longworth
16. *SMH*, 13 August 1883, p7 & SMH, 3 November 1883, p13
17. *NMH*, 20 March 1883, LAMBTON – p3
18. *Maitland Mercury*, 10 April 1883, p4 & 14 April 1883, p2
19. *SMH*, 26 May 1883, p2
20. Ibid
21. *SMH*, 13 August 1883, p7
22. *SMH*, 5 April 1884, p2
23. *SMH*, 16-17 April 2011, SPECTRUM – p35
24. Email, John Browning, September 2014

Round the Rip Tour (Point Nepean & Bellarine Railway) – 15 & 16 November 2014

Last year the annual Victorian tour incorporated several diverse examples of light railways found on both sides of Port Phillip Bay. At the heads leading into the bay is 'the rip', a narrow and treacherous stretch of water well known for its strong tides and unforgiving rocks. With the bay as a background to the tour, Saturday 15 November saw fourteen members and friends visit the quarantine station and fortifications at Point Nepean National Park, which is on the Mornington Peninsula. The following day seventeen members and friends visited the Bellarine Railway at Queenscliff, across the rip from Point Nepean.

The light railway's weather gods were smiling on our tour, in contrast to the rather damp Ada Mill tour in 2013. Whilst showers were predicted for Saturday, the weather was sensational and some members even got a touch of the sun.

The quarantine station was visited first and it is fascinating. It comprised of a network of 2ft 3in gauge light railway track from the old jetty (previously demolished) to several storage buildings. In between are two large autoclaves (steam sterilising chambers) and associated boiler and chimney arrangements. Potentially contaminated luggage was loaded onto hand propelled trolleys and pushed into the autoclaves.

The doors at each end were closed (sealing them steam tight) and the inside of the chamber was then pressurised with steam. This pressure was maintained for sufficient time to allow the heat to sterilise everything in the luggage (a pity about those chocolates you were bringing for Auntie Flo). The push trolleys could be rotated on small turntables and some even had hydraulic lifting capabilities to lift the trolley onto elevated sections of track through the smaller autoclave.

The members visited a number of buildings associated with the quarantine station before boarding the shuttle bus to investigate the former gun emplacements at the end of the park. Parks Victoria has done a great job providing static and audio displays throughout the park. Members were able to enter a labyrinth of tunnels that led to retracting guns, ammunition rooms and underground storage.

Most tunnels illuminated automatically when you entered and often had recorded messages describing the purpose of the area. An observation post nearby had remains of field telephones and a range-finding theodolite. The members moved onto the search light installation and associated engine room. Whilst the steam engines and generators were long gone, you could still smell oily water left behind.

We stopped for lunch at the tip of Point Nepean with spectacular views across the rip to the Queenscliff fort and of ships entering and leaving Port Phillip Bay. After lunch, members scaled the long staircase and investigated a small remnant of light railway associated with former gun emplacements measuring 2ft 2in gauge and probably not related to the quarantine station. We walked back past the former location of Pearce Barracks to Fort Pearce, another interesting gun emplacement. Beyond Fort Pearce is the Eagle's Nest which has several smaller gun emplacements and is the current location of a marine radar installation.

Saturday's tour group after a successful day exploring Point Nepean's heritage. *Photo: Terry Elliott*

Top left: *The view westward to Queenscliff from Fort Nepean looking down the long stairs to the engine house. An inclined tramway used to run down the right hand side of these stairs to a jetty (previously removed).* ***Top right:*** *Sleeper imprints of the hand pushed tramway at the upper barracks of Fort Nepean with container ship sailing out of the heads.* ***Bottom:*** *The sleeper imprints and interpretive display of tramway wagons at the upper barracks of Fort Nepean looking back up the park towards Portsea.* *All photos Colin Harvey*

Pozieres *(Andrew Barclay & Sons 1543 of 1919) comes 'off shed' at the Bellarine Railway's Queenscliff depot. ASG 33 (VR Newport 1945) can be seen in the background.*

Photo: Scott Gould

From the Eagle's Nest members walked through tea tree back to the Cheviot Beach bus stop. Some went down to the beach lookout and the Harold Holt memorial. Others took the bus back to the quarantine station. Back at the carpark, the tour was complete and members headed back to Melbourne or crossed over to Queenscliff on the ferry.

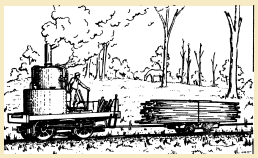
On Sunday 16 November, eighteen members gathered at the Queenscliff railway station, terminus of the Bellarine Railway at 9.30am for a tour of the workshop hosted by David Price, the Bellarine Railway Society's new President. We were lucky to visit the workshops this weekend, as it was due to be reclad the following week and we would not have had access. Inside the workshops were lots of machinery, Perry 11 (Perry Engineering No. 267 of 1926) under restoration and a former Tasmanian Government Railways (TGR) Sentinel railmotor being rebuilt as a dance car. Outside we looked at the refurbished turntable, the last remaining Australian Standard Garratt G33, former SAR T251 (Walkers 276 of 1917) , ex TGR diesels X3 and Y8, as well as other interesting items of rolling stock.

We took the 11am return train to Drysdale behind *Pozieres* (Andrew Barclay & Sons No. 1543 of 1919) aboard former TGR coaches. After lunch at the recommended Rolling Pin bakery, members met at Lakers Siding, which is located around 5km from Queenscliff. The Lakers Siding facility consists of a very large rollingstock shed (completed around 2009), and newly reconstructed way and works sheds. Lakers Siding is home to the other surviving steam locomotives that were operated by Australian Portland Cement at Fyansford, as well as locomotives and rollingstock from around the country.

David Price provided very interesting and frank commentary from the perspective of a working tourist railway with only 200 members. He was clear about the business requirements for survival, whilst being pragmatic about the large preservation and restoration challenge facing the society. It was exciting to see the future potential of the collection being grounded in practical reality. We are sure most of the members wanted to pitch in there and then to help David with this wonderful 3ft 6in gauge railway.

The tour finished around 3.30pm and members headed back to Melbourne in perfect sunny weather. Special thanks goes to David Price for his guidance at the Bellarine Railway.

Simon Moorhead and Scott Gould, Tour Organisers



LRRSA NEWS

MEETINGS

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

BRISBANE: "Bob goes to Irvinebank"
Bob Gough is presenting on his travels to Irvinebank, Queensland. Terminus of the 2ft gauge tramway servicing John Moffatt's tin mining empire, Irvinebank still has many historic buildings dating from the 1880s.
Location: BCC Library, 107 Orange Grove Road, Coopers Plains.
Date: Friday 17 April at 7:30pm

MELBOURNE: "Steam logging winches".
Peter Evans will present on the interesting topic of steam logging winches, including an in-depth look at the history of Richards winch, a remarkably intact installation visited by few.
Location: Ashburton Uniting Church Hall, Ashburn Grove, Ashburton.
Date: Thursday 9 April at 8:00pm

SYDNEY: "Steam trams of Broken Hill and Rockhampton."
NOTE TEMPORARY CHANGE OF VENUE
During the early 1900s the towns of Broken Hill and Rockhampton each operated a tramway system for public transport. Steam trams were the motive power. The late Ken McCarthy, a founding member of SPER and Illawarra Light Railway Museum amassed a large collection of photos covering these two interesting systems. In addition, other photos of light and industrial railway interest from Ken's extensive collection will be shown.
Temporary new location at Burwood: George St. Centre, Cnr George St and Elsie St, Burwood. Located about 150 metres north of Burwood railway station, off Burwood Rd. There is a parking station available (pay) or street parking.
Date: Wednesday 22 April at 7:30pm

Field Reports

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

James Mackintosh sawmill tramway 1873-1881
Echuca & Moama Red Gum Sawmill Company tramway 1881-1893
Fresh Food & Frozen Storage Company tramway 1898-1902
Milo Bacon Company tramway 1902-c1920
Echuca, Victoria.
Gauge 1600mm

(See also *Light Railways* 49, page 24)

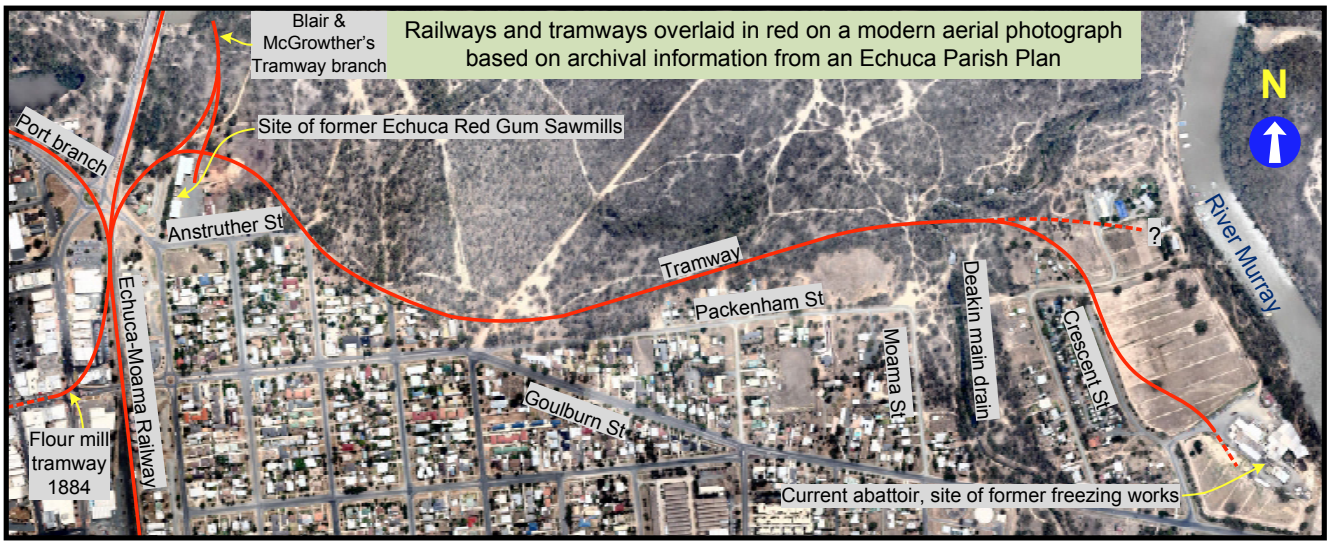
By 1864, Echuca was already Australia's largest inland port and Victoria's second busiest. The 55¼ miles of single-track railway connecting Sandhurst [Bendigo] to Echuca (with a branch direct to the Echuca wharf) cost just over £602,944, and drew vast amounts of trade from northern Victoria and southern New South Wales to Port Phillip. This included huge amounts of sawn red gum timber.[1] In May 1874 a consortium of Echuca sawmillers applied to the Victorian Railway Commissioners (VR) for the construction of a broad-gauge tramway system in order to reduce the cost of getting their timber to the Echuca railway station. Several of their number had considered the construction of privately-owned tramways, but they thought that one constructed by the VR would prove remunerative. The Commissioners thought so too, (provided the mill owners paid for the work and supplied the necessary sleepers) and, in 1873, had already laid down one such tramway to Blair & McGrowther's mill and another to Mackintosh's mill, the latter being 96 chains long and described as a 'substantial undertaking'.[2] It is reputed to have cost Mackintosh £1100 with 2s 6d to be paid for every truck using the line.[3]

Scotsman James Mackintosh had started sawmilling in 1860 at Lower Huntly, and moved to the Murray River (near its junction with the Goulburn) in 1864. In 1868, to take better advantage of both the Echuca railway and a growing business in red gum for railway and wharf construction (both in Victoria and India), the mill was moved to Echuca East, four river miles upstream from the Port of Echuca.[4] A decade later, his plant at this site had expanded to the point where he was turning out 150 tons of sawn timber per day, all transported over the 96 chains of tramway to the Echuca railway station (although the line was subject to occasional flooding when the river rose). In an advertisement in 1877, Mackintosh stated that 'The Government locomotives run out daily with empty trucks, and take back the loaded ones'. Mackintosh also had his own wharf on the Murray River at the mill, with a crane capable of lifting eight tons, more than the lifting capacity available on the Echuca wharf itself.[5]

In mid-1881, Mackintosh floated his enterprise as The Echuca & Moama Red Gum Sawmill Company.[6] By 1894 the business consisted of four separate sawmills grouped together, and was claimed to be 'one of the most powerful and complete sawmilling plants in the Colony'. The plant included a fully-equipped workshop to maintain the huge inventory of machinery. Mackintosh also owned the paddle steamers *Elizabeth* and *Julia*, the large barges *Campbell* and *Premier*, as well as several smaller barges, all required to keep up the substantial quantity of logs required for such a large enterprise. Unfortunately, like many other Murray River sawmillers he fell victim to a prohibitive 'on-again-off-again' duty on red gum in the late 1870s, which caused a great deal of uncertainty in the trade and the consequent loss of many contracts to West Australian Jarrah. By the 1880s, the best years of the trade were over as the log supply diminished. The bursting of the land boom bubble in the early 1890s and the inevitable halt to most large-scale construction projects was the final straw. The company went into liquidation in 1893 and, in January of 1894, the mill plant was put up for sale.[7] James Mackintosh died only a year later in May 1895.[8] The mill components and land were mostly sold-off piecemeal in May 1894, although there were some hopes that the one un-sold mill might be revived, but it was not to be.[9]

For some time there had been a push to establish a freezing works at Echuca.[10] By January 1898, the sawmill site at Echuca East was in the hands of the Fresh Food & Frozen Storage Company, which was erecting a slaughter yard and freezing chambers to process chilled mutton, beef, and pork for overnight shipment by rail to the Melbourne market. To facilitate this, Mackintosh's broad-gauge tramway was being repaired, and a short tramway had been laid between the slaughter house and a boiling-down works. (Presumably, the broad-gauge tramway doubled for livestock inwards and carcases outwards). Steam for the works was supplied by the boiler from the former paddle-steamer *Rodney*, (burnt by striking shearers in 1894), and the first shipment of chilled meat took place on 25 November 1898.[11] Licence 1311/99 was issued for the Company's broad-gauge tramway from 1 July 1899.[12] The Fresh Food & Frozen Storage Company had been formed in 1889 with its head office situated at 631 Little Bourke Street. Butter baron, cool store owner and machinery merchant J. Bartram & Son held a substantial shareholding in the firm from 1890. In 1902 the Fresh Food Company was declared bankrupt through manipulation by the directors, and its assets were sold off for a trifling sum, ending up in Bartram's hands through an intermediary.[13]

The Echuca freezing works were taken over by the Milo Bacon Company from 1 February 1902. Its manager was W. G. Boyle, formerly a director of the Fresh Food & Frozen Storage Company, and implicated in the demise of the latter company. The Milo Bacon Company set about a large-scale expansion of the plant, completed by 1907.[14] It is probable that the



The cluster of sawmills (one of which would be Blair & McGrowther's) above the bridge at Echuca during the floods of 1887, during which parts of the tramway used by these sawmills were submerged. From the Illustrated Australian News*, 20 August 1887, page 145. SLV image IAN 20/08/87/145.*

tramway fell out of use around the end of the First World War, as the Railway Commissioners intended removing the line to the freezing works in 1920. In 1921 the newly-formed Echuca District Cooperative Freezing Company Limited contemplated the erection of a plant adjacent to that of the Milo Bacon Company (the latter was still operating in 1919), noting that the existence of the tramway provided excellent access to the Echuca railway yards.[15] Despite this fresh interest, it seems the tramway was closed by August 1923, when the Railway Commissioners offered to sell the ballast on the 'old tramway' to the Echuca Borough Council.[16] The tramway licence had been transferred to the Victorian Railway Commissioners (possibly as security over the rails) shortly after the Fresh Food & Frozen Storage Company had taken out its licence for the line in 1899 and, in turn, the VR Commissioners surrendered the licence to the Lands Department on 17 January 1924.[17] Presumably, the tramway had been completely removed by then.

A little over ninety years later, a site survey on 21 August 2014 revealed absolutely no trace of the tramway (although parts of it were said to be visible in 1974). At its western end, the tramway originally curved from the Echuca-Moama railway around the boundary of a big fenced yard which, until recent years, was the site of the Echuca Red Gum Sawmills. (The yard is no longer being used for that purpose). There is no sign of the tramway from the point where it left the northern end of the VR Echuca yard and looped around behind the sawmill yard. Nor was there any sign on the approaches to Anstruther Street from the north. From the point where the line crossed Anstruther Street and curved eastwards is a levee bank as far as the 'K-shaped' intersection with Pakenham Street, Goulburn Street, the un-named street running north-south (actually Sutton Street), and the track heading out north-east. It is doubtful that the tramway ran along the top of this levee; more likely, the levee has been built on top of the tramway formation. At the 'K' intersection the levee bank ends and, from here until the eastern end of Pakenham Street the line ran along the river flats and behind house blocks. This area has been flooded, scoured and potholed-out so many times over the years that there is no sign of a roadbed, formation, or sleepers on the ground.

The Echuca Mills are connected with the Victorian Railways by a tramway one mile and 14 chains long, passing through the centre of the yard up to the river bank where an eight-ton crane stands for unloading piles from the barges on to the trucks. The Government locomotives run out daily with empty trucks, and take back the loaded ones. Tramways are laid through the yard.

The Argus*, Saturday 17 November 1877, page 12*

A few house blocks east of Moama Street there is a watercourse. This is the Deakin main drain (formerly Southern Cross Creek), and is approximately 14m wide and very steep-sided to a depth of about 7m. It meanders like a natural watercourse, and may once have been a shallow creek which has been deepened into a drain. Either way, at the point where the tramway must have crossed, there is no sign of either a bridge or a culvert. From this point the tramway continued easterly along the open riverflat country behind the houses on the north side of Pakenham Street, until it curved around to almost south to cross the far east end of Pakenham Street.

Although no sign of the tramway remains on the ground, it has definitely left its imprint on historical land use patterns and hence on modern maps, including the oddly-shaped block on the inside of the tramway curve north of Crescent Street. Curiously, the house on that block is skew to the Pakenham Street frontage; its right side wall being parallel to the tramway boundary fence. The historical land use extends to the tramway terminus, where the Echuca Abattoir now occupies the former sites of the Fresh Food & Frozen Storage Company and the Milo Bacon Company.

History and map produced by Peter Evans. Archival mapping and notes courtesy Colin Harvey. Additional mapping information from VR Echuca drainage plans 344-1 and 344-2, and VR Murray River crossing plan 344-4. Site survey Chris Wurr, 21 August 2014.

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13. Evans, P. (2013). J. Bartram & Son: *The Pioneers of Dairy Mechanisation in Victoria*. In *The Old Machinery Magazine*, issues 166, 167, 168 and 169.
14. *Bendigo Advertiser*, Monday 27 January 1902, page 3; *Riverine Herald*, Saturday 23 November 1907, page 2; Tuesday 14 April 1908, page 2; *The Argus*, Wednesday 21 September 1904, page 9. Boyle was also a councilor for the Echuca Borough – there were conflicts of interest everywhere here.
15. *Riverine Herald*, Tuesday 6 July 1920, page 2; Tuesday 22 February 1921, page 2.
16. *Riverine Herald*, Tuesday 7 August 1923, page 2.
17. VPRS 440/P0, unit 1174, file 1934/99, courtesy Colin Harvey.

Mount Keira mine tramway

Wollongong harbour is an attractive location, popular with both locals and tourists. This wasn't always the case, as it owes its development on the need to transport coal from mines in the Illawarra to the markets of Sydney and beyond. When the harbour opened, two mines transported coal to it by rail, running through what is now Wollongong and its suburbs. These lines are mostly lost under decades of development but traces of the former lines still survive. The most comprehensive history of the lines is *Transporting the Black Diamond*, published nearly 50 years ago. This article is both a summary of the history of the tramway and a description of the surviving features of the line.

Under the ownership of James Shoubert, mining at Mt Keira commenced in a modest fashion in 1848. It was the first mine to open in the Illawarra region of NSW, in an attempt to break the monopoly on coal production enjoyed by the AA Company in the Hunter region, but growth was limited by the lack of a decent harbour. Without the finances to develop the mine further, Shoubert sold to Henry Osborne in 1856 and the Osborne Wallsend Company was formed in 1858 to raise shares.

By 1858 the new company had constructed a balanced incline tramway down the mountain, installing screens at the bottom.[1] Coal was then loaded into bullock wagons going direct to the small Wollongong Harbour. A new, or upgraded, incline was completed in November 1859, but at its public launch on 7 November, both upper and lower sections of incline suffered brake failure when the first wagons were lowered, 'resulting in embarrassing derailments. The company went back to the drawing board and it was noted that "*..in the meantime, the old system of carting the coals from the mines to the wharf is to be revived..*"[2]

The company needed to construct its tramway all the way to the harbour to fully realise the potential of the mine. In May 1858, the company published notice of its intent to petition the Government to pass a 'tramway enabling bill' to allow the tramway to access public and private lands en-route. This brought about an immediate backlash from Charles Smith, who was a significant landholder with a large parcel of land just west of the harbour. He immediately called a public meeting, which carried motions against the tramway being routed along Smith Street. The issues were blockage of access to private property (mostly Smith's) and prevention of development in the harbour area if the company was granted a monopoly on rail access. The sway of public opinion at the meeting on 10 June 1858 was with Smith.

Nonetheless, the company continued development for the tramway and by February 1859, called for tenders to construct a steel railed 3ft 8½in gauge horse drawn tramway from the bottom of the incline to the harbour. By 1859, the company was proposing to run the tramway through Smith's property rather than along the road and in July, published notice of intent for a tramway bill. This proposal seemed to have resolved the issues and while Smith continued to rail against the tramway, support for his cause waned. Ultimately the *Mount Keira Tramroad Act of 1859* received final vice-regal assent in May 1860 and the tramway was opened for operation by May 1861.

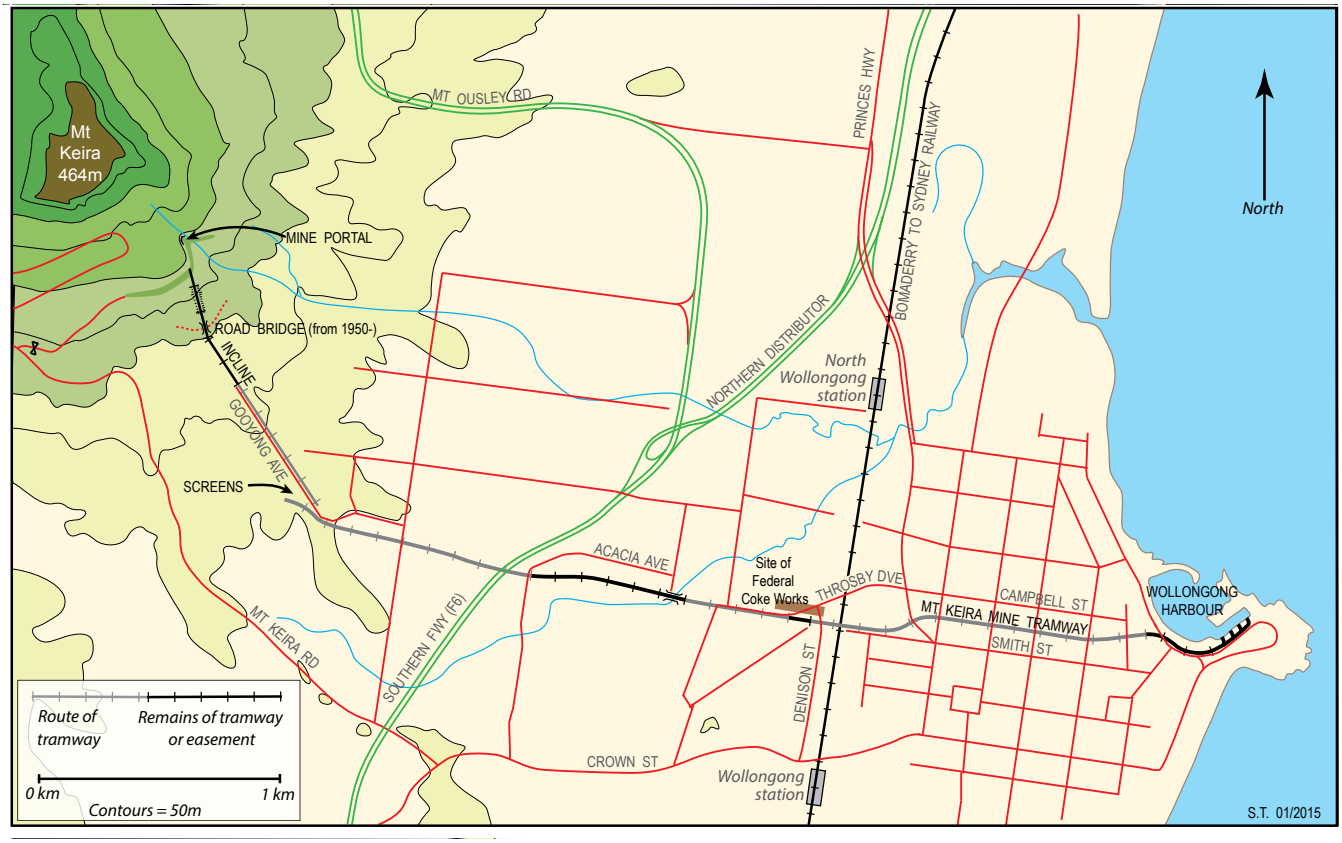
The Government began to improve Wollongong Harbour from 1859 by constructing an inner basin and using the excavated rock to construct an outer breakwater. The harbour was finally completed in 1868 after the size of the proposed harbour was increased in 1864. It could handle 3000 tons of coal a day, now coming from both Mt Keira (Osborne Wallsend) and Mt Pleasant mines.

By 1877, it was apparent that the lightly constructed Mt Keira horse drawn tramway, originally built with 20lb bridge rail, was not adequate to cope with increasing tonnages coming from the mine. A decision was made to rebuild the tramway to a heavier standard, convert the gauge to 4ft 8½in and place orders for steam locomotives. The Mt Pleasant mine had reached the harbor in 1862, at the time choosing the same 3ft 8½in gauge, but the Mt Keira tramway upgrade resulted in a yard of mixed-gauge sidings around the harbour to accommodate the needs of both companies.

The Government railway from Sydney to Wollongong was completed in 1887, crossing the Mt Keira tramway on the level on its approach to Wollongong station. Wollongong harbour was then the third busiest in NSW and the Government decided to purchase the portion of tramway from their line to the harbour. This was completed by 1889 with the company sharing operational rights over the line.

The establishment of the Federal Coke Works in 1900 brought a new lease of life to the mine. Coal 'slack', comprising small pieces of coal and coal dust, had previously been dumped as waste but could be used to create coking coal, an essential ingredient for steel production. Not only did the company have an abundance of 'slack', it used the tramway to transport it to the cokeworks, built at the junction of the company and Government lines.

The gradual development of superior harbour facilities at Port Kembla saw Wollongong harbour's role as a coal port decrease and ultimately cease during the 1930s. In 1940, the tracks from the Government line to the harbour were removed. The mine continued to rail out coal, both to the coke works and to nearby Cringila steelworks. This



Clockwise from above: Brick strips showing the former tramway routes. Just beyond the phone box on the left is the Smiths Creek bridge. • A small bridge carried the line over Smiths Creek and the remains have been preserved and restored. • The small embankment on Throsby Drive, just to the west of the child care centre on Denison Street. • The steel bridge was built on the incline to allow road trucks to pass underneath. This was part of a project in the early 1950s clearing waste 'slack' off the mountain, which was trucked down to the Federal Coke Works. Photos: Stuart Thyer

traffic used NSWGR wagons hauled by company locomotives over the tramway to the screens at the bottom of the incline for loading.

Having been sold to Australian Iron and Steel (AIS) in 1937, the mine workings were ultimately connected underground to the Kemira colliery in 1954. This new arrangement spelt the end of the incline and tramway after 94 years of operation.

In planning my survey of the tramway, CC Singleton's map from *Transporting the Black Diamond* was overlaid onto Google Earth to give reference to the modern day streetscape and allow exploration of the remaining features, starting from the harbour and working up the mountain.

Major redevelopments around the harbour have turned it into a significant community asset while maintaining historical aspects of the site. Numerous interpretive signs explain the history of both the harbour and tramways. The routes of the tramways (Mt Keira and Mt Pleasant) are marked in a linear brick strip where they leave the harbour area. The Mt Pleasant tramway ran north, following the coastline for another kilometre while the Mt Keira tramway curved left, crossed Smiths Creek and continued to curve before running east towards the mine, through Smith's lands.

The line through Smith's land ran through a cutting, which has since been filled in and built over with no trace remaining. After curving back to the edge of Smith Street and onto the originally proposed alignment, where some curved property boundaries on survey maps give a hint of where the line would have run, it crossed the Government line.

The first trace of the line after leaving the harbour is found parallel to Throsby Drive, west of Denison Street. Here, a short embankment, still with scattered coal visible, runs east-west for around 20m, merging into Throsby Drive just behind a small bus stop. At the west end of Throsby DRive, the route of the line passes between two apartment buildings and across Gilmore Creek on an old concrete and steel bridge, presumably former tramway infrastructure. This route is now a walking path. The locomotive shed, built after 1877, was once located in this area. Beyond the bridge are the former staging sidings, where loaded rakes of wagons were brought down from the screens, ready to be taken to the harbour when a ship was ready for loading. The sidings area is now a linear park, at the rear of houses on Acacia Avenue. Beyond this area, the line is completely lost among the Princes Motorway and suburban housing.

On the lower slopes of Mt Keira, Gooyong Avenue runs up part of the former incline's route towards the mine. From the end of Gooyong Avenue to the mine site, many remnants of the incline can be found, including the formation, rail, wire rope, ironwork and plenty of coal. In the last 30m of hill, all trace of the incline is now gone and no indication remains on the flat of the mine site as to where the incline finally approached the mine portal. BHP Biliton, the current owner of the mine, has remediated the site extensively, and much has changed, making it difficult to interpret how the mine's above ground facilities used to function.

There is still some intact infrastructure at the mine site: the impressive row of palm trees that mark the entry, the brick explosive stores, the bases of many mine buildings and the entry to the mine itself. To the right of the mine portal is the base of a large building. It has two sections of 1067mm track embedded in the concrete, presumably for maintenance purposes. The mine portal itself has a single 1067mm track, heading off into the darkness. From the mine portal, 224m above sea level, there is an impressive view over modern day Wollongong. The original entry road to the mine site is still accessible, and while gated, numerous walking track and mountain bike trails lead into the mine site.

Stuart Thyer

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2. 'Advertising', *The Sydney Morning Herald*, 11 November 1859, p. 5.

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G Mould, 'A Brief History of the Mount Keira Tramline', *Illawarra Historical Society Bulletin*, November/December 2000, pp 84-91

Heritage & Tourist NEWS

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

QUEENSLAND

WOODFORD RAILWAY, Woodford

610mm gauge

The maintenance team continues to improve the track through the use of concrete and steel sleepers. The maintenance team continues to improve the track through the use of concrete and steel sleepers. There were 16 sleepers marked for replacement or re-spiking – generally only one per 50m with the exception of a section near Petersen Road where there were seven ineffective sleepers. This area is part of the new work at Peterson Road and will be replaced when the new pointwork is constructed..

Whilst most work has concentrated on the existing mainline, some work has been undertaken at Peterson Road. An additional panel of track with 42lb/yd. rail and concrete sleepers was assembled and fish-plated into position on the future passing loop. The workshop crew was seconded to help lift the rails into position on the day.

More recently, the track crew has started cleaning materials to build and position panels with 60lb/yd. rails and concrete sleepers for the future mainline. As the backlog of mainline maintenance is completed, the crew plan to return to these works. The steel sleepers for the pointwork on the existing mainline are being progressively fabricated for these works.

President Terry Olsson reports that during 2014 passenger numbers on public running days were up 8.2%, paying passenger numbers were up 14.6%, income from fares was up 14% while income from sales was up 5.7%.

There were four special running days during the year. This may be the start of an upward movement although numbers are still down on figures of a few years ago. A huge number of passengers on the open day on 11 October certainly helped boost figures while on the other hand for some reason passenger numbers during November were well down.

Unfortunately sales income from shows and other special events was down 24%. This was not helped by having no new ANGRMS book to sell at shows during 2014.

Income from running days is not doing much more than paying the basic operating bills with all other work funded from sales.

While ANGRMS expect an increase in passenger numbers during 2015 when steam operation returns, it also notes a need to start looking at, and working towards other income streams such as weddings and perhaps driver experience.

Sales of the new book *Salute to the Hudswells* have exceeded expectations with over half the books already sold. Thanks to the fantastic efforts of the sales team, and in particular John Browning, orders have been received worldwide.

Durundur Railway Bulletin 1 and 2/15

FRIENDS OF ARCHER PARK STATION AND STEAM TRAM MUSEUM INC., Rockhampton

1067mm gauge

QR celebrated 150 years of rail with a beautifully restored train of steam locomotive BB18 ¼ 1079 (Walkers 547 of 1956) and wooden carriages travelling the old Sunshine route up the coast to Cairns. For the Rockhampton visit, Council offered APRM in early December the opportunity to organise a twilight trip as a fundraiser for Archer Park restoration works. The Coordinator jumped at the chance, thus a normally quiet December–January became a whirlwind of activity.

This was the biggest and best event in the Museum's history and was popular with the community at large. All seats available on the steam train adventure were sold out in a couple of weeks. So the exercise was a success – customers enjoyed the experience – the Museum was given tremendous promotion within the community – and APRM raised much needed funds.

The Purrey Tram (Valentin Purrey, Bordeaux) and Citra Billard Loco Tractor were stood down in December for their annual inspection, certification of boiler, repairs and servicing. All went well and the first running day for 2015 was 25 January. The crews were happy with their performance. Unfortunately restoration works proposed on the Purrey (mainly painting) have not yet been done, but will be undertaken in the coming weeks.

At the time of going to print there was no word on how the railway had been affected by Cyclone Marcia which damaged the Rockhampton area on February 20.

Tram Tracks 2/15

NEW SOUTH WALES

ILLAWARRA LIGHT RAILWAY MUSEUM SOCIETY, Albion Park

610mm gauge

As the society has the Davenport loco *Kiama* (1596 of 1917 PWD 23 and rebuilt 1938 with 1517 of 1915 PWD 65) that worked on the Kiama Tramway until 1941 and is set to see its 100th birthday in 2017, it is seeking to see if any of the blue metal rail wagons from the tramway may still be around in a shed or backyard in the Kiama area.

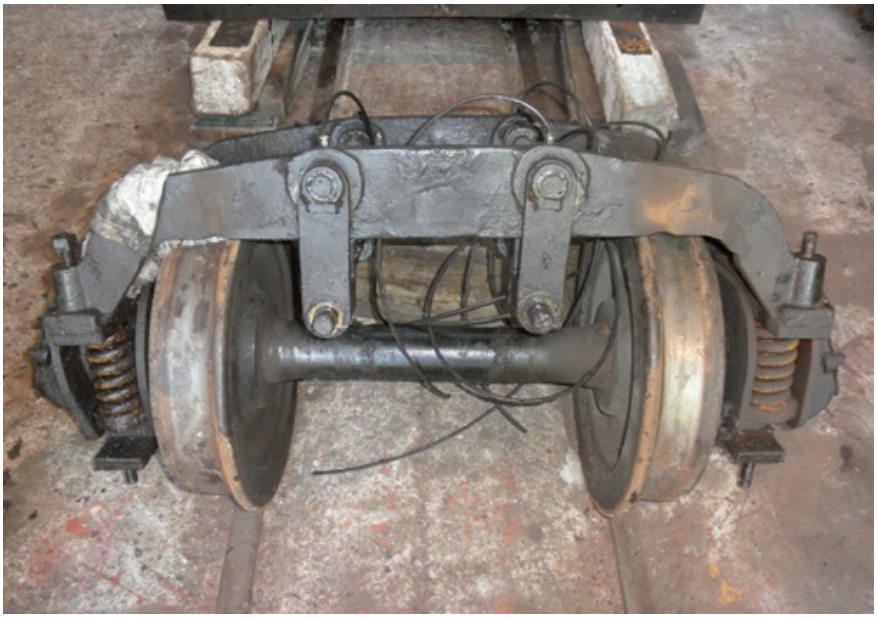
Work is currently being undertaken on the saddle water tank of the loco as part of its upgrade and we would like to reunite the loco with its wagons.

Anyone with information should email it to info@ilrms.com.au

So far the Society has received one reply from a Kiama resident who said the wagons and other parts of the tramway had been cut up for scrap in the late 1960s.

The tramway ran down Kiama's main street, Terralong Street, from 1914 to 1941. It brought crushed metal from quarries at Pikes Hill to the town wharf and on Manning Street to railway sidings next to Kiama railway station.

ILRMS Facebook site 2/15



Work on stripping the former Dreamworld Perry (5643/51/1 of 1951) is underway by Terry Olsson and the Gough family. Bob, and sons Mark and Peter had all worked on the loco during its time at Dreamworld. Photo: Bob Gough

Saturday 17 January saw the replica Mary Ann *(Olds & Sons, Maryborough 1999) on active duties into the Downer EDI workshop. Operating on approximately 200m of track, as part of the Queensland Railways 150th anniversary celebrations..* *Photo: Bob Gough*

VICTORIA

PUFFING BILLY RAILWAY, Belgrave

762mm gauge

Puffing Billy has recorded 10 consecutive months of passenger number growth although January was affected by a combination of hot and wet weather with resultant lower passenger numbers. This almost continuous increase in numbers clearly highlights the need for the developments happening at the railway such as the conversion of NGG 16 129 (Beyer Peacock, Manchester, 7430 of 1951) and new carriages.

Meanwhile, the Board:

- Approved expenditure for a Lucas Portable Timber Mill to produce posts and other timbers from trees either fallen on the rail reserve or that have to be felled due to safety reasons.
- Were advised that the on-line booking was gaining momentum with up to 180 passengers being booked per day. It was also pleasing that 72 bookings had been received for the "green timetable period". This allows interstate and regional customers to ensure they have a seat when they visit the railway in our busiest period.

The Puffing Billy Railway have received five new sets of cylinder castings. The new cylinders feature renewable wear surfaces which should prolong the life of the castings. *Photo: Graeme Daniel*

- Organised a Strategic Growth Workshop which was held on 30 October at the Packing Shed and was attended by members of the ETR Board, PBPS Executive, the Senior Management Team and representatives of the Puffing Billy Young Volunteers Representative Team. The Workshop provided all in attendance with the opportunity to comment on the key issues and proposed solutions identified by management and to table any additional suggestions.
- Continued planning for a number of projects for 2015. Construction of the new Lakeside Kiosk facility will commence during February with planning well advanced for the new IT Bunker at Belgrave. Planning for construction of platform 2 at Belgrave is underway and work on the specifications and costing of new rolling stock continues. In addition a number of IT related projects have been identified for implementation during the next 12 months.
- Approved, after a call for submissions and some 20 contributions, the following policy: "To generally present such items in the manner in which they appeared in their original provenance; in the case of locomotives this in particular refers to the numbering and the style of identification plates. Locomotive numbers will be those carried when in the service of its original owner. Colour schemes should be compatible with and harmoniously blend with existing PBR locomotives and rolling stock".
- Discussed the implications of the change in State Government and agreed that PB would approach the new government and broaden the search for funding the projects

Amidst all the new construction work at Puffing Billy Railway's Menzies Creek museum site, over 350 years of combined history stands waiting for a re-opening. From Left; ex Plane Creek Mill D6 and D5 (John Fowler 21914 of 1937 and 18801 of 1930), Ex Pleystowe Mill 0-4-2ST No.4 (Hudswell Clarke 1559 of 1925), ex Inkerman Mill 0-6-0DM (Baguley/RMP 3354 of 1951) and Malcolm Moore 4wDM (1015 of 1943). *Photo: Stefan Rebgetz*

in the Business Case. Clearly, yet again, the recent commitment of $2.15m by the former Government will not be delivered with the change of Government at the recent state election. Commitments not delivered now total $16million over the past four years. This is obviously extremely frustrating and is significantly affecting the Board's ability to deliver on the strategic plan. Steps are being taken to have dialogue with the new Government ASAP.

- Discussed a process to determine the design of additional carriages to complement the existing fleet. This is a high priority project after the existing projects are delivered.
- Was notified that the Gator Trolley had met all the requirements of accreditation. The Board will now monitor its performance to enable any future trolleys based on the Gator to be modified to rectify any limitations. The Board approved the purchase of additional Gator units at a cost of $10,000 each for future conversion. (John Deere has ceased production of that model of the Gator.)

Saturday 13 December was a special day in the history of Puffing Billy, a re-enactment to mark 60 years since the running of the first *Young Sun* special trains in 1954. The day featured a special timetable with all trains terminating at Emerald, where special attractions were laid on to entertain passengers. These included vintage cars and trucks, steamrollers, a fair through the town centre and a Lego model railway layout of Emerald station, located in the Gemco Theatre. '3A' (Newport Workshops, 1900) made a re-appearance for the day, (with a little help from 14A) hauling the *Young Sun* special and a special train ferried VIPs to Emerald for the festivities. Each of the six departures from Belgrave was full. The Young Volunteers Operating Day took place on Saturday 27 December. This was another *Young Sun* anniversary – commemorating the 60th Anniversary of the second day of special runs.

Some months ago the Senior Management Team agreed in principle to move the "Thomas" (Peckett and Sons, 1711 of 1926) event to Gembrook with an implementation date to be agreed. Planning is extensive and is developing well. At a recent meeting the Team agreed that, subject to final agreement early next year, "Thomas" will move to Gembrook for the Spring season in 2015. Boiler construction of NGG16 129 (Beyer Peacock, Manchester, 7430 of 1951) is advancing in Sydney including the fitting of the tubes. Bolts have been fitted to the rear pivot casting and the main air reservoirs are now at Belgrave. The smoke box doorplate is receiving attention and design work is underway. The boiler cradle has been cut and welded to the rear frame.

The restoration team anticipate completion of the boiler during February and the return of the two engine units from Jack Thompson Engineering at Hastings by April. Sufficient internal funds are available to keep the project on track until the end of this financial year.

Monthly News, December, January & February

WALHALLA GOLDFIELDS RAILWAY, Walhalla

762mm gauge

The bogie modification drawings required for regauging the DH locos are being prepared by Engineering Design Resources of Traralgon. The new drawings, with WGR title block, will create a computer generated 3D view of the bogies and this has been provided for review. Discussions with EDR have concluded that it will not be necessary to carry out a Finite Element Analysis (FEA) of the modification so long as correct welding specifications are prepared. On the basis of the work to be done (reducing bogie frame width by 305mm) the torsional rigidity of the frame will be greater than before modification.

The maintenance gang has drained the cooling system of DH37 (Walkers Ltd., Maryborough, 619 of 1969), flushed it and replaced 100 litres of coolant/inhibitor to preserve the engine which was started and run to ensure it remains workable until conversion is completed.

Some of the former Orica rolling stock is being modified for use as passenger transport.

It was hoped that the new platform would be sealed and the verandah completed before Christmas but both were not complete until the end of January and by mid-February final details were still not completed.

During construction, the ticket office was moved from Walhalla Station into the Goods shed and the Way and Works gang built a temporary platform on track number 3, so trains ran as normal.

The platform was completed by the end of January. It was filled with crushed rock, sprayed with a layer of tar like substance, and then covered with a layer of finer crushed rock. Once the surface is compressed with traffic using the area, the result will be like a sealed road surface. After the long weekend the roof plumbers and painters arrived. The painters cleaned the building with a high pressure hose then set about painting the windows. The roof crew installed new guttering on the side of the station between the verandah and the building. Once this was in place the roofing iron was screwed into place on the frame which has been adorning the building for the past six weeks. Any rain is now captured by the new guttering and channeled into the tanks. A new large tank is being installed at the southern end of the goods shed.

Sitting on the station under the new verandah is now quite a different experience; with the train in the platform the station feels much more like a real station and protects the passengers and the station face from heat and rain.

Dogspikes and Diesel, December and January.

VAUGHAN SPRINGS MINIATURE RAILWAY, near Guildford and Castlemaine

380mm gauge

Further to the report in LR 240, which said the railway was relaunched with an Open Day on 7 September, a visit was made to the location on 4 January. Despite being the first weekend after the Christmas/New Year break, the Vaughan Springs area was virtually bereft of visitors or holidaymakers. This was most likely the reason for the train not running.

The following information was ascertained: the gauge is 15in (380mm); rail is about 14 lb. with a tall web and the track is a perfect circle measuring 60ft 6in (18.44 m) diameter. Gauge is maintained using flat steel spacers and the occasional wooden sleeper, and the track appears "fit for purpose".

The steam-outline locomotive was able to be seen partly through the door crack in the sandstone "tunnel" which doubles as the loco shed. It appears to be somewhat detailed – even sporting a bar cow catcher.

Chris Wurr, 1/15

SOUTH AUSTRALIA

COBDOGLA IRRIGATION AND STEAM MUSEUM, Cobdogla

610mm gauge

The Museum is petitioning the South Australian government to take immediate action to have SA Water continue to own and support it. The petition asks for the allocation of necessary funds to facilitate the ongoing operation of the Humphrey Pump which it describes as "a unique gas powered, internal combustion artefact of international and engineering significance." The Pump is listed on the State and National Heritage registers. To assist with wider circulation of the petition the museum ran an Open Day on February 22 that was to include the running of its Bagnall 0-4-0ST *Margaret* (1801 of 1908).

Cobdogla Irrigation and Steam Museum email, 2/15

OVERSEAS NEWS

NEW ZEALAND

WAITAKERE TRAMLINE SOCIETY, Waitakere

610mm gauge

The Waitakere Tramline Society has been advised by Watercare Services that the Waitakere Tramline has been permanently closed to any passenger train operations as from 24 November 2014. Watercare has announced the Rainforest Express will remain out of service indefinitely. The decision will also mean an end to the passenger service previously operated by the Waitakere Tramline Society.

Public use of the Upper Nihotupu and neighbouring Waitakere tramlines has been suspended since May 2013, when a major landslide caused significant damage to the Upper Nihotupu tramline. Watercare Chief Executive Raveen Jaduram said he was sad to see the end of what had become a West Auckland icon during the 15 years Watercare had operated it as a sightseeing excursion for visitors from far and near. He said the Board had taken a long time to assess the various options available to the company, but in the end the decision was a straightforward one.

Auckland Council may investigate taking over the *Rainforest Express*, which will hopefully bode well for Waitakere Tramline also.

CLIMAX 1317 RESTORATION, Te Awamutu

1067mm gauge

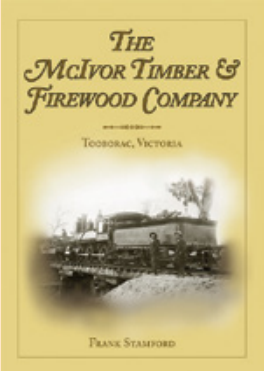
Climax 1317 (Climax Engineering, Corry, Pennsylvania, 1317 of 1914) worked for the Egmont Box Company at three sites from 1914-1942. Then it went to Smyth and Broyer, and worked at two of its mills from 1942 to 1956. The last mill it worked at was Ngaroma. The restoration is being undertaken by the Lions Club of Te Awamutu, under the guidance of Ken Williamson. The work has been extensive; all gears have been built up and machined to shape. New cylinder drains have been cast from a new pattern, and new piston rods fitted along with a whole new chassis, new cab, chimney and bunker. All truck frames have been rebuilt and overhauled. It has been suggested that the wheel sets fitted to the trucks on 1317 are from the former Taupo Totara Timber Co.'s, Climax 'A'.

Reports from *FRONZ Journal*, 12/14

The Vaughan Springs Miniature railway, complete with 'tunnel' come storage shed was visited by Chris Wurr in January this year.

New from LRRSA Sales ...

The McIvor Timber & Firewood Company



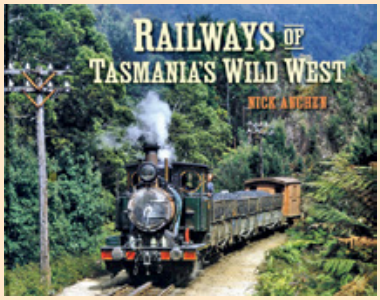
Tooborac, Victoria
By Frank Stamford
Published by the LRRSA
Soft cover, 104 pages, A4 size
104 photographs, 23 maps and diagrams, references, and index.

The history of a 5ft 3in gauge tramway from Tooborac to Mitchell's Creek, Puckapunyal, Moormbool West and Cherrington.

Price $30.00 plus postage
($22.50 to LRRSA members)
Weight: 490 gm

Railways of Tasmania's Wild West

By Nick Anchen
Published by Sierra Publishing
160 pages, 282mm x 225mm landscape, hard cover, over 200 photographs

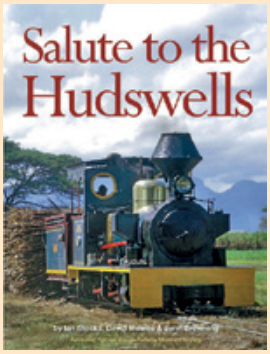


A wonderful collection of photographs, and recollections of railwaymen and travellers in an area which contained some of Australia's most remarkable railways.

Price $59.95 plus postage
($53.95 to LRRSA members)
Weight 1,080 gm

Salute to the Hudswells

By Ian Stocks, David Mewes & John Browning



Published by the Australian Narrow Gauge Railway Museum Society
Soft cover,
144 pages, 210 x 274mm

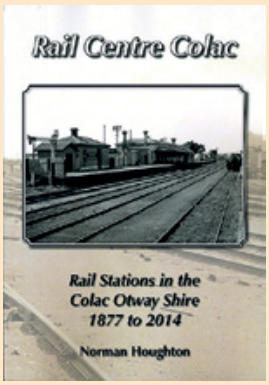
Gives the history of 41 Hudswell Clarke locomotives that worked on 2ft gauge sugar cane lines in Queensland and Fiji.

Profusely illustrated with photographs and scale drawings.

Price $35.00 plus postage
($31.50 to LRRSA members)
Weight: 525 gm

Rail Centre Colac

Rail Stations in the Colac Otway Shire 1877 to 2014



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

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

Price $63.50 plus postage
($57.15 to LRRSA members)
Weight 770 gm

Postage and packing: Within Australia, up to 250gm $2.10; 251 to 500gm $5.10, 501 gm to 3 kg $15.00, over 3 kg to 5 kg $18.70
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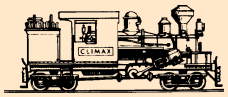

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- If joining in February or March, pay $16.00 ($21.67/$25.67 overseas) and receive 2 issues of *Light Railways* (Nos 242-243).
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