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LIGHT' RAILW

Australia's Magazine of Industrial & Narrow Gauge Railways

Light Railway Research Society of Australia Inc.

LIGHT RAILWAYS

Australia's Magazine of Industrial and Narrow Gauge Railways

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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 super foot	0.00236 cubic metre
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

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Comment

The problems besetting the ill-fated, and some would say ill-considered, Beaudesert Rail project (LR170, page 27) have prompted some interesting discourse recently in the pages of *Railway Digest*. A storm in a teacup, to be sure, but nonetheless questions have been raised which strike at the core of pursuits that give pleasure and purpose to a lot of people.

It would appear that, to many in the cash-strapped 'rail industry', the perceived proliferation of heritage projects and the amount of money they allegedly soak up have become something of a major irritation.

If we are witnessing the origins of a 'class war' developing within the broad church of rail enthusiasm, then that is most regrettable. At times like these, we should surely be looking to the things that unite, not divide, us. Bruce Belbin

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 the forests.

Light Railways is the official publication of the Society. All articles and illustrations in this publication remain the copyright of the author and publisher. 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 provision that the Society has the right to reprint, with acknowledgement, any material published in *Light Railways*, or include this material in other Society publications.

Cover: Kitson 1620 of 1870 is one of our great locomotive survivors. Built for contractor J Alger, the 35-ton 0-6-0ST, known as 'The Buck', was at first utilised on railway construction in northern NSW. In June 1872, it was purchased by the NSW Government Railways, who numbered it 20N (the 'N' standing for 'North' which, at the time, was a separate railway system) and put it to work shunting at Bullock Island and hauling coal trains on the Newcastle Mining Company's Glebe line. The Brown brothers, of J&A Brown fame, much admired the sturdy Kitson and made several attempts to purchase it. When it became clear that 20N was simply not for sale, they ordered a duplicate locomotive from the makers (Kitson 2236 of 1878) which became number 3 on their roster. In 1889, with the unification of the northern and southern systems, 20N became 403, and two years later it was deemed surplus to the NSWGR's requirements. The Brown brothers immediately made arrangements to purchase the loco and, in May 1891, Kitson 1620 joined their fleet as number 4. Initially used on the Hexham to Minmi railway, it was later assigned to shunting Hexham Wharf and environs, where John Shoebridge photographed it at work in July 1964. Finally retired in May 1967, it was stored with a view to preservation, until purchased by the NSW Rail Transport Museum in August 1973. The 133-year old veteran is now at the NSWRTM's Thirlmere site awaiting restoration. Number 3 has also been preserved, by the Dorrigo Steam Railway & Museum, and is currently stored at Dorrigo, NSW.



The Orenstein and Koppel locomotive hauling eight trucks of firewood in the 1930s. It is driven by J Dunn, the then contractor for supplying firewood. Photo: JW Knowles collection

The Charters Towers Water Board Tramway

by John Knowles

From about 1897 until 1941, the Charters Towers Water Board, later the City Council, and/or their firewood supply contractors, operated a tramway to supply firewood to the steam powered pumping station on the south bank of the Burdekin River, about nine miles north of the city of Charters Towers, Queensland. The rainfall averages 25 inches per year, but up to 1913 occurred with an annual range of 12 to 39½ ins.

The station was about a mile downstream from the Board's weir on the river, and just west of the junction with Sheep Station Creek. It was about eight miles west of the Macrossan Bridge, where the Great Northern Railway of the Queensland Railways has crossed the Burdekin on three different bridges over the years.

The tramway was (except briefly initially) of the unusual gauge of 825mm, or 2ft 8½ins. Except for sidings at the pumping station, it was located on the north side of the Burdekin, and followed three different routes as timber along a route was cut out. Traction was by horses until 1901, after which a small locomotive was used. The line originally crossed the bed of the river, some 400 metres wide at this point, by a low level bridge, but after 1910 the wood was taken across the river on a cable or aerial tramway.

The pumping station, with its boilers, engines, pumps and inlet shaft, was opened in 1889, the first phase of the water scheme was completed in 1891, and the second in 1899¹. After the second phase was completed, the plant could supply 20,000 gallons per hour, and 244.4 million gallons were pumped during the first year.

The engines are described, and some details of the boilers and pumping plant provided, in an article by O Peake, *The Charters Towers Steam Pumping Engines*, in the *Bulletin of the International Stationary Steam Engine Society*, Vol 15 No 2, Summer 1993, p 24.

Charters Towers

Gold was discovered at Charters Towers in 1871, a goldfield proclaimed in 1872 and the place incorporated in 1877. It was named after the first Warden, CSEM Charters (then located at Ravenswood, an earlier goldfield 40 miles east), and the geographical features, towers or tors, in the area. It was connected to Townsville by an 83 miles railway, the Great Northern Railway of the Queensland Railways, in 1882. Townsville first became sizeable as the port for the goldfield. Charters Towers had a population of 26,215 in 1899, and was declared a city in 1909.

For some years, Charters Towers had the highest gold output of any field in Australia, until surpassed by Mt Morgan and later, Kalgoorlie. The maximum production, 319,572 fine ounces in 1899, included the results of reprocessing by cyaniding of the tailings (waste) of earlier production. The maximum quantity of ore raised in a year, 247,481 tons, did not occur until 1903. At the time of Federation, it claimed to be the most prosperous place per head in Australia.

After 1903, there was a marked decline in output and profitability, and most of the mines closed just prior to or during the First World War. A large proportion of the many people who left Charters Towers moved to many places along the north Queensland coast.

The boilers supplying steam to power the machinery at the mines and treatment plants were fuelled, and the underground workings at the mines supported, by timber. By 1917 timber within a radius of ten miles of the city was cut out, and supplies were then obtained from places along the QR Ravenswood branch, and from along the Great Northern Railway to the west up to the Great Divide.

There were several private railways, most built under private Acts of parliament, and private sidings, in the city area, all 3ft 6ins gauge, to mines, mills and the pyrites works (which treated tailings, or residues, from the mills). The Day Dawn PC had a 3ft 6ins line to the Excelsior Mill, on which it ran its own locomotives. The rest were QR operated. At Sellheim, 12 miles east on the Burdekin, there was a private branch to another mill. Some mines owned 3 ft 6 ins gauge hoppers for carrying quartz. Ore, timber, mining equipment and supplies were conveyed on these branches and sidings.

As in most inland places in Australia, water availability set a limit to mining and treatment, and to the population. It was fortunate that such a large river, the Burdekin, flows so close to Charters Towers. The Burdekin and its upper tributaries rise west of Townsville and south-west of Ingham, an area of high summer rainfall, but the amount varies from year to year. The run-off of the Burdekin occurs mostly in high flood, and the river is often completely dry.

Near Charters Towers and elsewhere, the river bed consists of very deep sand (in places the banks are above the level of the surrounding country) which often contains water even when the bed is dry. The Water Board set up its pumps to draw water from a well in the sand.

Firewood Supply

For the first eight years or so, sufficient wood to fire the boilers at the pumping station was obtained from the south side of the river and moved to the station by animal powered road vehicles. This was on the same side of the river as the pumping station, an area already largely harvested of firewood by and for the mining companies. About 1896, it was necessary to consider obtaining wood from the north side of the river. That year the Board called tenders for a wire or aerial tramway across the Burdekin, but no tender was accepted. (A) potential wood supply contractor(s) advised the Board that he or they would offer to build a tramline across the river if a contract for 5000 to 6000 cords was available. Accordingly, the Board called tenders for a maximum of 6000 cords over three years, and in September 1896, the tender of J Boyd for the supply of 6000 cords at 15/- per cord was accepted.2 (A cord is 128 cubic feet.)

The report of the Board meeting for August 1897 in Charters Towers daily newspaper the Northern Miner, mentioned that on account of differences with the owners of land on the river frontage, the aerial tramway (presumably over the river) was not proceeded with. A three year contract for firewood supply was awarded, and the contractor proposed a low level bridge over the river. In October 1897, the Board accepted the recommendation of its Resident Engineer that it lay a light tramway in connection with the contract for firewood supply. It also accepted a quotation of $\pounds 10/5/$ - per ton for tram rails delivered at the pumping station. The Northern Miner report for December said the tramway would probably be completed in two weeks, and the Board's 1897 report said that the contractor had erected a low level bridge over the river, and that the Board was laying about 11/2 miles of tramway on the other side, almost complete at year end. The contractor was to be charged ten per cent of its cost for its use (presumably per annum). As there are gaps in the Board's records, it is not possible to say what was laid, or to what gauge, but the pumping station engineer in 1957 said that the original line ran 21/2 miles north-east from the point opposite the pumping station on the north bank (hereafter referred to for convenience as North Bank Depot). For reasons given below, however, I believe that north-west was meant.

The banks of the Burdekin near the pumping station are high and steep. Traces could be found in the 1980s of a cutting down the bank at the North Bank Depot, and a roadbed climbing the bank on a ledge parallel to it on the south bank. No doubt horses could have hauled empty trucks up the north bank, and loaded trucks could have descended that bank by gravity. From references to winding gear, it seems that some form of cable haulage was used to bring loaded trucks from the level of the bed and/or low level bridge to the level of the pumping station, powered by steam from the station boilers. Certainly the later aerial tramway was steam powered.

The tramline was completed early in 1898, and was said to answer the purpose admirably. The contractor's bridge across the river was damaged by floods early in the year, which led to an interruption in firewood supply of four months. A Provisional School was opened at the pumping station on 18 January, with an average attendance of 27.³ There were several cottages



The route of the third tramway as shown in the Military Forces map in 1942. The pumping station, just near the confluence of Sheep Station Creek with the Burdekin, and at the south-west end of the aerial cableway, is not indicated.



The low level bridge which carried the tramway across the Burdekin River until it was replaced by the aerial tramway in 1910. This view appeared in the Board's report for 1903. It was taken from the chimney at the pumping station looking to the north bank. The section where the line crossed a rocky section on the bed can be seen. The relative height of the bank is clear. Photo: JW Knowles collection

at the pumping station for the twenty or so men employed there. The wood cutters and their families lived in temporary accommodation in the bush. The school at the station provided for the families of both station workers and wood cutters.⁴

The 1899 Annual Report reported the contractor's bridge again being damaged by floods. Until it was repaired, it was necessary to cut wood in the waterworks paddock and reserve. In 1899 the Board's engineer reported on suitable aerial tramways for crossing the river, on which the views of the State Government Hydraulic Engineer were to be sought.

At this stage, there was a dispute with the firewood supply contractor, Boyd, about delivering the agreed quantity per month, and advances were made to secure certain delivery rates. Part of the dispute was his failure to lower his bridge in accordance with his offer. Why it was to be lowered is not recorded. A photograph of the bridge in the Board's report for 1903, reproduced above, shows it to have then been barely above the sandy bed, and for the track to have crossed a sandbank or rock outcrop in the bed between two sections of bridge. It also shows the high and steep banks.

At the end of 1899, the Board called tenders for the supply of 1000 to 10,000 cords of firewood at the rate of 150 to 200 cords per month, ie the contract could run for up to four years. The tender received, from the previous contractor, was not accepted, and in January 1900, a special meeting of the Board considered the offer of J Boyd and J McIntosh to supply firewood. The contractor then offered to supply 10,000 cords over five years at 18/- per cord, and at the end to hand over in good order and condition, his bridge, the tramline, winding gear and rolling stock, and to alter and strengthen the bridge for a light locomotive. (The contractor had owned the bridge, which gave him a stranglehold over future supplies; the Board no doubt negotiated these conditions to allow competition in tendering for later contracts.) In May 1900 the Board purchased the rails from the bridge from the wood contractor, to be left in the hands of the contractor. (This might mean that when the contractor laid heavier rails on the bridge in accordance with the above conditions, the Board bought the original light rails to put into an extension of the tramline, and had the contractor build that extension). By the end of the year, the contractor had altered the bridge, laid 40 lbs rails on it in place of the original lighter rails, made a cutting in the bank and laid rails so that wood could be delivered directly to the yard. On the tramline, he had made culverts, and put in a substantial bridge over a deep gully. The Board sold his surplus winding gear.

The report also says that the contractor altered the gauge of the Board's tramline (presumably to 825mm, or 2ft $8\frac{1}{2}$ ins, the original gauge not being known), and that negotiations over the purchase of a locomotive fell through. In 1900, 1700 $\frac{1}{2}$ cords of firewood were delivered, less than the 1822 $\frac{1}{2}$ consumed.⁵

In August 1900, the minutes record the acceptance of the tender of Roberts & Company for the purchase of the engine taken over by the Board from the wood contractor. This was probably related to the winding gear (see above), but might have been a traction engine, or portable engine used to power a saw bench.

Locomotives and Rolling Stock

Concerning negotiations about a locomotive, in October 1900, Mr C Walker of Mossman Street Charters Towers advised the Brisbane manager of the Colonial Sugar Refining Company that he had for sale a ten ton tank locomotive built by Aveling and Porter, with an 8½ inches cylinder, and with geared drive. It was said to be capable of drawing 90 tons on the level. The gauge of the locomotive was then 2ft 8½ins, but could be altered to any gauge up to 3ft 6ins without extra cost. It was at Charters Towers railway station, was nearly new and had never been used at Charters Towers (see *Light Railways* 146, April 1999, p 23). It would seem to have been a speculative venture, to have a locomotive on hand of the (altered) gauge of the Board's tramway in the hope that the contractor would buy it. It is nevertheless difficult to understand why anyone would transport a ten ton locomotive to Charters Towers without first having investigated the prospects of a sale. Walker asked for $\pounds 375$, which was much less than the cost of the locomotive bought for the tramway the following year. The contractor probably recognised that a small locomotive of the geared type would not be suited to the task. The locomotive must have arrived in Charters Towers some months earlier.

Why the variable gauge of this Aveling and Porter had been set to 825mm is not clear. The 825mm gauge was certainly unusual for a country using British measurements and obtaining most plant and equipment from Great Britain, and much of the balance from the USA. Was there an internal line at a local mine or treatment plant of that gauge? The availability of second hand wheel and axle sets cannot have been influential in changing the gauge of an existing horse operated tramway. Or was some supplier or consultant promoting the virtues of that gauge, which was eventually chosen for the tramway and the locomotive obtained to operate on it? Perhaps the Board's engineer advised the length of billet required for the station boilers, and some supplier advised that for that length 825mm was the 'ideal' gauge, compared with 2ft 6ins or three feet. That still begs the question why 2ft 9ins was not recommended instead. In any case, German suppliers were flexible in offering plant to local measurements, and 825mm was an unusual gauge in Germany and for the products of its locomotive builders (the locomotive eventually obtained was built in Germany). Neither the origin nor the fate of the Aveling and Porter machine is known.

In 1901, a small tank locomotive was obtained to operate the tramway. This was Orenstein and Koppel builder's number 819 of 1901, a 20hp 0-4-2. So far as is known, it was the only locomotive the line ever had. According to O&K records, it

was built to a gauge of 825 mm, and was supplied to J Boyd for export. This appears to indicate that the contractor Boyd was its first owner. Judging by the small value for the tramline in the Board's books, and later substantial increase in that value, as well as the conditions of contract given above, Boyd owned most of the tramline as well. According to the 1901 Annual Report, the locomotive entered service in October 1901 and was a great improvement on horse traction. By the 1930s at least, it had a conical chimney, no doubt with spark arresting screens to catch sparks from the wood fuel. It had many O&K features, such as the regulator valve at the front of and outside the boiler, outside steam pipes to the outside cylinders, and Klug valve gear (see G Murdoch Australian Model Engineering, Jan/Feb 1998 for a description of that valve gear, a variant of Hackworth). It appears that the locomotive was a well tank, and was designed to carry coal in side bunkers. As the fuel was wood, that was probably taken from the leading wagon on the tram. There were large centre buffers, with hook and link couplings above. A water supply was provided on the north bank, and water was taken by trucks to the end of the line, for the locomotive and the cutters and families.

The load of the locomotive up the bank of the river to the pumping station was two loaded trucks. It is surprising that the locomotive was expected to haul trucks up the bank, given the large stationary engines and boilers nearby, that soon after the boilers were used to power an aerial tramway across the river, and that they probably provided the power for trucks brought across the river before there was a locomotive.

Scaling from photographs, it is estimated that the wagons, carried a load about four feet long and high, and six feet wide, which accords with the weight mentioned in the specification of the new line of 2½ tons. The wagons left at the pumping station in 1957 were larger and steel framed, with curved central buffers and link couplings. They were about 7½ft long and 5½ft wide, running on four wheels of about 12ins diameter with inside axle bearings in a wheelbase of about 40ins. Two lengths of firewood about five feet high were placed vertically at each end of these wagons to contain the load. The timber was about



General arrangement drawing of Orenstein & Koppel 20hp 0-4-2WT (with major components numbered) in 1905 Arthur Koppel catalogue.



Trucks loaded with firewood at the pumping station, 31 December 1957. Photo: JW Knowles

6ft long, and loaded to about 6ft above the wagon floor. Allowing for the peak at the top, the volume of wood was about 240cft, say about five tons. These wagons were presumably used only on the pumping station side of the river, to convey wood from the aerial tramway to the boilers.

Once the low level bridge across the river had been removed, the locomotive could not be taken to the facilities at the pumping station for overhauls. It would be interesting to know how it was given extensive repairs. Presumably the boiler and wheelsets were taken across the river separately on the aerial tramway, as were smaller parts. The terms of the contracts for supply of firewood over the years are not known. It is possible that the contractor was responsible for day-to-day maintenance and the Resident Engineer and his staff who overhauled the pumping station boilers and machinery who were responsible for the heavier maintenance of the locomotive and trucks.

Heavier Rails

In 1901, the Board authorised its chairman to arrange to supply heavier rails to the firewood contractor, as recommended by the engineer. In the following year, the Board's report said that the tramline had been improved by laying 40lbs rails down the cutting from the bank to the low level bridge across the Burdekin. These heavier rails, as well as those on the bridge, are no doubt explained by the coming of the locomotive. In 1902, the Board provided rails and labour, and the "tramway for firewood" represented an asset of \pounds 933. Its value declined to \pounds 712 in 1903 and \pounds 643 in 1904.

In 1901, the contractor delivered 1693½ cords. Of this, 1653 were used. In 1902 these figures were 1572 and 1463½, and at the end of the year there were 1272 in stock. The varieties of timber and their density are not known, but at 70cft to the ton, a cord (128 cubic feet) would have represented about 1.8 tons (the QR charged log hardwoods at 50cft to the ton, but after exact measurement of large logs, rather than the space occupied by numerous small pieces). Comparing consumption in the years when it was given in cords with those when it was given in tons (see below) however, leads to the impression that, for the firewood used by the Board, a cord weighed about 2.9 tons, or 44cft to the ton. Deliveries in 1903 were 1357 cords and in 1904 2281 cords. In October 1903, the Board required the contractor to bring in 50 additional cords per month.

The Board was asked by the contractor during 1902 for assistance in the purchase of a traction engine. Also in 1902, the Board selected the site for a weir across the Burdekin, just upstream of the pumping station. HC Stanley, who had just retired as Chief (Civil) Engineer of the QR and set up as a consultant, offered to prepare the plan and specifications; whether he did so is not known; certainly the weir was constructed by the Board's engineer. 1902 was a major drought year throughout eastern Australia, which avoided disruption to the construction of the weir. The weir, 870ft long, was built in four months and completed on 22 November, and eventually impounded 148 acre feet of water. Three weeks later, drought breaking rains led to the Burdekin overflowing the weir.

The Second Route

In 1907, the area served by the first tramline had been cut out. That tramline was then removed and a new tramline built to another source of firewood. This line ran three miles northeast of the North Bank Depot. By June the principal cuttings on the new line had been completed, tenders had been accepted for rails, and the traction engine was to be used to cut sleepers. At the end of the year, the Annual Report noted that the first 1½ miles were built with 24 lbs rails, 10 to 12 lbs heavier than on the original, to which about a mile of lighter rails from the first tramline was added, leaving light rails for about a mile further extension. Although not much used by the end of the year, the heavier rails were considered a considerable improvement. It also noted that the sole right to cut firewood on two paddocks of the Knuth family had been obtained, which assured supply. It is surprising that the locomotive had been used on 14lbs rails up to 1907.

The records note the construction of a new larger wagon of twelve tons capacity, with strong ironwork and heavy steel tyres nine inches wide. "One of the old wagons purchased from Boyd" (still the firewood contractor) was sold for the same price paid for it, also a pair of spare wooden wheels. These references, including to the twelve tons capacity vehicle, are probably to road wagons, especially as a buyer for a tramway wagon of the unusual gauge is hard to envisage, unless (as above) there was another line locally of the same gauge, and twelve tons is very heavy for the light rails in use; further, nine inch wide tyres almost certainly apply to a road wagon.

Considerable repairs had been required to the tramline bridge over the Burdekin. At its February 1907 meeting, the Board heard that there had been an accident to the bridge and that the engine had almost capsized into the river. It was recognised that the rails were too light and the route too steep. Heavier rails or additional sleepers were required, and estimates of the cost of these improvements were presented. The 1907 report stated that a complete set of spur gearing had been obtained for the Fowler road loco, and that a well had been provided at Oakey Creek for the road loco, but was very brackish. 'Road' in this case is presumably in contrast to 'tramway' or 'rail', and means the traction engine.

In 1907, \pounds 1777 was spent on firewood, and \pounds 2037 on the tramline, which at the end of the year represented an asset of \pounds 4676. This very considerable increase in the value of the tramline since 1903 must mean that the Board took over the original tramline in 1906, at the end of the five year contract commencing in 1901 which allowed that takeover; that the Board built the second line, and that thereafter the contractor operated the line on terms provided in his contract. Certainly the bridge (and the frequent inundation and damage) was called the contractor's in Annual Reports up to 1905. Judging

from expenditure items in the Board's accounts and references in its Annual Reports (see below), the Board paid for certain aspects of the mechanical work on the tramway equipment, probably heavy maintenance. Presumably the contractor paid for the operation. During the year, 2115 cords were delivered.

The minutes of the Finance and Works Committee in 1908 report payments for trucks and for the rest of the pastoral lease (presumably to obtain timber cutting rights), while the Board's Annual Report notes expenditure of $\pounds 2895$ on "engine for firewood". This was not the purchase of an asset, ie a further locomotive, as the balance sheet shows the value of the tramline and its rolling stock to have been little changed. It seems that all the operating costs of the mechanical side of the wood supply were debited to this heading. Otherwise expenditure on the tramline was only £467, presumably track maintenance. Twelve steel trucks were made locally to the design of the Board's engineer, and wood delivered direct to the firemen at the boilers without further handling. (With the large mining industry in Charters Towers, there was local capacity for the manufacture of wagons.) During the year, 7457 tons of firewood were delivered, 4626 tons used, and 4533 tons in stock at the end of the year. (Quantities were now given in tons.)

In 1909 the bridge over Oakey Creek was rebuilt, while the bridges over the Burdekin and creeks were repaired. The traction engine and locomotive were thoroughly overhauled, with defective parts renewed. Spares for the traction engine were in stock. Expenditure on the tramline was $\pounds 685$, and on "engine for firewood" $\pounds 1408$ (much of the overhaul must have been done in the previous year; it would be sensible to schedule overhauls for the summer, flood, season). The tramline represented an asset of $\pounds 4595$. 3856 tons of firewood were delivered, 4638 used, leaving 3738 tons in stock at the end of the year.

The largest floods, of 1902 and around 1927, washed away the stocks of wood at the station, and the latter damaged the station.⁶

Aerial Tramway over the Burdekin

Floods early in 1910 washed away a large part of the low level bridge over the Burdekin. It was replaced by an aerial tramway, opened on 6th August. Presumably in the months until it was opened, trams crossed either the patched up bridge, or the river bed. The aerial tramway was a 2½ inch steel rope, 1308 ft long, on which ran a pulley from which a maximum load of three tons was suspended. The suspension of the loads included a block and tackle, so the loads could be raised from and lowered to rail level. A hydraulic crane was provided slightly later at a trestle at the North Bank Depot, presumably to raise the load. This crane was said to save four minutes per trip, presumably per aerial tramway trip.

Originally the wood was brought across the aerial tramway on the wagon on which it was loaded. Later only bundles of wood were carried, and the wood was placed on another wagon on the pumping station side to be wheeled to the boilers. Traction was provided by a rope which ran from a drum on the pumping station side across the river, around a pulley on the north side, and back to another drum on the pumping station side, and was attached to the load to be moved. Presumably there was a marker on the rope to show when the northern side had been reached, perhaps also a signal rope, as on mine haulage. The drums, at ground level, were powered by a small steam plant, which drew steam from one of the pumping station boilers. One drum drew in as the other played out, with their rôles reversed when the reverse movement was required.

A photograph, reproduced below, shows a passenger car on the aerial tramway. It also shows the tramline ascending the river bank on a steep gradient.

Advantages of the aerial tramway were said in Annual Reports to have been that: the risks associated with the gradients and cuttings on each bank were eliminated; maintenance of the locomotive was reduced as it was no longer necessary to force the locomotive on the inclines; maintenance of the bridge was saved; and more firewood was delivered by the same number of staff.



The passenger car on the aerial tramway suspended above the tramway on one of the banks of the river.

Photo: J W Knowles collection

To the First World War

During 1910, 2575 tons of wood were delivered and 3561 used, leaving 757 tons in stock at the end of the year. The Annual Report said that the locomotive used on average 100 tons per year. Both locomotive and traction engine were in thorough repair at the end of the year. It was said that teams and traction engine were having to travel increasing distances for firewood, and that it would be necessary in the near future to extend the line. Heavy rails were replacing the lightest, and were being laid on bridges. Tramway expenditure was £566, cable expenditure $\pounds760$, cost of firewood £1138, while the tramway represented an asset of £5205 (presumably after investment in the aerial tramway).

In 1911, the tramway was said to be in "fair repair". Heavier rails had been laid on the sandhills down to the culvert near Oakey Creek, and the grading much improved. Oakey Creek is east of the North Bank Depot. This reference makes it clear that the tramline in use in 1911, and from about 1907 to about 1914, ran north-east of that depot, and that the line first used (1897 to about 1907) ran north-west.

The bridges had been inspected and repaired. Little trouble had been experienced with the locomotive, on account of the reduced strain; it was now able to do five trips per day (presumably into the bush) instead of four (when it hauled all the wood across the river). The trucks required a "little overhauling" and new buffers.

The traction engine brought 2767 tons, and the horse teams 1498 tons, a total of 4265 tons, presumably all to the tramway. Of this, 4198 tons were used, leaving a stock at the end of the year of 833 tons. Allowing for the change in stock, 152 tons were consumed in other ways, perhaps by the locomotive and traction engine. The tonnage delivered represents only 16½ per day of a five day week, 50 week year. The locomotive hauled four trucks per trip on this line. It should therefore have been able to haul this in two trips per day, rather than the four or five referred to. For four trips to have been required per day, the line must have been non-operational for about half the year on account of the wet season and floods, maintenance, etc.

Expenditure on the tramway in 1911 was \pounds 326, and it represented an asset of \pounds ,4998 at the end of the year.

The Third Route

The Board's report for 1912 states that it needed to obtain a loan for a tramline extension due north from the aerial tramway (actually a new line). The then tramline was being shifted, using as much of its materials as possible. During the year, 4003 tons of wood were delivered and 3895 used, with 941 tons in stock at the end of the year. Expenditure on the then tramline was £183, and it represented an asset of £4581. The 1913 report shows 2844 tons of firewood delivered, and 3531 consumed.

At this time tenders were called for 2000 or 4000 tons of firewood, delivered to the terminus of the then tramline or the pumping station. The minutes of the Finance and Works Committee of the Board at the time of calling these tenders mention that: the Board's appliances at the time included the traction engine, the locomotive, aerial tramway and trucks used by the contractor; the stock of timber at the station was 900 tons; the maximum load on the aerial tramway was now 30 cwt; the aerial tramway was worked by the Board's men on the pumping station side; the wood was to be six feet long and between four and twelve inches in diameter, and the contractor was to supply all material, and keep the machinery in good order. From the quantity called for, it would seem that at this stage, tenders were called at least annually. If the capacity of the aerial tramway was then only 30cwt per trip, for timber six feet long, the bundle of timber would have been only about 2½ft square, and for tramway wagons of 2½ tons capacity, two hauls across the river would have been necessary per wagon. If wagons and their loads had been brought across the tramway together when it was installed, this represents a considerable reduction in its allowed load.

In 1913, two members of the Finance and Works Committee met Mr CE Quinlan, the QR District (Civil) Engineer in Townsville about the intended new line. It would be necessary, they learned, to have it surveyed. The Board was to ask the QR for an efficient man to supervise the laying of the line, and for 40 lbs rails for four miles. The QR surveyor CAS Andrews surveyed the line, and the Board hoped to engage him to construct it. Tenders were called for 190 tons of 30lbs rails and fittings delivered to Charters Towers, and 8000 sleepers. These were sufficient for 1.34 miles and (at an assumed spacing of 30 inches) 3.8 miles respectively. Their quantity was probably connected to the rails and sleepers in the existing line which could be reused, probably all the heavier rails but only some sleepers.

The Board resolved to have the line laid by day work, and requested a loan to have Andrews' plan put into effect. It decided to re-invite tenders for sleepers, this time for 10,000, at any point on the existing or new line, five feet long, but within depths and widths of 4½ to 5½ inches, and 8 to 11 inches, respectively. A tender was accepted in August.

The District Engineer of the QR was then to specify the rail requirement. He was advised that the line was to be able to carry a locomotive of six tons and trucks of 2½ tons. Surveyor Andrews was to draw up the specification (presumably for all other quantities) while the District Engineer was to give the certificate (ie for satisfactory completion). Ganger Welsh was to be lent by the QR to manage the laying, and was to start in July. Earthworks were to be carried out by day labour, and to commence in July.

The QR could not lend plant, so quotations were to be obtained for tools. The Queensland Agent-General in London was to obtain the rails. At this time, all new QR lines were built by day labour, under the direction of QR civil engineers, using QR plant. Quinlan had earlier reported on the civil engineering of A & D Munro's 2ft 6ins gauge tramway at Perseverence, on the Crows Nest branch near Toowoomba, in 1904.⁷

Andrews's plans and specifications were approved by the government and a loan for the extension authorised. Construction of the formation by day labour commenced on 31 July. By 15 October 1913, the route had been cleared of timber and grass chipped, ready for the Board's traction engine (normally used by the wood contractor) to plough "side grips" (sic) on 20 October. Sleepers were to be adzed. The work was completed as far as it could without the new rails, and the men were dismissed on 14 November; the rails being expected in January. Early in 1914, some cut firewood was stacked along the route of the new line.

In January 1914, quotations were to be obtained for carting rails from Macrossan, using the traction engine. Macrossan is a station on the GNR of the QR, 13 miles east of Charters Towers, where the GNR crosses the Burdekin, and on the east side. (On the 1942 military map of the area, the only road into the area being cut for timber for the Board ran-from the east side of the Burdekin, near Macrossan, on the Townsville to Charters Towers road. It was an earth track, largely unfenced, and ran by the terminus of the line being built in 1914, and beyond.) Had the rails been carted from Charters Towers, it would have been necessary to move them across the river on the aerial tramway. The old line, rails, bridges and fit sleepers, were to be removed by the Board's Resident Engineer, Mr Matthews, presumably also by day labour. In March, the men working on the new tramline requested 11 shillings per day. This was refused, and work was suspended.

At this point, chronologically, the extant records of the Board and its Committees give out. The following has been pieced together from the following sources: newspaper reports of meetings of the Board and later the City Council, a few Annual Reports, and some personal memoirs. There is a considerable gap in the information available on the water undertaking from 1916 until 1940.

In July 1914 rails had been laid for 6 miles 15 chains and by the following month to the terminus, after which some fixing and packing work was finalised. This third line was never extended beyond this 1914 terminus - the 1942 military map (see page 4) shows the line, by then out of use, of that length. By September, the line was lifted and packed for 41/2 miles. Consideration was to be given to rails on offer from the Brilliant and St George, a local gold mine. In October, the Board heard that two cuttings at the eighteen mile needed widening, and two culverts needed lengthening, also that the locomotive could haul eleven trucks per trip, compared with four on the old line (presumably the "eighteen mile" was measured from Charters Towers or Macrossan). In July the steam winch for the aerial tramway was delivered, presumably an improved means of powering that tramway. More ballast was being put on the line and packed, and an embankment over a culvert raised and widened.

The old tramline was torn up, the sleepers used for fuel and the rails used on the new line. The old line was on the books at \pounds 4816 including plant and rolling stock. The engineer was to value the old line, and the balance (ie book value less actual value) was to be written off. In August and September, the meetings heard that the gauge of the rails on the turntables was being altered to suit the firewood trucks, that the turntable for the aerial tramway was complete on the south side and rails laid into the yard, while the turntable on the north side was almost complete. From this it might be judged that improvements were being introduced at both the North Bank Depot and at the pumping station with the building of the new tramline.

1915 Onwards

In 1915 the carrying rope of the aerial tramway was replaced, the replacement obtained from Mills United mine. The tramway was reported to have been in good order, but the (unspecified) siding to have not yet been put in. Repairs and renewals were made to the locomotive. In 1916 the traction engine and two wagons were sold. In September 1917, after work on it, the locomotive was reported as working really well, but the new piston rings were yet to be fitted. Two men were employed cutting and chipping grass on the tramline. Channel steel for new trucks was reported delivered. The 1½ inches carrying rope for the aerial tramway was ready to take off the reel (this is a considerable reduction in the diameter of this rope from the 2½ ins diameter originally installed). From these reports of replacement of that rope in both 1915 and 1916, ropes seem to have had a short life.

The Charters Towers City Council took over the debts of the Water Board by Order in Council of 3 October 1918. In 1931, the Water Authorities Act was amended on behalf of the Charters Towers Authority to allow incorporation by, and transfer of the liabilities and responsibilities of the Board to the Local Authority, the City Council (part of the water supply area had included part of the adjacent Shire of Queenton, as can be seen from the 1906 Act; presumably that part of the Shire was by 1931 part of the City). A further amendment to the Act in 1937 allowed complete absorption of the Water Authority into Local Authorities.

At its January 1940 meeting, the Council considered tenders for firewood supply, alternatively delivered stacked at the head of the tramline and reloaded on to trucks (presumably on demand) or stacked at the pumping station. The tenderers required higher prices for the former, indicating that supply to the tramline could only be made from distant sites, as well as the extra work of reloading on to trucks. It was remarked that there was any amount of timber on the city side and that the tramline should have been built on that side. From this it can be concluded that timber had been cut out in the area around the tramway; also that timber had regrown in the area around the city since the mines closed. Road vehicles had developed considerably, and were able to haul wood from almost anywhere. Whether this was from the north side of the river, so that the aerial tramway was still used, or from elsewhere, even from areas where trees had regrown in the areas cut out earlier for fuel for the mines, is not known, but the aerial tramway survived. In any case, if hauls by motor trucks were made over earth tracks to the tramway, they were possible over similar tracks the few extra miles to the North Bank Depot and the aerial tramway. The hauling of wood to the tramway could not occur when the tracks were too wet for trucks.

In March 1940 it was reported that the rope carrying a half-inch pipe to the north side of the river had been caught by the flood before it could be lifted. This indicates how water was supplied to the North Bank Depot for the locomotive and the cutters' camps, ie through a small diameter pipe suspended from a rope across the river (it would be interesting to know how, considering the distance of 1300 feet). It was further reported that the locomotive required an overhaul, which would be attended to when firewood hauling was completed, and that the line would require attention when the weather took up. From this it would appear that stocks of wood along the line were being hauled in and that there was no idea of doing away with the tramway.

In July the Board heard that the hauling rope on the aerial tramway was carried away and fell across the river; the engineer intended to splice in a section on hand. In September, the Board was told that there was only two weeks supply of firewood at the station; and in October that the railway line in the wood yard had been repaired. It was also revealed that the intention when buying firewood was that the resulting stock of wood be half dry and half green.

In the first half of 1941, the Council heard at various meetings that the tramline needed attention, that during the period it was out of commission the track became overgrown, that white ants would have damaged the sleepers, that a new %inch hauling rope would be needed for the aerial tramway, and that the pipe carried across the river by a rope for the locomotive water supply needed reconditioning. In June the engineer hoped to get on with the "encasement" of the working parts of the locomotive, so it could be taken out on the tramline to bring in the firewood at the end of the line.

In July the engineer reported having been out on the tramline and brought in the balance of the firewood left there. The tramline was reported as having been well covered with grass, and that there were bad sags on account of perished sleepers.

End of the Tramline

This use in July 1941 is the last known operation of the locomotive and tramline. By September, the engineer had inspected four miles of the line, a considerable proportion of which had been cleared by fire, some sleepers being burned out. As firewood was becoming scarce on the south side of the river, the engineer told the Council that he thought it would be wise to secure a $\frac{1}{2}$ ins haulage rope for the aerial tramway, presumably a replacement. That was ordered in October. At the end of the year, the Council heard that wood was now so expensive that coal, previously too expensive, might become economic as fuel for the pumping station. Some of the wood was so green that maintaining steam was difficult. The proposal of the local electricity company to electrify the pumping was regarded favourably, especially as tramway extensions were expensive.

There was considerable military encampment near Charters Towers from 1942, which added to the demand for water, as did the large scale growing of vegetables. It was difficult to obtain men to cut firewood and fire the boilers. The manpower authorities refused to release men for these duties, nor would the Army provide guards for the weir, pumping station or reservoir. In July, the military came to the rescue of the operation in one small respect, by carting coal from the railway station to the pumping station in trucks. A tender was accepted, in October, for the supply of electric pumps. By November, about two-thirds of the fuel requirement was met by coke obtained from the local gas works. Council was advised that coal cost 24s 8d per ton at Collinsville, and rail freight to Charters Towers cost a further 36s 2d per ton.

The newspaper report of that December meeting mentions that the meeting was told that satisfactory arrangements had been made about reimbursement for the tramway ropes. The meaning of that is not clear, but in December 1943, it was reported to the Council that the steel wire rope across the river had been taken down, and that the haulage rope and the rope carrying the water supply were to follow. Together, these references seem to apply to what was told to the author by Mr PG Matthews in 1957, that flying under the steel rope of the aerial tramway had become a regular sport for those associated with air force training in the area, and that the rope was struck by a plane in a fatal accident (date unknown).

In January 1943 considerable cut firewood was lying in the bush on account of the wet weather. By May a sawing machine was in use in supplying firewood. In June pumping was suspended at times on account of shortage of firewood. There was plenty of firewood if the landowners allowed it to be cut (it was then being brought from about 13 miles away). The main problem was shortage of manpower. Overhead gear was installed near the boilers to allow larger pieces of firewood to be brought in. Some coal was used, and by July there were about 220 tons of it at the pumping station. The Council learned in January that the Ministry of Munitions had given permission (under the prevailing wartime controls) for the manufacture of the electric pumping plant.

In March 1944 the Council heard that two boilers were working on coal and coke and one on firewood. The new electric pumps arrived and were to be tested in May. In July it was reported that the Water Committee of the Council had gone into the tramline question, given that it was intended that all pumping be electric. All bright parts of the locomotive were given a coat of tallow and white lead and rough repairs were carried out to protect it from the weather. As some sugar mills were short of locomotives, some Aldermen (members of the City Council) thought they might receive enquiries for its purchase, but it was pointed out that the gauge at most mills was two feet whereas the gauge of the Council's locomotive was 2ft 8½ins. These remarks demonstrate that there was no intention of using the tramway again.

During 1945, 1946 and 1947, most pumping was powered by electricity, but steam had to be used on many occasions during the night, and at other times when there were failures and heavy repairs at the generating station. In April 1946 flooding at record levels occurred. Among other damage, the winch house for the aerial tramway was wrecked. About half the stocks of firewood, 12 to 15 tons of coke and 25 to 30 tons of coal were washed away. Contracts were still let for supplies of firewood. In February 1948 the Commissioner for Public Lands advised that straight wood with better uses was no longer to be cut as firewood, although crooked wood, disliked at the pumping station, could still be cut for that use. This restriction presumably did not apply on freehold land. In November 1947 and January 1948, steam operation was almost continuous, although not providing the only power.

The End of Steam Pumping

From March 1948 the supply of electricity was continuous and the supply of firewood was discontinued. When all staff holidays were complete the stocks of firewood were to be burned in the boilers. By October however there were again restrictions on electricity supply and the boilers were being kept warm in case steam power was required. Further supplies of firewood were again sought. Intermittent use of steam power, with consequential need to let contracts to supply firewood, continued until 1957, although the use of steam seems to have declined year by year. From reports of Council meetings in the Northern Miner, it seems that the last use of the steam plant occurred in the winter of 1957. The need to use steam for so long postwar was partly the result of inadequate electric pumping capacity as water use expanded until an additional electric pump was installed, and partly lack of generating capacity locally. The latter was not a problem if it did not last long, because water was stored in a large reservoir in the city, but it was indeed a problem if prolonged. The local electricity supply company was taken over by the Townsville Regional Electricity Board in 1956 (ie the company was nationalised), and an overland transmission line supplying electricity from the steam power station in Townsville was opened in September 1957. It was intended in 1958 that suitable firewood on hand be used as bearers in work on the pipeline to the city, and the rest be sold for use as domestic fuel.

Disposal of Rails and Locomotive

In July 1948 the Queensland Main Roads Commission offered the Council £1000 for the tramway rails, the small locomotive and other materials. The intended use was not given. The Council wanted f_{1500} . The line and locomotive were indeed sold in 1948 to the Main Roads Commission. They were probably removed by road along the track to Macrossan QR station. The rails were used during the following decade to reinforce the concrete in the piers of the new Inkerman rail and road bridge over the Burdekin River near Home Hill. The locomotive was taken to the bridge site, but the Commission sold it to JA Casey of North Mackay in 1956.8 That gentleman could not be traced a few years later. The locomotive, of unusual gauge, and difficult to convert to a narrower gauge on account of its inside frames, did not appear again. Its relatively low power also told against any idea of altering it drastically to convert it to the two feet gauge. It was presumably sold on for scrap.



The Orenstein and Koppel locomotive after its sale to the Main Roads Commission, which had this photograph taken. It is probably near the new Inkerman bridge over the Burdekin River between Ayr and Home Hill, for there were no large buildings, such as that in the background, near the tramway itself. Photo: JW Knowles collection

It is not clear why the Commission bought the locomotive. Perhaps its engineers had the idea of laying a tramway to assist in the construction of the bridge. In any case the locomotive probably cost next to nothing extra in the amount the Commission paid the Council.

Some 60 sq miles on the north side of the river had been cleared of timber to feed the boilers of the pumping station, almost all of which came over the three routes of the tramway after haulage to it by teams or traction engine. There is no reference in any of the sources consulted that the tramline and aerial tramway were used to supply firewood for others, eg for the mines, treatment plants or local industry. The Board or Council usually had problems enough supplying the pumping station. Firewood held in stock was no doubt sold when it was eventually decided that there was no need to retain the steam plant even on standby.

Remains

At the end of 1957 a considerable quantity of firewood was stacked near the station, with some on the wagons mentioned. These were on three holding tracks, which led to a turntable, from which led the track which ran under the aerial tramway (then no longer in existence), and another to the boilers. Also visible was the steam engine and winch for the aerial tramway.

At the same date, the tower and straining post for the aerial tramway and the site of the depot on the north side could be seen. Although all rails had been removed, the route of the main line and other tracks could be traced, as well as the



The winding plant for the aerial tramway on the pumping station side of the river with the chimney for the station boilers, 31 December 1957. This plant was housed in a shed until the shed was demolished in a flood in 1946. Photo: JW Knowles



The turntable under the route of the former aerial tramway on the pumping station side of the river, with the dry bed of the Burdekin River in the background, 31 December 1957. Photo: JW Knowles



Tracks leading from the turntable, on the side away from the river, 31 December 1957. Photo: JW Knowles



Track layouts at the North Bank Depot and at the Pumping Station, as they appeared in 1957.

remains of a shed. The main line on approach from the north turned through about 110 degrees to a dead end (A) parallel to the river bank, and joined a line to the bank as it did so. There was an ash/servicing pit just before the point, and a turntable on the line to the bank, from which led three short deadends. Loads were presumably lifted on to the aerial tramway from about the location of the turntable. Beyond the deadend directly ahead of the turntable could be traced the cutting for the track down the river bank to the former low level bridge.

There was no obvious loop for the engine to run around the loaded trucks, to push them to the point under the aerial tramway, and/or to haul the empties out again. As there is a photograph of a loaded tram being hauled, it would seem that the empties were pushed out to the end of the line, and hauled back. It also seems that on arrival of a loaded tram at the North Bank Depot, the locomotive took the point and the trucks were manually moved towards the turntable, and that as the timber from each truck was hoisted on to the aerial tramway, that truck was pushed back and on to the dead end 'A' in front of the locomotive. Presumably dead end 'A' was a relic of one of the earlier routes and was probably also used to store empties out of use.

The route north could be easily traced, with embankments and at least one culvert in the first mile, and remains of most sleepers.

In 1974, Gerry Verhoeven found the northern end of the last line. There was only one point in the layout there, to a dead end siding. This gives support to the idea that trams were pushed in one direction. The remains of some machinery could be seen, probably that used to cut the tree timber to the length required by the Board/Council, perhaps also used in maintenance of the locomotive and/or traction engine. He also advised that the support for the aerial tramway on the north side still existed then, that he found five pipe and one concrete culverts still in place under the roadbed of the first 1½ miles from the North Bank Depot, and that there were several piles of fishplates marked "30 lbs Q BA Steel 1913". As the rails were to be used for reinforcing, the fishplates, or most of them, were of no use and were left on site.

As late as 1961, the steam plant remained operable, for use in emergency. In 1962 the then engineer advised the Council that the steam plant would never be used again, and recommended that the tramlines and trolleys at the pumping station be sold or scrapped. In 1975 a new pumping station of higher capacity was built closer to the weir.⁹ It was then proposed to preserve what remained of the steam plant.



The tower and anchor pin for the carrying rope of the aerial tramway on the north side of the Burdekin River, 31 December 1957. Photo: JW Knowles

References and Acknowledgements

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2. Board Minutes

3. 1898 Annual Report

4. North Queensland Register 11 October 1980, p 20, about Rose Pryor, daughter of Jack Dunn, wood supply contractor and operator of the tramway in the 1930s.

5. 1900 Annual Report

6. North Queensland Register 11 October 1980, p 20

7. QR Secretary's file 36/1689.

8. Advice from the Main Roads Commission to the ARHS Queensland Division (about 1958).

9. North Queensland Register 7th June

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Minute Book from 1894 (to 1914) (WBD 11A/D1)

Finance and Works Committee Reports, 1887 to 1893, and 1894 to 1914 (both WBD 11A/3),

P G Matthews, the pumping station engineer from 1927 until 1959.

J G West, the Council Water Officer in 2000, who extracted reports of the meetings of the Board and Council from the *Northern Miner*.

Peter Lukey, who introduced me to Mr West's archive, and commented on my earlier attempts to record this history.

Gerry Verhoeven.

Mr Moore becomes Miss Twiggy (Lake Macquarie Light Railway)

by John Shoebridge and Grahame Swanson

Introduction

This brief narrative covers the reconstruction of a derelict Malcolm Moore chassis into a attractive and useful shunting locomotive for a private steam railway.

The Background

Although pursuing a career in aviation spanning 39 years, Grahame Swanson's predominant interest has always been steam locomotives. He regularly participates in crewing preserved steam and has over the years constructed three impressive 7½ in gauge steam models. Not long ago he felt it was time for something a little larger. Thus commenced the Lake Macquarie Light Railway.

A suitable property was acquired on Lake Macquarie at Toronto (an outer suburb of Newcastle NSW). It comprised some 5 hectares of easily graded rural land isolated from suburbia yet close to everything. A modest farm cottage was renovated and the more important large workshop followed, then pencil was put to paper and a small but interesting rail track route was planned and pegged. A front-end loader made short work of the track bed, grading and embankments. Sleepers and rail came at great expense. (By the way, does anyone have some 2ft gauge crossings to spare in 60 lb rail?)

In November 2002, not long after the project was in place, all was threatened by a massive bushfire. The Skycrane helicopter water bomber saved the house and workshop but a barn, then used to store numerous historic items of steam and the bygone era, as well as the total perimeter fence, succumbed to the fire storm.

The Requirement

It was always intended that this project was for the operation of steam engines. To this end two 610 mm gauge Perry locomotives were acquired from a failed tourist project in the Megalong Valley, west of Sydney NSW. These were delivered in August 2001 (See Report in LR 161, Oct 2001).

An engine shed was erected, a pit constructed and some track laid and, within three months, work on the restoration



The railway's ubiquitous front-end loader has just lifted the Holden 186 motor in place on the locomotive frame. Photo: John Shoebridge



The locomotive frame as inspected at the Illawarra Light Railway. The extensions for the proposed battery-electric conversion are clearly evident. Photo: John Shoebridge

of the first locomotive was under way. It is proposed that this will be the subject of a later article.

Once the job had commenced, it was found necessary to move the locomotive from the shed and back. Even with pinch bars, a deal of manual effort was required and it soon became apparent that there had to be an easier way.

Options were assessed and the search commenced for a suitable battery or internal combustion powered machine. A phone call and subsequent visit to the Illawarra Light Railway revealed that they had a wheeled frame for which they had no short-term prospect of use or restoration. A deal was negotiated and the remains arrived on site in April 2002.

The Machine

It would appear this is one of 94 four-wheeled petrol locomotives manufactured by Malcolm Moore from 1943 onwards for war service in the Pacific. They were numbered 1001 to 1094 and originally fitted with a V8 Ford petrol engine and manual gear box. After the war many were sold at auction to sugar mills and industrial concerns.(Our thanks to John Browning for this background information.)

This machine was eventually acquired by Hartley Brightburn Coal Company who operated several small coal mines near Lithgow NSW. Nothing is known of its service here or even if it was indeed used underground *(the authors would be pleased to receive any information in this regard)* but there are reports that it was (or was to be) converted to battery-electric power.

By 1970 it was derelict at the tunnel mouth of the disused Hartley Main No 2 Colliery. Some time later it was rescued by members of the Illawarra Light Railway Museum and taken to Albion Park near Port Kembla NSW. It is understood that the intention there also was to fit an electric motor and battery and to this end extensions were welded to the frames.

Restoration: Frames/Wheels/Brakes

On arrival on site, the 'foreign' extensions were cut off and the weld ground smooth. The frames were then steam cleaned and set up on a level surface and carefully checked for distortion. At this point an examination was made to see if by chance a serial or maker's number had survived. No luck with this - but then there was no distortion either.

The brake hangers were reworked and brake shoe holders were manufactured to accommodate standard main line fibre shoes; the assembly was then re-installed. Power brakes were considered essential and now the brakes are applied by a hydraulic cylinder, energised by an automotive power-steering pump. The cylinder



The end result. 'Miss Twiggy' in all her glory, with a test load of sleepers.

Photo: John Shoebridge

is located between the brake beams (and released by a spring) with a single-lever control in the cab. There is also a screwoperated handbrake, from an X200 class NSWGR shunter, for emergency and parking use.

Finally the frames and wheels were painted.

Installation: Engine/Transmission

The power unit utilised is an unmodified Holden 186, 6-cylinder automotive car engine, with the standard radiator and oil cooler retained. Similarly the electrics (starter, alternator and regulator) are unmodified. A steel box to carry the battery was made up and bolted beside the engine for easy access. The engine is supported on a fabricated sub-frame using standard rubber mounts.

The exhaust (with a suitable silencer) has been redirected up a vertical pipe beside the cab. A fuel tank was fabricated to make use of the available space and has a capacity of 40 litres.

The primary transmission is by means of the 'Power Glide' automatic transmission, which was fitted on the motor when acquired. It is coupled directly to a re-worked panel-van differential to provide a right-angled reduction drive. Secondary transmission is by means of chain and sprockets salvaged from a concrete agitator. One chain connects the differential output shaft to the rear axle, and a second couples the wheels.

Many locomotive conversions utilising automotive transmissions have been unable to operate at the same speed in either direction. In this case Grahame has overcome the problem by adopting a suitable sprocket ratio for the secondary transmission and restricting the automatic gearbox output to the 'first' and 'reverse' giving an overall ratio of 1:1.82. These are selected by a single lever with access to the other gears barred by a gate. So far the radiator fan hasprovided sufficient air flow for reverse running.

Construction: Cab/Couplers etc.

The cab has been riveted in the traditional method with sheet steel over a frame of 45mm angle iron. It is designed so as to allow the tallest operator to stand upright. The bonnet has been hinged to allow forward tilting for major servicing and the front grill can be opened for daily checking of water and oil etc. A front headlight was fitted together with dual air horns, all adding to the finished appearance.

The throttle and gear selector are located on a central pedestal along with a cluster of warning lights and the usual engine gauges. An additional gauge monitors the brake pressure. A custom-built stool, upholstered with an original NSWGR seat swab from a motor trike, completes the interior fit-out.

Link and Pin couplings were fitted, matching the coupling system of the Perry locomotives and the two cane wagons that are currently used for track work and construction. So far it has not been deemed necessary to fit sanding gear.

Trials/Painting

Once the above jobs were complete, trials were run on the short length of track that was at that time available. All went as planned and then drab old 'Malcolm' went to the paint shop for the cosmetician to apply the final touches, emerging as the gorgeous 'Miss Twiggy'.

Conclusion

The end result of all the hard work is an attractive and useful young lady. The final gearing and power train has provided a locomotive that can pull the 16 tonne Perry, after the initial roll, at idle. The loco has proven to be a valuable asset and a load of fun as well.

Visitors are welcome to the railway by appointment. It is essential to telephone first :- 02 49591054.



Like a tropical Stonehenge, the site of the former Mowbray River bridge cannot easily be missed as, decades after the last train passed over them, these concrete piers remain standing firm against the elements. Photo: Peter Lukey

For reproduction, please contact the Society

The Mossman Mowbray branch to Ballyhooley

by Mike McCarthy

A visit to Port Douglas during November 2001 provided the opportunity to explore the Mossman Mill tramway system. Despite the heat, great fun was had over a week travelling along side roads with John Kerr's *Northern Outpost*, Glenville Pike's *Port of Promise* and 1:50,000 maps in hand exploring the network's nooks and crannies. A trip following the Mowbray branch proved especially interesting in that I was able to trace much of the now long dismantled final 2.25 kms of the branch.

The tramway now terminates at what I believe was Andreassen's Siding alongside the Mowbray River Road about 200 metres from the Captain Cook Highway; the actual end of track being half hidden in the scrub at the south end of a large concrete culvert just before a caravan park.

The old formation can be readily traced through the park but has been built over in sections. On the south side it disappears into a cane field but a single strand telephone cable strung along the same route marks its alignment across Mowbray River Road and through another cane-field to the river. Some short lengths of discarded rail can found amongst the trees on the riverbank (watch out for the snakes!!).

The very substantial concrete trestles of the imposing Mowbray River tramway bridge, minus its decking, still march their way across the river to where Robbin's Siding was once located. In its day the bridge would have been the equal of any other in the system in terms of its size and structure. The site of Robbin's Siding is on private property and was not inspected.

A kilometre further, two bearer logs constitute the remains of the tram bridge over a small stream. They can be found a short distance from Spring Creek Road. The rails that once travelled across this bridge are still there but in a much misshapen form, and continue through the location of Hockley Loop, although all point work and the siding itself have long been removed. At one time the Council ran a weekly mixed train to this location (no doubt with "Faugh-a-Ballagh" in charge). No sign of the former shelter shed could be found.

After crossing Spring Creek Road the rails have been removed but the formation is clearly defined in the scrub above the road with the odd culvert still in evidence. The tramway followed quite a scenic route through this section and at places was a couple of metres above the road as it twisted its way around the end of a spur. A small Fowler chuffing through those trees pulling four-wheeled goods trucks and a passenger carriage or two must have presented a very pretty sight.

The rails that carried Reynolds Siding across The Bump Road lie discarded on the roadside. Beyond this point the road travels through a cutting, which looks suspiciously like it had a former, more interesting purpose, before crossing the bridge that, in earlier times, also carried the tramway to reach the old terminus of the line at Ballyhooley. A small mound, running parallel with the fence line, is all that remains here.

All in all it is a fascinating section of abandoned formation that is quite evocative of earlier times and well worth a visit.

Editor's Note: For an account of a typical run on the Mowbray line in the early 1950s, see "An evening run on the Mossman Central" by EM (Mike) Loveday, in Light Railways 157, February 2002.



FAUGH-A-BALLAGH (which means 'clear the way' in Gaelic) was the first locomotive acquired by the Douglas Shire. Built by John Fowler (8733 of 1901), it was a standard 12-ton 0-6-0T with 8½ in x 12 in cylinders, and arrived at Port Douglas in July 1901, taking over the operation of the Shire's Port Douglas line from Mossman Mill locomotives. The opening of the Mowbray line in 1902 (which was initially worked by the mill), prompted the purchase of a 15½-ton 0-4-4-0T Mallet compound loco from Orenstein & Koppel (943 of 1902), named DOUGLAS, which arrived in January 1903. These two machines, with occasional assistance from a mill loco, proved adequate for the Shire's needs until 1949, when a 16-ton Perry 0-4-2T (7650/49/1 of 1949) RD REX arrived to take the place of the ageing DOUGLAS. However, RD REX never hauled the mixed train down the Mowbray branch to Ballyhooley, for not only had the passenger service been withdrawn the year before it was built, but the Perry's axle load was considered too great for the Mowbray River bridge. Photo: Rural History Centre, University of Reading



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EDITORIAL

Thanks to all those who provide news. This time, the news section is shorter than usual, due to pressure of work on your editor, so some news has been held over. Don't forget, we are always looking for photographs for the Industrial News section.

NEW SOUTH WALES

BHP STEEL LTD, Port Kembla

(see LR 172 p.19)

1435mm gauge

The company is due to receive a new name by the end of June 2004 as a consequence of its demerger from BHP Billiton. The historically-minded might like to see a reversion to Australian Iron & Steel. It has been reported that BHP is intending to put out its coal train haulage from Elouera and Dendrobium collieries to tender, bringing an end to direct company operation of these trains. Chris Stratton 7/03, 8/03

PASMINCO, Cockle Creek

(see LR 171 p.18)

1435mm gauge

The bogies only of Goninan B-B DE SC16 (019 of 1964) were at Goninan's when closure of the plant was announced. The order was cancelled and they were returned to Cockle Creek in dismantled form. It is understood that this locomotive may be going to Dorrigo. John Cleverdon 8/03 (Locoshed internet group)

WALTER CONSTRUCTION GROUP, Metro Grid Tunnel, Sydney

(see LR 172 p.19) 762mm gauge

The tunnel mentioned in LR 172 is part of a powerlines project connecting Picnic Point with Haymarket. A 3km long 3.5 metre diameter tunnel has been driven from Sydney Park, Alexandria, to Wattle Street, Ultimo, by a tunnel boring machine (TBM) using narrow gauge rail equipment, with the remaining 300m driven by a roadheader. This project is nearing completion with the tunnel

boring machine having been removed from the tunnel in early August. Two Clayton 4wDH diesel locomotives on hire from Mining Equipment Inc, Durango, Colorado, have been in use. One was noted on the surface at Sydney Park on 12 August carrying the number ME3935. The other was underground. Because these two locomotives did not have enough combined power to handle the removal of the TBM, another was obtained to assist. This arrived on 28 July. This was EM Baldwin 4wDH 116-210 (3229.? of 1969/70), from Barlin Metals, Wingfield, SA (see LR 171 p.21) Ray Graf 7/03; 8/03; Metrogrid.

QUEENSLAND

BUNDABERG SUGAR LTD, South Johnstone Mill

(see LR 172 p.21)

610mm gauge

In early July, E.M.Baldwin B-B DH 24 (5477.1 8.74 of 1974) was seen in use in the Silkwood area, so if it was dismantled at Goondi on 2 June (see last issue), it was returned to service in quick order. Neville Conder 8/03 (Canetrains internet group)

LOCOMOTIVE, ROLLING STOCK & EQUIPMENT MANUFACTURERS

SAN ENGINEERING AND LOCOMOTIVE CO LTD, Bangalore, India

This company claims to supply battery locomotives to Gemco (George Moss) designs but no further details are known. Gemco is believed to have ceased locomotive building in Western Australia in about 1995. Phil Rickard 7/03; Editor

EQUIPMENT & MACHINERY SALES, Brisbane 1067mm gauge

Recently advertised on the company's website is a Motor Rail 'Simplex' 5 ton 4wDM locomotive priced at \$4850. This clearly must be 11305 of 1965, previously owned by Hornibrook Construction, Brisbane (see LRN 17 p.5). However, recent enquiries of Baulderstone Hornibrook indicated they have no knowledge of this locomotive. Any other information would be welcome. http://www.em-sales.com.au via Editor



Top: Walter Construction's E.M.Baldwin 762mm gauge 4wDH 3229.? of 1969/70, newly arrived from South Australia, awaits commissioning for the Metro Grid Tunnel project in Sydney Park, 29 July 2003. Photo: Ray Graf **Above:** Mackay Sugar's EM Baldwin B-B DH 7 NORTH ETON (6780.1 8.76 of 1976) on a train of ballast hoppers on Pleystowe's old Habana line near The Summit, 10 June 2003. Photo: Carl Millington

FIJI SUGAR 2002

Neville Conder visited Fiji in August 2002 and took a range of photographs on the Lautoka and Rarawai mill systems. These shots show the variety of Fiji's cane railways.

Clockwise from right: Not much cane is harvested chopped in Fiji but here EM Baldwin 16 (5058.1 5.73 of 1973) hauls a rake of empty bins near Lautoka Mill. Lautoka's Hunslet 0-4-0DH 17 (9267 of 1986) heads south from the mill with labourers and empty trucks to salvage crippled trucks and cane from derailments. The task for Lautoka's breakdown crew - retrieving spilt cane and trucks from a creek bed near Cuvu. Lautoka's EM Baldwin 0-6-0DH 16 (5058.1 5.73 of 1973) and Hunslet 0-6-0DH 18 (9285 of 1987) pass at Vuda Point. Lautoka's Baguley-Drewry 0-6-0DH 15 (3662 of 1971) heads towards the mill with full trucks near Nadi. Simplex Mechanical Handling U Series 4wDH 14 (122U136 of 1973) shunts around the Lautoka mill yard. Showing the contrasting livery of Rarawai Mill, Clyde Model DHI-71 27 (56-113 of 1956), ex Isis Mill, at Tavua















LIGHT RAILWAYS 173 OCTOBER 2003

Industrial NEWS Railway

EROC PTY LTD,

Laverack Avenue, Eagle Farm, Brisbane (see LR 163 p.20) 610mm gauge

The two Costain 1992-built 4wDH locomotives stored here for many years have reportedly been scrapped.

Eroc Pty Ltd via Editor 7/03

ISIS CENTRAL SUGAR MILL CO LTD

(see LR 172 p.22) 610mm gauge

Walkers B-B DH ISIS No.3 (600 of 1968 rebuilt 1994) was involved in a level crossing accident on the Bruce Highway on 17 July. A semi-trailer was struck by the locomotive after it ignored flashing lights to overtake another vehicle waiting at the crossing. Apparently the driver had seen one train clear the crossing and did not realise that another was following.

David Mewes 7/03 (Canetrains internet group)

MACKAY SUGAR CO-OPERATIVE ASSOCIATION LTD

(see LR 172 p.22) 610mm gauge

Eimco B-B DH 36 FARLEIGH (Eimco L254 of 1990) has been transferred from Farleigh to Marian Mill, apparently in exchange for Walkers B-B DH 44 WALKERSTON (672 of 1971 rebuilt Pleystowe 1994).

Ex-QR 3ft 6ins gauge Walkers B-B DH DH25 (607 of 1969), in storage at Racecourse Mill since 1995, has now been moved to the North Eton storage site to join all the other ex-government railway units awaiting rebuilding. Tony Wells 7/03

PROSERPINE CO-OPERATIVE SUGAR MILLING ASSOCIATION LTD

(see LR 167 p.22)

610mm gauge

The season so far has had its fair share of railway incidents at a variety of mills, but the most serious seems to have been a head-on collision between two E.M.Baldwin B-B DH locomotives at Proserpine Mill at about 8.45am on 25 July. The accident took place on the Waterson line to the west of the mill, about 400 metres north of The Pound siding. It happened on a wide sweeping curve beside the river with a canefield on the inside of the curve. Number 9 (6626.1 7.76 of 1976) was heading west with empties (cab leading) and number 10 (9816.1 10.81 of 1981) was returning to the mill with fulls (long hood leading). From the position that the locomotives came to rest, it appears that 10 climbed over the top 9, destroying everything above the frame. The cab of 9 was displaced as a complete unit and ended up on the ground at the opposite end of the frame, relatively unscathed. Surprisingly, only one full bin was destroyed, and 11 empties were damaged.



Top: The scene of devastation at Proserpine Mill on 25 July 2003. E.M.Baldwin B-B DH 10 (9816.1 10.81 of 1981) lies almost complete at an angle in front of the crane. The chassis of E.M.Baldwin B-B DH 9 (6626.1 7.76 of 1976) lies in front of the derailed bins, while the superstructure and cab are strewn in a heap at the side of the track. Photo: David Rowe **Centre:** Originally built for mining use at Coalcliff Colliery in NSW, this 3ft 6ins gauge EM Baldwin diesel mancar (2130.4 10.67 of 1967) became P3244 on the roster of the Tasmanian Hydro-Electric Commission and was used for tunnelling work in the early 1990s. After lying out of use at Tullah for many years, it was pictured on 5 August 2003 at Burnie before being sold at auction. Photo: Ray Graf **Above:** BHP Billiton's iron-ore haulage operation locomotives are being painted in a new corporate livery. Goninan Co-Co DE 5632 POSEIDON (081 of 1988) was the first to emerge in the new colours at Port Hedland on 13 July 2003. Photo: Richard Montgomery

One crew member was reported injured, and it took more than 12 hours to clear the scene. Both locomotives were seriously damaged, with number 9 reportedly almost destroyed.

Immediate attempts were made to source replacement locomotives on Ioan, and these were obtained from Mackay Sugar. Racecourse Mill's Clyde 0-6-0DH 43 *CHELONA* (59-201 of 1959) arrived at Proserpine Mill on 26 July, together with a second Model DHI-71 0-6-0DH, Farleifg Mill's former Pleystowe locomotive, 4 *HABANA (60-215 of 1960)*. Farleigh Mill's Com-Eng 0-6-0DH 46 BARCO0 (FB4383 of 1965) was also made available, arriving on 30 July.

The damaged locomotives were removed to the Bundaberg Foundry for assessment and repair. The cabs and other body components from both locomotives were in the outside storage area at the Foundry by 11 August and were still there late in the month.

Russell Anderson 7/03; David Rowe 7/03; *Proserpine Guardian* 30/7/03 via Frank Tybislawski (both Locoshed internet group); Lincoln Driver 8/03 (Canetrains internet group); Editor 8/03

TASMANIA

HYDRO-ELECTRIC COMMISSION

(see LR 172 p.23)

1067mm gauge

An auction was conducted by Tasmanian Valuers and Agents at River Road, Wivenhoe, Burnie on 6 and 7 August. Although most of the rail equipment was from Pasminco, Rosebery, the items sold included former Hydro-Electric Commission EM Baldwin Model 6DHS Mk2 personnel carrier P3244 (2130.4 10.67 of 1967). It appears that the unit was purchased for \$900 in order to salvage the engine, which was removed on 7 August, with the remains being marked as destined for scrapping by Metalcorp. Other remaining items of rolling stock from the

HEC was also disposed of including a mobile work platform, three Mulhauser concrete agitators, and two Hagglunds loaders. Ray Graf 8/03

PASMINCO

(see LR 172 p.23)

610mm gauge

The auction mentioned above featured a large quantity of rail equipment from Pasminco's Rosebery Mine. Eight four-wheel Gemco battery locomotives were included as follows:

Lot no	.Loco no.	Туре	Bid	Remarks
279	XL1	5 ton	\$350	Frame with
				Controller only.
200	1	5 top	0039	No batton box
203	1	5 1011	φυυυ	Probably sold
				for scran
320	1	5 5 ton	\$5000	Battery hox 5
020	'	0.0 1011	40000	Sold to WA
				buver?
321	2	5.5 ton	\$5750	Battery box 4.
				Sold to WA
				buyer?
322	1	10 ton	\$3000	Battery box 1.
				Sold to Index.
323	2	10 ton	\$3750	Battery box 12.
				Sold to Index.
324	3	10 ton	\$3000	Battery box 2.
				Removed to
				Devonport by
- 17	10	F .	\$40F0	10/8
517	19	5 ton	\$1050	Battery box 19.
				Probably sold
				IOF SCIAD.

The 5.5 ton locos were the passenger haulage units. They have the traction motor mounted in the cab and were originally supplied with cardan shaft drive to both axles. Number 2 had been converted at Rosebery to chain drive to one axle

These two 10-ton/Gemico 2ft.gauge 4wBE locomotives 1 & 2 were used for ore haulage at Pasminco's Rosebery mine and were designed to operate cab leading only. Here they are seen following the auction at Burnie, on 7 August 2003. Photo: Ray Graf

Industrial NEWS Railway

only, and it is believed that number 1 had been similarly treated. It is believed that they were originally supplied without cabs, with cabs being provided by Elphinstone in Burnie.

The 10 ton units were used for ore haulage. They have large cabs with sliding doors and plenty of glass, and were designed for operation cab leading.

Other equipment sold included about a dozen locomotive battery boxes, five four-wheel passenger cars (including an ambulance car) and about 80 assorted wagons including Granby ore cars and many special purpose vehicles, as well as spare parts for locomotives and rolling stock. Ray Graf 8/03

VICTORIA

McCONNELL-DOWELL CORPORATION LTD, Laverton North

(see LR 172 p.23)

610mm gauge The locomotive numbered 18 that is stored at Laverton North is the Clayton 4wDH B1864E of 1979 which was used on the Katoomba-Lawson-Hazelbrook sewerage tunnel contract in NSW in 1995. Editor 8/03

WESTERN AUSTRALIA

BHP BILLITON

(see LR 171 p.21)

1435mm gauge

The report of locomotives from GE's lease fleet coming to the Pilbara was premature. In fact these locomotives went to Brazil. There are now reports of other reconditioned locomotives being on their way from north America, with two to arrive in early October, but it may be wise to await confirmation on this occasion.

Goninan Co-Co DE 5632 *POSEIDON* (081 of 1988) was the first locomotive to be painted in a new BHP Billiton livery, appearing on 13 July. Colours are a mixture of charcoal, silver and terracotta. Total Corrosion Control has the contract to do the entire fleet, at the rate of one loco a week.

Richard Montgomery 7/03; Scott Jesser 7/03

CORRECTIONS

Ellalong Colliery (LR 172 p.20) - Westfalia Becorit 14526.1 was numbered 2. CSR Ltd, Herbert River (LR 172 p.21) - 600 tons of cane per day came from Victoria's Stone River area to Macknade Mill last year. The remaining 400 tons could have come from anywhere in the Victoria Mill area. Tully Sugar (LR 172 p. 22) - Locomotive 1 is E.M.Baldwin 6/1082.3 2.65. Thanks to Chris Stratton and Chris Hart.

Trip to Tasmania

From the Bacchus Marsh Express 23 May 1914. Submitted by Norm Houghton

Mr PVL Alkemade, Melbourne, writes:- My brother, Mr C Alkemade, wished me to forward to you a copy of 'The Zeehan and Dundas Herald,' which gives an account of a trip I made to the West Coast of Tasmania during the Easter holidays, he also asked me to send you a few particulars regarding the magnitude of the Copper Industry carried on at Queenstown, which may be interesting to your readers.

On reaching Queenstown by rail from Strahan one is struck by the desolation that appears to the eye, everything in the form of vegetable, herb or tree life has disappeared, the mountain sides, valleys, and all land which at one time carried dense forests is now coated with a black peat-like material. The cause of this destruction is the sulphur that is released from the ore when it is being smelted at the smelters, the quantity driven into the air and distributed in every direction as the wind blows amounts to 400 tons per day. This sulphur is allowed to go to waste, on account of the want of market for it. It destroys all growth of any sort where it rests.

Queenstown is an up-to-date inland city, where electric light, sewerage and water is laid on, wide well-made streets, kept in perfect order, and the buildings quite in keeping with our inland cities, and the population maintained solely by the Mount Lyell Copper Company.

The smelters are situated in a valley, south of Queenstown, and the very latest up-to-date system of extracting the copper is there. I was fortunate to see it in full work at night, and to see the molten streams of metal slag, and opening of the furnaces to receive their charges of ore, would make one think they had struck 'Hades' at its worst; but no, one is in the midst of an industry where 2,000 men are employed, producing from the mineral wealth of the mountains in that district, in marketable state, copper, silver, and gold, valued at \pounds 500,000 per annum.

To carry on these great works, science has been put to severe tests to overcome its many difficulties, such as getting rid of the slag, hauling over the mountain, &c.

The slag trouble was a great problem, when you come to think of the quantity, 320,000 tons of ore, with a copper content of only 2½ per cent. going through the smelters per annum. The men were unable to deal with it, but that great mind of the manager (Mr Robert Sticht) came to the rescue. He altered the plant to allow the molten stream to be continuously pouring into an opening, where a strong jet of water struck it, causing complete disintegration, almost to fine glass sand. This sand was carried by the water, and kept in agitation, then lifted 60ft high, and allowed to flow on the dumps by gravitation. The dumps of this slag consist of 12,000,000 tons; so far, no marketable value.

The haulage of ore from the mine to the works, which is from 3 to 4 miles distance, over mountains and valleys, is carried out first from the mine by overhead haulage cable. A bucket, carrying about 5 cubic feet of ore is sent along one of these cables, each bucket being 50ft apart. These buckets are automatically emptied into trucks at the top of the mountain, the trucks are then lowered down the mountain side on a tram line with a grade of 1 in 4, this is all done by cable, worked by electric dynamos, until it reaches the more level land, and is then hauled by small locomotive engines to the smelters.

The power required to generate the electricity for the work

Loaded and empty ore cars flank a Krauss 0-4-0WT and its crew in this early view of the Mt Lyell haulage. Photo: LRRSA Archives

carried on is 2,000 h. power, which is got from a series of Babcock and Wilcox boilers. The fuel consists of 300 tons of wood per 24 hours, costing the company £35 per h. power per annum. As fuel is becoming very scarce, the Mount Lyell Company are now carrying out a very big scheme of generating the power by water. They have the work well in hand, and expect to have it working this year. The work consists of tapping Lake Margaret. This lake is situated in a valley near the top of Mt Sedgwick. It is a fine body of water, with a depth of 160ft.

The Company is building a wooden pipe1^{*}/₄ miles long and 4ft in diameter. The intake of this pipe will be 20ft below the normal level of the lake, giving 60 days full work if the rain should hold off, but there is very little danger of that, as the rainfall at the lake is 13ft. (156 in.) per year! The water is carried along this wooden pipe, with a fall of 32ft. for the full distance, then it flows into pipes 30in. in diameter, down an incline of 3,000ft., with a fall of 1,050ft. These two pipes discharge from a 22in. nozzle into the turbine, giving power equal to 7,000 h.p., at a cost of £5 per h. power per annum against the present of £35.

The whole of the work, such as the building of the concrete powerhouse, rubble stone work, rough carpentering and labouring, is done by Maltese men. These men work through all weathers, their pay sheet shows 95 per cent full time.

The following is from the Zeehan and Dundas 'Herald':-

OUT TO LAKE MARGARET

The visitors last weekend included Mr P. Alkemade of the firm of Alkemade Bros, Hydraulic Lime Works, Bacchus Marsh, Victoria. He arrived on Thursday evening, and the same night went all through the Reduction Works, and being fortunate enough to have Mr. Con. H. Curtain, Inspector of Mines for the district of Lyell, to explain things, he became thoroughly conversant with the smelting process from beginning to end. On the following day, when a West Coast storm was raging at its fiercest, Mr Alkemade and Mr Percy Fowler announced their preparedness to face the journey to Lake Margaret. A trio started off, clad in oilskins and blueys. It was a cold ride on the wood bolsters out to the sawmill. At Clarke's siding, while waiting for the inward rake to pass, the first shower of hail descended with a viciousness that foretold what might be expected higher up among the hills.

The visitors walked from the sawmill to the power station, and halfway along they ran into a storm that was as bad as any that were experienced. The skies banked up into a dense black mass, the lightning flashed, the thunder boomed, and then cam the hail and wind. The tram was soon covered to a varying depth with the white globules, which crunched under the feet as they were walked on, and the way became slippery and uncertain. The party trudged on and reached the power house a trifle wet and a trifle cold.

Out again into the open, and the trio climbed aboard the big trucks that were being hauled up, and which were being used to bring down the conglomerate wash to be screened and mixed for concrete. The trucks were not exactly upholstered – unless a coating of wet clay can be so described. The rest was footed, not at record pace certainly, but the top was reached in due course. Along the tramline out to the lake the gait was quickened, sometimes involuntarily. There was practically no work going on. Four or five men were laying the wooden pipes, and the horse tram driver and another man were taking along the iron clamps and stacking them near the line, to be used later on. None of Stan Triffet's men were out, however, and the excavations close to the lake were temporarily suspended. The smoke which ascended from the camps told where the men were.

Just as the party arrived at the Lake, a terrific storm came over. In the shelter afforded between two immense boulders the trio looked out on to what might best be spoken of as a sea of rain. When the mists cleared the extent of the lake was discernable, and no one was more pleased then Mr Alkemade that he had come. He considered the unpleasantness of the weather well worth enduring in order to see the country, and the great scheme in progress for utilising the waters of Lake Margaret.

The trip back was made under much the same climatic

conditions, and Mr Alkemade and the rest walked from the top of the haulage to the bottom. Having the time at their disposal, they looked over the small temporary power plant, the dressing and treatment of the Oregon pine boards before they are ready to form part of the pipe, and they also watched the laying of the concrete blocks in the building of the new power house.

The ride through the gullies and across the open country to town on the empty bolster was perhaps improved a little by having some empty [indecipherable] and to help in keeping out the cold. The little engine was also drawing five or six bolsters of firewood, but parted company with them at the zig-zag, and they went the rest on their own. In other words they were broken down by the brakesmen, who know their work well, and inspire confidence except to the exceedingly nervous. There might be some cause for anxiety if your brakesman was a fluffy-haired, pink-cheeked Adonis, but they are not that. They are clear-eyed fibrous men, their faces tanned by exposure, and they know they have to master the rake of trucks or be smashed. And they're not going to be smashed - not for a long time. The small engine came up with the rake at the ballast pit and, coupling up again, drew the load to the top of the haulage overlooking the reduction works. From that point it was a walk home, and it was wanted to warm the hands and feet by restoring the chilled circulation. It was a well-satisfied party which reached Queenstown about 6.15. They had seen the hydro-electric works and the wonderful mountain country in spite of all the rain and all the wind and, after all, their discomfort had not been great. Not so great, at any rate, as to cause them to say "never again".

On Saturday morning Messrs Alkemade and Fowler went to the mine end of the field, and they were not long out before the drenching rains had thoroughly saturated them. They battled through, however, and after seeing the open cut and the other places of interest which convey the magnitude of the company's operations, they descended the hills into Linda, and returned to Queenstown by coach. They had thus crowded a great deal into a very short time, and they departed for Zeehan by the mid-day train with the satisfied feeling that not a moment of their stay had been uselessly wasted.

Lake Margaret Power Station, seen here in 1915, had begun operating in November the previous year. The twin water supply pipes and the tramway are in the foreground. Photo: HJ King

Dear Sir,

Nymagee Copper Mine (LR 172)

I located the following classified advertisement lodged by the Nymagee Copper Mining Company, Limited, which appeared in the Sydney Morning Herald of Wednesday 22 February 1888, page 4. Given that the two companies were owned by the same group of investors, I believe that the advertisement provides valuable insight into the wood cutting and carting arrangements at both Nymagee and the Great Cobar Copper Mining Co's operations at Cobar.

NYMAGEE COPPER MINING COMPANY, Limited.

TO WOODCUTTERS AND CARTERS. TENDERS will be received until noon, February 22nd, for Cutting and Carting Firewood for the use of this Company's Smelting Works in lots from 100 to 5000 tons per month, at the rate of 7s 6d per ton for dry wood, and 5s 6d per ton for green wood, 3d per ton to be retained by the Company until the completion of each contract. Size of wood not to exceed five (5) feet long by one (1) foot thick. The contract to be renewed every three months, and to extend over a period of three years.

Tenders to be addressed to the undersigned. The lowest or any tender not necessarily accepted. JAMES WATT,

Manager.

Nymagee Copper-mining Co., Ld., 131, Pittstreet, Sydney. Sydney, 9th February 1888.

Ron Madden Wagga Wagga, NSW

Dear Sir,

Our First Light Railway (LR 167, 168, 169)

As the article on Colliery Railways of the Australian Agricultural Company in the ARHS *Bulletin* was not referenced, the authors did not lead subsequent researchers to the source of their statement.

Incidentally, the statement is incorrect. The inclined plane that was opened on or shortly before 17 December 1831, was predated by more than a year by the operation of other light railways. By May 1830, the coal face and bottom of the shaft were connected by, and I quote: "wretched wooden rail-roads" (Parry W.E. Journal. Vol.1. p.144. 20 May 1830).

Jim Longworth Cheltenham, NSW

Where is it?

This old photograph, believed to date from the 1920s, is from the series 'At Work and Play - images of rural life in NSW 1880-1940' held in the State Library of NSW.

It shows a proud driver posing with his charge, which appears to be a much modified former Sydney steam tram motor. The photo is captioned "Probably a British Australian Timber Company train - probably Coffs Harbour, NSW". However, no such locomotive is listed among those known to have been operated by the BAT Co.

The 'main line' style drawgear suggests that the loco may have in fact been employed on a harbour or breakwater construction project, of which there were several on the NSW north coast around that time. Any ideas?

Photo: Bicentennial Copying Project, State Library of New South Wales

HOBART: "Timber Tramways of S.E. Tasmania"

The LRRSA is to hold its first meeting in Hobart to determine if there is interest in establishing a Tasmanian LRRSA Group. Scott Clennett will be giving an illustrated talk on the timber tramways of South-east Tasmania. This area had a dense network of tramways with gauges up to 6ft, though most were of 3ft 6in or standard gauge. They dated from the 1840s or earlier, and had many remarkable locomotives. Scott has made a study of these tramways for a proposed book, and he is a descendant of William Clennett, who established sawmills and tramways in the Dover area in the 1890s.

Location: St.Marys Church Hall, Springfield Ave, Moonah.

Date: Tuesday, 28 October at 7.30 pm. Contact Ken Milbourne, (03) 6272 2823

ADELAIDE: "A visit to the signal museum"

We will be making a special visit to the West Torrens Railway, Signal, Telegraph & Aviation Museum. Entry fee of \$3.00 per person includes supper. Friends and visitors are welcome.

Location: 112 Marion Rd, Brooklyn Park. Date: Thursday 2 October at 7.30pm. Contact Arnold Lockyer (08) 8296 9488

BRISBANE: "Queensland Narrow Gauge Railways"

Well known enthusiast Bob Gough will present a program of colour slides of Queensland Narrow Gauge Railways. Location: BCC Library, Garden City Shopping Centre, Mount Gravatt. After hours entrance (rear of library) opposite Mega Theatre complex, next to Toys'R'Us. Date: Friday 10 October at 7.30 pm. Entry from 7 pm. Contact Bob Dow (07) 3375 1475

MELBOURNE: "Moe to Moondarra"

Bill Hanks will be presenting a review of the southern end of the Walhalla railway. This will include details and illustrations of the current remains compared to old photographs.

Location: Ashburton Uniting Church Hall, Ashburn Grove, Ashburton.

Date: Thursday, 9 October, at 8.00 pm

SYDNEY: "Mining Railways of Cobar"

Bob McKillop will make a presentation on the mines and mining railways of the Cobar district. He will cover the research methodology appropriate to different eras and the historical themes that have emerged from this project.

Location: Woodstock Community Centre, Church Street, Burwood, (five minutes walk from Burwood railway station). Date: Wednesday 22 October at 7.30pm.

A selection of books from the LRRSA Sales Department ...

Built by Baldwin

The Story of E. M. Baldwin & Sons, Castle Hill, NSW - by Craig Wilson

The history of Australia's most successful and innovative builder of industrial diesel locomotives. E. M. Baldwin developed the B-B DH locomotive now widely used on Queensland's sugar railways, 160 pages, A4 size, 148 photos, 16 diagrams, construction listing.

\$44.00 Hard cover (LRRSA members \$33.00) Weight 1000 gm.

The Aramac Tramway

By Peter Bell & John Kerr

Aramac Tramway, almost in the centre of Queensland. Built in 1913, it operated for 62 years, providing the Shire Council a major challenge to keep it going.

48 pages, A4 size, 49 photos, 5 maps and plans, references, bibliography and index. **\$15.00** Soft cover (LRRSA members \$11.25)

Weight 350 gm.

Focus on Victoria's Narrow

Gauge Whitfield Line Photographs by Edward A.Downs and others, published by Puffing Billy Preservation Society. Very high-quality landscape format book of ductone photographs dating from 1899 to 1963, but mostly from 1940 to 1945. 48 pages, soft cover, A4 size. **\$35.95** (LRRSA members \$32.35) Weight 280 gm

Echoes through the Tall Timber

The Life and Times of a Steam Man 1895-1984 by Dorothy Owen, published by Brunel Gooch Publications. Life story of Harry Matheson, who drove logging winches, and mill engines in the Warburton-Powelltown area. 176 pages, soft cover, A5 size, 48 illustrations

\$22.95 (LRRSA members \$20.66) Weight 375 gm

Postage and packing: Within Australia, up to 500 gm: \$4.80; 501 gm to 3 kg \$9.00 Send to: LRRSA Sales, P.O. Box 21, Surrey Hills Vic 3127, Fax (03) 5968 2484. Payments may be made by cheque, money order, Mastercard, Visa or Bankcard.

Focus on Victoria's Narrow Gauge Gembrook Line Part 1

Photographs by Edward A.Downs, published by Puffing Billy Preservation Society. Very highquality landscape format book of ductone photographs from the mid-1930s to the mid 1940s. 48 pages, soft cover, A4 size. **\$35.95** (LRRSA members \$32.35) Weight 280 gm

Powelltown

A History of its Timber Mills and Tramways by Frank Stamford, Ted Stuckey, and Geoff Maynard. 150 pages, soft cover, A4 size, 150 photographs, 22 maps and diagrams, references and index.

\$22.00 (LRRSA members \$16.50) Weight 550 gm.

The Innisfail Tramway

The History and Development of the Geraldton Shire Tramway and the Mourilyan Harbour Tramway

by John Armstrong & G.H. Verhoeven. 128 pages, A4 size, 99 photos, 22 maps/diagrams. \$37.90 Hard cover (LRRSA members \$28.43) Weight 650 gm. \$29.95 Soft cover (LRRSA members \$22.46)

Weight 470 gm.

Modernising Underground Coal Haulage

BHP Newcastle Collieries' Electric Railways by Ross Mainwaring. 60 pages, soft cover, A4 size, 18 photographs, 13 maps and diagrams, references and index.

\$16.50 (LRRSA members \$12.38) Weight 230 gm.

Laheys' Canungra Tramway

by Robert K. Morgan, revised by Frank Stamford Describes Queensland's largest timber tramway. 32 pages plus soft cover, A4 size, 28 photographs, plus maps/diagrams and index. **\$9.95** (LRRSA members \$7.46) Weight 220 gm.

Mountains of Ash

A History of the Sawmills and Tramways of Warburton - by Mike McCarthy

Describes a complex network of over 320 km of tramways which linked 66 major mills to the Warburton railway. 320 pages, A4 size, 280 photos (incl. 52 duotones), 50 maps/diagrams, (incl. 14 fourcolour maps).

\$59.95 Hard cover (LRRSA members \$44.96) Weight 1500 gm.

Settlers and Sawmillers

A History of West Gippsland Tramways and the Industries they Served 1875-1934 by Mike McCarthy

168 pages, soft cover, A4 size, 96 photographs, 17 maps and diagrams, 6 graphs, orie loco diagram, references and index. \$31.90 (LRRSA members \$23.93) Weight 700 gm.

Bellbrakes, Bullocks & Bushmen

A Sawmilling and Tramway History of

Gembrook 1885-1985 - by Mike McCarthy 104 pages, soft cover, A4 size, 71 photographs, 17 maps and diagrams, references and index. \$26.00 (LRRSA members \$19.50). Weight 500 gm.

Arsenic and Molasses

A Pictorial History of the Powelltown Tramway and Timber Milling Operations by Frank Stamford. All photographs are different to those in *Powelltown*. 88 pages, A4 size, over 100 photographs, 8 maps and diagrams, glossary and index. **\$36.00** Hard cover (LRRSA members \$27.00) Weight 650 gm.

\$24.00 Soft cover (LRRSA members \$18.00) Weight 470 gm.

End of the Line:

A History of the Railways in Papua New Guinea by Bob McKillop & Michael Pearson. Published by University of Papua New Guinea. 170 pages, 81 photos, 28 maps. \$27.00 (LRRSA members \$24.75) Weight 550 gm.

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Manning Wardle Loco Winding Engine, NSW

While Gifford Eardley documented the railway and locomotives of the Gunnedah Colliery in ARHS *Bulletin* No. 413, March 1972 (pp.58-67), there appears to be little published history on other collieries in this district. The scope for research in this area has emerged from an inspection of the impressive memorial at Gunnedah to the miners who lost their lives at local collieries, another addition to the Miners' Memorial as featured on the back cover of LR 172.

This monument features a powerful sculpture of a miner at work and has the names of Gunnedah miners who lost their lives in colliery accidents on a bronze plaque attached to the granite base. Bronze reliefs around the base depict important historical events on the coalfield. One of these (pictured) shows a winding engine, which uses the boiler and engine of a locomotive, which is evidently a Manning Wardle old I or K-class with saddle tank still attached. The relief relates to a picket at Vickery Colliery and its violent repression on 16 August 1905. The LRRSA list of Manning Wardle locomotives in Australia (1990)

suggests there are only a few options. Old I-class 201/1865 is alleged to have been used as a winding engine at Wallarah Colliery c1894; while K-class 182/1865 went to the NSW PWD in 1884 and was at Swansea Tramway by May 1896 (no further details). Incidentally, MW class 0 681/1878 went to Gunnedah Colliery in 1899 as its No.1 locomotive and was noted there out of service in the 1930s and, according to Eardley, was sold for scrap in 1936.

Any information on the locomotive depicted in the Gunnedah memorial relief and whether it was in fact associated with Vickery Colliery would be very much appreciated.

Editor

Myall Lake Limestone Tramways, NSW

Newspaper research has identified a tramway at Myall Lake constructed for the transport of limestone. Basic details are provided here in the hope that it may draw out further information on this operation.

Small outcrops of limestone are found on the western side of Myall Lake a little to the south of Shingler's Creek, which is located a short distance south of the route of Alexander Croll's late 19th and early 20th century timber tramway to Mayers Point. In early 1896, the NSW Government Gazette (page 184) carried details of an application by T.S. Huntley for a special lease of 192 acres of land for grazing. with 20 acres of that land to be used for quarrying limestone and constructing tramways. Huntley's application covered Portions 79 and 80 and reserve No. 16073 for wharfage purposes, all in the parish of Topi Topi, county of Gloucester. The fate of Huntley's application is at this stage unclear, but from 1 April

Coming Events

OCTOBER 2003

3-5 Puffing Billy Railway, Emerald, VIC. Thomas the Tank Engine comes to Puffing Billy – a family attraction at Emerald town. Also on 11-12 and 25-26 October. Book with the Fat Controller: (03) 9754 6800.

4-6 Redwater Creek Steam & Heritage Society, Sheffield, TAS. Operations with narrow gauge steam trains. Information (03) 6424 7348. Also first weekend of November and December.

4-6 Werris Creek Rail Reunion Festival, NSW. A weekend of activities for railway workers, including those from industrial rail systems. Features include heritage rail motor rides, displays or railway history and songs, street procession, art & crafts, markets, reunion dinner, Gangers Grub' breakfast and railway sports event. Contact Chris Holley on (02) 6768 7464.

5 Cobdogia Irrigation & Steam Museum, Barmera, SA. Open Day with steam train and traction engine rides, plus Humphrey Pump operating; 1100-1630. Phone (08) 8588 2323.

5 Wee Georgie Wood Railway, Tullah, TAS. 610mm gauge steam train operations, 1200-1800 – also on 26 October. Phone (03) 6473 2228.

11 Illawarra Train Park, Albion Park, NSW. Narrow gauge industrial steam and diesel locomotives operating and featuring a live jazz band, 1100-1630. Phone: (02) 4232 2488. 12 Historical Society of Beaudesert, QLD. Centenary Picnic at Tabola to honour the opening of the Beaudesert. Shire Tramway in 1903. Information 07 5541 3740 or the Secretary (Mrs Lewis) on 07 5541 1284.

19 Puffing Billy Railway, Gembrook, VIC. Kids Fun Run With *Thomas* – great family day of fun when girls and boys run against *Thomas*. Book with the Fat Controller: (03) 9754 6800.

25-26 Bellarine Peninsula Railway, Queensland, VIC. 100th Birthday Celebrations of ex-Fyansford Cement Hudswell Clarke 0-4-2ST No.6. Phone 1900 931 452.

NOVEMBER 2002

1 Cobdogla Irrigation & Steam Museum, Barmera, SA. Twilight steam train for Halloween, from 1900-2200. Phone (08) 8588 2323.

1-2 Wee Georgie Wood Railway, Tullah, TAS. 610mm gauge steam train operations, 1200-1800 – also on 8 and 23 November. Phone (03) 6473 2228.

8 Illawarra Train Park, Albion Park, NSW. Narrow gauge industrial steam and diesel locomotives operating plus sale of surplus railway items. 1100-1630. Phone: (02) 4232 2488. 16 Cobdogla Irrigation & Steam Museum, Barmera, SA. Steam Open Day with steam train and traction engine rides; 1100-1630. Phone (08) 8588 2323.

DECEMBER 2003

6 Puffing Billy Railway, Gembrook, VIC. Santa Special trains - also on 13 and 20 December, For information, phone (03) 9754 6800.

6-7 Wee Georgie Wood Railway, Tullah, TAS. 610mm gauge steam train operations, 1800 for Carols on 6th, 1200-1800 on 7th. Phone (03) 6473 2228.

14 Cobdogla Irrigation & Steam Museum, Barmera, SA. Steam Open Day with steam train and traction engine rides; 1100-1630. Phone (08) 8588 2323.

NOTE: Please send information on coming events to Bob McKillop – rfmckillop@bigpond.com - or the Editor, *Light Railways*, PO Box 674, St Ives NSW 2070.

1898 to 31 December 1903, William Walter O'Neill of "Bulladellah" was permitted to lease 93 acres for the special purpose of procuring limestone (*NSW Government Gazette* page 5064, 1898).

By late February 1899 O'Neill had obtained a contract with the Cockle Creek Smelting Company to supply limestone and was in the process of opening a large quarry, and constructing a tramline a halfmile in length to the shore of the lake. The stone was to be carried by punts to Nelson's Bay and then shipped to Newcastle. (Wingham Chronicle, 1 March 1899). O'Neill disposed of his limestone quarrying interests to a Newcastle Syndicate, for whom Alexander Croll [junior?] was constructing amongst other things, a wharf and tramline. (Manning River Times, 19 July 1899). As a proprietor of Croll and Co., Alexander Croll Senior had held on the eastern shore of the lake in the early 1880's, a oneacre lease for quarrying limestone at Bibby Harbour.

Mid-May 1900 saw the Port Stephens Limestone Company, having completed the tramlines and wharves, busily engaged at its quarries on the western shore of the lake, under its manager Mr. W.T. Lee of Newcastle. (Manning River Times, 12 May 1900.) Some twenty additional hands had just been put on and it was expected that the firm would be able to take extract some 300 tons of limestone weekly. The firm had a contract to supply the "Cockle Creek Sulphide Works" with 150 tons of limestone per week.

Further special leases were granted for the obtaining of limestone from 1 December 1899 to 31 December 1904, to James David Jones of Newcomen Street, Newcastle. These leases, which covered parts of Portions 68, 70 and 71 parish of Topi Topi, virtually to the immediate north-west of O'Neill's leases, may have also been connected with the Port Stephens Limestone Company. *Ron Madden*

For reproduction, please contact the Society

News items should be sent to the Editor, Bob McKillop, Facsimile (02) 9958 8687 or by mail to PO Box 674, St Ives NSW 2075. Note new email address for H&T reports is: rfmckillop@bigpond.com Digital photographs for possible inclusion in *Light Railways* should be sent direct to Bruce Belbin at: boxcargraphics@ozemail.com.au

NEWS

Queensland

BOTANICAL GARDENS RAILWAY, Bundaberg 610mm gauge

Bundaberg Steam Tramway Preservation Society

Further to LR 172 (p.27), the restoration of former Qunaba Mill 0-6-2T *INVICTA* (J Fowler 11277/1907) is being led by David and Annette Twiss. They live in Sydney, where David was associated with *INVICTA*'s former home, the Navy Apprentices Steam Club at HMAS

Nirimba at Quakers Hill. The locomotive was restored by apprentices here in the 1980s, but was returned to Bundaberg following the closure of this facility in September 1993. David and Annette visited the BSTPS about 18 months ago to see the loco and found that the pressure of maintaining the Society's other two locomotives was such that no work had been done on INVICTA since its arrival back in Bundaberg. David insisted that he would work on the locomotive when he returned in 2003. He and Annette have settled into the caravan park nearby and, with his enthusiasm and vast knowledge, BSTPS members have been motivated. The work is now progressing apace. Wendy Driver, 07/03

LAHEY'S TRAMWAY TUNNEL, Canungra

A visit to the site of the former logging tramway tunnel in July found a well-presented heritage attraction. A sign on the main road alerts travellers to the historic tunnel. A parking area has been made at the roadside and, from here, a wooden pathway leads down to the tunnel portal. Here heritage signs have been erected, providing a history of the sawmill and logging tramway, with some details of the tunnel and of the Shay and Climax locomotives that operated the line. The tunnel has been cleaned out, allowing visitors access to the other end.

David Burke, 08/03

PROSPERPINE HISTORICAL

MUSEUM 610mm gauge This museum has recently placed is ex-Proserpine Sugar Mill 4-6-0T *DIGGER* on public display.

Built by Hunslet Engineering (B/N 1317 of 1918) for the British War Department (their number 2345), for use behind the lines during World War 1. Following a period in storage at Purfleet Wharf, Essex, the locomotive was exported to Queensland and spent the remainder of its working life hauling sugar cane at Proserpine Mill. It went to a children's playground after withdrawal in 1959, from where it was rescued by the Historical Society and stored until a suitable venue became available for it to be displayed.

The Proserpine Historical Museum is open Monday to Friday from 9am to 4pm and some Sundays between 10am and 4pm. It is located on the Bruce Highway on the southern approaches to the town.

Barbara Olivetta, 7/03

TINBEERWAH MOUNTAIN RAILWAY, Sunshine Coast 610mm gauge

The LRRSA South East Queensland Group conducted a tour to this site on 5 July 2003. Construction of the switchback railway was commenced in 1980 and the line is now about 2km long. Rail from former portable track (14 and 20 lb) obtained from cane farms around Nambour has been laid on

sleepers, most of which are timber. Some concrete sleepers have been made on site. The whole track is ballasted with rock The railway ascends a short distance from the workshop and storage area before turning right and descending into a low area from which the ascent of the foothills of Mount Tinbeerwah begins. There is minimum disturbance to the forest as the railway climbs and winds its way through three reversing points. The final leg ends at a vantage point with a Southern aspect overlooking Lake McKenzie in the foreground and the Glasshouse Mountains in the distance. The maximum gradient is 1 in 8.

Between the last two reversing points, a branch is being constructed to a vantage point with a northerly aspect. The branch will cross a rocky mountain creek on a concrete pier and steel girder bridge of 5 spans. Two piers have been cast and the girders are being prepared in the workshop.

Rolling stock consists of a B-B PH locomotive, a 4wPM locomotive, a railcar, three line cars, three bogie braked wagons, a ballast wagon, a way and works wagon, and a flatbed wagon with crane. The railcar was custom built utilising some Fairmont components and comfortably carries 8 passengers. The quality of the rolling stock and track is really impressive and the whole operation is a credit to its owner.

Owen Betts, 07/03

Back when it was employed by the now long-defunct Invicta Mill, near Bundaberg, Fowler 0-6-2T INVICTA crosses the Kolan River, with a load of whole-stick cane. Photo: Gordon Salzman Collection

Heritage &Tourist

New South Wales

BIRDLAND, Batemans Bay 457mm gauge?

A visit to this site in July found this miniature tourist train oprating over about 500 metres of oval track. Evidently, portable track of 2ft gauge had originally been obtained when the railway was constructed "about 20 years ago" and the sleepers had been cut to reduce the gauge. A Ford Escort 1.3 or 1.6-litre four-cylinder petrol engine powers the steam-outline locomotive. This drives through an Escort 4-speed manual gearbox to the rear fixed axle on the loco. It appears that it operates permanently in first gear, with a handle for the driver to operate the clutch for starting and stopping. It has a small 4-wheel bogie at the front and a single rear axle, although another two fixed axles were fitted sometime in the past. There is a fairly new exhaust system fitted which runs along the left side of the chassis and sits where these extra wheels would have

been. There are small imitation steam loco cylinders mounted on each side above the bogie but there are no coupling rods. The 'boiler' is made from 44-gallon drums, while the cab now fitted has a steam loco appearance. The loco is evidently maintained by the local NRMA.

The train comprises two open passenger cars with transverse sets. The train does one circuit for the ticket price of \$2.50.

Chris Stratton, 7/03

ILLAWARRA TRAIN PARK, Albion Park 610mm gauge Illawarra Light Railway Museum Society

Following a successful trial in July, the ILRMS operated two trains during its running day on 10 August. The ex-Corrimal Colliery 0-4-0ST (Hawthorn BURRA Leslie 3574/1923) operated the main steam train, comprising the match truck and car 430, running clockwise from the main platform. The ex-ER&S Hunslet 4wDM No.2 hauling Car 1 ran anticlockwise from the Bay road at the eastern end of the platform. The operating routine is for the steam train to come into the platform after doing three laps of the circuit, then the small diesel takes off the other

way after collecting the train staff as the "authority to proceed". The diesel does two laps and then goes back into the bay road at the eastern end of the platform. The train staff is handed back to the steam train loco crew and the steam train then departs for its three laps. With the trolley wire Gemco miners tram and the miniature railway, there are now four different rides available for visitors on open days.

All four steam locomotives and the Brownhoist vertical boiler passed their annual boiler inspections in the week of 25 August 2003. Subject to some minor pipework repairs and replacement of lagging around the boiler, it was expected that the stationary engine display would be operational for the open day on 14 September.

John Garaty, 08/03; Brad Johns 08/03

STATE MINE HERITAGE PARK & RAILWAY, Lithgow

1435mm gauge

A private visit top this site on 20 August found an impressive range of improvements. The whole site has been cleaned up and extensive landscaping work has transformed its appearance. Fire-damaged 2-6-2T 2605 (Dubs 2794/1892) has been

At Lahey's Tramway Tunnel, heritage signs have been erected, providing a history of the sawmill and logging tramway with some details of the tunnel and the locomotives that operated the line. Photo: Justine Stephen

rubbed back, its brass work cleaned and polished, and undercoat paint was being applied in preparation for static display. It will be presented with 4-wheel 'S' wagons and a brake van to represent a coal train of the steam era. Ex-AIS Port Kembla steelworks B-B DE D20 (EE Aust,) and D23 (EE Aust,) are now both fully operational, with the former unit now resplendent in its heritage livery. Sister locomotive D21 had its cab roof reattached in July and work is proceeding to bring it back to operating condition.

Documentation for accreditation has been submitted to the Department of Transport and a desktop audit completed. Finalisation, however, has been delayed by ongoing controversy over safety issues on the mainline railway in New South Wales. Accordingly, there is still no date for commencement of public railway operations at the State Mine Railway. Editor

Victoria

ALEXANDRA TIMBER TRAMWAY & MUSEUM 610mm gauge

During 2002-2003, the museum operated on 57 days and carried 4400 passengers. Machinery is being installed in the new workshop, while improvements have been made to the display area and the archives.

The 60th anniversary of the creation of the Malcolm Moore "1000" class 4wPM locomotive in 1943 will be celebrated with a special event at the Museum on Saturday 8 November 2003. In service will be hybrid Malcolm Moore 1023/1049 of 1943 with two other Malcolm Moore "1000's" as rolling chassis and, it is hoped, at least two "quest" 1000-class locomotives. Also on display will be Malcolm Moore C.396 of 1946 No.2 (see below). Owners of any other Malcolm Moore machinery are invited to display their machinery on the day (graders etc.). Please contact the ATT at PO Box 288, Alexandra 3714 if you require further details or would like to display a locomotive or other Malcolm Moore machinery. An additional Malcolm Moore 4wPM locomotive arrived in Alexandra on 3 July 2003. It is 1067mm gauge and will operate on the same track as the ATT's

SOUTH MAITLAND RAILWAYS 10-CLASS LOCOMOTIVES

1435mm gauge

There have been some recent changes in the status of the famous 10-class 2-8-2T locomotives of the former South Maitland Railways (SMR). The 14 members of this class were based on the T-class standard goods locomotive of the NSWGR and were built by Beyer Peacock between 1911 and 1925. They hauled coal trains over the SMR until 10 June 1983 and the Richmond Vale Railway until 1987, being the last steam operations in Australia. The 10-class locomotives are a unique industrial steam locomotive fleet and they have been heritage protected by the NSW Heritage Office. The Hunter Valley Railway Trust (HVRT), the Richmond Vale Railway (RVR) and the Hunter Valley Training Company (HVTC) have retained all 14 locomotives, their current status being as follows:

No.10 (BP 5520/1911): has been stored in pieces at HVTC, but recently transferred to Braemar Engineering Company, Mittagong for rebuilding to operating condition. The original copper firebox will be overhauled.

No.17 (BP 5790/1913): under restoration at HVRT, Branxton; black livery.

No.18 (BP 5909/1915): Owned by HVTC and used by 3801 Limited on Cockatoo Run; black livery; at Braemar Engineering for overhaul, but requires new driving wheel tyres. The quote obtained for a new set is too expensive, so a swap of wheelsets is being negotiation with a mothballed HVRT locomotive.

No.19 (BP 5910/1915): previously on display at the Port Waratah Coal Export Loader, but now stored at Kooragang Island; black livery. **No.20** (BP 5998/1920): at HVRT, Branxton; black livery; claimed to be operational.

- No.22 (BP 6055/1920): stored RVR, Richmond Vale; blue livery.
- No.23 (BP 6056/1920): at HVRT, Branxton; blue livery; operational and steamed in April 2003 (seeLR 171, p. 27).

No.24 (BP 6125/1922): stored RVR, Richmond Vale; black livery.

No.25 (BP 6126/1922): stored RVR, Richmond Vale; green livery.

No.26 (BP 6127/1922): stored HVRT, Branxton; black livery.

No.27 (BP 6137/1923): under restoration at HVRT, Branxton; black livery.

No.28 (BP 6138/1923): stored HVRT, Branxton; black livery.

No.30 (BP 6294/1925): operational at RVR, Richmond Vale; maroon livery.

No.31 (BP 6295/1925): stored HVRT, Branxton; green livery.

Negotiations have been conducted with Barclay Mowlem, current lessees of the former SMR steam shed and workshop at East Greta, for the reconditioning of track in the yard to allow access to the workshops, coaling stage and ash pits.

Melanie Dennis and Brad Coulter, LocoShed E-group, 08/03; Editor

In a scene typical of the era, SMR 19 (BP 5910 of 1915), sporting a home-made smokebox door wheel, brings a train of loaded non-air 4-wheel hoppers up the grade from Swamp Creek Bridge, Abermain, heading for East Greta Junction in November 1974. Photo: Graeme Belbin

Heritage &Tourist

3-ft 4½-in gauge Day's rail tractor. The MM locomotive is powered by a Fordson tractor engine and is C.396 of 1946 No.2 (second loco built in contract 396). It was built for the Victorian State Rivers & Water Supply Commission for use during construction of the Hume Weir. Only three of this "47L" type were built, and this is believed to be the sole survivor of the class. The locomotive has been obtained from the Bellarine Peninsula Railway on a twenty-year lease. A short section of temporary track was assembled, and the loco was placed on this display track where it will remain until the surface at the ATT has improved sufficiently to get it onto its home track and under permanent cover.

Restoration to working condition will commence as soon as the move can be completed.

Peter Evans 07/03

WALHALLA GOLDFIELDS RAILWAY 762mm gauge Walhalla Tourist Railway Committee of Management

The Victorian Government has provided an additional \$80,000 grant under its Living Regions Living Suburbs program for the relocation of the Walhalla station building to the restored track, thereby allowing its use for its intended function as a passenger facility. The Committee of Management will be responsible for the relocation and refurbishment of the station to provide an attractive gateway to the railway and town.

Victorian Government media release, 8 Aug 2003, via Barry Blair

Tasmania

DON RIVER RAILWAY, Devonport 610/1067mm gauge Van Diemen Light Railway Society Inc.

A visit on 23 August 2003 found 0-6-0DM V2 with the service train of the day and 4-6-2 MA4 at the rear of the platform. There were problems starting ex-Emu Bay Railway B-B DH 1002 (Walkers 577/1963), so V2 attached 1002 on the rear of the last service train of the day (1600) and hauled it down

Visitors to 'Birdland' at Bateman's Bay, on the NSW south coast, may take a .5km ride on this brightly coloured train. A Ford Escort four-cylinder petrol engine powers the steam-outline locomotive. Photo: Chris Stratton

The ILRMS operated two trains during its running day at Albion Park on 10 August, with the ex-ER&S Hunslet 4wDM No.2 hauling Car 1 running anticlockwise from the bay road at the easten side of the station, in between the steam train's regular trips. Photo: Brad Johns

the line, then propelled it back to the station to allow photographers to obtain shots of the EBR loco at Don River. Ex-Tasmanian PWD, ex-Queensland Railways 2-4-2T 4D9 No. 131 and 1067mm gauge 48DL model 4wDM 'Tardis' (R&H 187072 of 1938) were among the locos noted around the turntable, while the former Commonwealth Carbide Lune River 0-4-2T No.4 (Hunslet 1844 of 1936), ex-Tasmanian PWD ex-Kiama Tramway 0-6-0T (J Fowler 5265 of 1886) and the ex-North Mount Lyell 'Riley' rail motor were noted in the workshop. Steve Zvillis, LocoShed E-group, 26/08/03

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Red Cliffs Historical Steam Railway: Kerr Stuart 0-4-2T LUKEE (742 of 1901) with a two-car train at the outer terminus of the line, on 3 August 2003. Photo: Mike McCarthy

Puffing Billy Railway: On Saturday 30 April 1994, Belgrave is bathed in autumn colours as 'Canadian Red' 2-6-2T 14A and its unlined black sister 12A prepare to leave with a service to Lakeside. Green 7A, waiting in the shed behind, will be following shortly after. Photo: Bruce Belbin

1067mm gauge Malcolm Moore 4wPM C.396 of 1946 No.2 has recently been leased to Alexandra Timber Tramway by owners Bellarine Peninsula Railway. In May 1979, Bruce Belbin found it parked in the loop at Queenscliff station.

Heritage &Tourist

South Australia

GOOLWA-PORT ELLIOTT TRAMWAY 1600mm

TRAMWAY 1600mm gauge The 150th Anniversary of Australia's first public railway, the Goolwa to Port Elliott horse-worked line, will be held from 14 to 16 May 2004. Alexandrina Council has donated \$60,000 towards the celebrations, which will be split into part underwriting and a cash sponsorship.

Events will take place in each town served by the pioneer line – Goolwa, Middleton and Port Elliot – and committees have been formed to help organise a range of activities and memorials. A newsletter covering the events can be downloaded from www.australiasfirstrailway.com *The Times*, Victor Harbour 1 August 2003, via Barry Blair

Western Australia

LOOPLINE TOURIST RAILWAY,

Kalgoorlie 1067mm gauge Council approval for the long awaited rail extension of the line from Boulder City railway station to a new terminus at Mount Gleddon, Kalgoorlie - a length of approximately 5.6kms – was given in August. Completion of the extension is expected by the end of 2003, when expansion of the KCGM Super Pit will have begun encroaching on the existing track layout.

This expansion of the Super Pit will mean loss of tours over Chaffers Powerhouse and access to the Super Pit lookout. On the bright side, the Boulder to Kalgoorlie link will open new tourism markets for the tourist railway and ensure its continued viable operation.

The Loopline Tourist Railway currently operates over 5.5km of track between Boulder City Station and Chaffers Powerhouse. The tours of approximately one hour duration are operated by either the 105-year-old 4-6-0 G-class steam locomotive, G233 *LESCHENAULT LADY* or Bo-Bo DE Y1108. A commentary guide tells the history of the Golden Mile area.

Jim Collins, 08/03

Kitson 1620 of 1870: Outline drawing of locomotive 1620 from the Kitson records. Richard Horne Collection. Description Stephen and John Brown pose with 1620, now their number 4, following its acquisition from the NSW Government Railways. Its elaborate livery and immaculate condition reflect the pride of its new owners. Photo: NSWGR, from Phil Belbin collection Security Stephen and John Brown pose with the company, brings a train of wooden coal hoppers across the NSWGR's main northern line at Hexham. Photo: John Shoebridge. For reproduction, please contact the Society