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Photo: courtesy Department of Forestry, Queensland.

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Editorial

The future of *Light Railways* was an important discussion topic at the third annual conference of LRRSA in Melbourne over the 1981 Australia Day week-end. A number of policy guidelines were formulated which should ensure the continued development of the journal over the next few years.

A key decision was that all historical articles should first appear in Light Railways, the production of which will remain the first priority of the Society. Longer articles which have appeared Light Railways and have widespread appeal, would be amended by the authors on the basis of feed-back through the Letters columns for subsequent production in book form. The Melbourne conference decided that the practice of producing special issues of Light Railways devoted to a single subject would be discontinued. My policy will be to include a variety of articles and comment in each issue. It may therefore be necessary to serialise longer articles. It was also decided that the Society should aim to increase the size of Light Railways to 32 pages, though this will be dependent on finances.

The subject matter for articles in *Light Railways* will continue to be the history of light railways in Australia, Australian territories and areas of significant Australian influence (e.g. Fiji). The term light railways may be taken to include lines of less than 3 ft 6 in gauge, industrial and mining railways (except for heavy duty mineral haulers) and timber tramways generally while a historical approach which takes into account the wider social and economic issues behind a railways construction and operation will be encouraged. Articles on locomotive development and locomotive builders are also welcome.

This issue of *Light Railways* provides the type of balance I hope to maintain. The feature article is from a new contributor, Craig Wilson, and is supported with outstanding artwork by S.V. Foulkes. It covers the history of a short-lived quarry railway in New South Wales, and is balanced by short articles on locomotive development and operations, together with a range of letters which build on information provided in previous articles.

Cover: Logging train on Frazer Island, Queensland, c1929. The train is thought to be on the McKenzie's Jetty tramway, but further details from readers would be welcome.

BASALT QUARRIES LIMITED, WOY WOY New South Wales

by Craig Wilson

Introduction

The 1920's saw a rapid growth in the production of crushed rock for sale in Sydney and the surrounding area. This increase was caused by the growing acceptance of reinforced concrete in the building industry, as well as the need to supply rock to a rapidly extending road network.

This growth brought changes to the quarry industry. Many existing companies sought either through amalgamation or modernisation, to increase production and so compete with a number of new independent quarries which opened to meet the burgeoning demand.

In 1925, one person attracted to the industry was John Garrett¹ of Brooklyn, New South Wales. He had realised that with the forthcoming construction by the newly formed Main Roads Board, of a road from Berowra to Gosford, a quarry in the vicinity should have an assured market. His investigations revealed two large deposits of suitable rock. These were at Mount Bushell and on a property called Dillon's Farm on Patonga Creek near Woy Woy.

At this time the deposit at Mount Bushell was under the control of a rival group of promotors², and so Garrett turned his attention to gaining control over the Patonga Creek deposit. This deposit consisted of twin volcanic necks separated by 200 feed of sandstone. In 1926 Garrett secured an option for the lease of the more westerly deposit for 50 years, and also a 21 year lease over a smaller associated basalt mass a mile to the east³, which formed a ridge between the headwaters of Patonga Creek and Woy Woy Creek.

Garrett brought the deposits to the attention of the Mines Department and a geological survey was carried out by H.G. Raggatt, a Mines Department geologist. His survey, in conjunction with testing of the rock by the Public Works Department, indicated at least 5¹/₂ million tons of good quality rock at Dillon's Farm and some 900,000 tons of weathered rock in the second deposit.⁴



W.E. Longworth, a consulting engineer, made estimates of the plant required, together with a survey to determine a route for a railway to carry the quarried rock. The result of this survey was an application to the Land's Department for the withdrawal of 9 acres, 'being a strip 50 links wide for the proposed light railway line and... for use in connection with such a railway line,'⁵ from the inferior lands lease in which it was held. Also required was a block of land, Portion 66, between the two blocks of land held under the 21 year lease and the Great Northern Railway. Garrett's purchase of this land in 1927 left the way clear for the floating of the enterprise.

Basalt Quarries Limited was incorporated on the 23rd August, 1927 with a nominal capital of £100,000⁶. Six days later Garrett signed an agreement with the company to transfer his interest in the deposits for £1500 and 3,500 £1 shares in the company⁷. The prospectus for the company was signed on 16th September, 1927, and from an abridgement published in teh Sydney Morning Herald on 28th September, 1927, it presented an attractive investment. The published list of provisional directors was headed by J.C. Solomon, President of the Public Works Contractors Association and C.R. McKenzie, both directors of C.R. McKenzie and Co. Ltd., a firm then prominent in the contracting field. The prospective shareholders were assured that their experience in this field 'should prove of great value to the company'. Further, the directors had signified their confidence in the prospects of the company by underwriting



10,000 shares and, unusually for a company of its small size and background, the balance of the 50,000 shares to be issued had also been underwritten.

The directors were understandibly enthusiastic about the company's prospects. It was stated that in this industry profits were dependent on the distance to the customer, and due to the 'commanding freight advantage' enjoyed in the northern district, profits were initially estimated to amount to 20.5% per annum.

Despite what the promoters considered were terms of issue 'decidedly favourable in comparison with similar floatations', the issue created little interest. Even from the area near the quarry, only one application was received and in the end the underwriters, Smith Wylie and Co. were left to subscribe for 33 095 shares⁸.

Construction

The *Gosford Times* on the 29th September, 1927 reported the commencement of construction, with a gang of 30 men clearing roads to allow the movement of the company's plant. From then until February 1928, nothing further was reported on the company's progress, but with the delivery of a number of narrow gauge side tipping trucks to the site⁹, the council became concerned over the

damage to the South Woy Woy Road. Councillor Staples, Woy Woy's representative, stated that the road 'had practically been destroyed'¹⁰. The teamsters with their heavy loads had cut deep ruts into the earthern road. As a result, a load limit of 2 tons was placed on the road.

At this time a number of persons led by Councillor Staples were seeking to separate A and B Ridings from the Erina Shire Council, and form a council centred on Woy Woy. To this group, the damage to the road was an example of the lack of concern of the Gosford-centred Council to Woy Woy's problems. Councillor Staples expressed this felling in the Gosford Times of 22/3/1928, when he was quoted as stating 'But no notice is taken of the load restriction notices] and nobody seems to bother. It is only Woy Woy.' Interestingly enough, neither council (Woy Woy Shire was proclaimed in August of that year) appears to have taken action to recover the cost of repair to which it was entitled. The company for its part had no choice but to continue, being unable in many cases to lessen the loads within the limit¹¹. As a result, the damage continued.

With the last shipments of material in April, 1928, all the major plant was on the site. The company continued with its installation for several



Frost's team with the drum for the water tube boiler stand for the camera in the main street of Woy Woy.

Photo: courtesy P. Tabateau.



months¹². This left a none too happy council to repair the damage to the road which was estimated at $\pounds 400$, a not inconsiderable sum when the rate income of Woy Woy Council in the following years was of the order of $\pounds 7000$ per annum.

Not until September, 1928, with the completion of the government siding, did production begin in earnest, as the company had no area to stockpile production. The operation commenced without ceremony, and its opening wen unremarked locally apart from the *Gosford Times* which stated that the concern 'should mean a big thing for the district'¹³ with the beginning of production.

It was indeed a large undertaking for Woy Woy which was dependent on the tourist trade. The major plant¹⁴ was sited on the side of the hill around the standard gauge siding. With the aim of crushing 75 000 tons of rock per annum, the company had installed an electricity generator powered from a Babcock and Willcox water tube boiler. From this powerhouse set just below the siding, wires ran up the hillside to the crushing plant. Highest on the hillside was a Traylor jaw crusher that discharged onto a timber framed conveyor which ran 90 yards down the hillside to the siding. At this point, with the conveyor approximately 40 feet above ground, the rock was screened prior to feeding into bins with a total capacity of 600 tons. A secondary crusher was sited alongside the bins. Electricity was also supplied to the quarry where an Ingersoll Rand compressor powered the two jackhammers and rock drills used in breaking up the rock.

Linking the quarry and the crushing plant at the government siding was the company's 3 ft 6 in gauge railway. Laid with 40 lb rail, the track ended at the quarry, pointing directly into the centre of the deposit with the quarry face developed on either side. This loading siding was joined, just in front of the quarry, by a short spur which was laid past the compressor into a small corrugated iron shed used to house the locomotive, as well as a small workshop.

Water and coaling facilities were provided at the quarry where both a Whittaker steam navvy and the locomotive could be supplied. The water was pumped from a small dam immediately beyond the



Looking northwards over the larger of the two bridges on the line, January 1934.

Photo: courtesy S.V. Foulkes.



quarry on one of the several small streams which form the headwaters of Patonga Creek.

The line dropped after leaving the quarry area but rose again sharply after crossing the points leading down into the valley. The line then swung to the western side of the valley, dropping sharply along the side of the ridge until, on reaching the road to Dillon's Farm, it turned westward. From here an embankment 150 metres long curved back to the north, in the process crossing two small creeks. The bridges over these creeks were of timber construction on concrete footings. While the first consisted merely of two piers, the second was more substantial, having fifteen piers, though at the highest point above the creek bed it was only 15 ft high.

The line then ran along the side of the ridge, following its contours, until reaching a relatively flat area above the standard gauge siding. Here the rock was tipped directly into a chute gravitating 20 yards to a small bin above the crusher. From the top of the chute the track continued for some 20 yards until crossing, at least in the early days of the railway, a 3 ft 6 in gauge incline. The railway continued for a further 70 yards. It was on this section that all except for some half dozen trucks were stored with the removal of the track over the incline.

The incline terminated near a small storage shed 10 yards from the plateau edge. To transfer material, a small hand crane was sited where the two tracks crossed. From here, the incline ran 120 yards down the hillside to terminate near the base of the decked timber bridge carrying the government siding. Incorporated in the bridge was a bin from which coal gravitated to the boiler in the powerhouse. The boiler, in addition to providing steam for electricity generation, drove the double drum steam winch which worked the incline.

Rolling Stock

To work the railway a small 0-4-2 tank locomotive was obtained. Research previously published in *Light Railways* No. 58 shows it to have been a rebuilt 5 ft 3 in gauge Fowler B/N 6026/1889. This view is supported by an advertisement for the locomotive's sale in the *Sydney Morning Herald* of 3rd January, 1934 which listed it as a '3 ft 6 in gauge Fowler locomotive'. As No. 2 on the Wallaroo and Moonta Mining and Smelting Co. Limited's roster, it had worked at the company's mines in South Australia until 1924. Then, on the company's liquidation, it was sold along with that company's No. 1 (Dubs & Co. 1196/1878) and No. 11 (Hudswell Clark 629/1902). These three locomotives worked at Newcastle during 1926, carrying sand from Bar Beach to reclaim swampy land between Darby and Union Streets where the Australian Agricultural Company was subdividing land. Early in 1928, No. 2 was sold to Basalt Quarries Ltd. and arrived dismantled at the quarry site.

To carry the stone, a number of 2 yard capacity steel side tipping trucks were obtained. These appear to have been identical in design to those used at Moonta, though they were fitted with hook couplings.

The only rolling stock on the incline was one of these trucks. It had been modified, the bin being removed and replaced by a wooden platform top. It is the remains of this truck which survive, having escaped removal due to being marooned half way up the incline wrapped in cable, when all other plant was removed.

While it was initially planned that the loaded trucks gravitate part of the distance from the quarry, no evidence of such working has come to light. No. 2 worked such trains as were run, pushing the empty trucks up into the quarry area where they were loaded from a wooden bin set over the track. The locomotive then pulled the loaded trucks past the points leading to the valley, reversed and pushed its train the rest of the way to the chute. This arrangement was to be the cause of the railways' only remembered derailment. On No. 2's halting to reverse, a number of trucks broke free. These ran downgrade until, on the sharp curve past Dillon's Road, they derailed, leaving scattered blue metal that remains to this day.

Closure

The first indication of financial difficulties came with the signing in November 1928, of an equitable mortgage in favour of the English, Scottish and Australian Bank Ltd.¹⁵ The company's borrowings were in direct contrast to the directors' estimates of having a working capital on commencement of operations of £8000. From the time of the quarry's opening, it had been caught in the beginnings of the Great Depression. Production of crushed rock in NSW peaked in 1927 at 1 630 757 tons, and was to fall to less than half this four years later. To make things worse, companies were still entering the industry while existing producers continued to lift capacity. Largest examples of this were Southern Blue Metal Quarries Ltd of Berrima with a crushing capacity of 300 000 tons per annum, while established producer, Nepean Sand & Gravel Coy. Ltd., had in 1929 completed an expansion program



9



No.2 standing near the top of the chute on 4 January 1934. The whistle had been recently 'souvenired', no doubt in anticipation of the forthcoming auction.

Photo: courtesy S.V. Foulkes.

which lifted production capacity of sand and rock to 500 000 tons from the 80 000 ton capacity installed in 1925. The result was that the price per ton had fallen by 1929 to 8/- per ton or below, which was below the projected cost of production at Woy Woy. Without any local market, it was not surprising that the company failed¹⁶ to sell anything approaching the 75 000 tons per annum indicated in the prospectus. In such a situation the closing of the quarry was inevitable.

While no report of the closing of the quarry has come to light, it may have occurred in June of 1929, some nine months after its opening. Both local sources and documentary evidence suggest that the more saleable machinery was removed soon after closure. On the 12th July the *Woy Woy Herald* reported the inquest into the death of Daniel Roy Maher, the company's engineer, who may have been killed during the removal of this machinery. He was fatally injured by a falling jib on 17th June 'during erection of a crane to dismantle gear at the quarry'. Whatever the exact date of the closure of the quarry, it was to go unremarked in the local press for the next five years. However, at least two of the company's directors sought to keep the bank, with its debenture, at bay by guaranteeing further advances¹⁷. This made sense, as with the depression already cutting back production industry-wide, forced sale of the company's assets would realise little. With a return to prosperity, the quarry might be sold as a going concern or even refloated by its owners. To this end, a caretaker was installed in the house below the government siding, and the remaining plant left on the site.

During this time the company's standard gauge siding was progressively closed. First to go was the crossover 'between the Down and Up main lines' which was 'put out of use and spiked'¹⁸ on 28th January, 1930. This was followed a year later on 20th January, 1931 by the removal of the crossover along with the 'connection between the Up main line and the Quarry siding'¹⁹, the signals and the frame from which they were controlled. Otherwise, it is shown remaining intact in photographs until after the sale of the company's remaining plant.

Local developments then appear to have taken a hand in determining the fate of the company. The Woy Woy Council had become involved in another of the controversies which were to fill its short 18 vear life. This involved the council's lack of a full time Health Engineer and, more importantly for Basalt Quarries Ltd., an adequate sanitary service. Two new sites were chosen initially to service the Shire. For the southern end of the Shire a site at Patonga was chosen, while for Woy Woy the site selected was part of the Company's leased land covering some 31 acres²⁰. It included land over which the railway ran, and while the lease over the quarry had been registered, the lease over this adjacent block was not. This was apparently the last straw for the remaining directors and on 20th November, 1933, three months after the resumption, the bank appointed a Receiver. The Receiver initially attempted to alter the council's decision, but this was to no avail, the council remaining firm in its intent²¹.

Disposal of Assets

With no hope now of selling the concern as a whole, an auction of the assets was held on the 18th January, 1934. The sale realised £1005/3/-. All assets were sold except for the Traylor jaw crusher, Whittaker steam navvy (which had been for some years stored at Penrith Railway yards) and Portion 66, the company's land adjacent to the railway²².

The purchasers moved quickly to remove the plant. First was the machinery at the quarry and the



The chassis of the dump truck lying near the site of the bin. The truck was converted for use on the incline.

rail back to where it crossed Dillons Road, as from this point the rail was on land owned or controlled by the company. After this No.2 and the 25 trucks which had survived were dragged to this end of the track, where, on a level area, the rail, trucks and other items could be stored until their eventual removal. Bill Faulkner relates that when the locomotive was dragged back, the workmen riding in its cab were unwilling to stay aboard when it came to crossing the larger bridge. After not having been used for years they felt the bridge would collapse under the weight. Longer ropes were run out and everyone retired to a safe distance as No. 2 squeeled and screeched over the rusted rails on the trembling bridge, finally, to the relief of all, reaching the other side. On reaching the railhead No. 2 was cut up for scrap.

The Receiver's records give no indication of the purchaser of No. 2 and the other material eventually collected for shipment at this site. Bill Faulkner recalls that he was told of and had later seen the trucks used at Woy Woy in a machinery vard at Botany Road, Waterloo, a suburb of Sydney. In 1935 the receivers had engaged the Sydney Machine Co. to remove the crusher from Woy Woy. On being brought to Sydney it was held in their yards at Botany Road near Bourke Street²³. While this may be coincidental, it would make sense for the receiver, wanting to remove the company's remaining asset, to approach one of the purchasers who would have had in the area the manpower and plant required to remove what were now their assets.

The final move to sell the company's remaining assets was not made until September, 1935, when tenders were called. It was not until March 1937 that the company's last asset, the land adjacent to

Pages 12-13: Bird's eve view of the NSWGR sidings for Bassalt Quarries Ltd. showing probable arrangement of the narrow gauge railway terminus, the associated crushing and screening plant etc. circ. 1928/29. The set-up depicted seems to be the most likely arrangement as deduced from a combination of personal memory by the few people who remember the plant and reasonable deductions from site inspections of concrete foundations and other half buried relics or decaying remains which still exist 50 years after the plant ceased operations.

S.V. Foulkes.

Photo: C. Wilson.





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the railway, was sold. The company continued in receivership until the last payments from the land sale were made. The receiver ceased to act on 25th May, 1942 and the company was struck off on the 17th August, 1951.

Today little remains. The Woy Woy Shire Council and its successor eventually resumed all the land in the valley, using the quarry end as a tip and lately erecting a sewerage farm on the land below the government siding. A severe bush fire in 1979 destroyed what timber remained of the bridges and culverts, leaving the roadbed, wagon frame and various concrete foundations in the Brisbane Water National Park as the only reminders of the railways' short existance.

Acknowledgement

The writer would like to thank Mr S.V. Foulkes, Mr B. Faulkiner, Mr P. Tabateau and Mr A. Watson for their assistance with this article.



Looking toward the abandoned quarry in 1934. Note the rough sleepers which had been cut from trees in the surrounding bush. Photo: courtesy S.V. Foulkes.



Now buried by the enroaching tip, the cutting below the quarry was visible when visited in January, 1977.

Photo: C. Wilson.

LIGHT RAILWAYS

Footnotes

- 1. John Garrett is listed in the Basalt Quarries Ltd. Memorandum of Association as a sawmiller of Brooklyn. Reference to Electoral Rolls shows him as a resident in Brooklyn in 1925 and 1926 while he was involved in the initial stages of promotion of the company. Subsequently he was the manager of River Sand (Nepean) Ltd which was formed in September 1928 to dredge sand from the bed of the Nepean River at the point at which it was crossed by the Kurrajong branch of the NSWGR.
- 2. In January, 1925 Blue Metal and Timber Co. Ltd. was formed to exploit the Mt. Bushell deposit. After its failure, in February 1928 the Great Northern Blue Metal Co. Ltd. was formed. Both companies planned lengthy tramways though by different routes. Neither tramway was begun and the deposit eventually came under the control of the New South Wales Associated Blue Metal Quarries Ltd.
- 3. Agreement dated 29/8/27 between John Garrett and Basalt Quarries Ltd.
- 4. Annual Report of NSW Department of Mines, 1926.
- 5. Government Gazette, 17/5/29.
- 6. Australian Industrial and Mining Standard, 15/9/27.
- 7. As for 3.
- 8. Shareholders' Listing as at 30/12/27 and at 30/12/34.
- 9. Gosford Times, 1/3/28

- 10. Gosford Times, 15/3/28.
- 11. Gosford Times, 5/4/28.
- 12. Gosford Times, 26/7/28.
- 13. Gosford Times, 27/9/28.
- 14. Information on the plant and the railway comes from a number of site visits, as well as details from Mr Bill Faulkner who visited the railway while it was under construction and after its closure and knew a number of the companys' employees, and the list of the companys' remaining plant published in the *Sydney Morning Herald* 3/1/1934.
- 15. Indenture dated 24/11/28 between Basalt Quarries Ltd. and the English Scottish and Australian Bank Ltd.
- 16. Loadings for the period from Hawkesbury River Station under whose control the siding came: 1928, 5044 tons; 1929; 5358 tons and 1930, 6926 tons. Included in the above are amounts shipped from the sandstone quarry at Wondabyne.
- 17. Receiver's Abstract of Receipts and Payments for the period 20/11/33 to 19/5/34.
- 18. Weekly Notice No. 4 of 1930.
- 19. Weekly Notice No. 4 of 1931. A photograph taken on 30th September, 1930 shows that the crossover had already been removed.
- 20. Woy Woy Herald, 27/1/33.
- 21. Woy Woy Herald, 15/12/33.
- 22. As for 17.
- 23. Sydney Morning Herald, 14/9/35.

The Last Working on the Irvinebank and Stannary Hills Tramway

by Ruth S. Kerr

Editor' Note: Feature articles on the 'Stannary Hills and Irvinebank tin mining tramways' by G. H. Verhoeven appeared in L.R. 30 and L.R. 32. Ruth Kerr is undertaking further research work on these tramway systems.

The Boonmoo - Stannary Hills Tramway closed during 1938 though the Irvinebank - Stannary Hills section was used until August 1939. Tenders were called for the removal of the rails and fastenings to Boonmoo for sale. The contract was let in April 1940 to a local man, A.J. Atkinson, to transport all the rails to Boonmoo and stack them near the government siding, at nineteen shillings per ton for the Irvinebank Tramway and seventeen shillings and sixpense per ton for the Stannary Hills line. Atkinson used a rail motor chassis of two feet gauge with a 90 HP car engine with very low gear ratio for hauling ten ton loads of rails along the tramway.

The last working of a locomotive on the tramway was the running of the Borzig 4-4-2 (1907 No. 6345) locomotive and tender from Irvinebank to Boonmoo on 17 January 1941. It steamed into Boonmoo at 7pm in a blinding rain storm.

The cost of this trip was £24.3.0 for reinforcing the bridges with sixty pound rail and re-timbering

some culverts, $\pounds 3.15.5$ for cleaning and preparing the locomotive, and $\pounds 3.7.0$ for the crew's wages and running expenses to Boonmoo.

The Borzig was reboilered at Ipswich Railway Workshops in December 1934 - January 1935, and a boiler inspection certificate for 170 pounds steam pressure was issued for the locomotive in 1939. It was offered for sale for £900 in 1941 and was stored on the Tramway Siding until 1945 when it was bought for £500 by Cattle Creek Sugar Mill. On 20 February 1945 it was removed from Boonmoo in wagon W445 destined for Finch Hatton. Over the years it was substantialy altered. It was donated by Cattle Creek Mill to ANGRMS in 1973 and is presently stored at the Tramway Museum at Ferney Grove in Brisbane.

Reference: A/8603-4 (Queensland State Archives)

An Australian Diesel Mine Locomotive

by Ted Stuckey

In the mechanisation of the coal mines at the Port Kembla steel works late in the 1940's, the Australian Iron & Steel Co installed a system capable of handling some 3000 ton of coal per day at the Bulli Colliery. The New Bulli mine was opened in 1946 by driving a horizontal tunnel into the escarpment. Each work face was equipped with a power borer coal cutter and loader. The coal was loaded in 10 ton skips for transfer to the main tunnel by 10-ton battery operated locomotives. At this point the skips were made up into trains of 35 cars which were hauled by two 25-ton diesel locomotives.

Six of these 3ft 6in gauge locomotives were manufactured by Malcom Moore Pty Ltd at Port Melbourne, Victoria. Each locomotive weighed 26 tons in working order, and was 26ft 10in long, 7ft l in wide and 6ft l in high. They were capable of hauling the trains at 14 mph.

The power unit was a Gardiner 8L3 diesel engine. It had 8 cylinders of $5\frac{1}{2}$ in bore with a $7\frac{3}{4}$ in stroke, and developed 204 bhp at 1200 rpm. A supplementary oil pump was fitted to circulate the lubricating oil through a radiator. The locomotive had a fuel tank of 65 gallons, and a water tank of 80 gallons capacity.

The power of the locomotives was through a Vulcan-Sinclair hydraulic coupling to a Wilson-Drewery gear box, which provided four speeds in either direction. The final drive was via conventional side coupling rods. The three axles fitted with 30 inch diameter wheels were located at 4ft 6 in centres. The centre wheels were flangless. The



Locomotive under construction at Malcolm Moore's Port Melbourne assembly line. Photo: Diesel Railway Traction. axles and jackshafts were carried in self-aligning roller bearings. Westinghouse air brakes were fitted. Tractive effort was reported as 15200 lb, 8470 lb, 5810 lb and 3750 lb in each of the respective gears, assuming 95% efficiency.

The locomotives were designed to comply with Mines Regulations for underground use, and were equipped with exhaust scrubbers. In these, the exhaust gases were washed by water sprays, then passed through water chambers fitted with baffles. Finally, the gas mixed with air from an engine driven blower and discharged.

The driving cabin was fitted with seats for the driver and shunter. Instruments showed air pressure, cooling water temperature, engine speed, and ocomotive speed, an ampmeter was also fitted. The throttle and gear change were located so that they could be easily manipulated by the driver when the engine was travelling in either direction. The locomotives were equipped for multiple-working and electro pneumatic controls were fitted, which permitted the driver to control and monitor both engines. Two 12 volt batteries connected in series provided the power for starting, gear changes and sanding, as well as the interior and exterior lighting.

Automatic spring loaded couplers were fitted which could couple and uncouple on 40 foot radius curves.

Reference

Diesel Railway Traction, October 1949.



Above and below: These publicity photographs of the AIS Malcolm Moore underground mine locomotives are thought to have been taken during trials at the Fyansford Quarry railway in Victoria. Any comments from readers would be welcome.

Photo: BHP Publications Department.





LETTERS

Anderson's Tramway, Barkstead

I have been reading *Timber and Gold* by Norm Houghton, and the piece about Anderson's Tramway (pp. 17-28) was most interesting to me as one half of a mile of the line ran through our 40 acre paddock beside the Korweinguboora State School where the tram crossed the Ballan-Daglesford Road. In one section, I had to pull up 500 yards of this track so that we could put in potatoes. I wrote an article on the tramway for your magazine some years ago (*Ed. LR.27*, 1969).

The stringers of that section near the Ballan Road were logs about 15 inches in diameter, and had been levelled on the top with an adze where the 4 x 3 inch wooden rails had been fixed by 4 inch pins, with a countersunk head and barbed on the bottom. Across the back section of our paddock was the spring and dam where the locomotive took water at least twice daily. Along this section the stringers were sawn timber 12 inches x 12 inches as stated in Norm's book. Only 20 or so existed in 1921, as the majority were taken by the local residents for building material and gate posts. Two of these gate posts existed until burnt in a grass fire in 1952. I took out quite a few of the spikes which were holding the stringers to the cross beg logs or sleepers. These pins were 18 inches long by three quarters of an inch thick, similar to the small pins. I had about 50 of these until the days of the big depression, when our neighbour got a contract around Broken Hill catching dingoes. He knew I had the pegs so just took them without asking me. So lost for all time were the pins I had so carefully cut out of the tramway.

John Dalziel was Anderson's main locomotive driver with Robert Young his permanent fireman. John Dalziel's son, Ralph was the one who drew me the rough sketches of the two locomotives, which I see have been used in *Timber and Gold*.

In 1921-23 I worked for Robert Young part-time (there were no permanent jobs in the country in those times), butting props and lathes for the Langi Logan gold mine (somewhere near Ararat) whenever he received an order. When I found Bob Young was John Dalziel's permanent fireman, I never tired of asking him questions, and he never tired of giving me the information I was looking for. On one occasion he rode with me on horseback the full length of the line from Barkstead to the log depot beside the Werribee River.

The late Mr John Dalziel was a first class engineer, and like most engineers of his day, could turn his hand to any job he set his mind to, but locomotive driving was is most favoured work. He was also a highly educated man. I never knew him: he died before I went to live in the Korweinguboora district about 1920.

Robert Young could neither read nor write. He could sign his name, and could count money by mental arithmetic, mostly using the power of 10. He would count the mine props and the number of wooden lathes, and give me the answer in pounds, shillings and pence quicker than I could figure it out. One story he told me was that he faced the School of Mines Engine Drivers and Fireman's board nine times before he was given a fireman's ticket, so that he could fire the locomotive permanently. In 1920, I saw an engineer's handbook about Garratt locomotives at Ralph Dalziel's (John Dalziel's old home in Korweinguboora). It was destroyed in 1921 and, so was lost a valuable piece of history.

I took down some rough notes on Robert Young's information, but a lot of it made no sense to me at all until I read Norm's book. Items clarified for me were:

- the Garratt locomotive;

steel rails on top of the 4 x 3 inch wooden rails; and
the history of the Marshall portable engine.

Only one portion of this engine remains to-day, that is the water tank. I saw it in Dalziel's yard on Monday 20 October, 1980 at Korweinguboora.

When I wrote the article on Anderson's tramway for your magazine, your Research Society went to a lot of trouble to locate any information on the Garratt locomotive. I received a letter from them stating that Garratts at that time built a few locomotives. Going back to my notes some time later, Bob Young said that the locomotive was not brought in as a locomotive, but parts for a loco. When the parts arrived at Barkstead, they were assembled by John Dalziel. This would account for no locomotive as such arriving in Victoria at that time.

The roads were just a quagmire for most of the year. Bob Young said that John Dalziel and himself rode 3 miles from Korweinguboora to Barkstead wet or fine, arriving at 6.30 am. The fireman at the mill lit the fire in the loco for them. Their day was from 6.30 a.m. to 5.15 p.m. Mostly they did 3 loads a day, plus two loads on Saturday, and stopped work at 4 p.m.

Maintenance of the loco was a problem, as it was serviced every second Sunday. This is what prompted Anderson's to have a second loco built. After consultation, it was decided to make the second loco up out of the Marshall Portable (it was thought to be a traction engine). Bob said they used all the parts, and had a new boiler built by the Union Foundry in Ballarat. The portable was bought by John Dalziel, and lay in the yard at Korweinguboora for 50 years until cut up in 1937. John Dalziel used this engine for a while at his Toerag mill. I remember seeing the Government stamp on it - B.I.A. 1890 was its last reading. This boiler was never condemned, and it was not until the scrap dealers started to cut it up that its potential was found. When I had a look at it, the boiler was half as big again as an ordinary Marshall Portable. The firebox was wider and deeper and the barrel was 2 foot 6 inches longer. It had 48 2 inch brass tubes,

and the firebox was three-quarter inch copper. You can imagine the delight of the scrap dealer. The 48 tubes were brass, with a 12 inch piece of copper tube fitted into the firebox to take the expansion and contraction. The price for the double cylinder engine and fitting was $\pounds 10/0/0$ (\$20).

Bob Young said that Andersons admitted that they had made a mistake by not laying 25 lb rail out to the Werribee, the same as they had on the line from Dean to Barkstead. Bob said the geared protable was tried on the steel rails to Dean, but the brakes were not adequate, being only hand brakes, and caused a couple of frights between Mollonghip and Dean on the long downhill run. The Portable was brought back to the Barkstead/Werribee run and used for shunting when the Garratt was out of action. Being slower than the Garratt, it only did two trips a day with 4 log buggies.

This is the story as told to me by the late Robert Young who died in the depression years. I was a loco driver myself for 27 years at Fyansford. I am still an active member of the Bellerine Peninsular Railway, but at 75, I no longer drive. Anyway, we are on railway ground, and I have no safe working ticket for the Railways. I hope I have not confused you with this long story.

Albert A. Gunsser St. Leonards, Vic.

APRIL, 1981

EARLY AUSTRALIAN DIESEL LOCOMOTIVES (LR 69)

Several lines are missing from my manuscript on the Armstrong Holland diesel locomotives as printed on page 6 of LR 69. These are:

The engine was removed from DULCE and placed aboard a barge to drive a sand pump. In 1943 the barge sank, and the engine lost.

Anthony Weston Mt. Isa, Qld.

MARSDEN MUSEUM OF HISTORIC ENGINES—GOULBURN STEAM MUSEUM — LR69

I was surprised to find much detail omitted from the tabulated list of locomotives on pp 16-17 of LR69. In the interest of giving readers as much relevant details as possible on which further research can be based, I resubmit the following details from the original manuscript for belated publication. APRIL, 1981

LIGHT RAILWAYS

Isis Mill No. 5	11885/1909 Fowler	Ex Central Isis Mill No. 5 Gin Gin Sugar Mill No. 5
Fairymead No. 1	10533/1889 Baldwin	To static display at Bargara Beach, Qld. c 1961 prior to transfer to Goulburn.
Gin Gin Mill No. 7	1098/1915 Hudswell Clarke	Ex Goondi Sugar Mill Gin Gin Sugar Mill No. 7 Trials at Goulburn 25-4-1971
PWD 65/23	1596/1917 +1517/1915 Davenport	 PWD 23 - State Quarries and Quarries Ltd. Kiama NSW PWD 65 - Cordeaux Dam NSW Menangle Sand Coy. NSW Quarries Ltd. Kiama NSW Rebuilt as a single loco. at Kiama c 1938. To Parramatta steam tram museum 5-11-1956 To Goulburn 2-6-1967 In steam at Goulburn 4-4-1970 To Illawarra Light Railway 1-4-1977 In steam at ILRMS 14-11-1978
Jack	5945/1907 Krauss	Ex NSW Water Conservation & Irrigation Commission Fairymead Sugar Mill No. 7E.M. Baldwin, NSW
Perry	5643/51/1 Perry	Departed from Goulburn 28-4-1977
Billy	3677/1911 Maffei	Received at Goulburn without a boiler
Racecourse Mill No. 5	42155/1916 or 45215/1916	Former builder's number was not carried by a Baldwin ROD World War I loco. Reconstructed at a Rydalmere NSW engineering plant for pleasure railway use after 1974
Mulgrave Mill No. 9	455/c1904 Decauville	Once listed as loco No. 454 but parts stamped 455.
PWD 35	16089/1923 Fowler	 Ex State Quarries and Quarries Ltd. Kiama NSW. To Goulburn August 1958 Used at Goulburn as a portable boiler August'1958 to August 1962. Restored 1963. N.B. Wollondilly name given at Goulburn, has no historical significance.
Mt. Bauple Mill	6611/1912 Krauss	Withdrawn from use in 1950 Many parts carry number 6610 To Illawarra Light Railway 22-5-1976 to be restored as private project. Returned to Sydney September 1979. Boiler and cab parts still at ILRMS. Never owned by ILRMS.
Sth. Johnstone Mill No. 10	17881/1929 Fowler	Stored at Casey's Service Station at Silkwood Qld from 1971 to 1975 To Forresters Beach NSW June 1976 To Kurrajong 17-8-1978. In steam at Goulburn and at Forresters Beach.
	4667/1881 Fowler	Used by Bashford contractors. At Miller's Machinery Merchant Yard Vic. since c 1917. In steam at Goulburn 5-12-1976.

20

LIGHT RAILWAYS		APRIL, 1981	21
Qanaba Mill No. 1	20284/1935 Fowler	0-4-0T at Millaquin Mill until 1954. Converted to 0-4-2T at Qanaba. Withdrawn 1970. Delivered ILRMS for private preservation 18-10-1974. No work carrie out. To Sydney on 9-11-1979.	to ed
Macknade Mill No. 5	12271/1910 Fowler	Goondi Mill No. 5. To Victoria Mill as <i>Sunlander</i> c 1955. 7 Macknade Mill 1961 as No. 5. Set aside c 1965. To Lion's Pa Lucinda Qld. Arrived Timbertown Wauchope NSW 29- 1975	Го rk 4-

Ken McCarthy Keiraville NSW

MAYER'S POINT TRAMWAY, LR 70

I have just read David Burke's interesting article on the Mayer's Point Tramway of Allen Taylor & Co, and was prompted to send in several photos of the line which I was lucky enough to obtain last year. I don't know who took the photos or when. They would appear to show the Clyde-built 2-6-2T and an 0-4-0ST which looks very much like those Andrew Barclay locomotives which worked at Joadja (identified as AB 253 of 1882 in *LR.62* pp. 12-14).

I had initially approached Allen Taylor & Co with regard to my research interest in tramways of the Coff's Harbour district and was subsequently contacted by a Mr Ted Smith of that company. Mr Smith, now retired after spending most of his working life in the timber industry (a large percentage of it with Allen Taylor), has been contracted by Allen Taylor & Co to compile the history of the Company. He has sent me several photos of the Meyer's Point tramway and a copy of his history of the line which is based on old company records, newspaper articles, material in the Mitchell Library, interviews with people living along the line and personal recollections.

There are several variations between the Allen Taylor history and that appearing in LR 70. First, the line was constructed about 1904 for the Australian Timber Co. and featured wooden rails and horse traction throughout. For some reason this venture failed and the line closed down. In 1909 Allen Taylor secured a concession from the Forestry Commission of NSW to cut timber from the Coolongoolook Brush, apparently a very good stand of timber. In order to operate the concession they acquired the line in mid-1909 and initially used teams of horses to haul timber along the wooden rails to Meyer's Flat. It is said that 4 or 5 teams of horses were used and that they found the going very rough and sloshy in wet weather.

On account of the increasing demand for timber, Allen Taylor & Co. placed an order for geared locomotive with the Climax Manufacturing Co. about 1913. Around the same time they purchased some disused rail, reportedly from Ireland - 12 miles of 28 lb Carnegie Steel, 5 miles of 35 lb rail, plus a quantity of 46 lb rail for use on steep sections.

Also at this time extension work on the line was undertaken. (I am not sure of the location of the original terminus.) The country was rugged and some severe grades were met - as much as 1 in 20 against empty trains and 1 in 30 against loaded trains. O'Brien's Hill is said to have been the greatest obstacle. The line eventually reached Wootton on the upper reaches of the Coolongoolook River. This is now just a small village on the Pacific Highway, but in the 1920's it was a thriving township.

Here the line crossed the road on the level and continued inland, following the Coolongoolook River for a short distance. Next it passed through Dunn's Paddock, crossed a high timber trestle bridge and then climbed steeply for 2 miles to Sam's Junction (opened to here in 1918). From here a short branch, about 1 mile long, ran northwards into the forest to point beyond Mt. Grey.

The main line followed Worth's Creek after its junction with Carrington Creek, and continued upstream along Horse's Creek into further heavily timbered country, eventually reaching a point approximately 10 miles beyond Wootton. Two crossing loops were provided along the line; one half way up O'Brien's Hill and the other on or near Dunn's Paddock beyond Wootton. Some reports say that there was a balloon loop at the bush terminus.

About 1920 a turntable was provided near the level crossing on the Bulahdelah-Forster road. However, it was not used very much and was

removed short time later. Apparently the crews preferred to run bunker first on the outbound trips.

I hope that this information will be of interest and complementary to David Burke's article.

John Kramer, Pymble, NSW.

Editors Note: It was intended that the photographs of the Wootton accident would accompany David Burke's article in LR.70. Unfortunately they were not available in time to meet the production deadline. John Kramer's photographs are reproduced on the back cover of this issue.

TIMBER TRAMWAYS OF WHITTLESEA -LR. 67

I read with interest Rolf Alger's article on the Kinglake tramways, all the more so as I have come across some research material on the area whilst engaged in a separate project.

Ralf is to be congratulated for an excellent article relying on oral sources. His dates are accurate for the most part, and I can offer the following clarifications extracted from the *Yeo Chronicle*.

Munro Bros. appear to have commenced at Kinglake in October 1909 with a 16 h.p. mill and a traction engine. They obtained tramway rights from the Shires of Whittlesea, Eltham and Yea on 12 March 1911 and began laying the track soon after this. They did not have much financial success, and the firm of Kinglake Sawmills Pty Ltd went into liquidation in September 1912, and was dissolved in April 1914. By May 1913, Messrs Baxter and Coghlan had taken over the assets of the old company under the name Kinglake Timber Co.

Higg's mill was set up late in 1917.

Baxter & Coghlan went out of business in 1919, and their operations were taken over by the Whittlesea Sawmill Pty. Co. This firm installed the Flowerdale No. 1 mill in 1920, and at the same time joined with the Flowerdale Timber Co. to form the one company known by the latter name.

The last months of Baxter & Coghlan were characterised by a dispute of monumental proportions between the Shires of Whittlesea, Eltham and Yea, the Eltham Progress Association and the Public Works Department on one side, and the millers on the other. Baxter & Coghlan had in July 1918 discontinued the practice of permitting local residents to use the tramline to cart their produce on, and to ram home the point, had torn up sections of the line. It was at this point that the Country Roads Board in its wisdom closed the Kinglake to Whittlesea road on account of the weather, thus leaving the locals stuck on their farms!

The Whittlesea Shire ordered the tramline to be restored but Baxter & Coghlan refused, claiming that the original agreement of 1911, with its provisions for locals to be permitted to use the tram, did not apply as it had expired with the demise of Munro's company, and had not specifically been renewed with them. The Shire countered by saying if this were the case then Baxter & Coghlan had no right to use the tram at all, let alone determine who shall travel over it.

Another tram in the area was an earlier one. E. H. Robinson laid 1½ miles of tram along the Whittlesea - Yea Road in 1898 to serve the mill. The site is not known, save that it was in the Parish of Flowerdale. The Yea Shire Council were not impressed with the sloppy construction, viz; no provision for drainage; trees left lying in the road; and a bridge of very questionable status. The Shire did not have to suffer this for very long, as Robinson left the site on 1901.

Norman Houghton Archivist Geelong Historical Records Centre

Whilst every effort is made to ensure the accuracy of articles published in *Light Railways* errors may creep in. Additional information is being discovered all the time, and this sometimes contradicts previous information.

If you see any errors, or can add information, please contact the editor, and so help us to record the full history of Australia's light railways.

Articles and news items are always welcome and should be forwarded direct to the editor. It greatly assists if they are typed or written on one side of the paper only and double spaced.

Historical references to sums of money in Light Railways are in Australian pounds (\pounds). One pound equalled two dollars on changing to decimal currency in 1966.

NOW

Victoria.

APRIL, 1981

AVAILABLE..... WHILE STOCKS LAST. TIMBER AND GOLD by Norm Houghton. Tramways of the Wombat State Forest area around Daylesford, 96 pages, approximately 35 photos and 8 maps including a foldout measuring 16in by 171 in. Price; \$8.55. BRITANNIA CREEK WOOD DISTILLATION by A.P. Winzenried. Wood Distillation at the only commercial plant in Australia, along with a history of associated tramways. A Special issue of "Light Railways" (No.68). 24 pages, 20 photos, and maps. Price; \$1.95. THE CORRIMAL COLLIERY RAILWAY by K. McCarthy. The history of a coal mining tramway on the South Coast of New South Wales near Wollongong. ("Light Railways" No.60.) 44 pages, 36 photos, 14 diagrams. Price; \$2.65. HARTLEY VALE SHALE TRAMWAY by F.John Reid. A history of shale mining in Hartley Vale, together with some notes on Davenport locomotives and South Australian Jetty Tramlines; all part of LIGHT RAILWAYS No.64. 36 pages, 30 photos and 3 pages of maps. Price; \$1.35. LIGHT RAILWAYS INDEX No. 2. A complete index to all issues from No.13 to No.40, inclusive. Two listings are made; one by subject/title, the other, by locomotive. Other index's are in preparation. 36 pages, size compatable with "Light Railways", Price; \$1.60. All Prices Include Postage. All Items Available, stocks permitting, from: LRRSA Sales. P.O.Box 382. Mt. Waverley, 3149. All prices subject to alteration without notice.



Above: Andrew Barclay No. 253 of 1882 (ex Joadja No.4), nicknamed Fanny, on the Mayer's Point Tramway.

 $\frac{Below:}{timber} \mbox{ Clyde Engineering Coy. 2-6-2T locomotive (B/N 241 of 1920) hauling timber of the Mayer's Point line.}$

Both photos courtesy John Kramer (see p. 21).

