

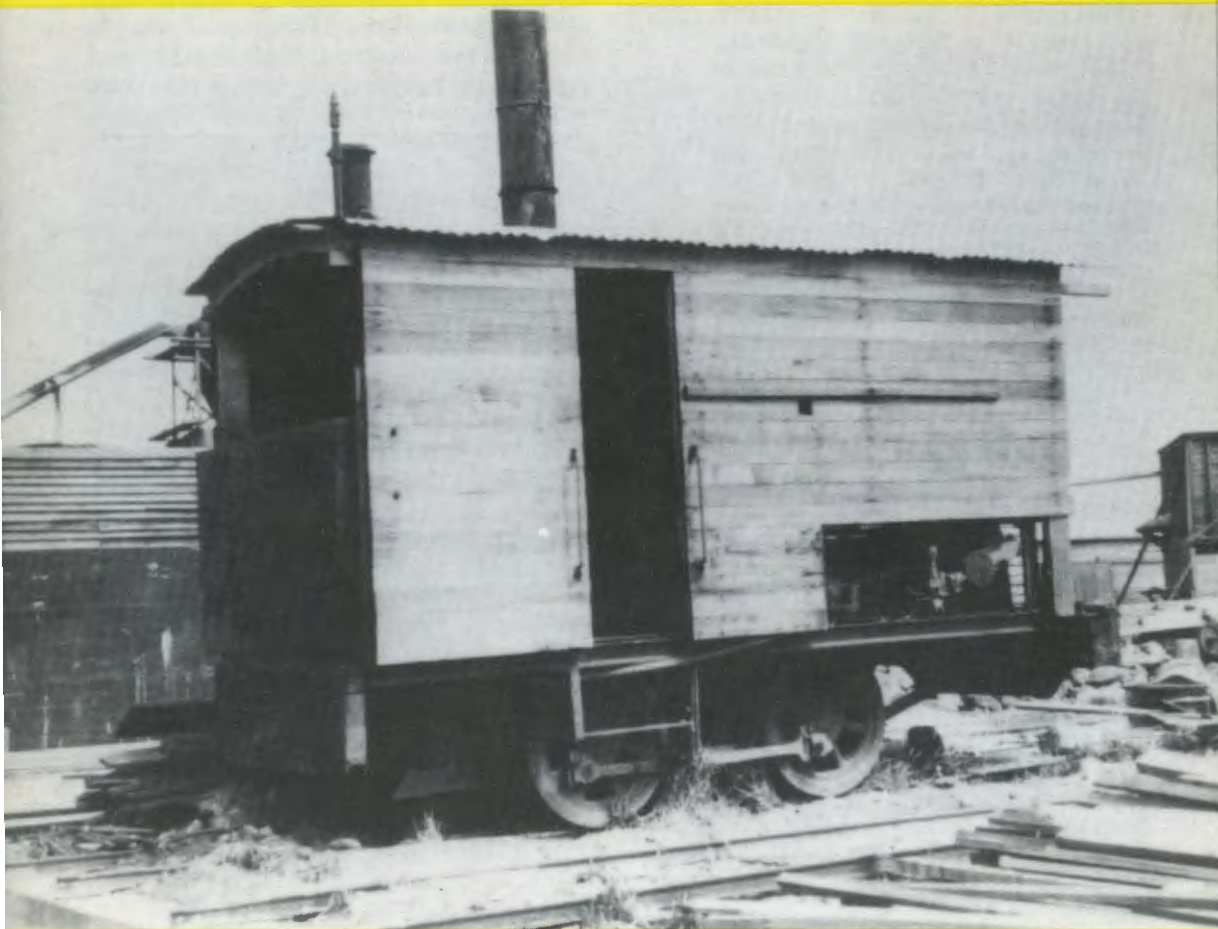
# **LIGHT RAILWAYS**

**Number 119**

**January 1993**

**Locomotive 'Stanley'  
Maud's Landing Jetty Tramway, W.A.  
Sydney Pressure Tunnel Tramway**

**ISSN 0 727 8101**



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**Light Railway Research Society  
of Australia Inc.**

PO Box 21, Surrey Hills Vic 3127

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**President:** Bill Hanks (059) 44 3839

**Secretary:** Jack Stock (03) 888 7346

**New South Wales Division**

**Address:** PO Box 290, Burwood NSW 2134

**President:** Jeff Moonie (047) 53 6302

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**Light Railways Editor:** Norm Houghton, PO Box 1128, Geelong 3220. Phone (052) 21 7007 or (Home) (052) 29 4805. Articles, photographs and letters welcome.

**Cover Photo:** Locomotive 'Stanley' in a hybrid condition as a 0-4-0 VBTG at Jaeger's sawmill, Smithton, Tasmania.

*Photo: G. F. Sweetapple per R. T. Horne*

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### EDITORIAL

This issue is one of continental breadth with articles on light railways from the coast of Western Australia through to south eastern Tasmania, up to Sydney, and reviews on Queensland sugar mill tramways. Ken Milbourne raises some points of clarification on the genealogy of the locomotive Stanley that should settle a few arguments.

David Whiteford presents an account of the settlement and jetty tramway at Mauds Landing. This remote dot in the vast expanses of the north west of Western Australia took a century to achieve its status as anything other than a goods shed at the end of a jetty.

Jim Longworth continues his chronicles of the Sydney water supply tramways, this time looking at the construction of Sydney's pressure tunnel with all its technical and geological problems and subsequent lessons.

Reviews and letters on several issues complete the journal's contents.

**Norm Houghton**

# LOCOMOTIVE 'STANLEY'

by Ken Milbourne

For many years the origin of the 0-4-0 ST engine Stanley has been a matter of speculation and debate. Although the locomotive's appearance clearly indicated a Manning Wardle product it was consistently reported to be a Black Hawthorn. This view was strongly supported by a boiler inspection record of July 24, 1901 which identified the locomotive as a Black Hawthorn (rebuilt 1892). As a result of extensive research conducted by Richard Horne in England, and by Wayne Chynoweth and myself in Tasmania, it now appears that most of the engine's history has been accurately determined.

Boiler records, press reports and a widely circulated photograph clearly prove that the engine was located at the Tasmanian Hardwood Corporation's Hopetoun operation in July 1901. Tracing its subsequent movements and modifications in Tasmania was relatively easy but establishing its appearance in Tasmania proved very difficult. The widely held, but erroneous, view that the engine was of Black Hawthorn manufacture complicated the research. In retrospect it is easy to see how one piece of evidence wrongly interpreted can lead to many frustrating hours of research which produce nothing.

The following is a summary, in chronological order, of what is known of the history of the Manning Wardle engine Stanley and the engine of the same name which came to Tasmania. It is my opinion that the evidence strongly suggests that they were one and the same engine.

1871 0-4-0 ST loco *Stanley* built by Manning Wardle, BN 371/1871, 3 ft 4.5 in gauge and supplied to the Victoria Colliery, Wakefield, Yorkshire.

1890 Victoria Colliery received standard gauge Black Hawthorn 1016/1890 0-6-0 ST. (Change of gauge would have made 371/1871 unsuitable and a candidate for disposal as a trade in).<sup>1</sup>

1892 0-4-0 ST locomotive rebuilt by Black Hawthorn and thereafter 3 ft 6 in gauge and carrying name *Stanley*.<sup>2</sup>

1901 *Stanley* arrived in Tasmania aboard iron-ship Margaret Galbraith, for Tasmanian Timber Corporation.<sup>3</sup>

July 24, 1901 *Stanley* underwent boiler test and entered service in track laying on Hopetoun Tramway near Dover.<sup>4</sup>

1908 Tasmanian Timber Corporation taken over by Huon Timber Company and *Stanley* stored.

1911 *Stanley* re-entered service on Hopetoun Tramway.<sup>5</sup>

1915 Hopetoun mill and tramway closed down and loco stored.

1922 *Stanley* transferred to Huon Timber Company's Geeveston operation where it worked until project closed down in 1924.<sup>6</sup>

1927 Loco worked briefly for Tasmanian Paper Pty Ltd in their trial paper making project near Geeveston.<sup>7</sup>

1934 Engine sold to F. Jaeger & Sons of Redpa, North Western Tasmania and used at their mill and tramway.

1936 New boiler made by Emu Bay Railway Co.<sup>8</sup>

c.1937 Boiler removed from *Stanley* for use in restoring Hudswell Clarke 0-6-0 loco 380/1891, Six Wheeler, to serviceable condition.<sup>9</sup>

1943 Cab etc. removed from frame and wheels on which was mounted a Sentinel steam lorry motor. The whole composite engine was totally enclosed in a box wagon-like construction. This engine saw limited service only and was out of use by 1945. The steam motor was subsequently used, though not as a locomotive, by Jaegers at their Newhaven Mill.

An unverified report claims that the Sentinel steam motor was salvaged by a Victorian steam lorry enthusiast for use in the construction of a steam lorry.

## References

1 Richard Horne, correspondence 1990/91.

2 Tasmanian DLI boiler record, 699.

3 Tasmanian Mail, Jan. 19, 1901.

4 DLI boiler record, 699.

5 H. Jones & Co. Ledger, Melbourne University.

6 Wayne Chynoweth, notes based on boiler records.

7 D.L.I., boiler record 2895.

8 Karl Jaeger, interview 1986.

9 Letters to the Editor



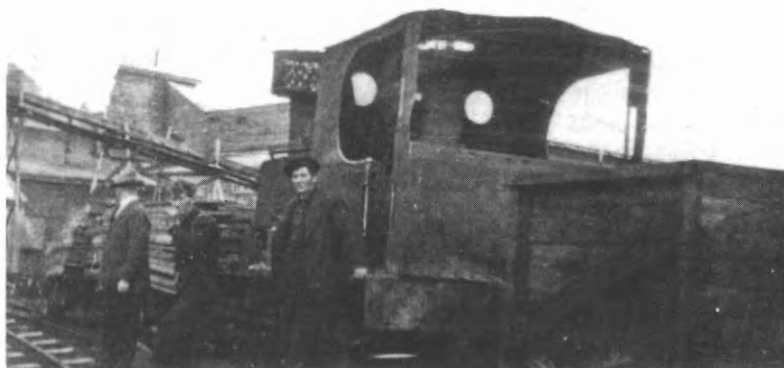
*Above: Stanley as delivered at Dover, Tasmania 1901.*

*Right: Stanley being refuelled at Jaeger's sawmill near Salmon River, N.W. Tasmania 25/2/1937.*

*Photo: C.C. Singleton.*

*Below: Stanley at Geeveston, working for the Huon Timber Co. c 1924.*

*Photo: Miles Ponsonby ex George Sweetapple Collection.*



## MAUD'S LANDING; A HISTORY

by David Whiteford

'Mauds Landing is in the Ashburton magisterial district. It is an open roadstead, situated about 95 km north of Carnarvon, but south of the north-west Cape with a reef which forms a protection from southerly winds. A jetty 450 metres long has been built here to accommodate two schooners, with a maximum depth at high tide of five metres. At the end of the jetty a large shed has been erected to facilitate the shipping of wool from the surrounding sheep stations. Large ships can anchor safely some distance out with 10 metres at low water, and be lightered from the shore.' So described the 1902-1904 Western Australian Yearbook under the heading 'Principal Towns' etc and goes on to describe the main features of the 'town' as being a timber jetty with straight head 30 metres long by six metres wide and 450 metres from shore; a wool shed; a 660 metre 2 ft (610 mm) gauge tramway; 4 trucks and a well for water.

It is only in recent years that Mauds Landing has perhaps begun to live up to its 'Principal Towns' status and it is many years since the port ceased to be used and the jetty and infrastructure were demolished. However, the history of this small and remote port, reflecting the history of many other such localities, is interesting in the context of the development and change experienced by the North West since the 19th century.

Detailed information on the establishment of Mauds Landing as a port is hard to find but it is known that tenders were called by the Public Works Department of Western Australia (PWD), closing on 19th May 1896<sup>1</sup> for the construction of a jetty, shed and well. The contract was awarded on 4th July 1896 to J. & J. Wishart for £7989 with a completion date of no later than 4 July 1897.<sup>2</sup> The 1896-97 PWD Annual Report mentions that the work is nearing completion with the corrugated iron on timber framework woolshed finalised; a well, windlass, and cattle trough finished and work proceeding on the jetty. The next annual report gives the details on the now completed contract. There is no mention in the reports of the tramway but it does appear that it was laid as part of the construction contract, being a single track 2 ft. (610 mm) gauge line running from beside the woolshed to the head of the jetty.

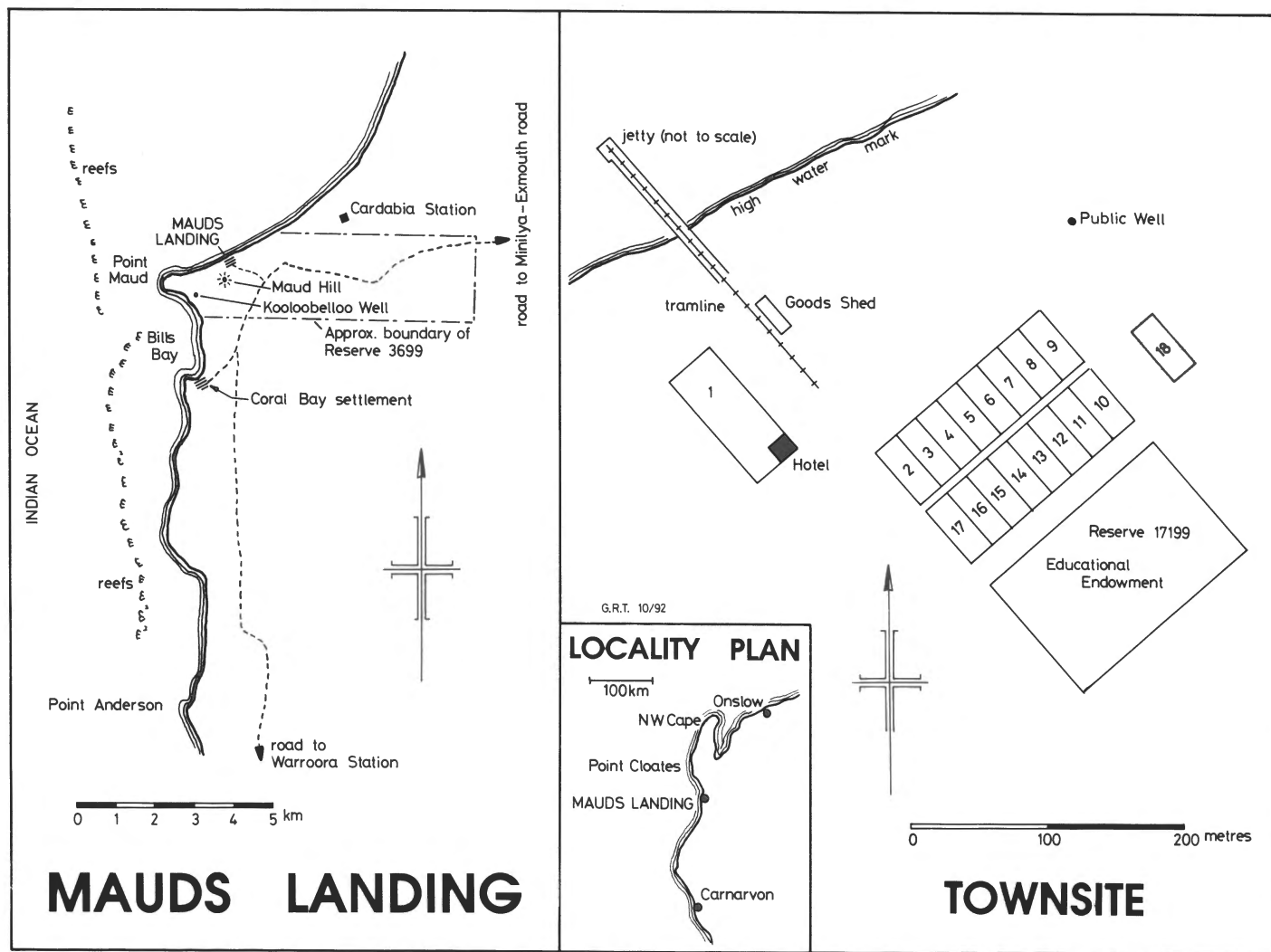
The 1905 PWD Annual Report provides an official view of some of the rail services provided at various north west ports. 'At several of the ports, such as Wyndham, Balla Balla, Mauds Landing etc, the tramway lines practically do not extend further than along the jetties or a few metres beyond their ends, and can hardly be considered as lines of communication.'<sup>3</sup>

With the development of the port there followed the declaration of Townsite Reserve 3699 on 27 November 1896.<sup>4</sup> This 5,700 hectare site was not subdivided or developed and it led to the Commissioner of Crown Lands receiving a petition in June 1898 from eight settlers of the Minilya/Lyndon region and Bangemall Goldfield for the survey of a townsite. The petitioners suggested it be called Mervyn after 'one who has done most to develop this port'<sup>5</sup>, pioneer settler Mervyn C.R. Bunbury. However the Surveyor General did 'not consider there is any necessity to survey any lots at Mauds Landing at the present time.'<sup>6</sup> One change that was made was a re-drawing of the townsite boundary to reduce Reserve 3699 to about 4,000 hectares, this being gazetted on 1 March 1899.

The Government Gazette of 23.9.1898 called for tenders for the lease of the Mauds Landing jetty and tramway for a period of 12 months. In March 1900 the call was for the lease of the jetty and wool shed but no time period was specified. The Public Works Department issued the initial tender but the Collector of Customs was responsible for the next, while the Chief Harbour Master called tenders for leasing the Mauds Landing jetty, tramway and goods shed in February 1903! This latter tender was for a 12 month period ending 31 March 1904. While early control of this outpost see-sawed between departments, the Public Works Department was generally responsible for carrying out maintenance of the jetty, tramway and shed, while the Harbour & Lights Department controlled the leasing of the port for most of its existence. The Lands and Surveys Department managed the actual land reserves and later surveying.

While the local settlers perceived the need for a townsite subdivision, the Harbour & Light Department took a negative view of Mauds Landing. The 1903-4 Annual Report records that 'No tenders have been received for leasing Fortescue and Mauds Landing jetties and it is impossible for this Department to work them at anything but a dead loss.' This had not been the first year in which no lessee could be found for the jetty but in 1906-7 it is recorded that the Department received the sum of £5 for the Mauds Landing lease, year ending 31/3/1907. The next year the lease cost £22/10/- and it increased gradually to £37/10/- in 1914-15.

Despite the difficulties in leasing the jetty, the Government was prepared to spend money on upgrading facilities and in maintenance. In 1899/1900 clearing drift sand around the shed and road and tightening the jetty bolts cost £37/1/10d while in 1902 a two tonne whip





crane was forwarded 'to be erected shortly on the jetty.' The 1905 Public Works Department Annual Report was able to report that 'this somewhat out-of-the-way jetty was also visited by a maintenance party. Walings and braces destroyed by Teredo were renewed and the structure generally overhauled, and a crane erected at jetty head. The tramline was rebalasted at the goods shed sidings.' Unfortunately, no diagram showing any siding at the goods shed has come to light during this research, and this was the only evidence the author found of anything other than a single line of rail existing. The three year period taken to erect the crane indicates the PWD was not eager to be involved in work at such remote places. This was confirmed by a statement in the Annual Report that 'Other lesser tramways (such as that at Wyndham, Balla Balla, Mauds Landing) have been attended to as required during the year in the way of minor repairs etc, generally by local arrangement; but several of these places being more or less out of the beaten run, have to wait their chance of convenient opportunity for any general overhaul.'

In spite of this lack of official interest in Mauds Landing, the tiny port was handling occasional bursts of heavy traffic. In July 1907 it was reported that 'Mr Cameron, Supervisor of Public Works, and Mr Palethorpe have returned from Mauds Landing (to fit a buoy for navigation). At the time of their visit Mauds Landing wore quite a business aspect as, besides the SS 'Penguin', there were in port the steamer 'Una', the lighter 'Diver' and a two masted sailing boat from Fremantle. The jetty is well built, though too short for the expeditious handling of cargo. There is a sandbank about 200 metres from the head of the jetty and over this the depth of water is only 1.5 or 1.8 metres, whereas alongside the jetty itself boats drawing 3 or 3.6 metres can berth. It is stated that were the jetty extended for a distance of 180 metres there would be no need to lighter goods. A reserve was recently surveyed near the landing and the

survey of township blocks is almost certain to follow. Negotiations have opened up for the purchase of a low-draught steamer to ply between the landing and Carnarvon.'

In 1907-08 additional trucks for the Mauds Landing tramway were supplied although no number was specified. At this time the 2 ft (610 mm) gauge rail stock from Hopetoun was dispersed to other PWD operations so it is possible that the new Mauds Landing wagons were transferred from there. The motive power on the tram was horse.

One of the more important years in Mauds Landing's history was 1907 when Surveyor A.H. Salmond re-surveyed the township boundary lines in June and advised the Department that the receiving and forwarding agents, Baston & Co of Carnarvon, intended to establish a branch of its business at the Landing. Salmond asked whether he should survey some town lots and in July was directed to do so. Mauds Landing was finally taking shape as a surveyed townsite. Baston & Co were also taking over the goods shed and jetty lease at this time. George Henry Sutton Baston was recorded as a store-keeper and leaseholder of Mauds Landing in the electoral rolls and appears to have stayed there from approximately 1911 to 1921, after which he took up the Quobba Station property much further south towards Carnarvon. Baston has the honour of operating the sole business at Mauds Landing during its life as a port and the 'hotel' shown on a Lands Department townsite map is assumed to be Baston's business.

The Public Works Department eventually considered that the jetty should have been built 4 km further north where the same length of jetty would reach eight metres of water. With the agitation for a surveyed township it was suggested that vested interests would want a jetty extension once development occurred.

The Lands Department acted on the PWD comments and set aside Reserve 5313 of 120 hectares around the proposed new jetty site in August 1908 although it was not gazetted until 1923! But in January 1913, following a special instruction issued to Surveyor Bennett, 16 by .10 hectare town lots were surveyed at the original reserve, the Lands Department considering the likelihood of building a new jetty being very slight. The Government Gazette of 19 February 1915 finally announced the declaration of the townsite of Mauds Landing. Maud was the name of the schooner whose Captain was discoverer of the place, and the schooner was named after the daughter of



*Horse operated tram at jetty head, Mauds Landing, hauling three wagons, c. 1925.  
Photo: Courtesy Ric French.*

John Bateman, a very old resident of Fremantle and owner of the boat.<sup>9</sup> Lots 2 & 3 were set aside as Reserve 1852 for Public Purposes and the remainder of the lots were thrown open for selection at Capital Values varying from £15 to £25.

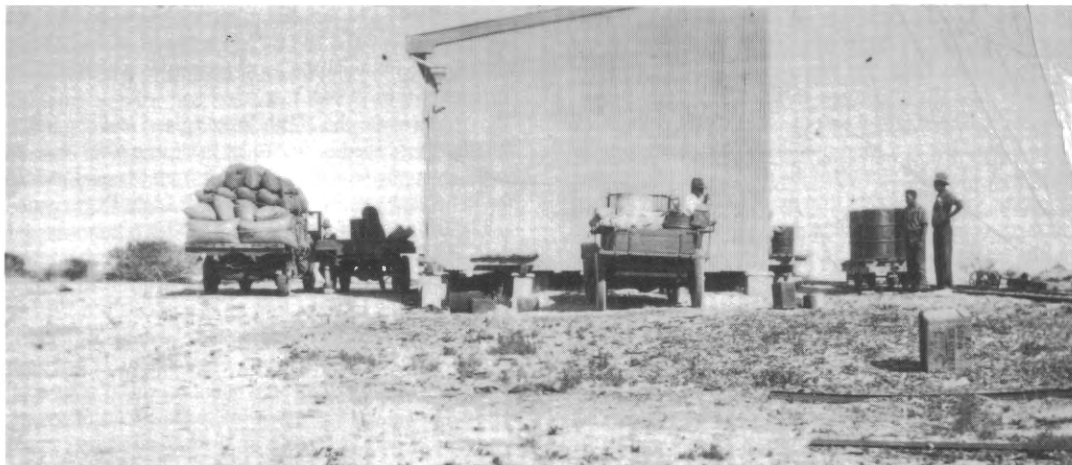
Meanwhile, the annual cycle of events continued at the Landing with inspections and jetty repairs occurring in most years. Extensive repairs to the shed and jetty were completed in 1911-12. On 2 May 1911, Don Matheson (a partner to Mr French in Cardabia Station) wrote to Mr Butcher his local MLA, and reported that 'the jetty is in such a bad state that he (Mr French) would not be surprised to see it blown down in the first big storm'.<sup>10</sup> The goods shed was useless for keeping rain out, the tramline needed repairing, and tram trucks could not get to the door of the goods shed on the north side as sand had drifted to such an extent that it had practically closed that door. The ramp at the shed needed extending about ten metres. The Public Works Department sent Supervisor John Cameron and a team of men with materials to undertake the work between September and December 1912 but by late 1913 it was considered that major repairs were again required, but expenditure reports show that only small amounts were allowed in the years 1913 to 1915.<sup>11</sup> In 1914 four pairs of wheels and axles for trolleys were being made and were to be despatched to the Landing, and the trolley bodies already at the Landing were to be put in order. £400 was set aside for material sent in July 1914 but the work was deemed non urgent and was held over until June - September 1916 when a total of £950 was spent. Again in 1918 - 1919 it was reported that 'material has been forwarded with a view to carrying out necessary repairs to jetty, tramway and goods shed' but the 1919 - 20 annual report said that 'material and plant have been assembled preparatory to undertaking repairs and general overhaul of jetty, tramway, rolling stock and goods shed. It is hoped to have this work in hand some time next year.' Indeed, the necessary repairs were finally carried out during the following financial year, continuing the general lack of urgency about any Mauds Landing affairs.

In May 1922 Mr F. Meagher, the then lessee of the jetty applied for payments of £10/15/- for repairs he wished to conduct to the tramline and this was approved in August. It was noted that the line on the shore then had a length of 90 metres. Mr Meagher took over the lease in 1922 from Mr C.E. Fane but had some difficulties in obtaining the goods shed keys as they had been sent to Fremantle for safe keeping. Mr Meagher only had a fairly short term as lessee for in 1923 Mr J.G. Cooper took over, though Mr Cooper also only lasted for one year. The leasing contract for Mauds Landing jetty and tramway in the 1920s is very detailed and the Chief harbour Master

drew up many conditions for such leases.<sup>12</sup> The clauses of tramway interest were: -

1. The lessor shall for the term of one year from the date of this agreement permit the contractor to use the jetty, tramway and goods shed at Maud (sic) Landing... and to use all trucks and rolling stock supplied.
3. The lessor shall supply rolling stock as deemed necessary by him for the use of the contractor and any things supplied by the lessor shall be kept in good repair by the contractor sufficiently oiled and greased where necessary, damage by fire and storm excepted.
4. The lessor may appoint any officer of the Government to be a judge of whether the contractor is maintaining the rolling stock and other appliances in good repair, and the decision of any officer so appointed shall be final and binding on all parties.
5. The contractor shall truck and carry over and upon the said jetty and tramway all cargo and goods discharged out of the vessel upon the jetty or delivered to him to be carried to or from any vessel in the harbour or roadstead or to the Goods Shed terminus provided however that nothing in this clause shall prevent the contractor from running his rolling stock to ship's side for the purpose of loading or unloading inward and outward cargo.
7. The contractor shall not be compelled to load or unload goods more than 4.5 metres from the rails except in any Government Goods Shed or Customs House.
13. Whenever the jetty, tramline, goods shed and rolling stock or any of the appurtenances thereto shall require repairs or alterations the contractor shall carry on the traffic to the best of his ability but no remission of rent or compensation of any kind shall be made on account of inconvenience caused.
14. The lessor or his nominee shall be entitled to the use of the rolling stock at all times when not in actual use by the contractor.
16. The contractor shall not receive, truck, or permit to be placed on or near the jetty, tramline or goods shed any hay which is not properly and securely trussed.
17. All goods for Government works carried out departmentally shall be free if trucked by government employees and all goods for a government contract let by tender shall be charged half rates only if trucking is done by contractor for such works.
21. The contractor shall deliver goods at any time between the hours of 8 am and 5 pm on week days and on Saturdays between the hours of 8 am and noon or at such other times as may be appointed by the Lessor.





*The goods/wool shed at the shore end of the jetty. Note the light rail lying in the foreground.  
Photo: Courtesy Ric French.*

22. The contractor shall keep the jetty, goods shed and rolling stock clean and free from refuse hay or other inflammable substance.

23. The goods shed mentioned in this lease shall not be used for any other purpose other than for storage of goods.

Despite the considerable work done at Mauds Landing every few years, 1923 saw a further report for work reach the Department headquarters. Fifty jarrah sleepers, 6" x 4" x 4' (152 x 100 x 100 mm) and 200 kg of small dogspikes were required at a cost of £138 including installation. The line needed straightening and there was a reported shortage of trucks. Mr Stoddard, Engineer for the North West, reported that £800 would be spent by the end of June 1924. He inspected the site between 23 and 25 October 1923 and reported 'Tramway. A number of new sleepers are required and line needs straightening up. There is a shortage of trucks but we may be able to transfer some of those at Onslow when Beadon with its three foot (sic) (914 mm) gauge is completed.'<sup>13</sup> Onslow previously had a two foot gauge (610 mm) railway from the sea jetty to the original townsite but following the development of a new port and town at Beadon Point, with a 3'6" (914 mm) gauge railway, the two foot (610 mm) stock became redundant.

The schooner 'Geraldton' delivered some materials on a departure from Fremantle in March 1924 but the projected June trip with further material was cancelled due to the 'Geraldton' engaging in regular Carnarvon - Onslow runs. Cargo space to many small N W ports was often at a premium and so transhipment of goods at Carnarvon or even off the coast at Mauds Landing was often used as

an alternative. Repairs were finally reported complete in April 1925 at a total cost of £1700.

Around this time, pastoralists using Mauds had purchased a schooner to co-operatively undertake trade through the port. The Maud Landing Shipping and Trading Company Ltd was given a certificate of incorporation on 13 June 1924 but went into voluntary liquidation in February 1926 after losing some thousands of pounds. Perhaps as a result, the Engineer for the North West, on 29 March 1927, considered the abandonment of the jetty when next extensive repairs became necessary.

Local pastoralists, in July 1922, obtained a grant of £100 for improving the road track to Mauds Landing. These pastoralists, 13 in number, would have between 60 and 80 km travel to a jetty instead of 240 km to Carnarvon. It was hoped that the Gascoyne-Minilya Roads Board would expend the money but as it only met about once a year, it was approved for Mr Meagher (of Winning Station, and now jetty lessee), as a Roads Board representative, to arrange the road work. However, the Roads Board reported in November 1922 that Mr Meagher shipped Minilya wool from Carnarvon (!) and only Waroora and Cardabia used Mauds in that season - and neither of those used the road for which the grant was made. Only £25 of the £100 had been expended, and this was on creek crossing improvements. In July 1924 Meagher reported that he could now get the work completed in time for the coming season. He had had difficulty in getting the work done at satisfactory figures, but it appears that the remaining work was not approved by the Board and in November 1924 the Commissioner for the North West recommended that instead £1000 be

spent on the telegraph line (Winning Pool) to Mauds road.<sup>14</sup>

At the landing itself, the new motor truck was finding itself at one disadvantage to the old wagon teams. Wagons had been pulled past the shed down to the beach to be turned but soft sand prohibited this movement for motors. A 12 metre section of the road required widening to permit trucks and cars to turn and £40 was approved for this work in October 1924. In the years after this road motor trucks instead of horses were used to haul the tramway wagons as the jetty was wide enough to permit this.

Mauds Landing jetty was not always able to berth ships and in the wool season a lighter was usually taken to the landing to ferry goods between the jetty and larger ships. Illustrating typical North West conditions is a statement from the Assistant Engineer North West Dept to the Secretary for the North West in October 1924. 'The 'Bambra' is still unable to lift the nine piles from Carnarvon, there is no lighter at Mauds Landing. A lighter attempted to get down from Onslow to meet 'Bambra' this trip but bad weather drove her back. The 'Geraldton' is up Exmouth Gulf way so that there is no immediate prospect of shipping piles by her .. The people at Mauds Landing are awaiting lighter to get the wool away so that best course appears for Carnarvon to send piles by first steamer calling off the landing when lighter is available.'<sup>15</sup> In November 1927 the lighter 'Nicol Bay' was transferred from Cossack to Mauds for the wool season, but one wonders at the general ability of jetty lessees to make a living from operations if much of the North West shipping was unable to use the Landing for most of the year. Unfortunately no record of shipping arrivals and departures has been located for Mauds Landing but the visits were probably few in number.

In 1927 C. French & Co of Cardabia (by then lessees of the jetty etc) wanted a repair plan drawn up so material could be despatched while the lighter was based there. Mr Field, the Resident Engineer at Onslow, inspected the Landing on 9 October. At that time only Cardabia Station (average 500 bales of wool) and Waroora Station (F.H. Reid, average 300 bales) were using the Landing. Winning Pool, Marilla, and Mia Mia (total average 1350 bales per year), although in the district, did not use the jetty. The lightering service was provided in the wool season but station stores were now coming from Carnarvon by road.

The goods shed was in reasonable condition except for guttering and downpipes and the tramway was in working order with six flat top trucks in fair travelling order but fairly extensive repairs, including renewal of ten piles, were necessary to the jetty structure. Mr Field felt that repairs of £750 could not be justified on a jetty

returning only £20 per annum in rent unless greater use was made of it - and he saw no likelihood of that. Motor transport had bought the local properties within carting distance of Carnarvon.

The Engineer for the North West agreed and suggested that the goods shed be leased by itself as a wool store as some lightering would likely occur from Mauds Landing for some time yet. But the Harbour & Light Dept continued to call tenders for the lease of the jetty, tramway and shed and from 1 April 1943 C. French of Cardabia was awarded the lease for twelve months at £15 per annum. He had actually held the lease at this price since 1927 or 1928 despite the £20 income quoted above by Mr Field.

In May 1932 Mr French reported that the trucks had been kept in repair but now needed major repairs at great cost. The rails were equally bad owing to the effects of sea air. He asked if rails and trucks ex Point Samson jetty could be sent to Mauds but in view of the comparatively low rent paid by him, he did not expect the Dept to spend money on repairs. Instead if he were supplied materials he would do the work. French had hoped to obtain a three year lease from 1932 instead of the usual annual, being mindful of the 'abandonment' of the jetty by the PWD and the decision not to spend funds on rolling stock, repairs or the jetty itself.

Mr A.J. Orr, Wharfinger of Cossack, reported to the Public Works Dept on 25 June 1932 advising that 102 lengths of 21 lb (42 kg/m) rail - varying from 15 ft to 23 ft long (4.5 to 6.9 metres) but mostly 21 and 22 feet (6.3 to 6.6 metres) were stacked at the junction on the closed (Cossack/Point Samson/Roebourne railway) about 10 km from Roebourne. See LR52. 'If further lengths are required they would have to be taken up from the existing line. The stacked rails would have to be transported across a marsh about 800 metres and owing to the nature of the marsh only a few at a time could be transported. There are seven 8 tonne trucks at Roebourne but the 4 tonne trucks are at Point Samson. The lighter people advise they have no facilities for loading these on to lighters at Point Samson. Some means would have to be found of removing them by motor truck to Cossack and they would probably have to be dismantled to enable them to be loaded on to a motor truck. It is not possible to get them to Roebourne owing to the line being wasted away at many points.'<sup>16</sup> Also available at Roebourne were 75 pairs of suitable fish plates, 50 kg of dog spikes, and 100 kg of new bolts. The spikes would have to be pointed at one end to be of use at Mauds.

A lighter was due to leave Cossack for Mauds on 9 July and arrangements were made to send two 4 tonne trucks and the required track material but only 20 out of the 164 lengths of rail requested were actually approved for delivery.

Repairs were required again following the 1934/35 season when 85 tonnes of cargo and 1056 bales of wool were handled at the jetty. The Manager of the State Shipping Service had expressed the view that it was a pity to allow a convenience such as the jetty to drift out of use. The Harbour & Light Dept believed stations other than Waroora and Cardabia were using the jetty and that trade could increase if reasonable repairs were made, and a greater rental received as a result. An unusual visit or to the jetty was the Stateship 'Kybra' in July 1935 when 102 tonnes of cargo and 140 rams were handled.

The Dept of the North West sent an inspector to Mauds in October 1935 to undertake a full study of the jetty condition. Mr French had reported to his local MLA (A.J. Rodoreda) that 1935 would see the last use of the jetty unless repairs were made. He proposed reducing its length by half and using materials from the dismantled section to repair the rest, doing the work himself with new piles being supplied by the Government as needed. The Dept inspector concluded that 40% of the piles in the proposed section for abandonment would need replacing and some were missing, causing the jetty to sag.

French hoped to continue his lease of the jetty for a nominal sum as a result. He reported that Bullara, Waroora and Cardabia shipped from the jetty with some 'indirect' use by Exmouth Gulf, Ningaloo and Yardie Creek. The latter being when the Onslow lightering service undertook Mauds Landing work and would call at those coastal stations when cargo from a ship at Mauds would be loaded into the lighter and taken up the coast. 'In a nutshell, it would be an act of grace for the Government to give us the jetty, rather than see it float away.' Mr

French wrote.<sup>17</sup>

On 8 January the Harbour & Light Department called tenders for two jetty leases for a period of from one to ten years as from 1 April 1936. The announcement advised that 'Repairs to these jetties will not be undertaken unless the amount tendered and the period stated warrant the expenditure.'<sup>18</sup> Mr French at first proposed to pay £193 per annum for ten years basing the offer on repair expenditure estimated at £1930 including reducing the jetty length and construction of a new head. But the final tender from French was £130 per year for ten years, agreeing to maintain the jetty at his expense or recoup the cost from the Department for doing so should he require it. The tender was conditional on the jetty being reconditioned with an 18 metre head and no fender system. However, the jetty was not leased during 1936-37 pending Treasury agreement to allow funds for the work. This agreement never came but it was agreed by the Executive Council that French lease the jetty for ten years at £5 per annum and pay £1300 repair costs. Dalgety & Co wool buyers, assisted French with funding for repairs and it is reported that work was completed by the end of July 1937, under budget, at a cost of £988/4/1d. The 450 metre jetty was reduced to 175 metres long with an 18 metre head, the tramline of course being shortened by the same distance.

The Assistant Engineer for the North West inspected Mauds in July 1944 reporting five 'bogeys' serviceable, the shed good (except paintwork) but some pile and decking replacement was needed on the jetty. Apparently there were no repairs done and little or no use made of the jetty during the war. The lease expired on 31 July 1947, and it was proposed that rent continue at £5 per



*A rail/road combination in 1947. The Cardabia station truck provides the motive power. The driver and his two canine assistants pose for the camera at the shore end of the jetty.*  
Photo: Courtesy Ric French.

annum while repairs were estimated at £1000. But again, no repairs were done. Post war shortages held up work on far more important projects (eg Carnarvon jetty repairs) and Mauds Landing was given a very low priority. In August 1947 it was estimated that no repairs could be attempted for at least another 12 months. Accordingly, the lease on the jetty was not renewed.

This marked the end of Mauds Landing as a coastal port. The goods shed was sold by tender for £600 in 1949. Sale of the jetty to the North West Whaling Company for £175 was approved in February 1950. The jetty was to be removed by the Whaling Company to Norwegian Bay some 85 km north of Mauds. The Norwegian Bay Whaling Station (also known as Point Cloates) had been devastated by a cyclone in 1944 and was resurrected in 1949. In the early 1950s further major additions were made to the plant.

The fate of Maud's rails and trucks does not appear to have been independently recorded but as tramways were operated at the whaling station, and the Norwegian Bay jetty was rebuilt in the early 1950s using much of the Mauds Landing jetty material, it is possible that the rail material was included in the sale. When the Whaling Company closed in 1957 the liquidator's list specified 'one complete tramway system throughout works and jetties with turntables, steel tip wagons (25) and four trucks; one main jetty 60 metres long strongly built and provided with double set of tram rails.'<sup>19</sup>

In 1953 'Exmouth Gulf, the so-called 'Madman's Corner' of the West Australian Coast' was 'now the subject of keen scrutiny by very sane men.'<sup>20</sup> Big developments were proposed with the opening up of the area to oil exploration and the need for a future service town. 'Maud's Landing (was) the general topic of conversation. Will it be the new Townsite? People are asking one another if the blocks are still for sale. If they are it seems that speculators will be quick to snap them up.'<sup>21</sup> The Lands & Survey Department was quick to respond to this and withdrew all lots in the townsite subdivision from sale - the decision just beating the application by a Mr Goddini of Mt Lawley for Lots 16 and 17! A second application from a Dalkeith address arrived a few days later. Interest in Mauds Landing was unprecedented!

Onslow and Exmouth, however, became the economic centres of the early oil boom and for six years interest in Mauds Landing was negligible until in 1959 Cardabia Station applied to have the townsite re-included in a pastoral lease. But possible North West developments, including a salt works, made the Lands Department cautious about releasing the reserve and it was not until

December 1960 that the eastern portion (about 2253 hectares) was deleted, leaving 1746 hectares as townsite reserve.

Another possible revival as a major port for Mauds Landing was in a proposal by CSR building materials to construct a 600 metre long jetty about 4 km north of the original jetty (the 1908 proposed site). It was intended to have a conveyor loading about 500 tonnes per hour (more than the old jetty handled in many a whole year!) of unspecified freight into ships, but the development did not proceed.

In November 1966 Garrick Agnew Pty Ltd applied for a gypsum mineral claim over Townsite Reserve 3699, while in 1967 Coral Bay Pty Ltd proposed a fish processing works at the Landing and a caravan park - motel complex at Bills Bay, five miles to the south. Bills Bay is now better known as Coral Bay and a substantial tourist settlement has since developed. The mineral claim was approved for investigation but it was never developed. Coral Bay Pty Ltd set up a short-lived fish freezer facility. Taylor & McMullen prepared a development proposal and a town plan for the Mauds Landing and Bills Bay sites with the industrial sites at Mauds and usual town facilities at Bills Bay.

In 1968, Cardabia Station regained a pastoral lease over Reserve 5313 which had been set aside in 1908 for a possible new jetty and townsite north of the then existing site. Land to the south of Mauds Landing was surrendered by Cardabia for the creation of an extension of the Mauds Landing Townsite around Bills Bay. Reserve 3699, set aside for 'Townsite' purposes, was cancelled vide, Government Gazette 13 June 1969, most of the land going into a Cardabia lease while the new townsite boundaries were gazetted on 26 September 1969.

In 1981 an inspection of Mauds Landing showed remains of a few jetty piles protruding from sand and sea, and a length of very corroded rail in the sand dune scrub. By the end of the decade some of these piles had gone and in 1992 much of the former 'townsite' is being developed as a new tourist accommodation and recreation complex with marina, golf courses etc. The few remains of the old port will soon be gone. A file reference records a suitable epitaph. 'The jetty and shed went the way of most such constructions after time and the elements had their play, and the motor truck with its long distance haulage capacity ousted the old camel teams which formerly transported wool to the sea coast for collection by contemporary small coastal trading steam boats or schooners.'<sup>22</sup>



*Remains at Mauds Landing 2.5.1981 - some rusted and bent rail and several jetty piles.*  
*Photo: D. Whiteford.*

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#### Acknowledgement:

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## 'SUCCESS AMIDST FAILURE'

### A DESCRIPTION OF THE LIGHT RAILWAY USED IN CONSTRUCTING SYDNEY'S PRESSURE TUNNEL

by Jim Longworth

#### Introduction

During the early years of this century Sydney was racked by a series of severe droughts that tested the city's water distribution system. At that time Sydney's water distribution system to the southern suburbs was connected to the Headworks bulk supply system by two 48" diameter watermains but was barely able to cope with peak summer consumption. This situation arose because the city was growing rapidly and demand was increasing beyond the system's capacity to meet it. See below.

Year	Population Served	Average Daily Consumption (million g)	Average Daily Consumption per capita (g)
1888	296,346	8.144	27.49
1908	620,415	24.567	39.59
1918	992,970	41.359	41.63
1928	1,250,968	74.650	51.32
1938	1,438,233	105.290	73.21

To overcome the problem a three part strategy was adopted with a boosting plant being installed at Potts Hill, the areas between Potts Hill and Crown Street being supplied by independent trunk mains, and a main feeder Pressure Tunnel (PT) constructed<sup>1</sup>

#### THE PRESSURE TUNNEL

Investigation into the pressure tunnel began in 1914 and the proposal was approved by the Water Board in 1915. This tunnel was to be just under ten miles long, by thirteen feet diameter as excavated (ten feet diameter as finished and lined) and laid in a straight line between Potts Hill reservoir and Waterloo pumping station at a depth ranging from 149 and 378 feet.

Seventeen shafts were sunk along the line of the tunnel at an average distance of 3,220 ft between shafts.<sup>2</sup> Large wooden poppet heads were erected at each of the seventeen shafts to provide cage hoisting and spoil removal. Each shaft was equipped with two independent cages. Instead of using ordinary side-tipping trucks, the poppet heads used rotary tipplers, of 5 ft 6 in diameter<sup>3</sup> to which box trucks were clamped and turned upside down<sup>4</sup> to empty their load of spoil.

The excavated tunnel was lined with an eighteen inch thick envelope of sandstone concrete.

However, on subsequent pressure testing, sections of the tunnel ruptured where dykes and poor quality rock had been passed through, allowing large volumes of water to escape.<sup>5</sup> Nevertheless, the first section of the conduit was placed in service in the summer of 1929-1930 due to the urgency of supplying water to consumers.

In June 1930, the Board approved lining the tunnel along its full length with steel tubes, 8 ft 3 in internal diameter, by 9 ft long, of 5/8 in to 1/2 in plate, with special internal joints. The void between the tube and the tunnel was filled to near the top of the original lining with bluestone concrete. The full length of the tunnel was retested successfully and commissioned in November 1935.<sup>6</sup> The tunnel supplies Sydney with 100,000,000 gallons of water per day.

#### ARROL WHITTAKER TUNNELLER

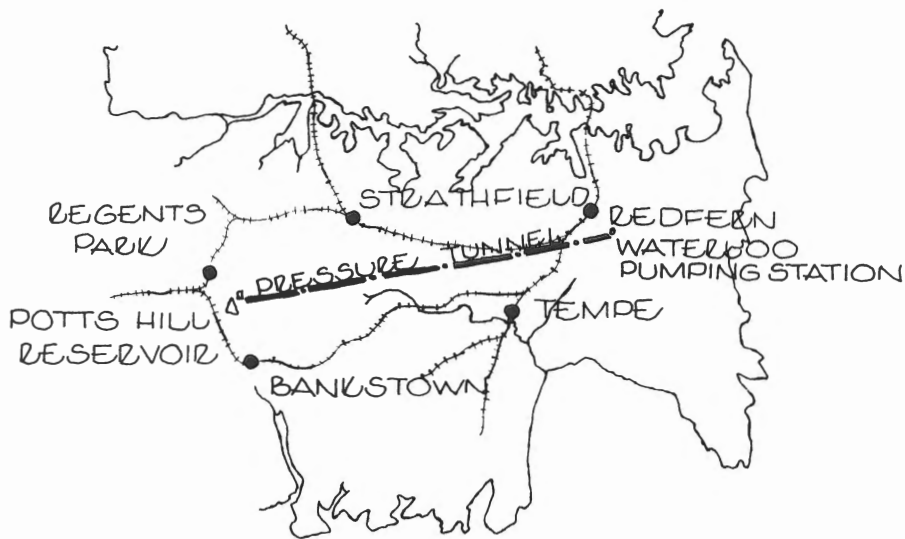
Initial excavation of the tunnel was by the drill and blast method. One shift per day produced an advance of twenty five to thirty linear feet per week. Blasting took place at the end of the eight hour shift as the men withdrew to have lunch (crib).<sup>7</sup>

Chief Engineer Mr J.G.S. Purvis was despatched to England via America to enquire, investigate and report on tunnelling machines. Tunnels bored by the ATEM (Arrol Tunnel Excavator Machines) were inspected at both the Manchester sewerage works and at Bournemouth.<sup>8</sup> Similar machines were then also in use tunnelling under the English Channel.<sup>9</sup>

To expedite progress on the works,<sup>10</sup> Purvis recommended by cable that the Board approve the purchase of two Arrol Tunnel Excavator Machines at a cost not to exceed £12,100 c.i.f. Sydney.<sup>11</sup> The Minister approved the Board's recommendation and the Board sought to gain every publicity in the press, as evidencing its endeavour to supply up-to-date construction methods e.g. photographs of the proposed type of tunnelling machines appeared in the Sun 12/3/1924 and Telegraph 13/1/1925.

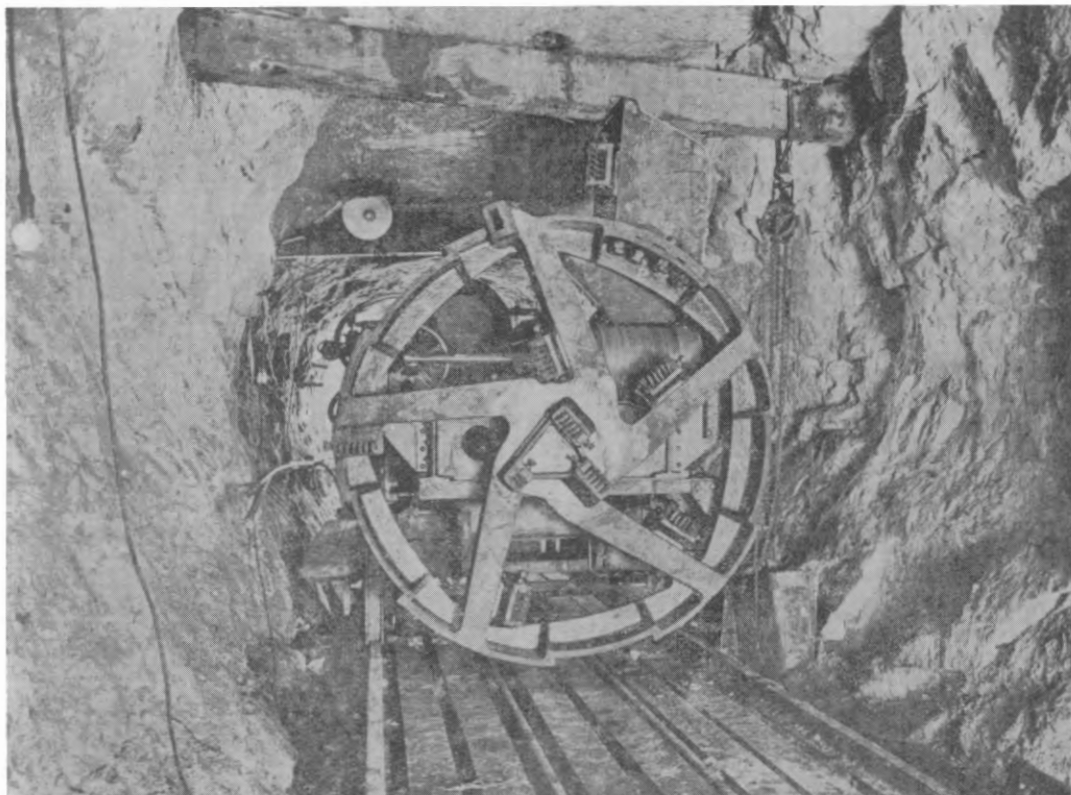
By installing ten of the electrically driven tunnelling machines, it was claimed that the job would be finished in three and a half years instead of six





*The cutter head on the Arrol Whittaker tunnel in shaft No 9 West Drive, Pressure Tunnel.*

*Photo: Sydney Water Board.*



years using conventional drill and explosives. A saving of nearly forty percent in cost was also claimed.<sup>12</sup>

Mr Purvis returned to Sydney expressing full confidence that the machines:<sup>13</sup>

'would do all that is promised on their behalf by the designers and makers,...

'literally eat through shale and soft sandstone, such as will be found in the route of the tunnel,...

'can cut through soft rock at an enormous rate, and the only difficulty that we will have in the new tunnel will be in getting the debris to the surface as quickly as it is cut out by the machines.'

The two machines were delivered to the site by July 1925. A company expert accompanied the machines to Australia and supervised their establishment. One machine was assembled and in running order by August but it made no impact on the local Sydney sandstone. The machines underwent continual and expensive adjustment, modification and repair<sup>14</sup> and as this type of machine was in its infancy, the Board treated the lack of progress as experimental.<sup>15</sup>

Cutting rates of up to three feet two inches per hour were achieved.<sup>16</sup> But the rock proved variable in nature with the result that cutting tools lasted from an advance of thirty two inches down to an advance of less than one inch per change of tools. Eventually the machines proved incapable of cutting through the sandstone, irrespective of the various modifications made to their cutting heads. Excavations then reverted to the ordinary heading and bench method<sup>17</sup> using gelignite at a rate of two to two and a half pounds per cubic yard of rock.<sup>18</sup> The 1933 Royal Commission suggests that the machines finally cut less than 200 feet of tunnel.

Elder Smith & Co Ltd (the local representatives of the Arrol-Whittaker Tunnelling Machines) re-purchased one of the machines for £5,000 on behalf of its client Messrs Hancock & Webb.<sup>19</sup>

## BRITISH ELECTRIC VEHICLES LTD LOCOMOTIVES

Apparently the first operation of a storage battery electric locomotive in underground construction work in Australia was by the New South Wales PWD at the Northern Suburbs Ocean Outfall Sewer (NSOOS) (1916-1928).<sup>20</sup> The locomotive was a 5 ton model, used in the removal of excavated tunnel spoil.<sup>21</sup> Following the success of this locomotive the Board approved the purchase of two similar loco-

motives with the accessories for use on the Pressure Tunnel to remove spoil.<sup>22</sup>

This approval was soon varied to two No 1<sup>23</sup> locomotives of the same manufacturer, for a sum of £2,500 including spare battery, sandboxes, and charging plant.<sup>24</sup> The builder's Kardex records give these two No 1 locomotives as Builders Numbers 605 and 606 despatched on 8/10/1925.<sup>25</sup> Overall dimensions for the No 1 10 ton locomotives and further technical details of the locomotives are to be found in McRae<sup>26</sup>. Hills<sup>27</sup> attributes use of battery locomotives in London's tube railway extensions and surface relief sewers of the 1921-26 period as leading the MWS&DB to consider them for use in the Sydney Pressure Tunnel.

The locomotives were supplied by W.J. Spencer & Co. who used the fact of their use in the Pressure Tunnel as part of the company's advertising campaign.<sup>28</sup> This advertisement refers to five locomotives in use in the Pressure Tunnel.

Soon after delivery of the initial two locomotives the Board called tenders for the supply of an additional four, No 2 locos rated at 15 tons capacity.<sup>29</sup> The builders Kardex records show that only three locos were supplied, being builders numbers 646 and 647 despatched on 23/7/1926 and builders number 648 despatched on 13/8/1926.<sup>30</sup>

## BATTERY CHARGING

Battery charging for the locos took place on the surface in specially constructed battery charging sheds. Batteries were transported between the tunnel and surface on special purpose battery transporter wagons. When the distance from shaft to face exceeded 1,200 feet arrangements were made to change the batteries every morning before commencing the shift. On shorter hauls the batteries were changed on alternate days.

On arrival at the plat (the level part of an underground working), the battery transporter wagons were shunted alongside a waiting locomotive on a siding. The battery compartment side doors were removed and batteries slid sideways onto the locomotive frame, with the whole operation taking less than five minutes. Up to twenty miles per charge were possible under normal operating conditions of running one way with a full load and returning with six empty skips. This gives an average of 130 ton-miles per locomotive per battery charge.<sup>31</sup>

## ROLLING STOCK

Rolling stock comprised forty six one cubic yard trucks came from the City Railway Construction Department and sixty trucks, probably constructed



*Pressure tunnel excavation by drill and blast methods.*

*Photo: Sydney Water Board.*

by the MWS&DB workshops. Tenders were later called for sixty hardwood muck trucks, with the lowest tender being from Horan & Crossan.<sup>32</sup> These trucks were probably the 1 1/2 in timber, wooden body trucks 4 ft 4 in long x 2 ft x 2 ft with heavy wheels, as later advertised for sale.<sup>33</sup>

Concrete carriages for the initial lining of the tunnel were purchased from James Steel Engineering Co Ltd.<sup>34</sup> A further unusual truck was that of the 'charging trucks' used to load measured materials into the concrete batching plant on the surface.<sup>35</sup>

Later 10 aggregate trucks (for relining the now piped tunnel with bluestone concrete) were supplied under Contract (SMH 29/7/1933) and there is a reference to two Webb travelling concrete guns.<sup>36</sup>

## TRACK

The track was of 2 ft gauge built with 30 lb rail. Eighteen sets of points and crossings were supplied by W. Thornley & Sons Ltd for £12/5/0 per set, with a further thirty three sets approved later. Some twenty pound rail may have also been used together with some lighter rail.<sup>37</sup>

The track layout was simple, apparently being a single line running from the working face to the shaft. At the shaft the track divided in two with one line leading to each cage, rejoining with each other

on the other side of the shaft, and then on to the opposite tunnel face.

## RAILWAY OPERATION

During excavation of the tunnel, the railway provided transport for the removal of excavated spoil. Excavation of the tunnel proceeded concurrently by two headings at all but three of the seventeen shafts. Initially haulage of spoil was by manpower. However by April 1925 this was becoming increasingly difficult as the tunnel drives lengthened. Labourers filling skips at the base of shafts were paid 15/8 per shift, which was raised to 17/-, the same as truckers-out and shovel men.<sup>38</sup>

Trains of six loaded skips (with an aggregate weight of ten tons) were hauled from workface to shaft. On arrival at the shaft, the locomotive pulled its train through one side of the cage, leaving the end skip in the cage for elevation to the surface. The remaining skips were then detached from the locomotive and left beyond the cage awaiting their trip to the surface. Meanwhile the locomotive returned via the other line, picking up a rake of empty skips as it passed through the other cage.<sup>39</sup> Empty skips were then pushed to the working face for reloading. Tractive effort to pull these tunnel trucks was

equivalent to 35 lb pull per ton, compared to 25 lb per ton for mining trucks.<sup>40</sup>

The sandstone concreting operation involved both hauling the horseshoe shaped liner forms to the site of placement and hauling concrete from the mixer to the patented 'Webb' concreting gun. Concrete was mixed on the surface and loaded into one cubic yard side-tipping skips standing in the cage. After lowering to the plat the locomotives took charge and pushed the loaded skip from the cage. Concrete trains comprised rakes of four one cubic yard trucks.<sup>41</sup>

This would have been all that was required of railway operations on the site had not the tunnel ruptured. Lining pipes for the remedial measures were lowered in a horizontal position and placed onto a special low truck fitted with rollers to facilitate removal at the work face. The truck and its load of pipe, were then, for reasons unknown to the author, hauled into position by horses rather than locomotives.

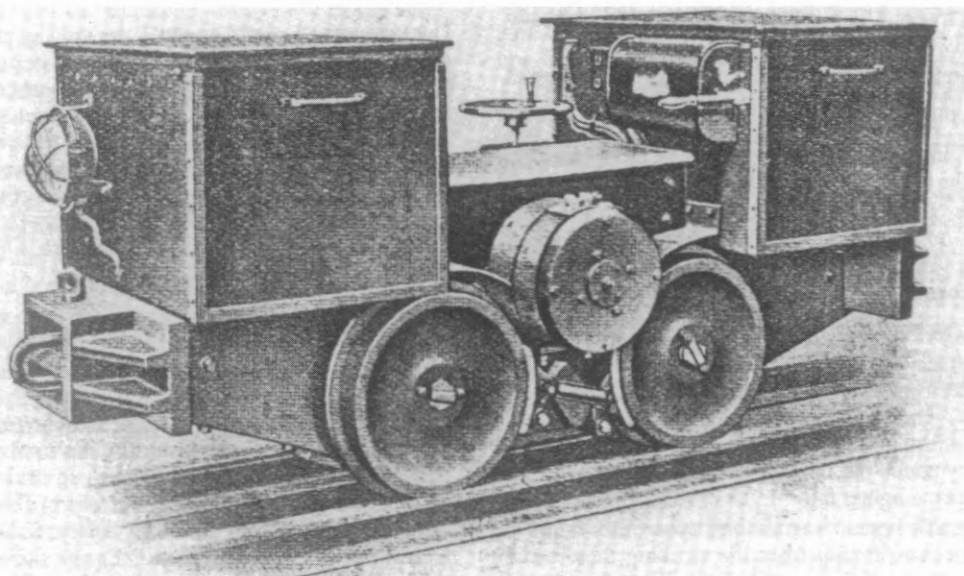
Bluemetal concrete was then placed around the pipe to nearly fill the void between outside of the pipe and inside of the ruptured tunnel lining. Aggregate and cement were sent to a concrete batcher at the face by horse haulage. Specially designed trucks were equipped with gravity rollers and metal batch boxes. Stock bins at the surface fed via six inch diameter pipes down the shafts, to fill the batch

boxes at the tunnel level. Some shafts used a mono-rail system attached to the under floors of the shaft cage and tunnel ceiling, instead of the six inch diameter pipes. Two batch boxes were used for each mixer batch. As the leading truck was emptied, its supply of boxes was replenished from a second rear truck, which shuttled to the shaft with empties from the leading truck.<sup>42</sup>

### WORKING CONDITIONS

Working conditions in the tunnel were different from those generally found in a coal mine of the same period. There was ample height for walking, the tunnel was lit by electric lamps and was provided with good ventilation by a constant current of fresh air. Usually the space was dry except where underground soakages were intercepted. Temperatures were warm in winter and cool in summer. Log fires in the drying huts dried wet clothes and warmed their wearers. A bonus system allowed day labour workers to increase their pay by exceeding their set tasks. Locomotive drivers were paid 18/3 per day.<sup>43</sup>

Usual access to the tunnel was by cage at the poppet heads.<sup>44</sup> Stairs were provided but the 200 ft depth required hundreds of risers. The stairs were badly lit and often slippery with seepage water, necessitating the wearing of oilskins and top-boots.<sup>45</sup> During November 1931 the Board called tenders for the purchase and removal of one 'locomotive', proba-



*Battery electric locomotive as used in the Pressure Tunnel. Photo: Electrical Engineer.*

bly a BEV from the Pressure Tunnel.<sup>46</sup> During January 1932 tenders were again called for disposal of excess plant, including 'Electric Locomotives', again probably BEVs from the Pressure Tunnel.<sup>47</sup> During December 1933, Empire Engineering which was the local successor to Spencer as BEV agents,<sup>48</sup> advertised '3 locos' in use by the MWS&DB (probably at the Pressure Tunnel work).<sup>49</sup> Presumably two locomotives had either been sold or were awaiting sale, leaving three still in service.

#### POSTSCRIPT

Not until the early 1970s did Sydney's MWS&DB again venture to trial tunnel boring machines. A

Robbins small boring machine was hired with an option to purchase and an Atlas Copco Model FF 1524 Mini Fullfacer TBM was demonstrated at operating cost only. Later one Atlas was hired with an option to buy.<sup>50</sup>

Now in the 1990s even TBMs are threatened with redundancy. Horizontal boring is currently in use on short length tunnels. Microtunneling technologies are under development. Both offer significant reductions in the volume of spoil to be removed for a given design section of conduit. No longer is the minimum size of the tunnel governed by the maximum size of the equipment required to bore it.



*8 ft. 3 in. steel linings being placed inside ruptured original concrete lining as a remedial measure.  
Photo: Sydney Water Board.*

*Aggregate Truck being pushed to the working face during installation of mild steel lining at Pressure Tunnel. Note bags of cement on top of batch boxes.  
Photo: Sydney Water Board.*



## ACKNOWLEDGEMENTS

Sincere thanks are extended to Mr C. Wilson for his supplying many invaluable media references used in compiling this account.

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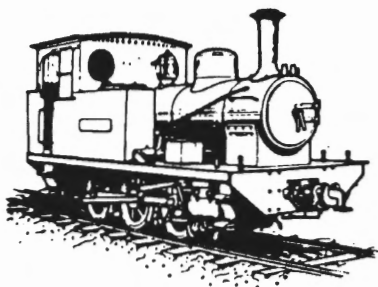
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- Telegraph. various dates. The Telegraph newspaper. Sydney.







**'The Dalmaine Colliery and its Transport Systems - A Tale of Corporate Inefficiency and Rugged Individuality',** by Lindsay Whitham, in *Tasmanian Historical Research Association Papers & Proceedings*, Vol 39, No. 1, March 1992, pp 12-22.

This interesting illustrated article by member Lindsay Whitham examines the ups and downs (mostly downs) of three attempts to mine, transport and market black coal from Dalmaine on the north east coast of Tasmania. The original scheme as promoted by Victorian capital in 1914 was to provide coal for Victorian and South Australian markets. The coal was to be despatched from the mine by means of a 3 ft 6 in gauge railway 9 km in length to a deep water jetty at Seymour. But the Tasmanian Public Works Department advised that the Seymour site was storm prone so the wharf proposal was moved north to Picaninny Point, 6 km from the mine and a ropeway substituted. So far so good. A jetty was constructed but the depth of water was found to be insufficient for anything but small vessels. The jetty was extended but storms wrecked the extension. The mine then closed in 1918.

The mine was revived in 1919 and a 60 km 3 ft 6 in gauge railway south to Coles Bay was put in hand. By mid 1926 some 27 km of earthworks had been constructed but work was suspended when funds ran out.

A third and final attempt was made in 1939 to get the mine working and exporting. This time costs were kept to a minimum by economical methods and ideas and coal was road trucked to the railway station at St Marys. Most of the mine output was sold to the Tasmanian Government Railways. The mine finally closed in 1953.

Much of the railway formation has been turned into a road but relics of the ropeway and the facilities at Picaninny Point can still be found.

## BOOK REVIEWS

Readers wishing to purchase this issue of the journal can do so on application to P.O. Box 441, Sandy Bay, Tasmania 7005 in return for \$5 including p & p. NH

### **Cattle Creek Memories** by John Elliott.

64 pages, 197 mm x 210 mm, printed on fine quality art paper. Published by Glenlyon Press, Ashgrove, Brisbane. Available from the manager, Mackay Sugar Cooperative Association Ltd, Marian Mill, Marian 4753 at a price of \$14.95.

Before the closure of Cattle Creek Mill at the end of 1990, the Mackay Sugar Cooperative Association commissioned photographer John Elliott to record its final days. During the last two weeks of operation, an evocative collection of black and white photographs was taken, and a selection of 60 of these has been published in this soft cover book. They record a wide variety of aspects of the mill operation and provide a wonderful record of the mill, its people, and the town of Finch Hatton. Ten or so of the photographs feature tramway details including locomotives and mill yard operations. Each photograph is printed 120 mm x 180 mm size, one to each page, and carries an informative caption. This book is recommended for all interested in the sugar industry.

JB

### **Top Mill in the Valley: Cattle Creek Sugar Mill, Finch Hatton** by John Kerr. 120 pages, 240 mm x 175 mm, 44 photographs, 1 map. Published by Boolarong Publications, 12 Brookes Street, Bowen Hills, Brisbane 4006 with the Mackay Sugar Co-operative Association Ltd.

Mackay Sugar are to be congratulated not only for commissioning a photographic record of Cattle Creek Mill but also for arranging for John Kerr to write its history, which was published in soft covers shortly before the end of 1991.

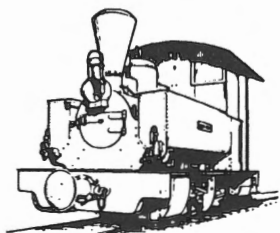
Cattle Creek Mill was unusual in being a grower's mill which was built by local capital without the benefit of government assistance. It survived through careful management and the prudent acquisition of second hand equipment from larger mills to become an integral part of the merged Mackay Cooperative. The merger has sounded the death-knell for two mills, including Cattle Creek, but it has ensured the continuance of the local autonomy and initiative which Cattle Creek symbolised.

Readers familiar with John Kerr's style and manner of treatment of mill histories will find a definitive family resemblance with his previous histories of mills at Maryborough, Bundaberg, Racecourse and Mossman. Being the story of a small mill with a shorter history than most, the book is briefer than the others, and being published in harder times, the presentation is more economical. However, the

easy to read style, and the sure touch in handling the details of technical change and mill politics are very much in evidence. The author has made extensive use of the minutes of meetings of the mill's Board of Directors as well as a variety of other sources, which are referenced throughout. The 44 photographs (including a number by John Elliott) are well chosen and captioned informatively and a map shows the salient features of the upper Pioneer Valley and the mill's transport links. A chapter devoted to cane transport is full of interesting detail, but the whole book contains much which will fascinate those interested in the development of rural industry in Australia and the communities and technology upon which it relied.

Another highly recommended book from John Kerr.

JB



#### IDENTIFICATION WANTED LR 95, 99, 102, 104 & 110)

Dear Sir,

Paul Simpson's interesting information on Felix Caldwell and the companies associated with him (LR110) certainly sheds light on a fascinating aspect of Australian locomotive development.

A further point of interest has arisen from the publication of 'The Construction Railways of Wyangala Dam' by John R. Newland (AHRB Bulletin Nos 623 and 624, September & October 1989). In this are given details of tenders for locomotives received by the NSW Water Conservation & Irrigation Commission in 1929. These included one from Purcell Engineering Co Ltd, Auburn, for three 9 ton locomotives, to be fitted with a Purcell 38 hp diesel engine, with four gears in each direction and driven by roller chain at a cost of £1215 each.

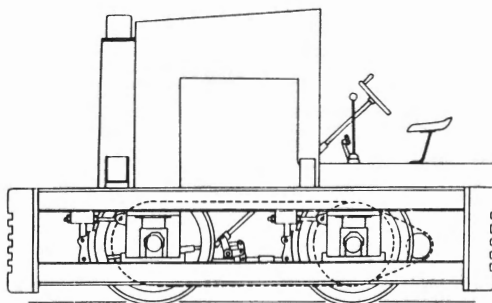
A line drawing of a 4-wheeled locomotive provided by Purcell Engineering as part of the tender documentation is illustrated. While looking unlikely to weigh in at nine tons, it shows a general similarity

## LETTERS

of design to the Caldwell Engineering loco motive pictured in LR99, even though the drive shaft is positioned behind the rear axle rather than in between the axles.

My guess is that this similarity is unlikely to be coincidental.

**John Browning  
MACKAY Qld.**



Dear Sir,

With regard to the serial correspondence in LR 95, 99 and 102 on the subject of unidentified diesel locomotives depicted in those issues, can I add, rather belatedly, my own contribution to it.

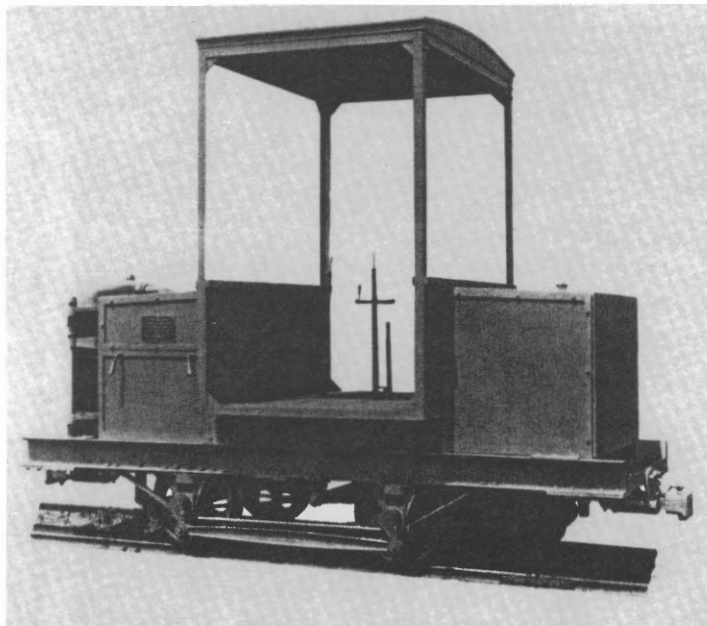
Craig Wilson mentions the 'Captain Cook' dock construction in Sydney in the 1940-45 period. A number of small 2 ft gauge internal combustion locomotives were used in two areas of this project. Most, if not all, had names in large letters on the cabside. The exact number used is not known but is at present being investigated by Sydney member Jim Longworth. It would appear that about ten at least were involved, some of which were identical. At least three had the Fowler radiator and engine cowling. I have a photo of 'Flora' taken in the goods yard at The Rock on the NSW main south railway, together with some 'muck' wagons (LR 118, p 23). I have no name or date of the photo and I enquired locally about twelve months ago for details but a few people remembered them being there for a number of years and then they disappeared about 15 years ago. Nobody knew their purpose. It is possible that all these locos came on the market at the completion of the Dock project and they found their way to various locations. I believe that the photo taken in the Kelly & Lewis workshop

could be one of them and taken there for refurbishment before being resold. The small oval plate on the back of the cab looks very much like that used by Miller & Co, machinery merchants of Melbourne. Comparison between this loco and the one on p 9 of LR 95 shows them to be identical, maybe one and the same. Gauge change was a feature of the construction of these locos. Incidentally I think that Craig may be mistaken with his view that the other Kelly and Lewis products in the photo are locomotives. I believe they are portable diesel driven air compressors, one of the K & L's mainstay products.

As far as the photo of the loco at Kingscliff is concerned (p 20 LR 99), I know that there was a 'Vanguard' loco at Kingscliff (Vanguard being the name applied to later Caldwell-Vale and Purcell locos) but I do not consider that it is the one shown which is almost identical to those discussed above. A hallmark of the 'Vanguard' locos was the cranks and coupling rods on the drive and I have not seen evidence of variation of this in their photographic records. The one depicted at Kingscliff is not so fitted, nor does it have the usual design of radiator tank. They also had a rectangular builder's plate proclaiming that it was a 'Vanguard' with other details including a serial number. The number quoted

in the text seems very high but there is no record of their production quantity as far as I am aware, they may have included other manufactured items in their construction serial numbers. I think member Paul Simpson is doing something on the history of this Company. If the locos in question were fitted with Fowler equipment, could they be Fowler built? Alternatively if Fowler supplied the basics to another builder would there not be a record in the Fowler archive of either circumstance. Perhaps Richard Horne could look at this situation. The locos at 'Captain Cook' did not appear to be new for that job but neither were they old so I would guess at them being of about late '30s vintage. We will all have to wait until some other individuals present us with the complete story.

**Bruce McDonald**  
**CHAPMAN ACT**



*A Vanguard loco.*

*Photo: Bruce McDonald.*



*Poppet head and double rotary tippler over spoil bin at Shaft 13 on Sydney Pressure Tunnel excavations.*

*Photo: Sydney Water Board.*