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LIGHT RAILWAYS

Australia's Magazine of Industrial & Narrow Gauge Railways

Light Railway Research Society of Australia Inc.

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Imperial to metric conversions:

1 inch (in)	25.40 millimetres
1 foot (ft)	0.30 metre
1 yard (yd)	0.91 metre
1 chain	20.11 metres
1 mile	1.60 kilometres
1 ton	1.01 tonnes
1 pound (lb)	0.454 kilogram
1 acre	0.4 hectare
1 horsepower (hp)	746 Watts
1 gallon	4.536 litres
1 cubic yard	0.765 cubic metres
1 super foot (sawn timber)	0.00236 cubic metre

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Editorial

The LRRSA's Facebook Group *Light Railways of Australia* continues to thrive and currently has around 3300 members. Considering that the Society currently has around 700 members and newsagent sales for each edition of *Light Railways* is around 1000 copies, the Facebook Group is currently reaching around twice as many interested persons than before we established the Group – this is very encouraging, and shows a growing interest in the topic of light railways.

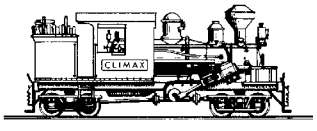
On the basis of recent activity, there are approximately 20 posts per week of general items of interest and photos of light railways from across Australia that bring out much sharing of information and lively discussion. These posts range from old photos that have been dug out of albums or dragged from shoe boxes, to items of field activities, and items from current museum operations – in short, all the things that our readers like about each edition of *Light Railways* magazine, but readily and constantly provided to readers of the Facebook group.

Social media provides a wonderful means to get information to interested persons and is part of the general swing away from traditional methods of communication. However, the Facebook Group is not a substitute for publishing good research in publications like *Light Railways*. On the contrary, it has proved to be beneficial.

If you have not seen the Facebook pages or have not joined the Group, I would encourage you to do so.

I trust that you enjoy this edition of *Light Railways* as it has some excellent material - all obtained by good old fashioned research! *Richard Warwick*

Front Cover: Eudlo, *(John Fowler 0-6-0T B/No.16207 of 1923) just after crossing the David Low Way bridge on the Moreton Sugar Mill's tramway system at Nambour, Queensland. 31 August 1964. Photo: Frank Stamford*



Light Railway Research Society of Australia Inc. A14384U
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The Light Railway Research Society of Australia Inc. was formed in 1961 and caters for those interested in all facets of industrial, private, tourist and narrow gauge railways in this country and its offshore territories, past and present.

Members are actively involved in researching light railways in libraries and archives, interviewing knowledgeable first-hand participants and undertaking field work at industrial sites and in forests.

Articles, letters and photographs of historical and current interest are welcome. Contributions should be double spaced if typed or written. Electronic formats accepted in the common standards.

The Red Cliffs Pumping Station light railway (Part 2)

by Mike McCarthy

Introduction

The first part of this article appeared in LR 283. It covered the early days of the pumping station and the light railway, including how it was operated and the eventual change to the use of brown coal briquettes as fuel. The story continues here and focusses on the changes that the provision of electricity to the Merbein pumping station from the alternators at Red Cliffs brought to the pumping station and its light railway.

Correction: On page 4 of LR 283 the opening of the Red Cliff pumping station was stated to be "in January 1922". This is incorrect. The correct date was 25 November 1921.[1]

Merbein

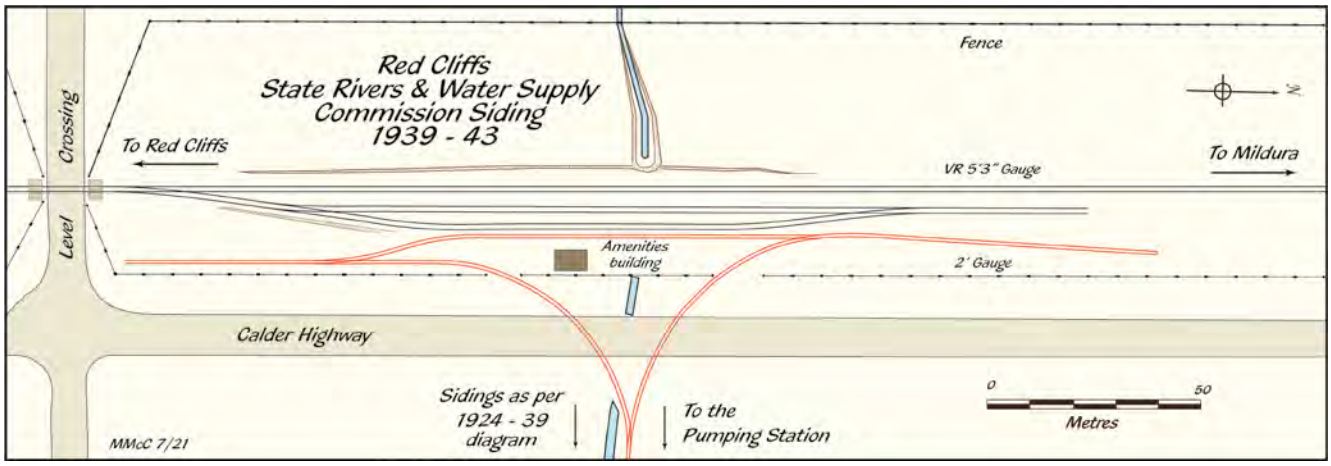
Merbein pumping station is 20 kilometres north-west of Red Cliffs. It was opened in 1909 to serve a government sponsored irrigation area covering 8,000 acres. Pumping at Merbein was performed by steam-driven pumps with firewood-fed furnaces which, by 1935, were consuming 20,000 tons of fuel annually.[2] With the prospect of further increases in pumping requirements and the steadily rising cost of firewood, a decision was made to take advantage of the electricity generation capability at Red Cliffs to convert Merbein to electrically driven pumps. The generation of electricity was to be expanded, and the output transmitted to Merbein by a dedicated high voltage powerline. The decision was to have a massive impact on the operation of Red Cliffs pumping station, the quantity of fuel needed for the boilers, and the operation of the narrow-gauge link to Red Cliffs.

Work started on the conversion and the construction of the transmission line in 1937 with the first electrically-driven pump coming online in September along with a 1000 kw turbo alternator at Red Cliffs.[3] Three of the four pumps at Merbein were converted to electric drive by August 1940.[4] Expansion was needed to the generating plant at Red Cliffs to support this and a seventh boiler, manufactured by Babcock and Wilcox was installed in 1939. The added boiler meant more fuel, and for the 1939-40 year, 12,000 tons of briquettes were necessary to meet demand. This amounted to a rise of 66% on the fuel requirement prior to the expansion which, in turn, meant an extra return journey a day was needed on the light railway.

The need to achieve the extra journey in the eight-hour day meant that changes in practices were required. At the siding, the elaborate track arrangement of 1924 was dramatically rationalised; a counter-intuitive reaction one might think given the increase in traffic that was occurring. However, the change involved the removal of the siding that had served the ill-fated coal bin and grab crane, as well as the utility track used for locomotive movement. What was left was all that was needed for the hand offloading of briquettes and the manual movement of empty and full skips to and from the arrival and departure sidings. By this time, there was no lingering by the locomotive at the siding to help with truck movements. Having dropped a rake of empty skips, the Kerr Stuart would at once couple onto the waiting loaded trucks and start the return journey to the pumping station.

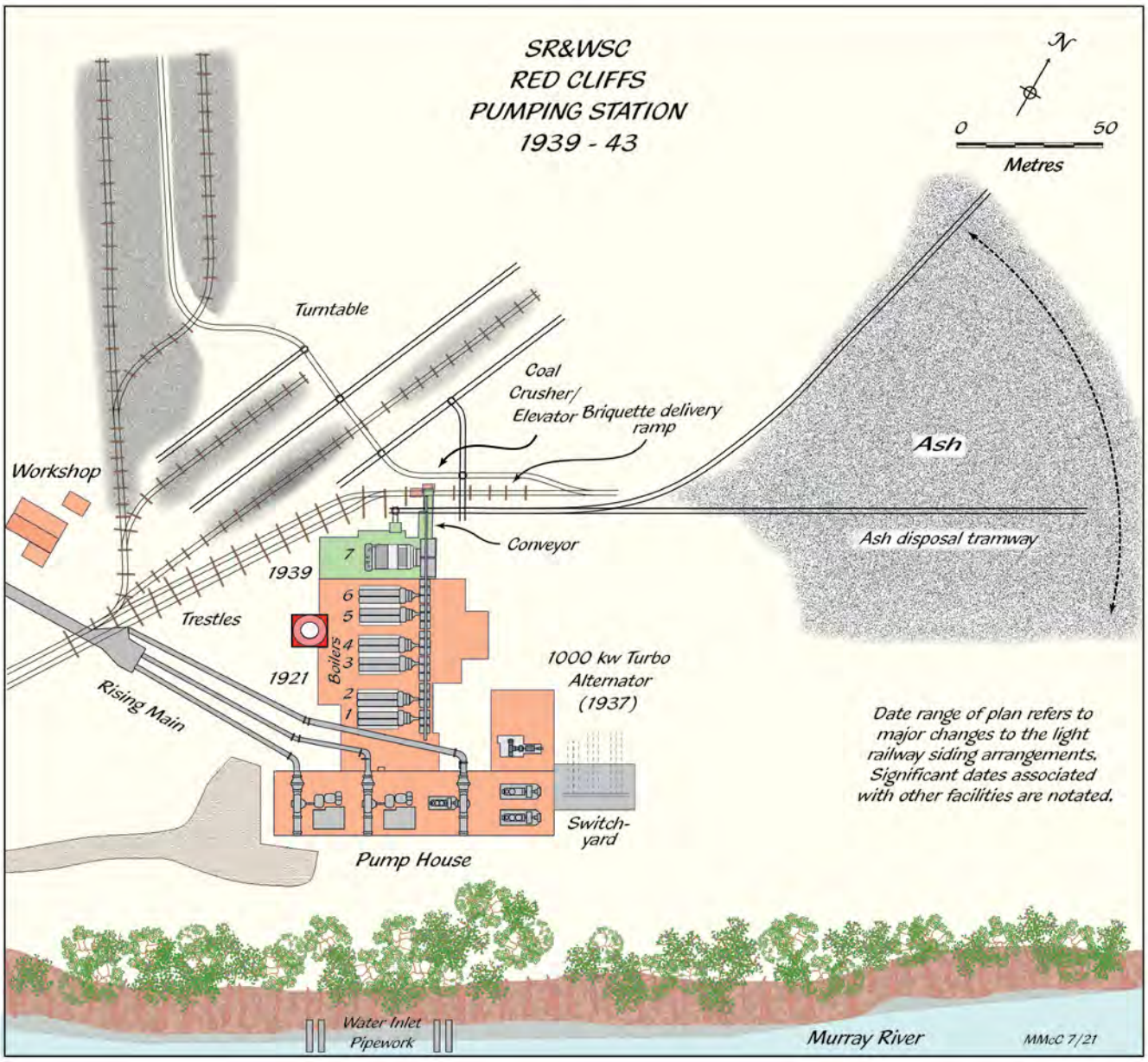
The changes that occurred during the installation of boilers 8 and 9 are clearly visible in this c1950 aerial view. The twice extended boiler house butts up to the railway trestlework which now stretches for 40 metres to allow a rake of trucks to be managed through the unloading process at a time. The radiating ground markings at bottom right shows the pivoting of the ash tramway alignment over time. To the right of the image the coal park clearly displays the positioning of the movable track while to the left of the coal heap a line of trucks waits attention on the loading line. In the upper left of the photograph the loco shed sits with doors closed. No doubt the Kerr Stuart sits inside gathering dust.

Photo: State Library of Victoria, Rural Water Collection



Merbein pumping station c1930. Constructed in 1909, it supplied the Merbein irrigation area to the west of Mildura. By 1935 it was consuming 20,000 tons of firewood a year which was deemed to be not sustainable. A decision was made to convert it to electrically powered pumps with the electricity to come from alternators at Red Cliffs pumping station. The change was to have a profound impact on the volumes of coal and/or briquettes carried by the Red Cliffs pumping station light railway. *Photo: State Library of Victoria*

The original TACL yard shunter at the pumping station was replaced by a 1930 vintage Malcolm Moore fordson powered rail tractor, probably early in 1934. It seems likely that it came from the Hume Weir construction project where it and a sister locomotive had been engaged in hauling concrete. It was photographed on 30 April 1949 on the trestlework at the Pumping station. Photo: Former ARHS (Vic)



Changes were also needed at the pumping station to support the new boiler. The trackwork associated with the briquette tipping and its related trestlework was realigned to make way for the expansion. Similarly, the ash tramway, now incorporating movable track at its extremity, was repositioned to accommodate the longer boiler house. Operationally, however, practices were much the same as they had been. The one noticeable change was an increase in the number of skips found in the pumping station yard. This may have been linked to wanting to send complete rakes back to the siding on the occasions when the most recently arrived full set had yet to be emptied into the coal dump. No evidence has been found to support the purchase of more skips making it likely that they came from other SR&WSC projects.

Possibly related to the need to increase the capacity and reliability of the light railway to meet the needs of the Merbein development, the TACL yard shunter was replaced by a 1930 vintage Malcolm Moore unit, probably early in 1934.[5] This was likely one of the two fordson engine fitted locomotives acquired by the SR&WSC during 1930 for use on the Hume Reservoir works. Work was completed there in 1934 and one of the locomotives was sold to Cameron, Sutherland and Seward.[6] It seems highly probable that the other locomotive was moved to Red Cliffs to replace the TACL which was probably then scrapped.

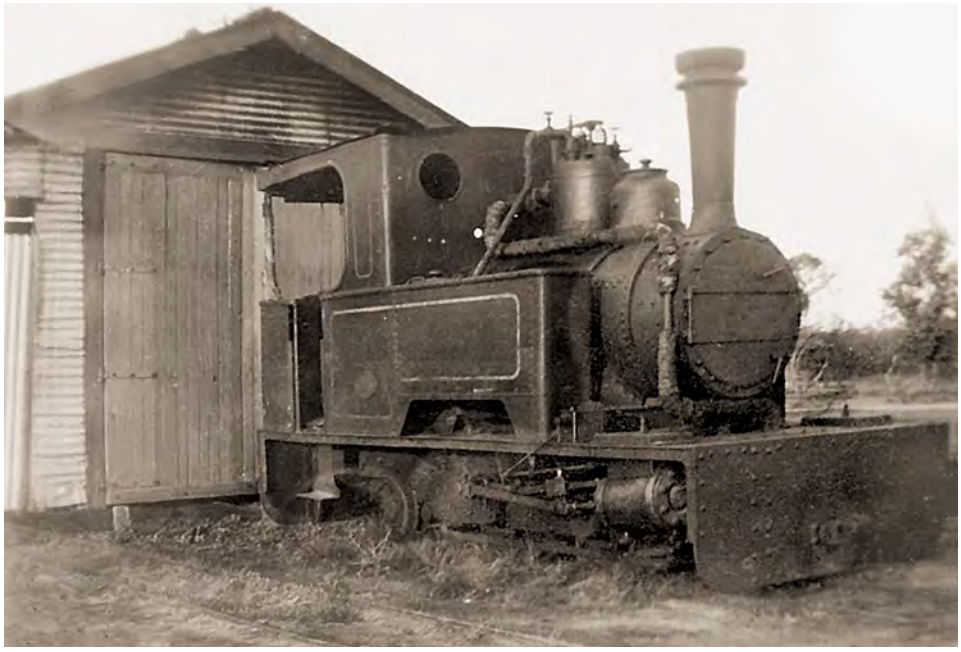
Locomotive problems

The Kerr Stuart locomotive gave sterling service from the day it arrived, but it did have its drawbacks. The railway was not built to take the 10½ ton weight of the unit, the consequence of which was significant maintenance costs on the line. The engine tended to spread the 20 pound-per-yard rails and sometimes derail.[7] A jack was carried to enable rerailing and the pumping station workshop crew was kept busy keeping the track in order. The crew was led by Jack Bennett who was the blacksmith at the pumping station but also took responsibility for track repairs.[8]

When delivered, the tyres on the locomotive were badly worn, as were the flanges on the spare set of wheels that came with it.[9] In 1926 new tyres were fitted to, presumably, the spare wheels by Thompson and Co (Castlemaine) Pty Ltd prior to installation on the locomotive.[10] Other tyre refurbishments occurred in July 1939 and October 1942.[11]

By far the most dramatic event affecting the locomotive was the condemning of its boiler in December 1940.[12] Fortunately a spare boiler that could be fitted to the Kerr Stuart was available from the Hume Reservoir project.[13] It had been supplied by Johnson and Sons' Tyne Foundry in South Melbourne, back in 1927, for an unknown purpose and had seen use for around six years.[14]

A condemned boiler saw the Kerr Stuart waylaid for some time in 1940/41 as a replacement boiler from the Hume Reservoir project was fitted. The locomotive frames are mounted on workshop trolleys to allow work to be undertaken in the light of the day. Clearly the opportunity was also taken to refurbish the wheel tyres. The dismantled cab sides and water tank can be seen at the right.
Photo: Norm Wadeson collection



The Kerr Stuart sits outside the locomotive shed c1946. Of interest is the height of the door to the shed extension on the left. The extension was added to accommodate the small Malcolm Moore locomotive around 1927 and features a lower opening suited to its size. In later years the Kerr Stuart was stored on this side allowing the Malcolm Moore locomotives to be serviced over the inspection pit. It would appear the shed extension was rebuilt to accommodate it.
Photo: State Library of South Australia

The fitting of the new boiler was performed at the pumping station workshop, which could be expected, given steam work was a good proportion of the workshop's activity. The replacement boiler was fitted with the original chimney and sand dome, and, unlike its predecessor, it featured a steam dome outside of the cab. The stylish Kerr Stuart smokebox was replaced by a plain barrel type, and, differing from the original boiler, the replacement was not lagged. The locomotive certainly lost some of its visual appeal in the process!

How long this took is not known but the small Malcolm Moore locomotive took over the steam locomotive's haulage duties while the work occurred. The petrol locomotive, with its Fordson Major engine, could haul a maximum of 20 trucks to and from the siding.[15]

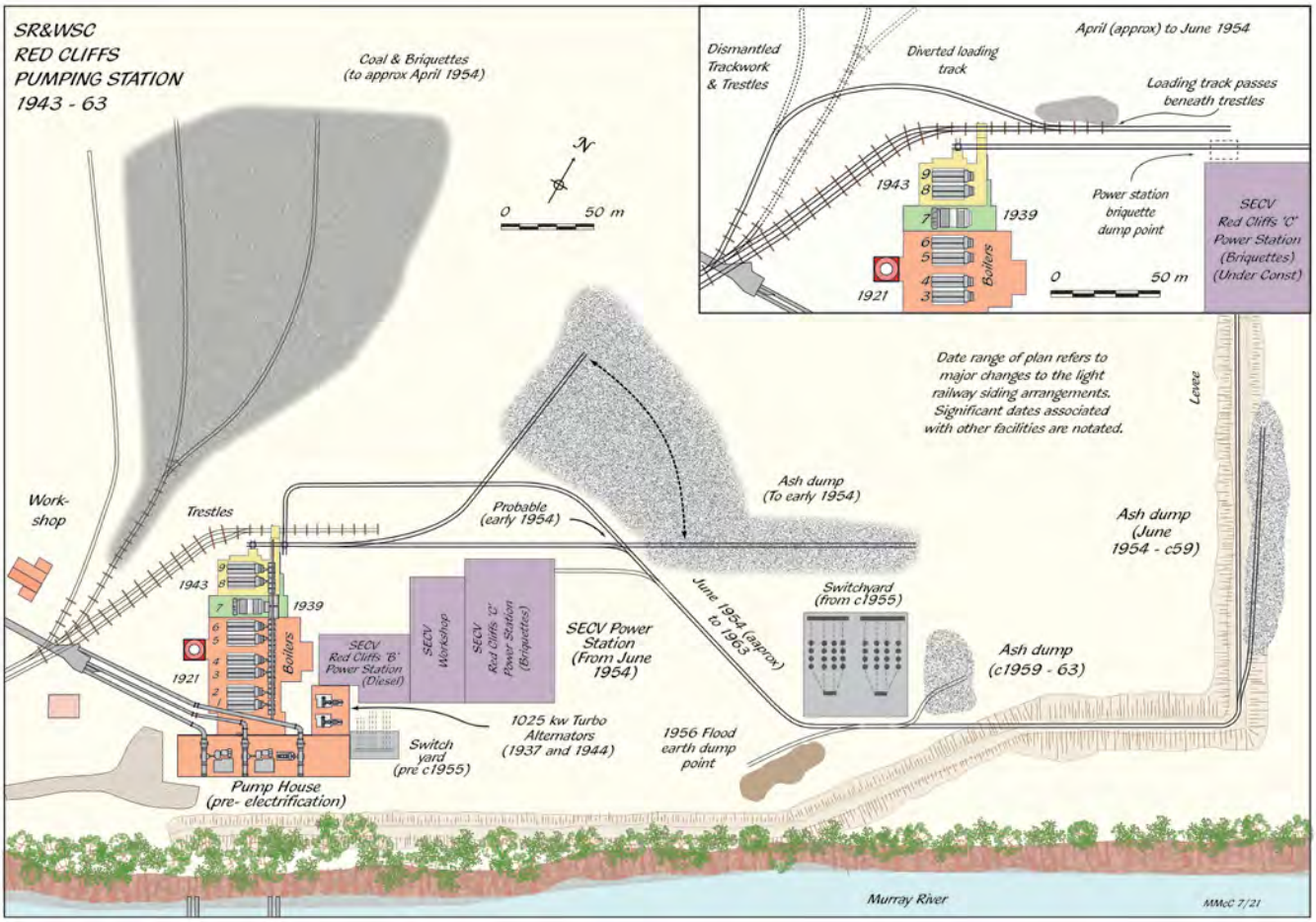
The replacement boiler met the immediate critical need to keep the locomotive working but reliability troubles arising from worn components and a suggestion that it experienced steaming problems, raised concerns during the 1940s.[16]

Further Merbein impact

As previously stated, three electric-motor-driven pumps had been installed at Merbein by August 1940 and the project progressed in 1944 when a second 1000 Kw turbo-alternator was introduced at Red Cliffs.[17] In preparation for the expansion in electricity generation, during the prior year, boilers eight and nine were installed to supply the necessary extra steam and brought with them another major increase in the fuel needed.

Furthermore, differing watering periods at Red Cliffs and Merbein meant that boilers were fired for longer periods than was initially the case at Red Cliffs alone. By 1944 the total requirement for coal or briquettes had reached 17200 tons.[18] This meant an increase from around 290 train journeys per year to about 650 and, significantly, a major expansion in coal storage capacity at the pumping station. The arrangement of rail tracks in the coal dump changed and expanded because of this.

The trestlework and tracks serving the fuel discharge point at the end of the boiler building were moved yet again to allow for the extension to the boiler building. The reinstated, raised sidings saw the introduction of a single-track headshunt, 40 metres in length.[19] This allowed for a more efficient use of the small Malcolm Moore locomotive. One imagines that this was done to allow a rake to be pushed past the dump chute before being pulled out along the empties line by the loco; a much more efficient way of moving the skips than hand propelling trucks out of the way, one by one, as had been done previously. The change reduced the labour needed for the task and may also have



reflected the impact of manpower shortages during wartime. The rearranged discharge track incorporated a tipping chute for the briquettes but also included a second chute for coal that fed the conveyor via a crusher.[20] The former winch-worked ramp that had been used to bring briquettes to a tipping point on the coal discharge platform was removed as part of the changes.[21]

It was at this time that a significant change also took place in how stored briquettes were moved to the boilers. To date, this had been done using mainly manually pushed trucks along separate retrieval tramways that ran between the fuel stacks. This was a laborious process that, nevertheless, met needs in early times. However, with a doubling of fuel tonnage and wartime manpower shortages, a better method was needed. To achieve this, the trestlework extending into the coal dump was pivoted to the east and was shortened to the points serving the briquette heaps. Two movable sidings extended onto the piles of briquettes themselves. The track would be swung in an arc to meet requirements. As needed, the trackwork was extended using temporary trestlework protruding from the end of a heap allowing the side-tipping trucks to be emptied.[22]

From 1946 to 1952 severe fuel rationing in Victoria saw the Red Cliffs pumping station denied access to briquettes for fuel. This meant a return to using the much-maligned Wonthaggi screened coal as fuel for the furnaces. This image, recorded c1947, shows the small Malcolm Moore locomotive at work on the coal heap. The track is laid directly on the coal and was movable to meet needs. A somewhat rustic temporary trestle is in use to allow the skips to offload beyond the end of the heap. A man is engaged in tipping a skip.
Photo: State Library of Victoria, Rural Water Collection

A locomotive-worked briquette retrieval siding was laid to replace the manually worked trackwork around the briquette piles. This track branched from the fulls line just before it crossed the rising-main. It took a steep gradient down to ground level and passed in front of the pumping station store and garage. From a point a short distance beyond the garage, movable track allowed positioning of the rails alongside the lower edge of the briquette stacks. The small Malcolm Moore locomotive worked this line. Briquettes were hand loaded (later aided by a front-end loader) into skips for movement up onto the coal platform and then around to the coal chute. The small locomotive could haul no more than five loaded trucks at a time up the steep incline to the fulls line.[23]

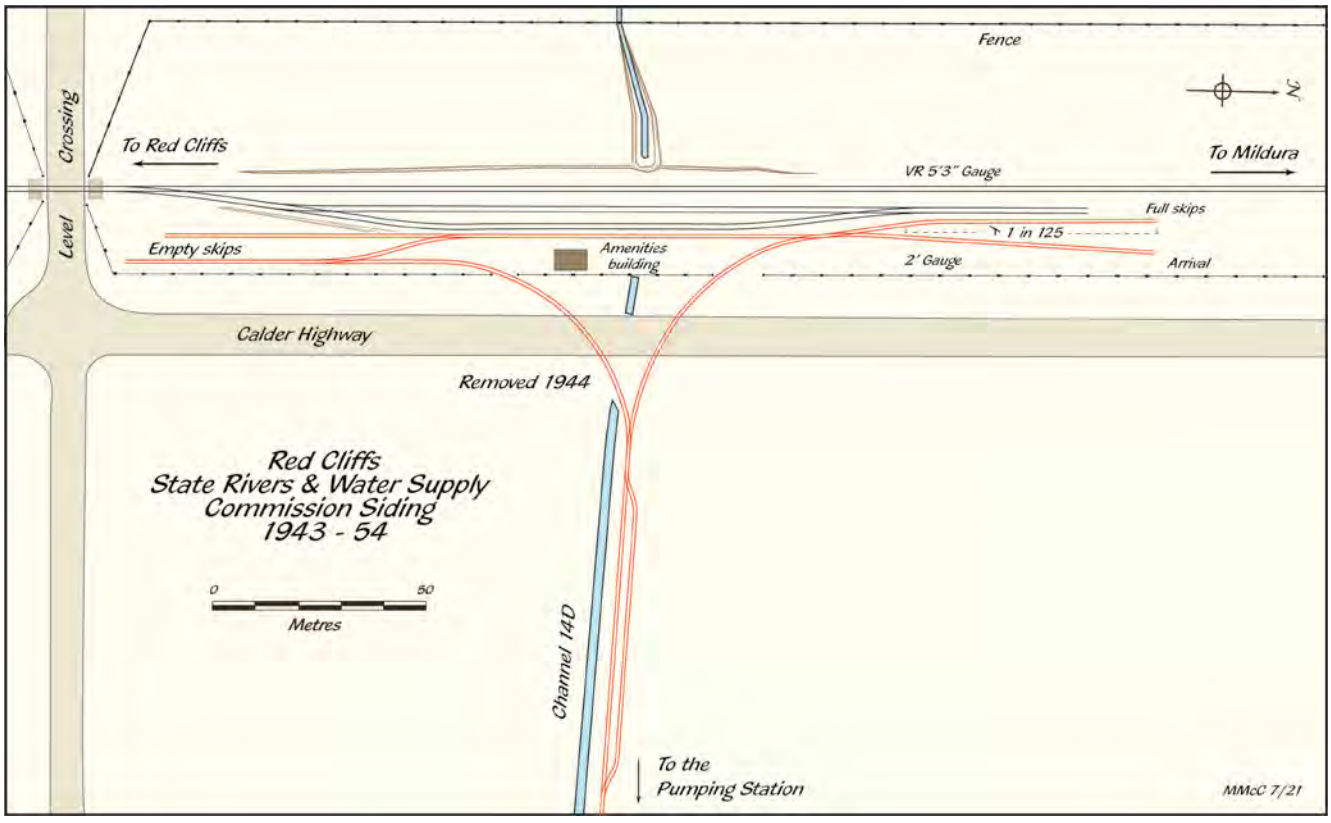
The terminus at Red Cliffs also saw changes. The seemingly counter-intuitive alterations that were made at the outset of the Merbein electrification project in 1939 had proven effective but were improved upon in 1944 in the search for faster turnaround of trucks. The year 1939 saw the manual movement of empty and loaded tippers from alongside the railway line, through the arms of the wye, to the arrival and despatch sidings. The Kerr Stuart would shuttle back and forth between here and the pumping station, more or less taking whatever loading was available. The 1944 change did away with the use of the arrival and despatch sidings and, instead, established sidings at both the north and south ends of the main Red Cliffs SR&WSC yard (see diagram) to facilitate locomotive operation directly into the loading area. The former arrival siding was dismantled at this time and the rails likely used for this change.

Aside from the manual loading of skips, which had replaced the failed grab crane and hopper from around 1925, working the siding after 1944 became quite efficient, and the method remained in place through to closure. On arrival, the train of empty trucks would be hauled into the arrival head shunt at the northern end of the yard. The trucks would then be reversed along the loading siding with the trucks closest to the locomotive being placed alongside the waiting VR trucks. The rear of the rake would extend along the holding siding that stretched to the southern end of the yard. If trucks were already present in the holding siding the newly arrived trucks would be deposited in the storage siding at that end of the yard. The locomotive would then move forward to collect the line of loaded trucks awaiting on the fulls line at the northern end. A throw of the points and the train would leave via the northern leg of the wye. In later times, a second locomotive would occasionally be positioned at the Red Cliffs terminus to help with the movement of trucks. However, most movements were done manually. As full trucks were pushed to the fulls siding, empty trucks would be man-handled forward from the holding siding to take their place in the loading positions.

The changed operating method did not make use of the southern leg of the wye. This led to the dismantling of the section crossing the main road in 1944.[24]

It was hard work for the men employed at the siding and it was not made any easier by the high temperatures that could be experienced in the summer months. This could explain the presence of the shunting locomotive at times during the later years of operation when larger Malcolm Moore locomotives were in use. When loaded VR trucks were present it was normal practice, after 1943, to run seven trains a day, to and from the pumping station, until the coal or briquettes had been moved.[25] Each usually consisted of around 36 trucks and the six men did the lot. This could mean each man would hand load 42 skips per day although a second shift would sometimes be rostered to reduce the individual workload. Each skip could carry ¾ ton of coal.

Each labourer would take command of a single VR truck and would load six tippers of the total rake, three at a time. Steel platforms, supported by chains, were attached to the VR trucks.[26] The platforms allowed the labourers to stand next to the open door of the railway wagons to shovel briquettes into a skip. Once space allowed, they would move into the truck and the briquettes would be shovelled onto the platform from



Despite the early attempt to use a grab crane to offload coal from VR trucks, after the first year it was all manual work. This December 1950 view shows Charles Flint shovelling screened Wonthaggi coal into the coal skips. Photo: Sunraysia Daily *14 December 1950*

where they could easily be pushed into the tipper. Loaded trucks would be hand pushed onto the fulls siding taking advantage of the slight down grade in that direction.[27]

Amenities for the men were primitive at first without even shade in which to take a break. The toilet provided in 1941 was replaced by an amenity building in 1948. A shower, toilet and a crew room improved conditions considerably.[28]

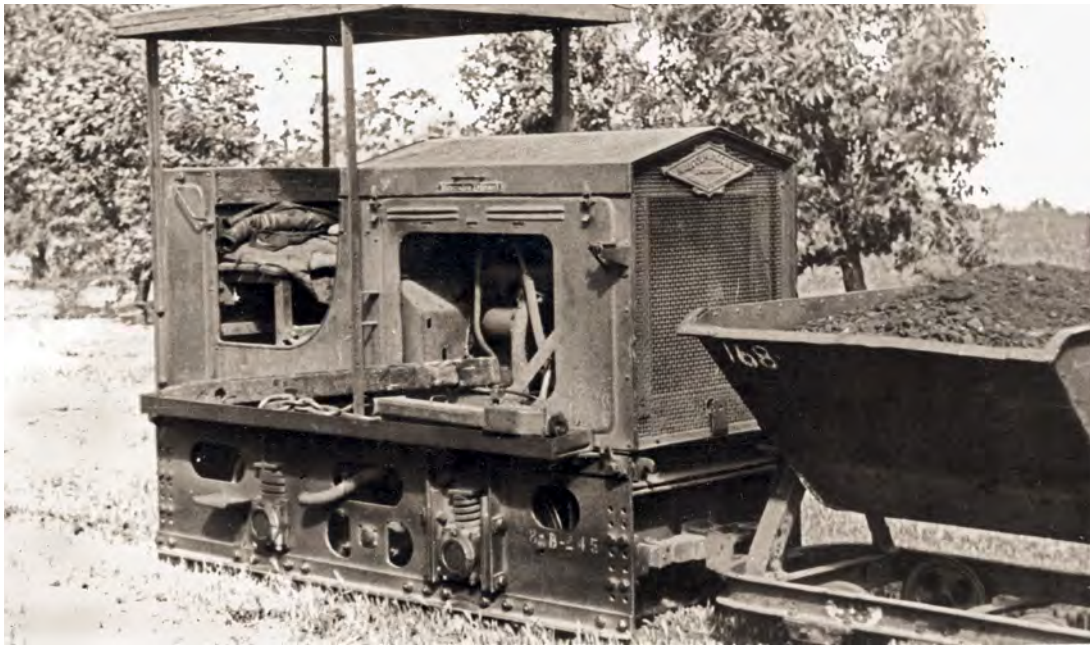
The movements to and from the siding could cause some traffic inconvenience on the highway crossing. The slow passage of the 36 trucks (sometimes 45) in both directions meant that cars and trucks were forced to wait for some time on 14 occasions over the eight hours of operation each day.[29]

Introduction of Malcolm Moore 1000-series locomotives

Throughout the early 1940s the Kerr Stuart was proving to be increasingly unreliable due to general wear and tear. The drivers around this time were Bill Evans and Les Williams,[30] and the condition of the locomotive was a constant concern to them. This led to a call for backup haulage power capable of pulling a similar load. The small Malcolm Moore Fordson-engined tractor was used when the steam locomotive was unavailable, but it was limited in its haulage capacity, which seriously impacted on the ability to move briquettes from the siding. Furthermore, removing it from its usual tasks, moving coal to the tipping chute at the power station, doubled the impact.

In January 1947, the decision was made to buy another internal combustion locomotive to provide the backup for the Kerr Stuart.[31] Subsequently, a 4-wheeled petrol-mechanical Malcolm Moore locomotive was purchased by the SR&WSC from the Commonwealth Department of Supply and Shipping.[32] It was one of a batch of locomotives of the Malcolm Moore '1000' series that had originally been purchased by the Australian Army back in March 1944,[33] but had been in storage since. As built, they were fitted with Ford V8 petrol engines, were rated at 32 hp and weighed about three tons.[34] One of them, most likely Malcolm Moore b/n 1015 (SR&WSC plant number 18-C-9),[35] was despatched to Red Cliffs.[36]

Malcolm Moore b/n 1015 on the northern leg of the 'wye' at the Red Cliffs siding on 30 November 1952. This was the first of the 1000 series locomotives delivered to Red Cliffs and was re-engined with a Hercules DJX diesel in 1948. On the side rack can be seen the wooden sprags used to prevent runaway trucks at the pumping station as well as, to the right, a jack used for rerailing the locomotive and trucks. Photo: R B McMillan



Malcolm Moore locomotive 8-B-245, an identifier which would seem to relate to an earlier life, stands next to the loco shed at the pumping station on 9 September 1952 with a load of Wonthaggi screened coal.
Photo: EW Stephens

In June the following year, a second Malcolm Moore '1000' was ordered for use at Red Cliffs. The likely reason is that the Kerr Stuart was continuing to perform poorly, and the situation had changed to the point where the small, original Malcolm Moore was in use on the line to Red Cliffs and required backup. What is certain is that the steam locomotive was rarely used after 1947.[37]

The second Malcolm Moore '1000' unit sported a peculiar plant number on its lower frame. It was '8-B-245', which according to the SR&WSC defined it as 'engine, oil, portable'. Although odd and seemingly inconsistent with the identification used for other such units, it is conceivable that it had been in use elsewhere and possibly incorrectly classified. The true answer remains a mystery at this point.[38]

Post-war petrol rationing was still in place at the time so, very soon after the arrival of the second new locomotive, the Ford V8 engines were removed and both Malcolm Moore locomotives were fitted with Hercules DJX diesel engines whilst a spare engine was also obtained.[39]

From the time of arrival of the first 1000 series Malcolm Moore, internal combustion locomotives took over the scheduled haulage duties to and from the siding. The maximum load assigned to the newcomers was 30 tipper trucks as opposed to the 36 assigned to the Kerr Stuart, but this seems not to have proven a problem.[40] In any case, wherever possible, the two larger Malcolm Moores operated in tandem, allowing a 45-truck rake to be hauled, and obviating the need for a guard.[41] The driver of the second locomotive could keep

Approaching the terminus at Red Cliffs, Malcolm Moore b/n1015 (likely SR&WSC 18-C-9) stands in charge of 33 empty coal trucks. The power poles to the rear and right of the train carry electricity to run the three relift pumping stations in the Red Cliffs irrigation area. Probably recorded c1949.
Photo: Former ARHS (Vic Div) collection

Inside the locomotive shed in March 1951. The Kerr Stuart sits gathering mallee dust in the shed extension added with the arrival of the small Malcolm Moore in 1927. A skillion lean-to had sat here before then. On the right the small Fordson and one of the larger 1000 series Malcolm Moore locomotives, '8-B-245', stand over the pit in the original shed. Photo: Arnold Lockyer

watch to the rear while the driver up front looked ahead. Operating two locomotives in such a fashion was difficult as gear changes between the locomotives had to be co-ordinated, but the cost savings made the effort worthwhile.[42]

Until it was transferred to Robinvale in 1953, occasionally the small Malcolm Moore rail tractor would double-head the first train of the day into the siding. It would remain there helping with the movement of trucks and would return to the pumping station on the final train of the shift.[43] The second 1000 series Malcolm Moore diesel locomotive would work the unloading process at the pumping station when this occurred.

Drivers in this era included Jock Cramp who worked on the line into Red Cliffs. Ken Smith took charge of the small Malcolm Moore, although he occasionally also worked on the haulage from Red Cliffs as well, especially when tandem locomotive operation was occurring.[44]

Not all the internal combustion locomotives could fit in the engine shed with one line occupied by the stored Kerr Stuart. Consequently, normal practice saw one or two of the Malcolm Moore locomotives stored in the open when not in use.[45]

The operation overall was more efficient than during the days of steam haulage because the diesels were lighter and could travel on the trestlework.[46] This meant that, generally speaking, the practice of coasting the loaded trucks onto the trestlework was only needed when the empties line at the pumping station was occupied. With the provision of a headshunt on the trestles following the 1941 changes to accommodate an extra pumping station boiler, loaded rakes could be hauled onto the trestles.

Malcolm Moore 8-B-245 has pulled the small Fordson Major powered loco and the Kerr Stuart out into the sunlight for the benefit of an Arnold Lockyer photograph in March 1951. Wooden skip sprags and a rerailing jack sit on the larger Malcolm Moore while the smaller unit has been given the benefit of what appears to be a sandbox at its rear. The Kerr Stuart displays its heavier tank-side lining applied after the 1940/41 rebuild. Photo: Arnold Lockyer

More fuel issues

Accessing adequate fuel supplies for the pumping station in the post-war period bedevilled the management at Red Cliffs. Since 1930, the operation had been structured around the use of briquettes but, with demand from industry outstripping supply, and rationing in place from 1943, the most that could be obtained annually for the pumping station was 12,000 tons. This was 70% of what was needed.[47] The rest had to be made up with Wonthaggi coal, which was of poor quality and unreliable in delivery.

Matters worsened considerably in 1946 when further severe rationing saw no briquettes available for the Red Cliffs pumping station.

The briquette rationing forced the use of more Wonthaggi large lump coal mixed with a high percentage of fine slack coal as well as expensive Newcastle and imported coal. The poor burning qualities and high residual ash volume that came with Wonthaggi coal meant that a greater tonnage was needed than that required when briquettes were used. This put yet further pressure on the light railway. Wonthaggi coal was also more expensive than Yallourn briquettes. The situation was to continue well into 1952, and at times of industrial action at Wonthaggi and when no other choice presented, use of oil to fire the boilers was also adopted. At the time of the 1950 rail strike when coal stocks were completely exhausted, a fleet of local trucks was deployed to carry ex-army pontoons, reconfigured as oil tanks, so that fuel could be shuttled from Melbourne in order to keep the pumps operating.[48] Later, oil was railed to Yelta and then sent by road to Red Cliffs.[49] A measure of the desperation was that consideration was also given, at one point, to reintroducing firewood as a fuel![50]

Locomotive changes

In 1952 the light railway was carrying more coal or briquettes for the boilers than ever. This was placing great stress on the locomotives with the diesel engines being swapped out of units regularly for repair. Additional diesel engines were purchased from the local fruit co-operative to meet this need.[51] Howard Biscoe was the mechanic at the pumping station and undertook most of the Malcolm Moore maintenance work. In 1953 the opportunity was taken to bolster the available haulage power and address the needs of a new development to the south-east.

Robinvale, also on the Murray River, sits about 60 kilometres south-east of Red Cliffs, and it was here where the development of another irrigation area was underway as a post-World War Two soldier settlement scheme. A pumping station, built to the south of the town to feed the channel network, was initially fuelled by firewood. It was served by a tramway between the stacking yard and the boilers.

Late in 1953, the small Malcolm Moore locomotive was refurbished and moved to Robinvale to work this tramway.[52] The Red Cliffs operation, of course, could ill-afford to lose one of its haulage units even if it were the smallest and oldest of the internal combustion units. Consequently, the opportunity was taken to replace the small Fordson with another 1000 series Malcolm Moore locomotive. It was SR&WSC locomotive 18-C-12, the builder's number of which, unfortunately, is not known.[53] It was still powered by its original Ford V8 petrol engine and further differed from the existing, other 1000 series Malcolm Moore locomotives at Red Cliffs, being roofless. It had been used in tunnelling work at Rocklands Reservoir, west of the Grampians, where clearances were limited. In December 1953, it was moved to Red Cliffs, a month after it was released from the Rocklands project.[54]

The locomotive was a welcome addition to the Red Cliffs fleet, providing not only a replacement for the smaller unit in performing shunting duties around the pumping station, but also promising to be a very useful backup and adjunct to the fleet operating the railway to Red Cliffs. Its one drawback was its fuel consumption. It used about a gallon of petrol for each mile of operation.[55]

The final years

To address what was a post-war, state-wide fuel crisis, the Victorian Government, through the State Electricity Commission of Victoria (SECV), looked to increase briquette production through the planned Morwell briquette factory, but had also decided to invest massively in electricity generation and distribution. Its strategy was to encourage the use of electricity in preference to coal or briquettes. This view passed through to the Sunraysia region which, although not on the state electricity grid, would eventually be. Planning for this accelerated in 1949, when the SR&WSC sought funding for the replacement of more of the original boilers at the pumping station.[56] In preference to agreeing to this, a decision

SR&WSC 18-C-12, a Malcolm Moore V8 powered petrol engine locomotive about to pass onto Fitzroy Ave in Red Cliffs c1953. This was the last of the 1000 series Malcolm Moore locomotives to arrive at Red Cliffs, and had previously been in use at the Rocklands Dam project in Western Victoria. It was later put to work by the SECV on the ash tramway at the pumping station and in 1977 it was donated to the Puffing Billy Museum at Menzies Creek where it was restored to operating condition. It remains there to this day. Photo: R Earle, Red Cliffs and District Historical Society

A rake of 22 trucks laden with briquettes on the curve approaching Fitzroy Avenue, Red Cliffs during the months leading up to closure in 1954. The locomotive is SR&WSC 18-C-12, fitted with a Ford V8 engine. Photo: R Earle, Red Cliffs and District Historical Society

was made to eventually power the pumps from the state-wide electricity grid rather than by steam. Until the grid reached the Sunraysia region a regional power station, making use of output from the new Morwell briquette factory, would be built to meet the needs of the pumping stations, and for the general supply of electricity to the region. Originally planned to be built at Mildura, this changed to Red Cliffs with the new structure to be constructed in the pumping station grounds. The outcome for the pumping station was to be a conversion to electrically driven pumps as opposed to steam.[57] Contracts were let for this work over 1950/51 with a planned completion in 1957/58.[58]

As far as the operation of the light railway was concerned, for the short term, it was business as usual. Even if the pumps were changed to electric power, for the time being, the pumping station boilers would still need coal or briquettes to generate the electricity. The eventual introduction of the planned new briquette fuelled power station, however, was a far different matter because the quantity of briquettes to be carried would likely more than double. This raised the question of the ability of the light railway to carry the needed loadings. Furthermore, with the tentacles of the state electricity distribution network gradually extending northward, the writing was very much on the wall about the future of the line.

Construction of the SECV power station at Red Cliffs started in 1952. The conversion of the pumps to electric motor drive began the following year[59] and was completed in 1956.[60] The new power station was to include both diesel and steam powered generators with briquettes as fuel for the steam element. The electricity generating capacity of the pumping station boilers was planned to be used as a backup to the new generators rather than as a contributor to meeting base load. However, this was to change very quickly as demand for electricity grew and the full capability of the pumping station boilers was needed constantly.

Although the boiler house was to remain in SR&WSC ownership and control for well beyond another year, the start of electricity generation at the new power station occurred in June 1954.[61] By agreement between the two Commissions, 1 July 1954 was chosen as the day when the SECV would take charge of all fuel delivery to the combined facility. This would include responsibility for the VR siding at Red Cliffs which, henceforth, was to be renamed State Electricity Commission of Victoria Siding. It was agreed that the tramway would close on the final day of SR&WSC operation.

From 1 July 1954, road transport would be used to carry briquettes to both the pumping station and the new power station.[62]

The final run on the railway to the Red Cliffs siding quite possibly took place some weeks before closure as briquette stocks at the pumping station were used over the final months.[63] During this time the SR&WSC briquette dump reduced in size and the trestlework serving it was progressively dismantled. This most likely was linked to the transfer of land ownership that was to take place with the handover to the SECV. Because there remained a need to store some briquettes for the original boilers over the final months, the fulls line head-shunt was used for this purpose.[64] As was the practice in the former coal/briquette dump, briquettes would be tipped over the side of the trestlework to the ground below and would be recovered when needed.

To collect this fuel, a section of track was laid beneath the head-shunt trestles, linking it with the locomotive-worked retrieval siding on the northwest side of the site. It seems that this section of track was used up until the final days of railway operation. The siding extended as far as the briquette delivery chute for the new power station suggesting that the fuel needed for the new facility during commissioning, prior to the formal handover of fuel delivery to the SECV, was brought to the site by means of this siding.

Above: *The end was very near for the Red Cliffs pumping station light railway when this view was recorded. It is early in 1954 and within a month or so the trestlework visible on the left will be dismantled. The briquette loading line that climbs up from the left would remain in use to the end as would the fulls and empties lines at centre. The V8 Fordson powered Malcolm Moore locomotive, formerly used on the Rocklands Reservoir project, awaits its next task.* *Photo: Des Jowett*

Below: *A rake of empty trucks lined up on the main line approaching Red Cliffs railway siding on 30 November 1952. In the distance the locomotive has moved forward onto the curve leading to the loading area. The location pictured is the site of the former Red Cliffs arrival and departure sidings. The little used remaining siding sits amongst weeds alongside the trucks.* *Photo: R B McMillan*

Recorded around July/August 1954, this image highlights the great change that was taking place at the Red Cliffs pumping station at this time. The light railway has been closed for one to two months and the trestlework leading into the coal park has been mostly dismantled. In the final months of SR&WSC operation, briquette storage had been moved to the confines of the headshunt, and the coal loading line has been realigned to serve it. The SEC Red Cliffs 'C' power station is nearing completion but has been in operation for a month or two. The ash tramway has been diverted around to the levee bank protecting the works and is now operated by the SECV.

Photo: State Library of Victoria, Rural Water Collection

SECV ash disposal tramway

During the months leading up to June 1954 and the closure of the light railway to Red Cliffs, the ash tramway serving the SR&WSC boilers was re-routed around the SECV power station, then nearing completion. A siding was laid to service the new power station's requirement for ash disposal as well.[65] The redirected tramway ran to a new dumping ground on the levee protecting the power station grounds. This was clearly aimed at bolstering protection in case of severe flooding. It proved to be prophetic as two years later massive floods along the length of the Murray River caused terrible damage and threatened the newly constructed power station at Red Cliffs. Although it needed significant raising and strengthening, the foresight that saw the levee constructed was rewarded by the facility not being affected by the flooding. The ash tramway proved to be a valuable facility for moving earth, as well as ash, onto the levee at this time and a siding in the power station grounds was provided to allow its loading. Interestingly, the third Malcolm Moore locomotive, powered by the V8 Fordson petrol engine, was either leased or loaned to the SECV for use on this tramway.

Ownership and management responsibility for the SR&WSC boilers and their associated electricity generation passed to the SECV on 29 May 1956.[66]

In the late 1950s, the ash dumping ground moved to the area east of the new electrical switchyard where swamp affected land was being reclaimed. Consequently, the ash disposal tramway was truncated to this location.[67]

The tramway was to remain in use until 1963 when, following the connection of Red Cliffs to the state electricity grid late the previous year, briquette-fuelled power generation ceased. Supplementary diesel generators had come into operation in March 1957. They also ceased regular operation in 1963 but were kept as a standby and peak load supply until the power station's ultimate closure in 1975, when a second connection to the state electricity grid, bringing power from the Latrobe Valley, reached Red Cliffs and removed any need for local backup or peak load power generation capacity.

The Red Cliffs pumping station and power station on 6 March 1961. All trace of the tramway to Red Cliffs has gone but visible at the rear of the pumping station boiler house is the ash tramway. It weaves its way around the power station where the siding for the removal of briquette ash from that facility is visible. The Malcolm Moore, Fordson V8 and a line of ash trucks are parked on the siding leading to the SECV powerhouse. At the far left is the ash dump where, by this time, the tramway terminated.
Photo: Ted Lawton Collection, Mildura Rural City Council

Disposal of track, locomotives and rolling stock

The Kerr Stuart locomotive was donated to the Red Cliffs Rotary Club and on 19 August 1955, was placed on display in the Rotary Club playground in Guava Street, Red Cliffs.[68] It was to remain under cover here, but in deteriorating condition, until December 1976 when it was moved to the Lions Club wayside stop nearby Red Cliffs railway station. At both locations it was joined by several of the ash trucks from the pumping station. In December 1983, the locomotive was taken to Express Engineers, Mildura for restoration where, by 1987, under the guidance of Fred Mabey, it was restored to operating condition by a team of volunteers. The search for a location where the locomotive could run took some time and, for this reason, until 1995, it was stored at the First Mildura Irrigation Trust workshop. In January 1995, the locomotive was moved to the Red Cliffs Historical Steam Railway, south of the town, on the easement of the former railway to Morkalla, where it remains in operation to this day.[69]

The three remaining Malcolm Moore locomotives, the rollingstock and the trackage through to Red Cliffs were offered for sale in June 1955.[70] There were 194 skips, 88 of which were unserviceable,[71] made available for sale. The rails, in situ, and the rollingstock were bought by the Shire of Mildura and were dismantled and removed in quick order. The exception was the track crossing the Calder Highway which was to lie in the bitumen until many years later. However, the three locomotives did not find a buyer and the two diesel-powered units were readvertised for sale in December 1956 but again found no interest.[72] As mentioned earlier, the V8 petrol locomotive had been deployed to ash hauling duties for the SECV by this time.

After the cessation of all rail activity at the pumping station in 1963, the three locomotives remained on site; two sitting in the SR&WSC scrap yard whilst the third, the V8 Fordson (18-C-12), sat within the SECV compound somewhere. The two in the scrap yard were sighted in January 1972, although Malcolm Moore 1015 was lying on its side.[73] Two years later, the strangely numbered '8-B-245' was still there but 1015 had been removed to a place unknown. 8-B-245 was sighted again there in April 1976[74] but its fate after then is unknown.

Malcolm Moore '1000' series locomotive '8-B-245', photographed in the scrap yard at the pumping station in January 1978. What happened to this unit after this date is unknown. In 1972 its sister locomotive, (B/N 1015) was lying on its side nearby but had been removed by January 1974. Its ultimate fate also remains a mystery. Photo: Mike McCarthy

The Malcolm Moore V8 Fordson was donated to the Puffing Billy Preservation Society in 1977 and was eventually restored to operating condition using components from Malcolm Moore 1013 which had been obtained from Inkerman Sugar Mill in Queensland. It remains there today, both on display and in use, as needed, on the 2 ft gauge trackage about the Menzies Creek museum site. Unfortunately, it is incorrectly identified as Malcolm Moore 1015.

Remains

The flatness of the countryside between Red Cliffs and the pumps meant that little in the way of earthworks were needed for the light railway and, consequently, in 2021 there is little left to see of this interesting light railway in the far northwest of Victoria.

A low embankment is discernible in the section east of the 'spider web', but a growth of scrub tends to obscure its presence. The one location where formation is obvious is in the section leading to the bridge over the main channel. The rising grade to the bridge meant that an embankment was necessary, and this remains to be seen today. It has been disturbed, however, by the laying of a water supply pipeline that proceeds to the east along the formation and crosses what had been the main channel using the former light railway bridge. This bridge was the most clearly evident remnant of the railway until the channel was piped in and back filled around 2015. The former railway bridge, with its concrete supports and steel girder beams remains but unfortunately is now buried by the channel back filling.

At Red Cliffs siding the arrival line formation is all that remains but has been much disturbed. No evidence of the former existence of the light railway remains at the pumping station, which is not surprising as beyond the rising-main it was mostly carried on trestlework which has been removed.

Acknowledgments

The author received valuable assistance from several people over what has been the 45-year span of this project.

I want to acknowledge the help given by Bruce McLean, especially in the early days, when he made available his set of newspaper references from the early issues of the *Sunraysia Daily.* Colin Harvey generously shared his SR&WSC correspondence card summaries which shortened the work needed to be done by me considerably. Bob Collins from the Red Cliffs Historical Steam Railway assisted with details concerning the Kerr Stuart's boilers. Christine Cook and Helen Petschel from the Red Cliffs and District Historical Society were very generous with their support, as was engineering historian Rohan Lamb with the provision of SR&WSC plans and pointers to their filing as well as assistance with plant descriptions and changes at the pumping station. Dave Baker at the Puffing Billy Museum at Menzies Creek assisted with the identification of the Malcolm Moore that came from Red Cliffs.

Former Engineer-in-Charge at the Red Cliffs pumping station, the late Eric Larsen, was a tremendous help with the provision of plans and information. Former locomotive drivers, the late Ken Smith and the late Jock Cramp generously provided invaluable firsthand recollections of working the light railway.

Colin Harvey and Phil Rickard did their usual great job in editing the text for which I am most grateful.

I sincerely thank them all.

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Cockatoo Island shown in the foreground with the Sydney Harbour Bridge and the Opera House in the distance, pictured in the 1980s. The grey cleared area in the middle-right of the photo is the site of Mort's Dock and Engineering Company at Balmain. Photo: Author's collection

Light railway aspects of Cockatoo Island

by David Jehan

Introduction

This article covers the light railway aspects of Cockatoo Island in Sydney Harbour. This is in regard to both the light railway systems that operated on the island and the light railway equipment that is known to have been built there.

Cockatoo Island was a major marine and engineering facility which closed in 1991. The author was a trainee mechanical engineer there between 1980 and 1987 during the construction of HMAS *Success*, which was an 18,000 tonne replenishment ship for the Royal Australian Navy.

For those interested in a full history of the island the author refers the reader to '*Cockatoo Island – Sydney's Historic Dockyard*' by John Jeremy, who was the dockyard's last Managing Director.

Background

Cockatoo Island is the largest island in Sydney Harbour and is located in the Parramatta River, approximately 5km from the Sydney central business district.

Prior to European settlement the island was a heavily timbered sandstone knoll which rose to 18 metres (59 ft) above sea level and covered an area of 12.9 hectares (32 acres) but it has been extended over time to 17.9 hectares (44 acres) and is now cleared of most vegetation.

It was uninhabited until 1839 when a prison settlement was established to house secondary offenders. It was a brutal penitentiary like those established on Norfolk Island and Port Arthur, at its peak 800 male prisoners were housed in cramped conditions.[1]

In 1855, the administration of Cockatoo Island became the responsibility of the Chief Secretary's Department of the Government of New South Wales, and in 1864 the prison administration was taken over by the Department of Prisons.

The first dry dock was built by convict labour between 1851 and 1857 and named after the NSW Governor at the time Sir Charles Augustus FitzRoy. The dock was 284 feet long when completed and was extended in 1870 and again in 1880 to its present length of 475 feet.[2]

In 1870 the dockyard was placed under the control of the engineer in chief of the NSW Public Works Department, Harbours and Rivers Branch. The island was then used for the construction and maintenance of government vessels and plant, in addition to the docking of warships.

The Fitzroy Dock was soon found to be inadequate so a second larger dock was built between 1882 and 1890. This

dock was 638 feet long and named after Minister for Public Works at the time John Sutherland. In 1928 this dock was further extended to 680 feet to accommodate ships of 20,000 tons.[3]

Ship building began in about 1870 and approximately 150 vessels, mostly small, were built for the NSW Government up to 1912.[4]

In 1913 the Commonwealth Government took over the establishment recognising the importance of the facility to the defence of the nation. This continued until 1933 when it was decided to lease the dockyard to the private sector as there was insufficient naval work to keep both Garden Island and Cockatoo Island fully employed.

The island was then leased to the Cockatoo Docks and Engineering Company, this allowed non-navy work to be performed.[5] In 1947 Vickers Ltd of the UK bought the majority shares of the company.[6] Over time the lease on the island was renegotiated and extended numerous times.

In addition to the overhaul of the *Oberon* class submarine fleet which commenced in 1971, the dockyard did a lot of refurbishment work on steam turbines and built the coal pulverising mills for various power stations in NSW.

In 1984 Vickers Australia Ltd merged with the Commonwealth Steel Company Ltd to form Comsteel Vickers Ltd.[7] In the late 1980s the then Labour government decided not to renew the lease which expired in 1992 and so the dockyard effectively closed in the previous year.[8]

Light railway system

Under the control of the NSW Public Works Department, Harbours and Rivers Branch a narrow-gauge rail system was established of nominally 3 ft gauge. Tracks were laid around the island to move materials and product to and from the various wharves and workshops. The rail system was quite basic, consisting of four-wheel flat top wagons and side tipping skips that were pushed around by labourers. Small turntables were located at the entrance to each building allowing the vehicle to be rotated ninety degrees and rolled into the desired location.

As the island developed and changed over time so did the rail system. By 1932 the system had developed into a veritable labyrinth of narrow-gauge tracks reaching every workshop on the island, see map on pages 24/25.

A tunnel was cut through the solid sandstone of the central plateau in 1915 to allow access between the slipway and plate yard in the north and the two dry docks and the machine shops in the south.

The joiners and pattern shops located on the top of the central plateau also had small sections of track that allowed materials to be rolled to the edge of the cliff and lowered down to the rest of the network.

Photographic evidence shows that a section of the rail system was electrified by 1907 with a two-wire direct current system that was operated by a small locomotive with two trolley poles. It appears to have just ran north-south in front of the original machine shop. Little information other than the photograph presented here has been uncovered to date.

A few four-wheel flat wagons survived into the 1980s and were used on small lengths of track to transfer heavy materials between workshops, for example between the Heavy Machine Shop and the Turbine Shop, a distance of only five to ten metres.

The Cockatoo Island electric railway, c1907. Both the Works Manager's office and the Machine Shop on the left of the railway still stand today, albeit somewhat modified over time. *Photo: NSW PWD (LR No. 88)*

Travelling steam crane No.002 in its original condition when delivered from England with a totally open cab. It is seen here alongside HMS Karrakatta *and HMS* Wallaroo*, Sutherland Dock, Cockatoo Island, 1900. This crane and its identical twin saw active service into the 1980s. Photo: John Jeremy Collection*

Travelling steam cranes

Two travelling steam cranes operated on a system of nominally 9 ft gauge tracks that ran the length of both dry docks. They were known as 001 and 002. One running on tracks north of the docks and the other on the south, the two lengths of railway were not connected. Each crane had its own siding for maintenance and servicing.

Both cranes were built by Priestman's of Hull, England, installed circa 1890, and were powered by a vertical boiler and a twin-cylinder steam engine. A heavy chain drive connected the steam engine to the wheels which propelled the machines along. Should it be necessary to secure the crane, clamps were provided which allowed the machine to be clamped on the rail head at four points.

The two cranes were used for putting the shores and staging into the dry docks when ships went into the dock for repairs, and were also used to tow vessels into the docks. Three men were required to operate each crane – one driver and two riggers.

When originally supplied the cranes had a simple concave roof with large canvas blinds that could be pulled down to protect the crane driver from the elements. However, both cranes were enclosed during WWII with a small sliding door providing access from a narrow walkway that was added. This of course took the crane driver from one extreme to the other, creating an oven during summer as the boilers were coal fired.

Both cranes were in continuous service well into the 1980s. The author remembers having to move aside on numerous occasions to avoid being run over whilst one of these 'beasts' chugged and clanked past spraying anyone too close with oil and steam.

Crane 002 has been restored by volunteers and restoration of 001 is well underway.

Above: *Restored travelling steam crane No.002 pictured on the southern side of the Fitzroy Dock in October 2021 with the high central sandstone plateau in the background and the caisson floating in the end of the dock. Beneath the crane can be seen two of the bollards that are placed around the dock, they are mostly ships cannons cemented in place. Photo: Author*

Below: *Travelling steam crane No.001 under restoration by volunteers in the Heavy Machine Shop on Cockatoo Island, October 2021. The four wheels are seen in the left foreground, the rotating roller bearing behind them and the main under-carriage mounted on timber blocks. Photo: Author*

The State Car built on Cockatoo Island for the Goondah-Burrinjuck Railway. This beautiful little vehicle must be one of the most ornate narrow-gauge carriages ever to operate anywhere in Australia. Lavishly appointed to transport dignitaries and senior management it was also fitted with a full air brake system. *Photo: The Railway Archives 851641, ARHSnsw*

Goondah-Burrinjuck Railway Work

Whilst under the control of the NSW Public Works Department, Harbours and Rivers Branch, Cockatoo Island undertook various locomotive and rolling stock work in relation to the 2ft gauge Goondah to Burrinjuck railway that was built to transport men and materials to the Burrinjuck Dam construction site on the Murrumbidgee River.

This work was undertaken as both the island and the dam were under the same state government department at the time.

Rolling Stock Construction

It appears that most of the rolling stock for the line was designed on the island. The rolling stock construction drawings are labelled 'Government Dockyard Biloela' and signed by the Dockyard Superintendent at the time Mr A E Cutler in 1907/08.

The approach to design taken was the prudent strategy of standardising as much equipment as possible across the fleet, thereby reducing the cost of production. This strategy also minimised the amount and variety of spare parts needed to be stocked on site, thus keeping operating costs down.

The passenger carriages and most of the freight rolling stock were built on a standard timber underframe with steel queen posts and tie rods. These were mounted on bogies via spherical centre bearings. The coupling system was a link and pin arrangement.

An arch-bar type bogie with a 3ft 1½in wheelbase was used as standard. These had no primary suspension (wheel to bogie), but quite substantial secondary suspension (bogie to bolster) in the form of two double helical spring nests which would have provided a reasonably comfortable ride for the passenger vehicles. This would have also limited the track damage caused by the freight vehicles. The spoked wheels were cast steel and cast-iron brake shoes acted on all four wheels.

This narrow-gauge railway was unusual in that it operated trains fitted with a single pipe air brake system. This required all locomotives to be fitted with a Westinghouse single-cylinder steam compressor, an air reservoir, a driver's brake valve in the cab and associated piping and brake hoses. Likewise, all bogie rolling stock was fitted with a control valve, reservoir, brake hoses and associated piping. Some drawings also indicate that slack adjusters were fitted to the brake rigging to compensate for wear.

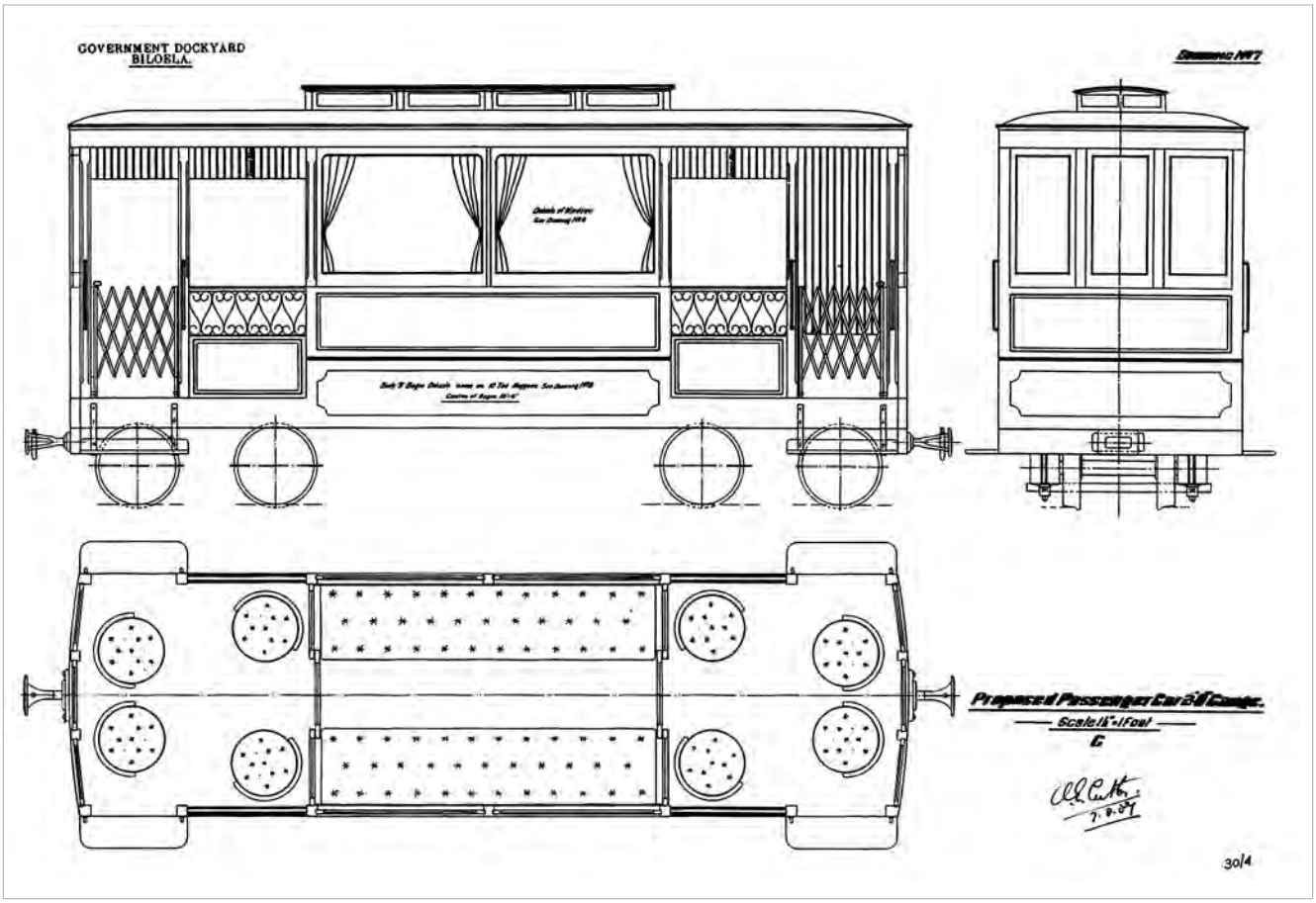
The design of the passenger rolling stock car bodies appears to have been heavily influenced by the electric tramcar designs of Sydney rather than the main line rail system.

Passenger Carriage No.1 – The State Car

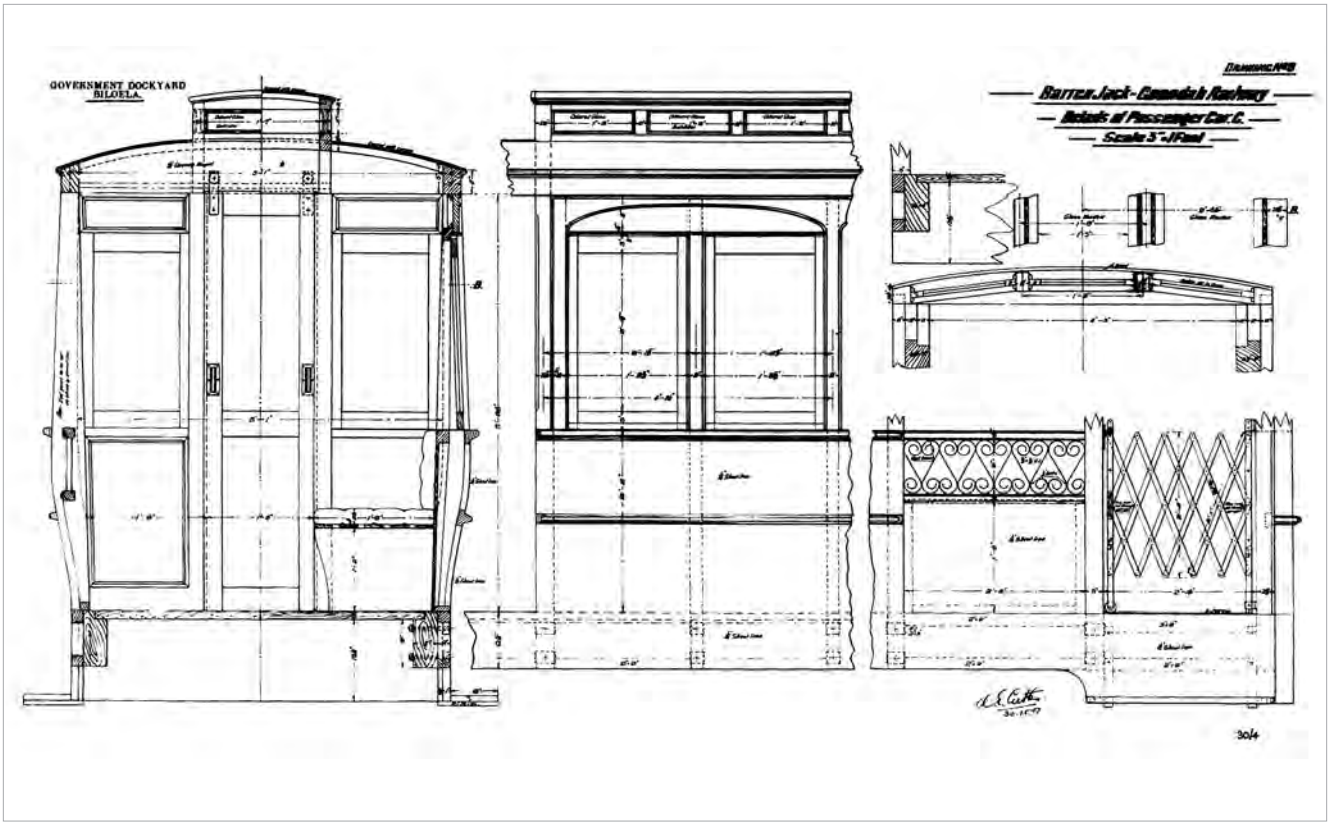
This small ornately decorated passenger carriage was designed for the conveyance of important visitors and senior officials to the dam construction site.

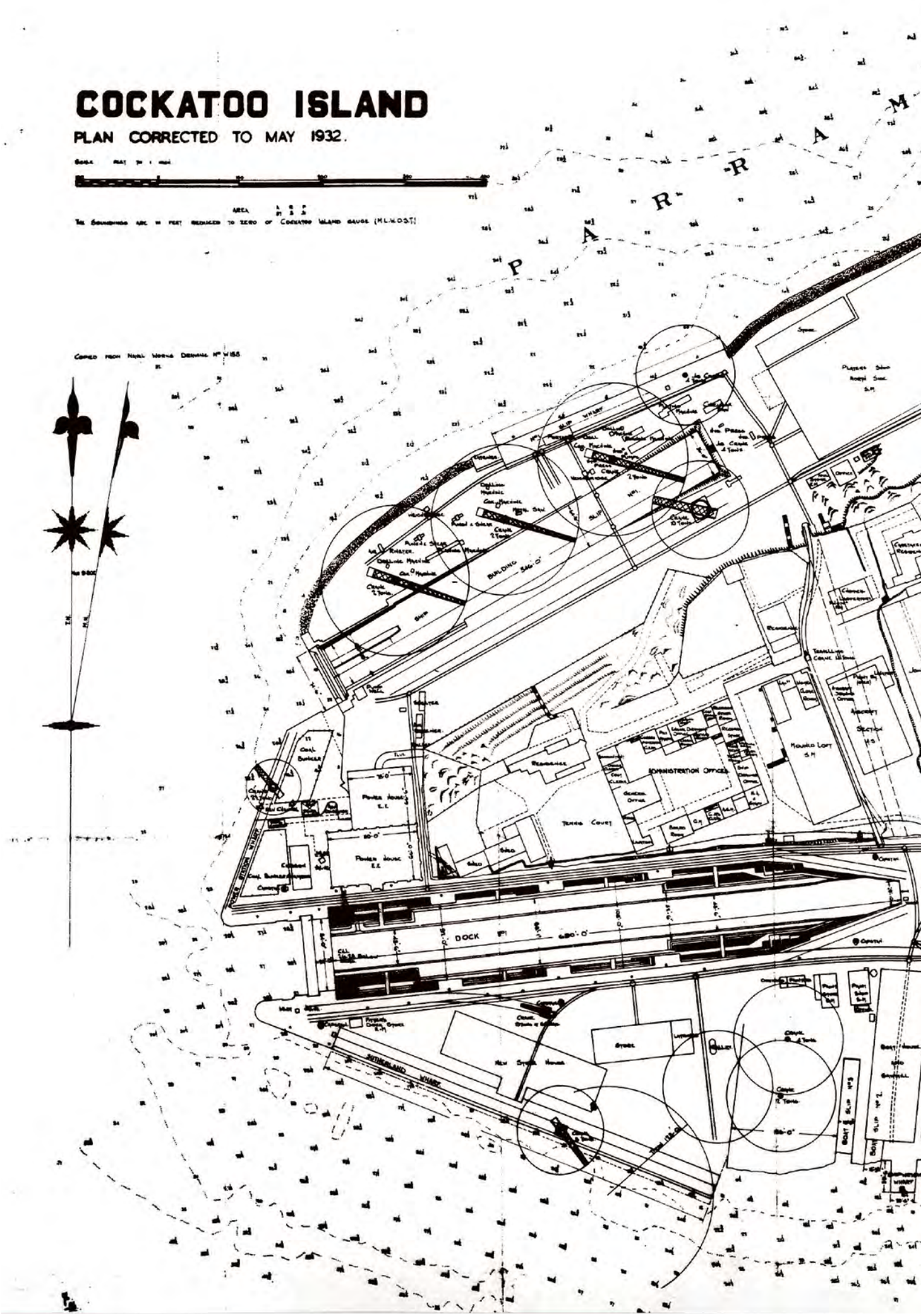
The design of this carriage in particular appears to have been influenced by the Sydney L-class trams which were a class of two-bogie California combination vehicles with a single centrally positioned saloon area comprising two longitudinal timber benches facing inwards and two open platforms of the car at either end with lateral seating. This class had been converted from the original F class trams which had longitudinal seating in the open areas, a project that had began in 1906.

The State Car had four leather seats on each end platform which could rotate (but were fixed to the floor), sun blinds and concertina gates. The central saloon had a clerestory roof with coloured glass panels, two leather bench seats, curtains on the windows and sliding doors. The seating capacity appears to have been 16.[9]

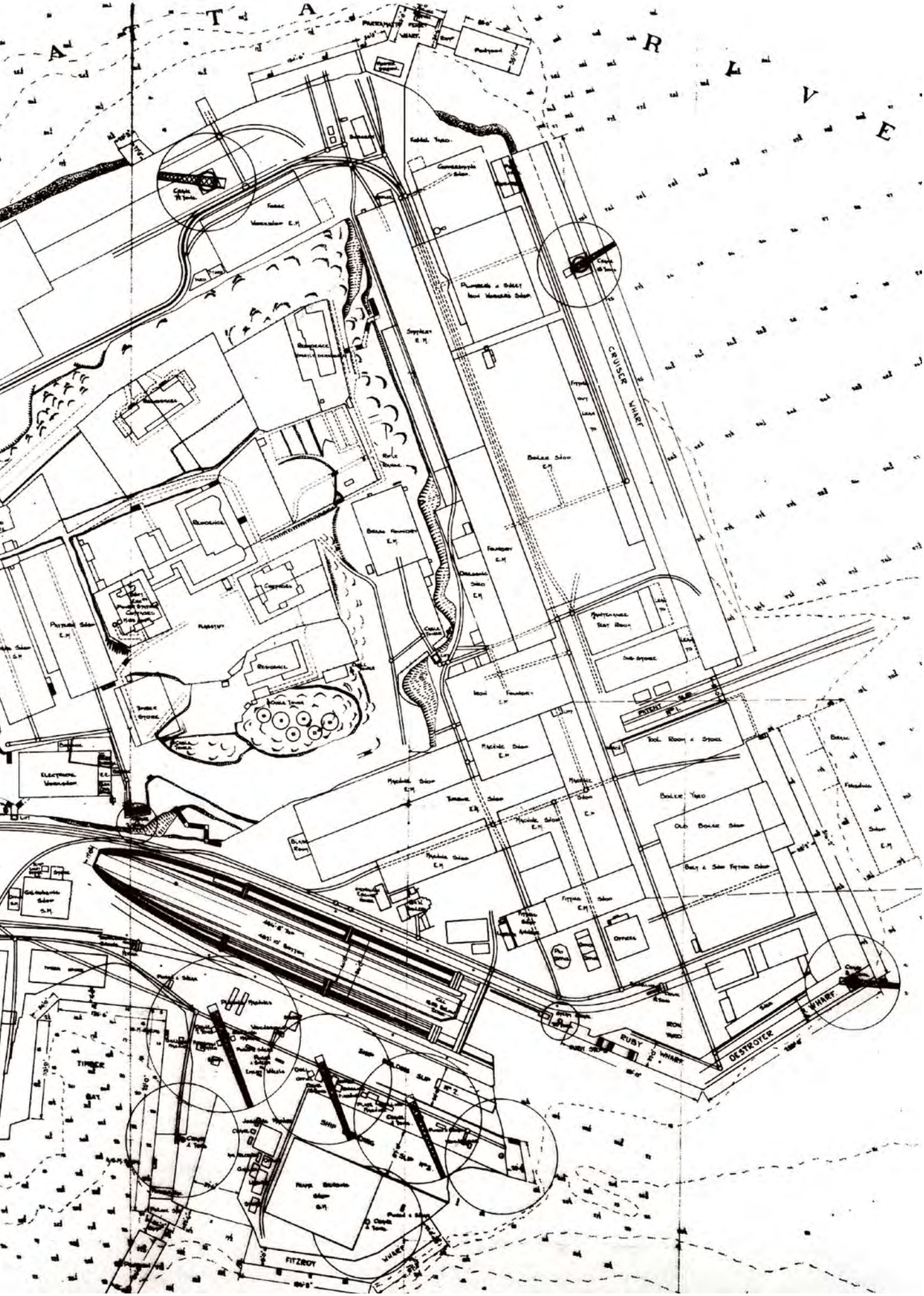


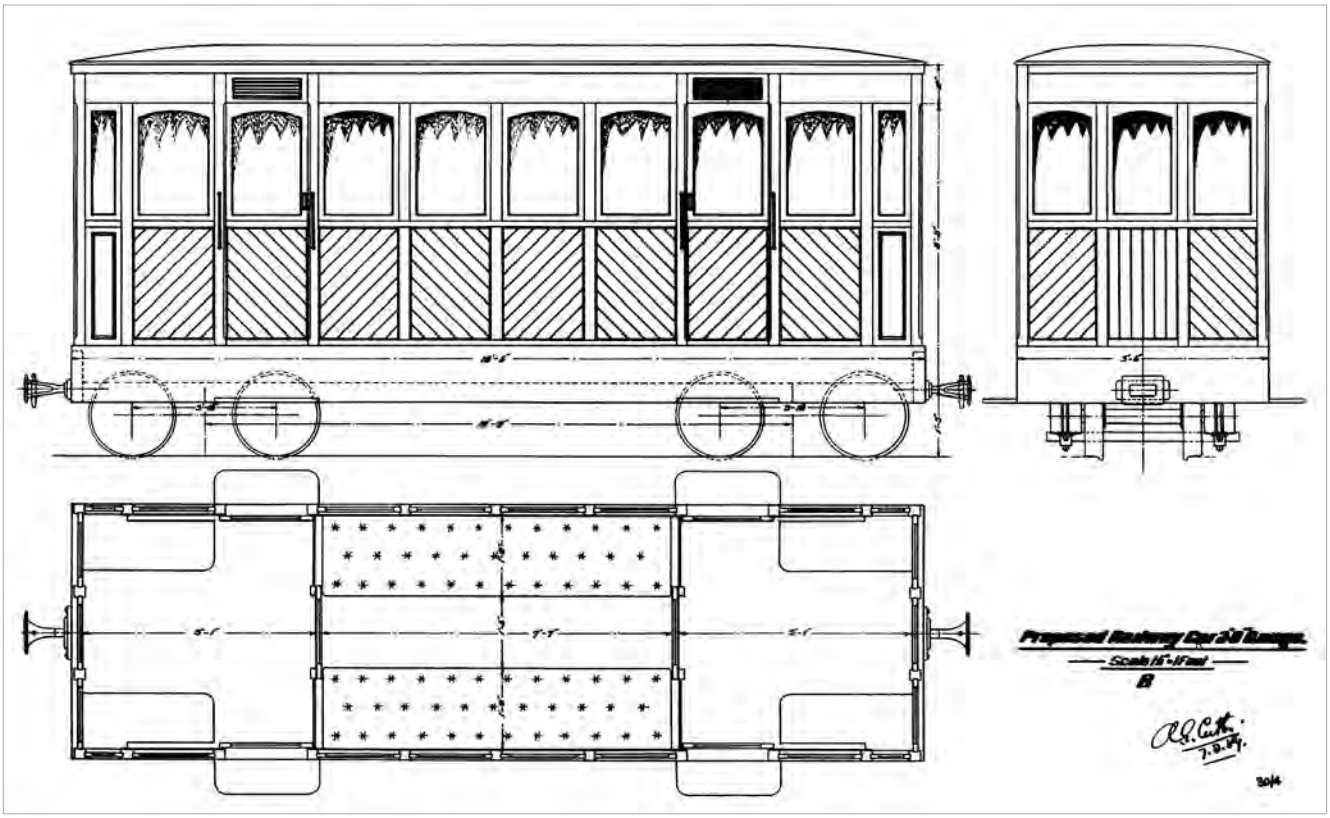
Two design drawings of the State Car which were produced on Cockatoo Island. The general arrangement of the vehicle, depicted in drawing No. 7 (above) shows us the internal layout, but does not correspond to the vehicle 'as-built' as the sides of the car body were not straight as shown. The details of the passenger car, depicted in drawing No. 8 (below) reflects the vehicle as built. Its design appears to draw heavily on the electric tramcars that were being put into service at the time on the Sydney system. Clearly the vehicle was designed to impress its passengers with both the comfort it provided and the view it afforded of the countryside on the journey from Goondah Station to the Burrinjuck Dam construction site.
Drawings: John Newland Collection





1932 map of Cockatoo Island showing narrow gauge and travelling crane tracks. John Jeremy Collection





Drawing of passenger carriage No. 2, which was a similar layout to that of the State Car, but with less luxurious features. However, it still exhibited decorative timber panelling on the outside. Drawing: John Newland Collection

Passenger Carriage No.2

This carriage was of a similar floor layout to the State Car, having a vestibule at either end and a central saloon. It was fitted out with less luxurious features to suit the lower ranking officials and second-class passengers.

The central saloon appears to have had leather bench seats whist the end vestibules had plain timber bench seats. The saloon had a sliding door at either end.

The structure of the carriage reflected railway design rather than tramway, with an exterior frame and varnished planking mainly mounted at forty-five degrees. All four entrance doors were sliding and mounted internally. Like the State Car, the seating capacity appears to have been 16.

Passenger Carriage No.3

This carriage was rather spartan in layout having six transverse bench seats in a 'toast rack' formation as used on various classes of Sydney tramcar. The centre four seats could be tipped over in order to face the direction of travel and an end platform which could access the main compartment by a sliding door.

Metal pipes at the end of the seats supported the roof and large blinds could be rolled down should inclement weather set in. The seating capacity appears to have been 22.

Passenger Carriages No. 4, 5 and 6

These three carriages appear to have been designed by the Cockatoo Island drawing office as they matched the other vehicles in style, however no drawings have been located to date. They were manufactured by Mort's Dock and Engineering Company at Balmain.[10]

Passenger Carriage No.4

This car was a similar 'toast rack' design like No.3, but was fitted with sliding doors to give protection from the elements. The seating capacity appears to have been 24.

Passenger Carriages Nos. 5 and 6

These were combination carriages, each with a saloon at one end and three transverse seat compartments with side entrance doorways at the other end. The seating capacity appears to have been 20.

Brake Van

This vehicle was also most probably designed by the Cockatoo Island drawing office, it had two compartments; one for luggage and one for the guard which was surprisingly fitted with a ducket on each side. The body had an external frame that was covered with polished wooden planking with a louvred panel and diagonal cross-bracing at the ends. Access was via a large siding door on each side. It was shorter than the other vehicles being 13 ft 10 in long it also appears to have had a small pot belly stove for the guard as evidenced by a small chimney.[11]

No drawing has been located for this vehicle and its manufacturer is unknown, but it was probably built on the island.

15-ton Bogie Flat Wagons

These wagons were nominally 24 ft long and 5 ft 6 in wide. They were fitted with removable vertical stays, five on each side and two on each end. These wagons were mainly used to convey a wide variety of materials including steelwork and firewood for the Burrinjuck power station.[12]

Eighteen were built on Cockatoo Island.

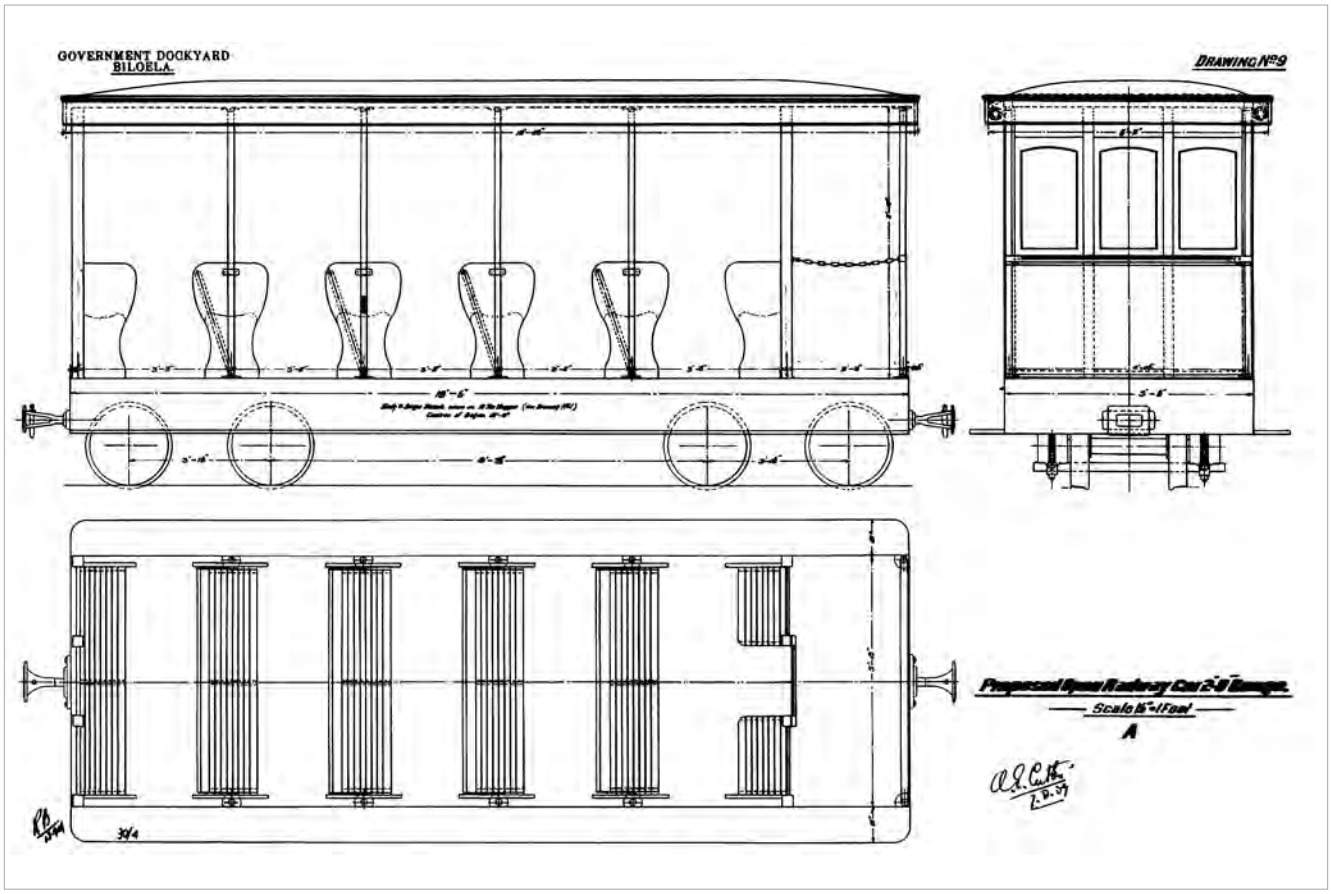
10-ton Bogie Drop-side Wagons

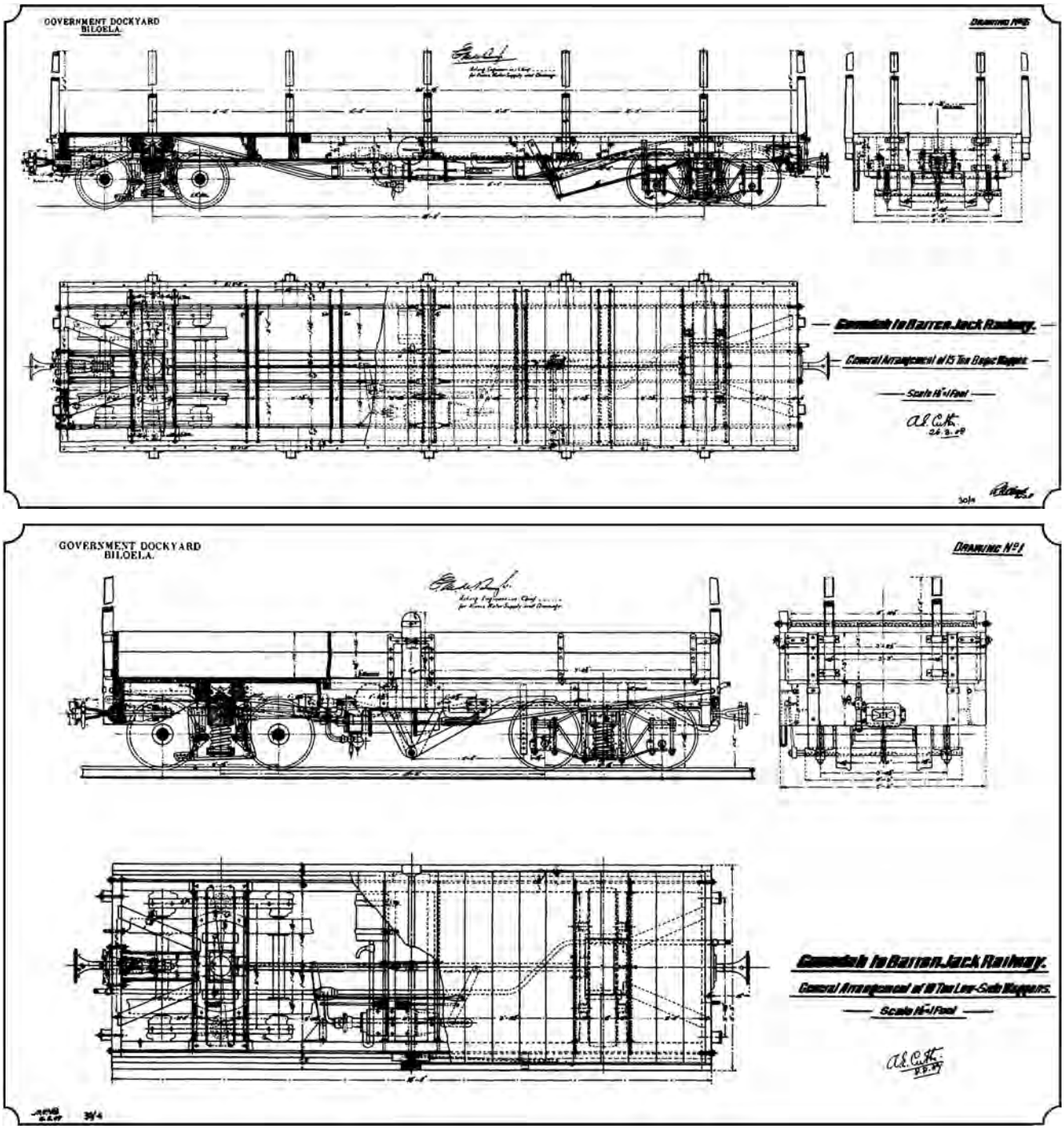
These wagons were 16 ft 8 in long and 5 ft 6 in wide. They were fitted with four large drop-side doors that hinged down to allow materials to be easily unloaded. Pillars were located in the middle of both sides of the wagon which were connected by a bar, this provided lateral support when the wagon was full of loose material such as gravel or stone.

Above: *Passenger carriage No.3 shown on Cockatoo Island in the process of being lowered by rope onto a pontoon for delivery to Darling Harbour where it would have been trans-shipped onto a flat wagon for transport out to Goondah on the NSWGR.*

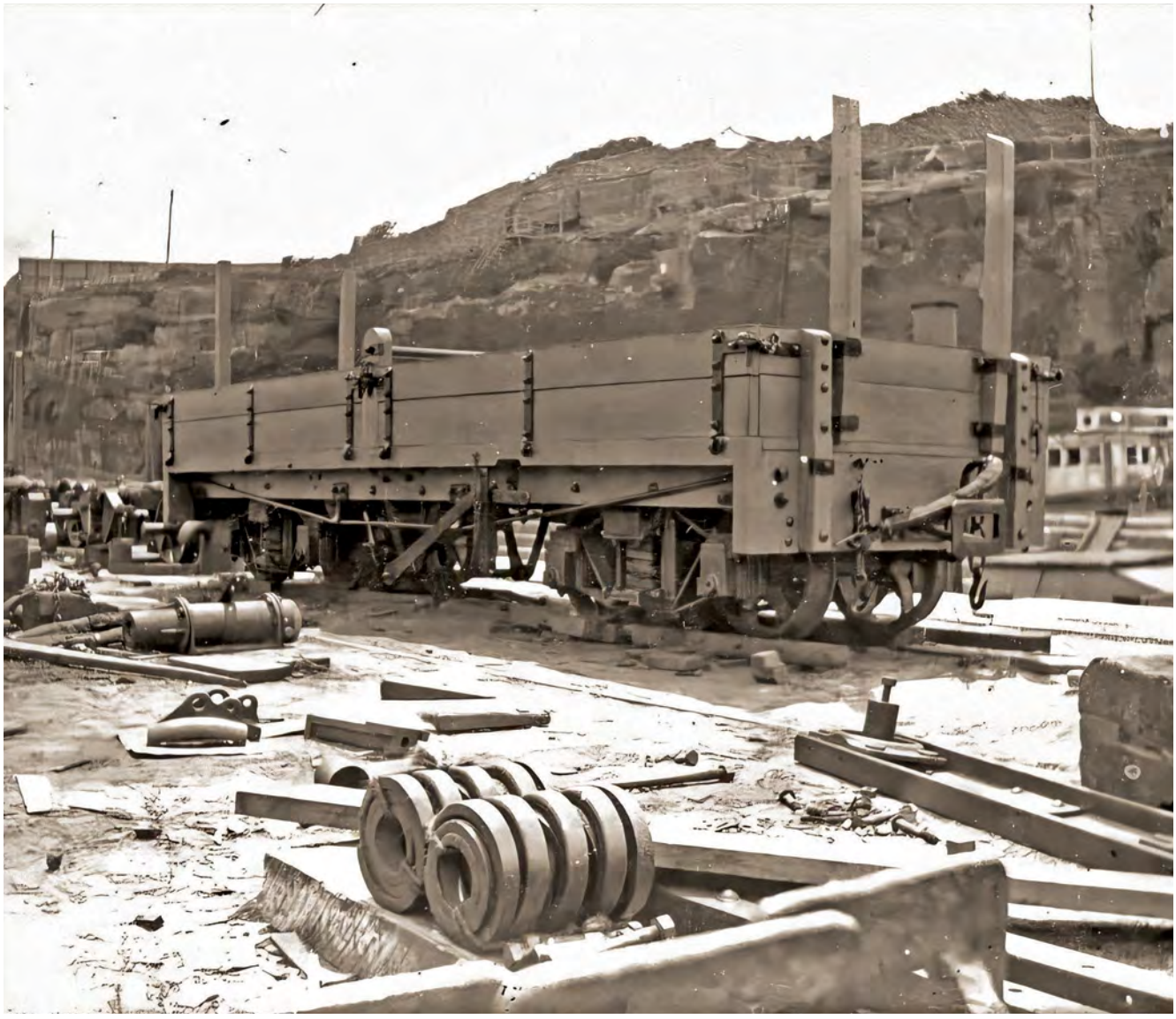
Photo: The Railway Archives 851642, ARHSnsw

Below: *Drawing of passenger carriage No.3 showing its simple layout.* *Drawing: John Newland Collection*





Top: *Drawing for the 15 ton bogie flat wagon showing details of its brake rigging. Drawing: John Newland Collection*
Above: *Drawing of the 10 ton low-sided wagon. Showing its brake rigging. Drawing: John Newland Collection*
Right: *Pipes for the Burrinjuck Dam project dockside on Cockatoo Island with the electric tramway in the foreground and Balmain in the distance. Photo: SLNSW/ FL1012254*



Assembly of the wagons was carried out beside the docks in the open. A complete 10 ton low-sided open wagon is seen here prior to delivery. Bogie springs, brake blocks and brake cylinders are seen in the foreground with bogie assembly being carried out on the far left.

Photo: John Jeremy Collection

Two removable vertical stays were mounted on either end to retain materials such as firewood. A large park brake lever was fitted to one side mounted on a V hangar.[13]

Nine of these wagons were built on Cockatoo Island.

Locomotive Modification

In 1903 the NSW Public Works Department purchased a second-hand 0-6-0T locomotive from the Colonial Sugar Refining Company. This locomotive was built by John Fowler & Co of Leeds, England (B/No.8767 of 1901) and was first used by the department on the construction of the Cataract Dam hauling stone and timber.[14]

At some point the locomotive was transferred to Cockatoo Island where it was fitted with air brake equipment and probably overhauled for use on the Burrinjuck Dam project.

Although it may seem strange to transport this locomotive, which weighed approximately ten tons, to the island to perform this work, it must be remembered that the island was the workshop for this department at the time.

Turntable

A 20 ft turntable was designed for the Burrinjuck works end of the railway where a turning triangle was impractical. It was a simple design based on two large timber beams rotating around a central pin with rollers at all four corners.

The structure was designed by the Cockatoo Island drawing office as evidenced by the drawing shown. However, its place of manufacture is uncertain, but was most probably the island.

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1. Taylor.G.J., *Cockatoo Island – Brief History and Site Guide*.
2. Jeremy.J., *Cockatoo Island – Sydney's Historic Dockyard*, UNSW, 1998, page 10.
3. Ibid, page 15.
4. Ibid, page 20.
5. Ibid, page 39.
6. Ibid, page 42.
7. Ibid, 48.
8. Ibid, 52.
9. Newland.J.R., *The Goondah-Burrinjuck Railway*, ARHS, Sydney, 2009, page 83.
10. Ibid, 86
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12. Ibid, 87
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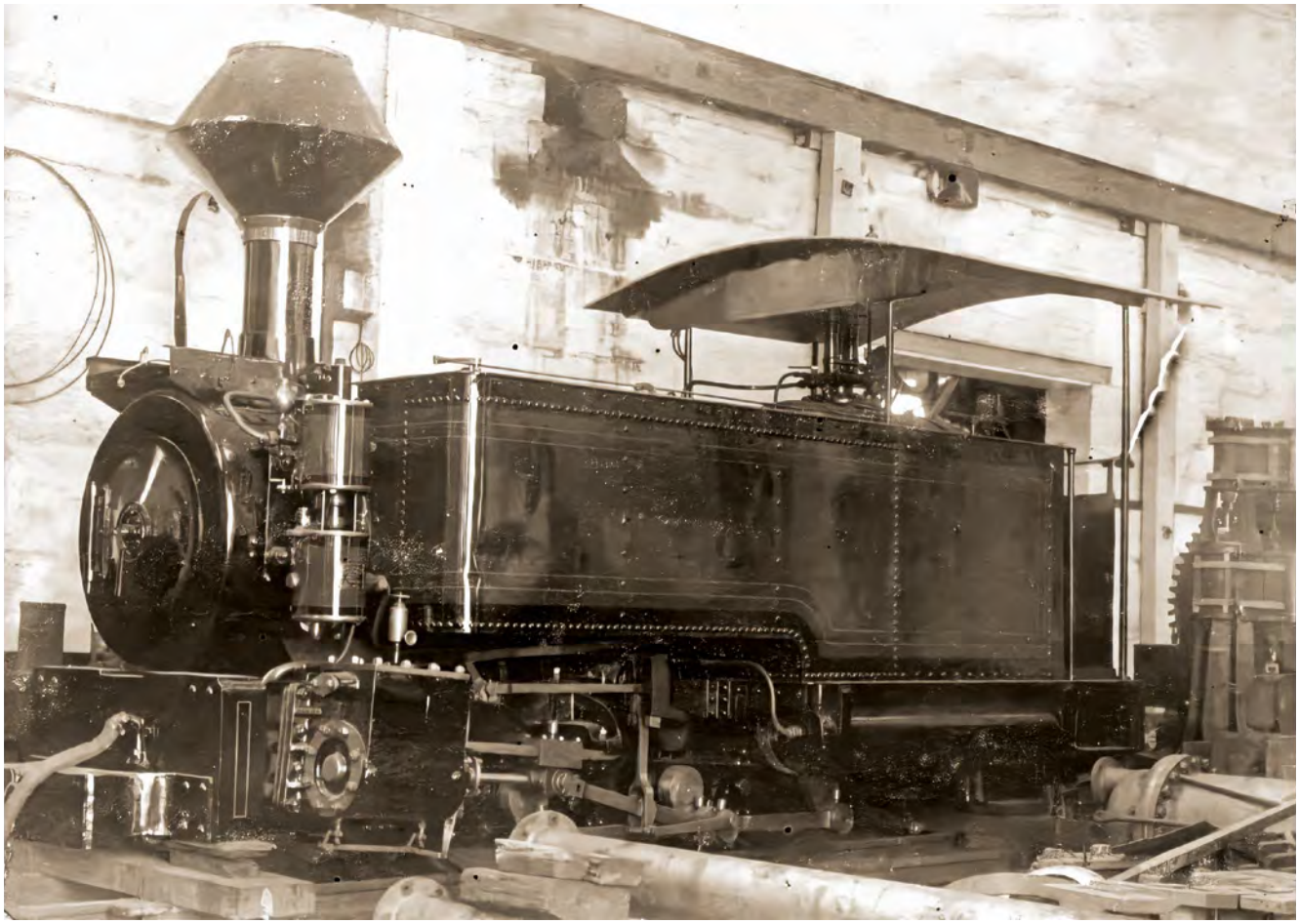
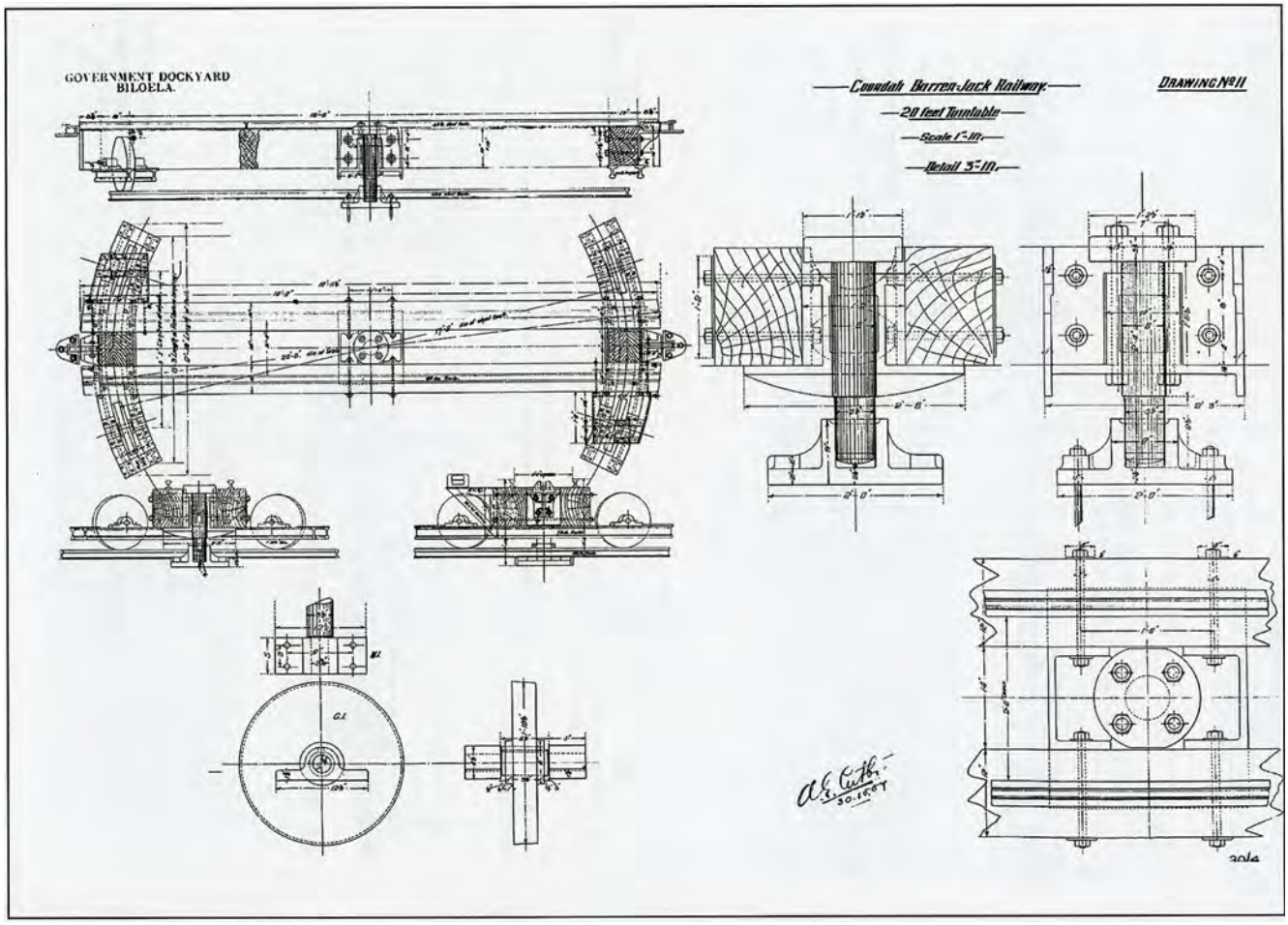
14. Ibid, page 81 & McCarthy.K, *Gazetteer of industrial Steam Locomotives Illawarra District, NSW*, ARHS, Sydney, 1983, Item 62.





Above left (page 30): *Fowler locomotive* KATE *(B/No.8767 of 1901) pictured in the convict-built Erecting Shop on Cockatoo Island, where it was fitted with a Westinghouse single-pipe air brake system. This was reasonably major modification considering this type of locomotive was rarely fitted with such equipment. The single-cylinder steam compressor can be seen mounted on the smoke box, an air reservoir has been mounted under the right-hand water tank and an air brake hose is evident on the front buffer beam. Photo: John Jeremy Collection*

Below left (page 30): *The image of* KATE *was most probably taken in 1907. This photo, taken of the same location in October 2021, shows how little this portion of this convict-built workshop has changed in over 100 years. This building was originally built in 1848-1857 as the pump house for the Fitzroy Dock. It was converted into an Erecting Shop in 1884, then a Fitting Shop in 1914 and finally a Machine Shop (mainly boring machines) during WWII. It remained in that role until 1991. Photo: Author*

Above: *Drawing of Burrinjuck turntable designed on Cockatoo Island and probably built there. Drawing: John Newland Collection*

Right: *Part of the few surviving sections of track with turntables on the island located near the Carpenter's Shop. Photo: Author*

The SS Zephyr *arrives at the Rottnest steamer jetty exactly one hundred years ago. All is hustle and bustle as holiday makers and day visitors come and go, some getting a spot on the tram or seeking other transport. The* Zephyr *was built in 1906 by Rock Davis, Blackwall, Brisbane Water, NSW for McIlwraith & McEacharn. At 126 ft long and 25 ft in the beam, her machinery comprised two sets of triple-expansion steam engines, from Campbell & Calderwood, Paisley, Scotland. The Ford motor car, at left, with nine or 10 on board, belonged to Mrs Rose Keough, licensee of Rottnest Island Hostel, where our intrepid photographer stayed at Easter, 1922. Photo: Abraham 'Izzy' Orloff, SLWA Image 111485PD*

The Rottnest Express
horse tram for holiday makers

by Jim Longworth and Phil Rickard

Introduction

Rottnest Island lies 18 km west of the Western Australian coast, off the Perth suburb of Cottesloe. The island is almost 11 km long and 4½ km at its widest. It was first sighted by Europeans in 1696 when Willem de Vlamingh, a Dutch explorer, named the island *'t Eylandt 't Rottenest* (Island of Rats' Nest) due to what he thought were large rats that he found on the island. These were in fact, quokkas, a variety of small wallaby.

The island has long been a special place for Western Australians and a popular destination for interstate and international visitors. Some fine beaches and bays can be found around the island, providing a spectacular venue for snorkelling, scuba diving, surfing, and swimming. Colonial streetscapes and architecture among the oldest in Australia are also a feature of the island. Recreational and holiday pursuits have continued on the island from the start of last century to the present day, except for its closure in 1914-15 for an internment facility and again from 1940 to 1945 for military functions.[1]

From 1894, when steamers started carrying excursionists to Rottnest Island on Sundays for a couple of hours' visit (provided you had a permit), to the hordes of visitors arriving today, the island has become a favourite destination for locals and visitors alike. Prior to becoming a holiday destination though, it was long-used as a prison for Aboriginals, starting in 1838 with the last not leaving until 1931; it was also used as a Boys' Reformatory for many years.

During the 1890s and early 1900s, one could only visit Rottnest with the authority of the Colonial Secretary – there being no facilities for the general public although the government had a 'cottage' for use of the Governor, his family and invitees during the height of summer, in order to escape the extreme heat sometimes found in Perth. The island also has a couple of lighthouses and used to have a saltworks.

Jetty

Over time several jetties have graced the north-eastern coastline, along Thompson's Bay, the side of the island closest to Fremantle. One jetty, towards the southern end of Thompson's Bay, accessed deeper water and, from 1907 to 1924, allowed excursion ferry passengers to avail of horse-drawn trams at the base of the jetty and be transported to the Thompson Bay settlement and back. The paddle steamer *Eleanor*, and steamers *Dolphin* and *Clyo* were active on the run during the 1890s. From 1907, the ss *Zephyr* was a popular Sunday ferry, sometimes running twice a day, leaving Perth at 10:30am and a moonlight trip leaving at 8:00pm. Other vessels that included the island in their occasional excursions were the ss *Manx Fairy* (the engines and fittings of which were subsequently used in the ss *Westralian*), the *Awhina* (a New Zealand-built steam tug), ss *Gannet* and ss *Venus*. At the time, the main 'season' on Rottnest was from mid-November until Easter; at other times residents were serviced by much-reduced services by the government steamer *Penguin*, which, with a draught of 10 feet, had to anchor half-a-mile out in Thompson's Bay with everything being taken ashore by whaleboat with trusted prisoners at the oars.

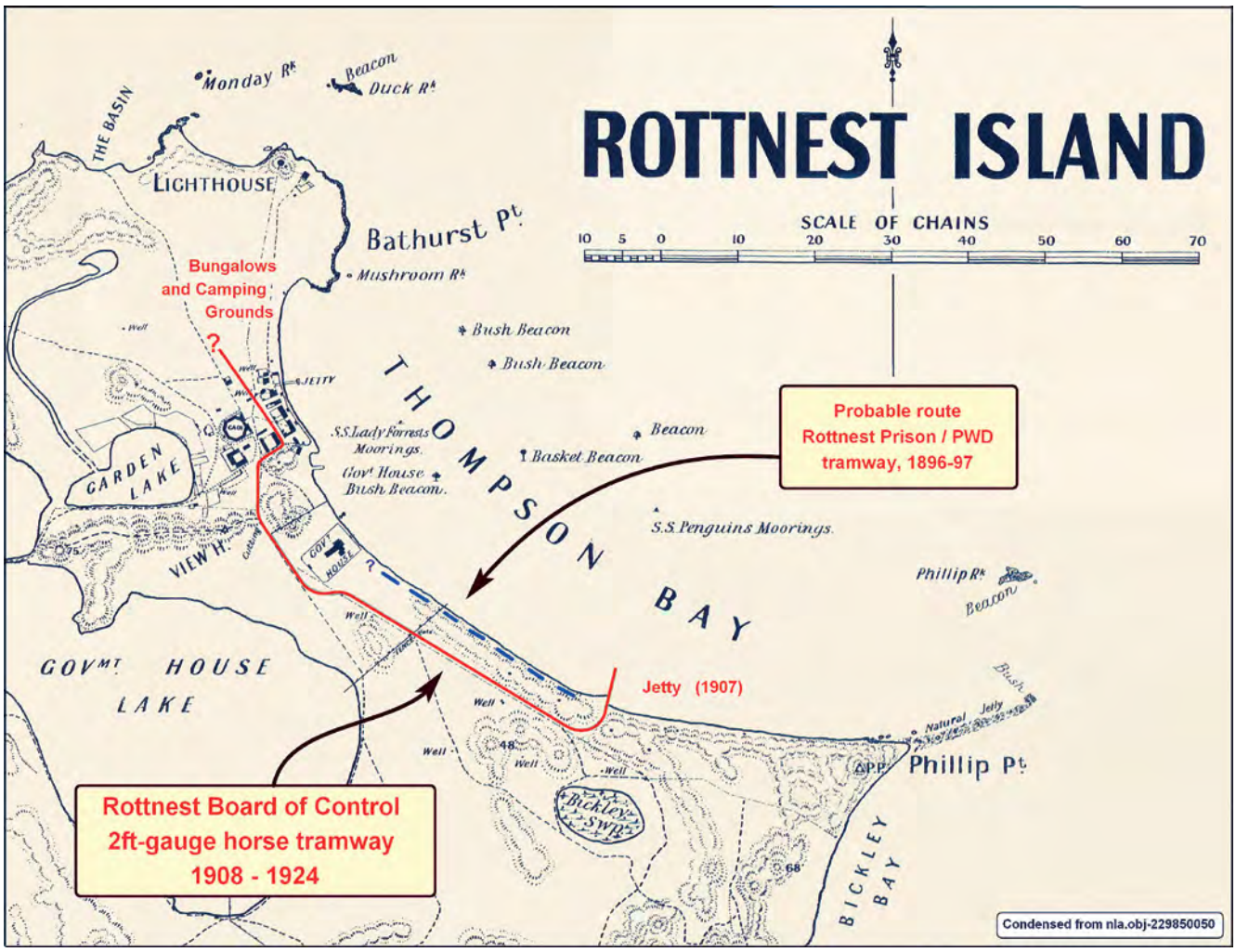
Possibly a hot overcast day judging by the umbrellas, and the tram is ready to depart from the base of the jetty watched by two small boys. Maybe the sea had been rough, deterring some excursionists, as all the visitors fit nicely onto the three passenger trucks with just three 'overflow' travellers in with the luggage. This photo appeared in the Western Mail, *6 Feb 1914 and its mate, taken a minute later, appeared in the* Sunday Times *8 Feb 1914. Photo: Ernest L Mitchell.*

First Tramway

At some time prior to 1896, a surveyor from the W.A. Public Works Department selected a position for a jetty with deeper water than that available at the existing short jetty adjacent to the main settlement and gaol.[2] As a jetty at the selected spot would be next to useless without a tramway to connect it with the settlement, which was a mile distant, the Rottnest Prison superintendent (Lieut-Colonel Edward Angelo) had used his 1894 official Report to propose such a line.[3] Although no funds had been officially voted for the purpose, Col. Angelo subsequently set to work to construct the line with the available prison labour and by December 1896 it was approaching completion. In mid-March 1897, the Minister for Education, E H Wittenoom visited Rottnest and inspected the tramway[4] so by then it was presumably complete despite no material having been sent to the island for the line!

A couple of years earlier, in 1895, just a few miles to the west of the proposed tramway, a new lighthouse had been completed. In its shadow were the rails and sleepers of a construction tramway that had been used for transporting the stone blocks a mile or so from a quarry.[5] Being no longer required for that purpose, the thrifty Colonel Angelo recovered the material and utilised it for the new line. As one reporter noted:

> "A marvel of economy would soon be accomplished in a mile of excellent tramway, calculated to meet then present difficulties and to forestall those exigencies which must sooner or later make themselves felt when the island would be thrown open to the public."[6]



Easter 1921, and the SS Zephyr *arrives. She had departed at 10am from Perth's Barrack Street wharf with a good load of holiday-makers and day-trippers each of whom forked out six shillings for the return fare. Having sailed down the Swan River, calling at Fremantle for more passengers (at just 4/6d each), we now find Captain Charlie Strue, with the* Zephyr's *twin-screws in reverse, bringing her alongside the steamer jetty. The top of her funnel (as visible in the photo) could be telescoped down inside the lower portion to enable clearance under the road and rail bridges at Fremantle. Photo: A. Orloff, SLWA image 111322PD*

What was most deserving of attention was the fact that this line cost virtually nothing. Maybe, wondered the reporter, some remission of sentences might be accorded to some of the prisoners for their good work? None-the-less, despite the reporter's implied claim, one doubts that a prison superintendent would dare remove and reuse another department's property without sanction from officialdom in Perth.

It was generally thought that the Public Works Department was merely awaiting the necessary vote of funds to construct a jetty at the terminus, whence excursionists would have no trouble in landing direct from steamers. That this was true is confirmed by the WA government's Forward Estimates which for 1897-8 included £500 for "construction of jetty, Rottnest" which leads one to think that Colonel Angelo had authority to re-use the old lighthouse tramway and build the connecting tram from the settlement to the jetty site.

Despite each yearly report from the Rottnest Prison superintendent pleading for a proper deep-water jetty to do away with the sometimes dangerous lightering of goods and passengers, and now although having the necessary tramway in place, the government changed its mind! The funds allocated for the jetty officially lapsed.[7] The Rottnest Prison report for 1897 succinctly notes: "The jetty, which was proposed to be constructed at the south of Government Cottage, had not been commenced and the tramway abandoned and the rails removed by order of His Excellency the Governor."[8]

From the scant references to this line in the newspapers, it would seem that it was built to the east of the sand hills that run parallel to Thompson's Bay, rather than to the west as the later tramway did. Colonel Angelo had stated that he wanted 'his' line to meet an existing tramway that must have run from the short settlement pier‡, into the nearby gaol precinct.[9]

Thompson Bay settlement's main street, looking northwards from the Cash Store towards the camping grounds and bungalows, beyond the distant trees. The bay is about 50 metres to the right, the hostel and the octagonal accommodation house (formerly the gaol) are about 120 metres to the left. The tram has paused to collect day trippers; the horses tended by the driver whilst the conductor sells tickets. Once the tram departs, quiet will again descend on this sunny sleepy spot. 1922 or 23. Photo: A Orloff, SLWA Image 111498PD

The unknown photographer of this holiday snap thoughtfully wrote on the reverse: "Went down to meet Alice Butterworth and Jim Morrison. Rode back in the trolley, 18 Jan 1913". Saturday, 18 January saw the temperature on Rottnest peak at a pleasant 24½° C. The following day, Sunday was a degree warmer and on Monday it reached 27 C. Meanwhile, back in Perth, they had a sweltering 38½ C. Let's hope Alice and Jim enjoyed their Rottnest sojourn away from the City! Photo courtesy: Royal Western Australian Historical Society Ref 2015_1011

Nothing of substance happened for the next five years though 1901 saw the end of the decade-long Forrest government and the start of five years of political instability that saw seven premiers come and go. In 1902 one of those governments proposed, due mainly to the drive of Hector Rason, the Minister for Works, to open up Rottnest as a national park, introduce tourism and remove all prisoners.[10] Plans for this required a deep-water jetty to overcome the on-going lightering of goods and passengers but, again, it all came to nothing when the government was defeated at the elections.

Second Tramway

Three years later the plans were again revived when Rason, now the premier, formed yet another government.[11] As foreseen by Col. Angelo over a dozen years previously, a tramway was still required and would be an important link in the transport chain, filling the gap from the proposed steamers' jetty to the newly repurposed goal and surrounding buildings that were converted to tourist accommodation. By March 1906, prisoners were being used to quarry limestone blocks and a start had been made to push the stone jetty approaches seawards.[12] The Forward Estimates again included monies for the jetty – 1905/6 some £506, 1906/7 another £500 and 1907/8 a final £100.[13]

A year later, in April 1907, a correspondent for the *Western Mail*, extolling the island's beauty, noted that the new jetty for the pleasure steamers was completed and work was proceeding on the necessary roads and works to connect it with the settlement.[14] By November, matters weren't much advanced – the jetty was being used by some of the pleasure steamers, but the rocky approach causeway still awaited levelling and filling – the sharp limestone rocks proving disastrous to ladies' dainty shoes! The proposed tramway was yet to eventuate and visitors had to walk the mile to the settlement, along the beach, which enabled them at least to view the governor's summer cottage and grounds, surrounded by a barbed wire fence to ensure his privacy.[15]

‡ That the small jetty adjacent to the gaol and settlement had a tramway is confirmed by a tragedy on 6 Sept 1907 when, during the erection of a new arm for the jetty crane, a young lad, Roy Hamilton, whilst watching proceedings was killed when the crane collapsed. The caption to a photo of the jumbled scene, in the *Western Mail* on 5 Oct 1907 states " . . . the little boy . . . was sitting on the tram rails when the spar fell on him."

Construction of the tramway started in early 1908 with an alignment surveyed to accommodate a tramway (6ft easement), roadway (18ft) and a 3ft-wide footpath. According to a rather scathing report in the Fremantle *Evening Mail* in October, the "Rottnest Railroad" and associated works employed some 60 prisoners – 40 white and 20 Aboriginal – for a good portion of 1908. These good-conduct prisoners received the standard 2d per day for their efforts though this may have been just the white inmates.[16] The paper claimed (with no corroborating evidence) that rather than use the government surveyor's (Alfred Lewis), gently undulating surveyed line, the head gaoler had a prisoner calculate levels to make the line dead flat, which resulted in the raising of an embankment some 10 to 12 feet high to the west of Government Cottage, spoiling the governor's westward views of the lakes. The governor then demanded his view back, resulting in the embankment having to be largely carted away!

What is clear is that south-west of the jetty, a large curved cutting (approx. 130 yards long, up to 20ft deep and 30ft wide at the bottom) was cut through the sand hills, the sides of which had to be covered in brush or ti-tree to try and hold the sandy soil until vegetation took hold. This cutting was necessary to access the inland side of the sand hills for the tramway, to avoid the unstable beach side of the dunes which the 1897 tramway had taken. The government's Estimates for 1908/9 includes £165 for "Rottnest, material for new tramline", though whether that was the total or just partial cost is not known.[17] We do know from the *Evening Mail's* report that the sleepers, rails and trucks for the tramway had been landed prior to mid-October so it would seem that the tramway may well have been in operation for the 1908-09 summer season.

Until 1917, even with a rise in tourism, the island was run through the Colonial Secretary's department and the Tourist Bureau in Perth started handling the requests for camping sites. In 1917 responsibility for the island was transferred to the newly-formed Rottnest Board of Control whose main remit was to develop the island for tourist purposes.

The line and operations

The jetty was equipped with 2ft-gauge tramway rails running along its length of about 100ft, followed by around 180ft of rock causeway which led to a large area at the jetty base where there was a siding to enable the luggage trucks to be shunted as required, before the tramway headed into the large cutting.

A study of available photos of the 2ft-gauge passenger trucks shows that prior to the 1913-14 season the unsprung flat trucks merely had a footboard and uncomfortable wooden longitudinal knife-back seating. For the 1913-14 season solid timber ends were added, presumably for passenger safety. Unfortunately, no extra trucks were added to the fleet, leading to extreme crowding at times, with the overflow passengers jammed, standing or sitting dangerously on the sides of the luggage trucks. Photo: 'The Rottnest Tram' – Murray Views post card, Hugh Ballment colln.

As the jetty was about a mile from the hostel and tourists' reserve, a tram drawn by a couple of horses met all steamers and conveyed passengers and their luggage to their destination. The passenger cars were nothing more or less than unsprung open flat trucks provided with back-to-back seats for the passengers and separate box trucks for their luggage. If the number of tourists to be carried was large, the luggage would be brought up to the settlement an hour or so later, as the luggage trucks would often be filled with passengers! On landing at the jetty one would find that an Aboriginal good-conduct prisoner was in charge of the horses while a separate conductor collected the fares. Passengers travelled at their own risk and initially a ride on the quaint horse tram was seen as part of the Rottnest experience. Rather than wait for the tram however, some more energetic men preferred to walk along the foreshore to their temporary homes, some of which were visible from the jetty. As a general rule, women and children took the tram – especially if the day was hot. A mile-and-a-bit of tramping along a glaring white dusty road to one's holiday abode was almost enough to make the jerky, jolting tram look inviting!

This means of locomotion, however, was by no means speedy. Owing to the 2ft gauge and the lightness of the permanent-way, it was no doubt considered unsafe or

An interesting study in humanity, one hundred years ago, outside the settlement's general store. Fares have been paid, most are settled and just waiting for departure time – resigned to a bumpy, dusty trip down to the jetty and the first leg of their journey back to Perth. Not a bare head or arm to be seen – bar the conductor. Stockings and court shoes for the ladies, suit and ties for some of the gents. Just about everyone is watching 'Izzy' Orloff as his camera records the scene for posterity. Photo: Abraham Orloff, SLWA Image 111496PD

impracticable to travel fast, the horses being walked all the way. One newspaper correspondent claimed that the aforementioned tram driver trotted alongside his trusty steed with a whip and a thunderous shouting to make the animal gee at all however not one photo supports the claim of a whip. Should the tram stop, woe unto the passenger who was not on guard, and who was not accustomed to jolts, when it started again. The driver was a careful fellow and he generally issued a warning to "Hang On," which advice, needless to say, was welcomed by the gentler sex. Sometimes the tram ran off the rails and then everyone climbed out of the trucks and the men lifted it back on again. The driver then proceeded with business as usual.

After brief stops at the hostel and the store, another few hundred yards and the tram reached the terminus – a spot in close proximity to the tourist reserve. Island residents would sometimes gaze interestedly at its cargo, human and otherwise, and speculate as to whether the 'freight' contained any likely sensation, romance, or scandal for the edification of the islanders! The human freight in the meantime detrained and dusted themselves off, wended away in the direction of their hostel, cottage, bungalow or camp site as the case may be if they were staying for a few days. Day visitors usually went looking for the tearooms or spread their picnic rug under a shady tree. The first demand was for a wash, the second a brush-up, and the third something to wash the salty taste out of the mouth. It was not very difficult to transfer the luggage to the camps, though this had to be done by hand, as it was the desire of the authorities to preserve the tourists' reserve from the tracks of vehicles which in time would have had a detrimental effect upon the appearance of the grounds.[18]

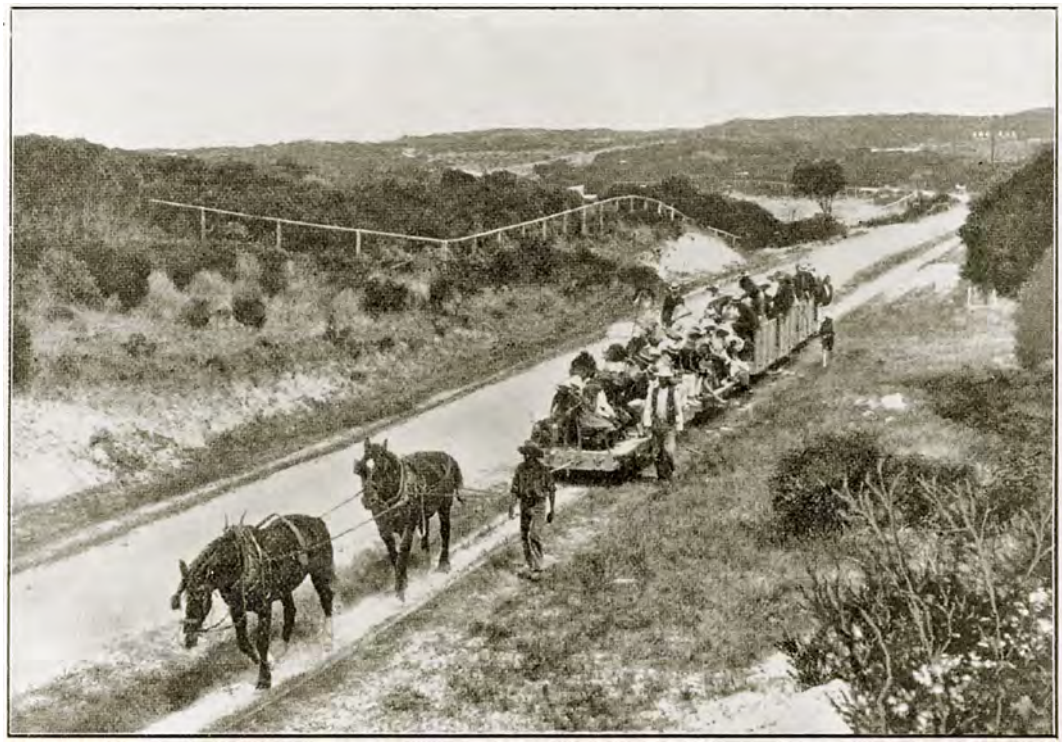
During 1918, the island's facilities were much improved – everyone's favourite swimming basin on the north coast received new dressing sheds, the settlement water supply received attention, the hostel's main dining room was extended, the road from the jetty was re-made and the tramway re-laid. Whether that was with new rails or just a re-sleepering and general re-alignment is not stated but clearly ten years' use made the work desirable for public safety.[19]

A terrible accident

Despite the slow speed, even an anachronistic horse tram could be dangerous. This was brought home to all when on Boxing Day, 1919, Bertha Ledoux, a young nurse on holidays from Onslow travelled on the ss *Zephyr* to Rottnest with friends. The usual mad scramble at the jetty saw the three passenger trucks quickly filled and Bertha found herself crammed, standing, in the first of two box trucks normally used for luggage. In the excitement and noise, Bertha missed hearing conductor Robert Baker's shout of "Look Out! Hold on tight! Mind the jerk!".

The sudden jerk as the horses started, resulted in Bertha over-balancing and tumbling over the rear end of the truck. She was struck severely on her back by the last truck, ending up on the track in a huddled position. Hearing passengers' shouts, the horse driver quickly halted the train. The unconscious Bertha was conveyed to the settlement where she was attended by doctors for eight days, before being transferred back to a hospital in Fremantle. She was paralysed in the back, in extreme pain and incapable of walking. Later attention by a senior doctor relieved the pressure on her spine and she fairly recovered. She subsequently sued the government and won a payout of £130. Evidence in court showed that Bertha lived at Onslow and was used to the horse tram there. She testified that at Onslow the conductor always blew his whistle as a warning before starting the tram. This practice was not done at Rottnest, just a shouted warning, unheard over the chatter and noise of sixty or so people. The jury recommended, amongst other things, that the Rottnest Board of Control introduce a better system of warning passengers.[20]

Several years later, another accident occurred, though with a less severe outcome. On 16 March 1924, heading to the settlement with a full train, the lead horse decided to go 'walkabout', heading off-track, dragging his mate and the first two trucks off the line and upending them. Passengers spilled in all directions and some nasty bumps and bruises ensued. The Perth newspaper *The Advertiser* thundered: 'The "Rottnest Express" – Fit for the Scrap Heap – A Menace to Public Safety'; ending their story advising that a new jetty was going to be built at the settlement and 'pleasure-seekers will not go holidaying at Rottnest *at their own risk*'![21]



Having left the jetty and curved to the north-west through a very substantial cutting, the tram headed along the white, dusty road to the settlement and camping grounds. This picture is thought to be to the north of Government Cottage where the line passed through another cutting to enter the 'town'. Note the crush on this tram – the usual three passenger trucks full and three luggage trucks taking a large overflow of tourists. It was such a situation that resulted in Bertha Ledoux's terrible injuries on Boxing Day, 1919. Photo: J W Dawson, Western Mail, *17 January 1913*

Replacement

The Rottnest Board of Control's 1923-24 annual report showed that during the year they had collected landing fees representing 9542 visitors, 8612 of whom had arrived on the ss *Zephyr*. Tram fares and luggage receipts netted £102 9s – the final full year of the tramway's operation.[22] From the delayed start of the next season, in late December 1924, the horse tram was replaced by a char-a-banc and motor taxi. The tramway was not lifted immediately though no further mention is made in the newspapers; several 1925 photos show the tracks still in position, both at the jetty and in town. The Board of Control's 1924-25 annual report valued the tramline 'and appurtenances' at £135.[23] Did the Board keep the tracks in situ for a couple of years in case the road motor option failed?

In early 1936, *The West Australian*, in reporting on the Defence Department's new works and military railway being built on Rottnest, noted some of the old tram trucks, looking rather dilapidated, near the salt works on the south side of the Causeway that separates Herschell Lake from Government House Lake, about ¾-mile south-west of the Settlement. Some of the old tram rails were also seen, being used as borders to new paths leading to the latter lake.[24]

At the time of the tramway's closure, it was officially announced that a new steamer jetty would be constructed further north in Thompson's Bay, adjacent to the settlement and some initial dredging was done in the bay in 1925 to enable the steamers to reach the proposed jetty site. After some £5000 had been spent on dredging, the engineers ceased work as it was now thought that shifting sand would soon render the dredging, and thus the proposed new jetty, useless!

Despite the jetty issue being raised in the WA parliament regularly, no further action occurred until 1935 when the, now, rather wonky, existing jetty was incorporated into plans by the Defence Dept for the fortification of Rottnest Island. The jetty [today's Army Jetty] was duly repaired and extended and equipped with new 3ft 6in-gauge tracks. This new military railway headed south-west from the jetty, carving a new cutting through the sand hills and was used for transporting building materials and armaments and for accessing the newly-built military barracks and heavy gun sites.[25] Readers are referred to *Light Railways* No. 46 for further details of that defence railway. Additionally, the much more recent tourist tram does not interchange with boats at a jetty so, again, is not included herein.

Postscript

Though it had a relatively short life, the Rottnest Island horse tram evoked strong feelings, both for and against. Take the following, an excerpt from a lengthy submission by 'Crosscut' that appeared in *The Sunday Times,* Perth on 15 December 1918, page 13, titled *Plague Spot or Paradise?* Crosscut had just made his first trip to Rottnest and encountered its white limestone roads and paths. We have omitted some racist language. It was written at a time when there was much discussion in Perth as to whether Rottnest should be turned into a place for quarantining anyone with the Spanish Flu, which was then sweeping the globe in a world-wide pandemic. The original story is at nla.gov.au/nla.news-article57998492:

A Returned Soldier's Reflections at Rottnest

"To begin with, the trip across the ocean is crisp and bracing. It is different from the placid river meanderings of a ferry boat as strong wine is from lemon syrup; it is the Indian Ocean against a duck-pond – and yet the distance is so short that even the poorest of sailors feels none of the discomfort and all of the exhilaration of a dancing sea and a thousand miles of brine-kissed breezes. The journey itself is a privilege that should not be lightly tossed aside. The landing point is unromantic and gives little promise of the beauty that is to be found within, and it almost paralyses one with amazement that a responsible Government should be so inert and crassly stupid after many years of possession as to leave unimproved a state of things that must have existed in the early convict days.

Or perhaps there is method in the madness, and the total and unexpected aspect that strikes one almost as a blow in the face is one of the charms which the astonished visitor is expected to admire. Imagine a white road – it may well be hewn out of chalk – running between embankments cleverly bound with fascines of scrub and topped with dense and uninteresting native bush. A tramline and a small string of low, heavy, springless mullock trucks. A few of these trucks, with the sides knocked off and a seat running down the entire length after the fashion of an Irish jaunting car. We sit back to back and joke cheerfully about what must surely be the most novel conveyance in Australia – and we look anxiously for the motive power.

A gentleman in a white suit (it could not be anything else we discovered later) asks blandly for our fares – sixpence each – and assures us that we will reach the hostel within half an hour. The hostel, he informs us, in parenthesis, is nearly a mile away. And then the motive power heaves in sight. Two solemn-faced, heavy-hoofed cart horses, limbered up with plough chains and

An occasional visitor to Rottnest was the SS Westralian*, a 123-ton steel-hulled excursion steamer with twin-screws, built in 1905 in Perth by G & C Hoskins Ltd. Her length was 128 ft 9 in, breadth 16 ft and depth 7 ft 3 in. She was fitted with the engines (built by Hutson and Corbett, of Glasgow) and fittings of an old condemned steamer, the SS* Manx Fairy*. A solitary truck has been brought down to the jetty presumably for transferring of luggage. It has been suggested that the lettering upon its sides says "Rottnest Tramway". Photo:* Sunday Times, *1 February 1914*

The only photo seen by the authors showing the northern terminus of the tram. It appears that departure time is nigh – the closest truck is stacked with luggage, the three passenger cars are well filled and trailed by another luggage truck. One truck sits isolated at the far end of the line. Two Aboriginal 'good-behaviour' prisoners stand ready to tend the horses and collect fares. Our knowledge of these men is pitifully meagre. We do know that in 1917, the year of our image, prisoner Georgie was on horse tram duties. Is he one of the men depicted? If you would like to know more about the sad Aboriginal colonial history on Rottnest please see 'Further Reading' for a web site run by the WA Dept of Local Govt, Sport and Cultural Industries. *Photo: SLWA Image 304439PD*

led by two grinning blackfellows – prisoners – lumber clumsily to the front of the caravan; the chains are hooked on, one proud Aborigine mounts postilion – on the rear horse so that he can prod the one in front of him – and with a creak and a groan the queer old procession moves ahead. And then immediately arises such a cloud and pother of fine smokey dust that the surrounding scenery disappears in a cloud of white; the passengers close eyes and lips fast against the onslaught; the man in white (although we are ALL in white by this time), being in a hurry, jumps off and walks ahead; the Aborigines shout and the solemn horses move stolidly forward at the pace of a well-regulated funeral, churning up fresh smoke wreaths at every heavy hoof-beat. That is how one gets to the hostel – and that is how the Government of West Australia caters for the tourist who would visit Rottnest."

A couple of years later and mainlanders were still somewhat scathing of Rottnest's narrow gauge horse tram. Witness this letter from "Jimjam", that appeared in the Perth weekly newspaper *The Call*, on 29 October 1920:

"Having sworn in solemn and holy fashion at the end of last season that I would never see Rottnest again until the famous island tramways had been consigned to the sea, I confess with mingled feelings of shame and defiance that I was among the first to make the trip over last Sunday. Yea, such is the weakness of man that I could not keep away from the place, even though a rattling, dusty, primitive horse-tram continues to desecrate art, dignity, and the scenery. On the way back to the boat I ventured to remark something to this sad effect to a holy-looking man from Adelaide. The holy-looking man swore violently in surprise. "Damme!" he said (minus certain familiar but unprintable adjectives), "there's nothing wrong with it! It just fits in nicely with the entire novelty of the whole place. A man goes for a holiday to get away from up-to-dateness, fashions, and the depressing sameness of civilisation. From my brief experience of it he gets what he wants in that way here at Rottnest. Motor-cars, electric trams and their accompanying noises and smells would destroy the whole delightful picture. I wish we had Rottnest near Adelaide, a Rottnest which could supply the sufferers from an overdose of up-to-dateness with a tonic like the novelty of a horse-tram always handy!" The holy-looking man's point of view is a revolutionary one, and quite new to me. I'm slowly recovering from the shock."

Further reading:

https://www.dlgsc.wa.gov.au/aboriginal-history/reconciliation-and-history-projects/wadjemup-the-land-beyond-the-shore

https://archive.sro.wa.gov.au/index.php/rottnest-island-wadjenup-cd0754

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4. *West Australian*, Perth 13 March 1897
5. *West Australian*, Perth 26 April 1895
6. *West Australian*, 30 December 1896
7. *West Australian*, Perth 23 August 1898
8. *West Australian*, Perth 6 July 1898
9. *West Australian*, Perth 26 August 1895
10. *Kalgoorlie Miner*, 12 June 1902; West Australian 13 Mch 1903
11. *Western Mail*, Perth 17 March 1906
12. *West Australian*, Perth 3 Jan, 2 March 1906
13. *West Australian*, Perth 2 Oct, 22 Nov 1906; 17 Oct 1907
14. *Western Mail*, Perth 6 April 1907
15. *West Australian*, 16 Nov 1907; Western Mail, 4 Jan 1908
16. *Evening Mail*, Fremantle 17 October 1908
17. *West Australian*, Perth 25 Nov 1908
18. *Western Mail*, 6 February 1914; Sunday Times, 24 March 1918.
19. *Western Mail*, Perth 15 Nov 1918
20. *Daily News*, Perth 11,12,13 Oct 1920
21. *The Advertiser,* Perth 21 Mch 1924
22. *The Daily News*, Perth 25Aug 1924
23. *The Daily News*, Perth 7 Aug 1925
24. *West Australian*, Perth 15 Jan 1936
25. Crellin, I R, The Rottnest Island Defence Tramway, *Light Railways,* Summer 1973-74; Winter 1974; Spring 1974.

Industrial Railway NEWS

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

QUEENSLAND

FAR NORTHERN MILLING PTY LTD, Mossman Mill
(see LR 282 p.30)
The latest accounts for the company that owns Mossman Mill show that it may not be able to continue as a going concern. Com-Eng 0-6-0DH *Douglas* (AL2562 of 1963) was seen with the bridge gang working on the South Mossman River bridge on 2 February.
Gregorio Bortolussi 2/22; *Australian Financial Review* 2 February 2022

MSF SUGAR LTD, South Johnstone Mill
(see LR 283 p.30)
610 mm gauge
A number of ex South Johnstone Mill 4-tonne bins were seen in a scrap collection yard on See Poy Road between Innisfail and Goondi during January. They include bins originally from Moreton Mill which had been transferred to South Johnstone after Moreton closed.
John Love 1/22; Luke Horniblow 1/22

TULLY SUGAR LTD
(see LR 283 p.30)
610 mm gauge
A number of scrap 4-tonne bins from this mill were seen at Simsmetal in Townsville on 26 January.
Luke Horniblow 1/22

WILMAR SUGAR (HERBERT) PTY LTD, Herbert River Mills
(see LR 283 p.32)
610 mm gauge
Clyde 0-6-0DH *Kalamia* (67-569 of 1967) was sent back to Invicta Mill during December before Christmas. Macknade Mill's EM Baldwin B-B DH *Selkirk* (6750.1 6.76 of 1976) was still at Victoria Mill in February after spending the latter part of the 2021 crushing season working the Victoria sugar train. Track laying on the new crossing loop in the 4 Mile area had not started in early

Com-Eng 0-6-0DH multi-unit locos Faughy *(AL4190 of 1965) and* Douglas *(AL2562 of 1963) cross the South Mossman River road and rail bridge as they head back to Mossman Mill after dropping off empties at Valeses siding in the Bonnie Doon area on 24 October. Photo: Gregorio Bortolussi*

Mossman Mill's Com-Eng 0-6-0DH Douglas *(AL2562 of 1963) with the bridge gang working on the upstream South Mossman River bridge on 2 February. Photo: Gregorio Bortolussi*

February although earthworks were complete.
John Macarone 2/22; Editor 2/22

WULGURU STEEL,
South Yard Workshops, Townsville
(see LR 266 p.29)
1067 mm gauge
The Linmac ST150 road/rail shunting unit RRS 42 was seen here on 5 February. Stenciled on the cab side is WRM0011 although it is not known if this is meant to be an identity.
Luke Horniblow 2/22

WILMAR SUGAR (INVICTA) PTY LTD,
Invicta Mill, Giru
(see LR 283 p.32)
610 mm gauge
Clyde 0-6-0DH *Kalamia* (67-569 of 1967) returned from Victoria Mill during December before Christmas.
John Macarone 2/22

WILMAR SUGAR PTY LTD,
Pioneer Mill, Brandon
(see LR 283 p.32)
1067 mm gauge
Walkers B-B DH locos 680 and 681, both of 1972, are being rebuilt here for Proserpine Mill and will become the new 12 and new 14 respectively. Also being rebuilt is Walkers B-B DH 632 of 1969, which will become the new *Karloo* at Plane Creek Mill.
Kieran Koppen 1/22

WILMAR SUGAR PTY LTD,
Inkerman Mill, Home Hill
(see LR 282 p.33)
610 mm gauge
Six x 4-wheeled ballast hoppers from this mill have been passed on to the Kerosene Creek Tramway operation in New South Wales and arrived on site on 3 February.
Kerosene Creek Tramway 2/22

WILMAR SUGAR (PROSERPINE) PTY LTD,
Proserpine Mill
(see LR 283 p.32)
610 mm gauge
By 8 February, Walkers B-B DH locos 12 (673 of 1971) and 14 (701 of 1972) had been dismantled to their bare frames with these frames probably to be used in future rebuilds for the Wilmar mills. The new 12 and new 14 are being assembled at Pioneer Mill on the frames of Walkers B-B DH locos 680 and 681, both built in 1972. Owing to dissatisfaction with the performance of Farleigh Mill, farmers with cane totaling 55,000 tonnes at Yalbaroo plan to transfer their cane to Proserpine Mill next year. Yalbaroo is between the southern extremity of Wilmar's Proserpine Mill rail system and the northern extremity of Mackay Sugar's Farleigh Mill rail system.
Tom Badger 2/22; Kieran Koppen 1/22; *Australian Financial Review* 2 February 2022

MACKAY SUGAR LTD, Mackay mills
(see LR 283 p.32)
610 mm gauge
Marian Mill's Walkers B-B DH *Miclere* (664 of 1970) was damaged in an incident on 16 December,

Top: *Macknade Mill's EM Baldwin B-B DH 20 (7070.4 4.77 of 1977) heads out along the Central line on 4 October. Photo: Luke Horniblow* ***Centre:*** *Clyde 0-6-0DH multi-unit locos* Palmyra *(63-273 of 1963) and* Pleystowe *(64-321 of 1964) bank a train headed by EM Baldwin B-B DH* Foulden *(7220.1 6.77 of 1977) up the fiercely steep Church Hill between Pleystowe and Farleigh Mill on 15 December. Photo: James Chuang*
Above: *Working this distributed power train of 166 full 6 tonne bins between Howells Loop and Denmans Loop on Farleigh Mill's North Coast line on 18 December are head end loco Walkers B-B DH* Cedars *(693 of 1972), mid train loco Walkers B-B DH* Dulverton *(690 of 1972) with Farleigh Mill bogie brake wagon B VAN 4 (built in 1998) bringing up the rear. Photo: Steven Jesser*

following which it was out of action for the remainder of the crushing season. As set out above, owing to dissatisfaction with the performance of Farleigh Mill, farmers with cane totalling 55,000 tonnes at Yalbaroo plan to transfer their cane to Proserpine Mill next year. Tom Badger 12/21; Australian Financial Review 2 February 2022

WILMAR SUGAR (PLANE CREEK) PTY LTD, Plane Creek Mill, Sarina
(see LR 283 p.32)
610 mm gauge
The 4 wheeled ballast hoppers had disappeared from storage at the Shannons Flat yard by February. The Plane Creek line with the exception of the sidings is being lifted this slack season. This line is around seven kilometres in length and runs west of the mill up the valley of Plane Creek. By 15 January, the section from the junction near the mill yard to the first bridge had been lifted. The condition of at least one of the bridges on the line is being cited as the reason for lifting it. In the future, cane will be road hauled to the mill using the mill's rail bins on roll on, roll off trucks and the existing sidings. Work has been continuing on the rebuild of Walkers B-B DH 632 of 1969 at Pioneer Mill for Plane Creek. It will become the new *Karloo*.
Carl Millington 2/22; Steven Allan 1/22; Shea Munroe 1/22; Kieran Koppen 1/22

BUNDABERG SUGAR LTD, Millaquin Mill
(see LR 283 p.32)
610 mm gauge
Bundaberg Sugar is planning to build a bridge over the Burnett River at the site of the former Fairymead ferry crossing. This will link the rail systems of the closed Bingera and Fairymead mills on the north side directly to the Millaquin Mill system on the south side and eliminate the road transport of cane through the city of Bundaberg to Millaquin. The bridge will have a 25 metre retractable span that will be left open during the slack season. During the crushing season, it will be operated by telemetry from the mill traffic office.
Bundaberg Sugar Ltd 1/22

ISIS CENTRAL SUGAR MILL CO LTD
(see LR 283 p.32)
610 mm gauge
Torrential rain in December caused significant sections of the new Wallaville line to be washed out. EM Baldwin B-B DH 10 (7267.1 6.77 of 1977) was seen with the ballast train at the Wallaville end on 26 January.
Ben Glossop 1/22; Gary Hondow 1/22

DOWNER EDI, Maryborough
(see LR 281 p.39)
1067 mm gauge
Walkers B-B DH locos 1104 (641 of 1970) and DH73 *Hugh Boge* (718 of 1974) were seen moving stock between the factory and Maryborough West on 20 and 22 December. The former still does not carry its identity. During flooding early in January, rolling stock had to be moved from the factory site to higher ground.
Luke Horniblow 12/21; Bruce Saunders 1/22

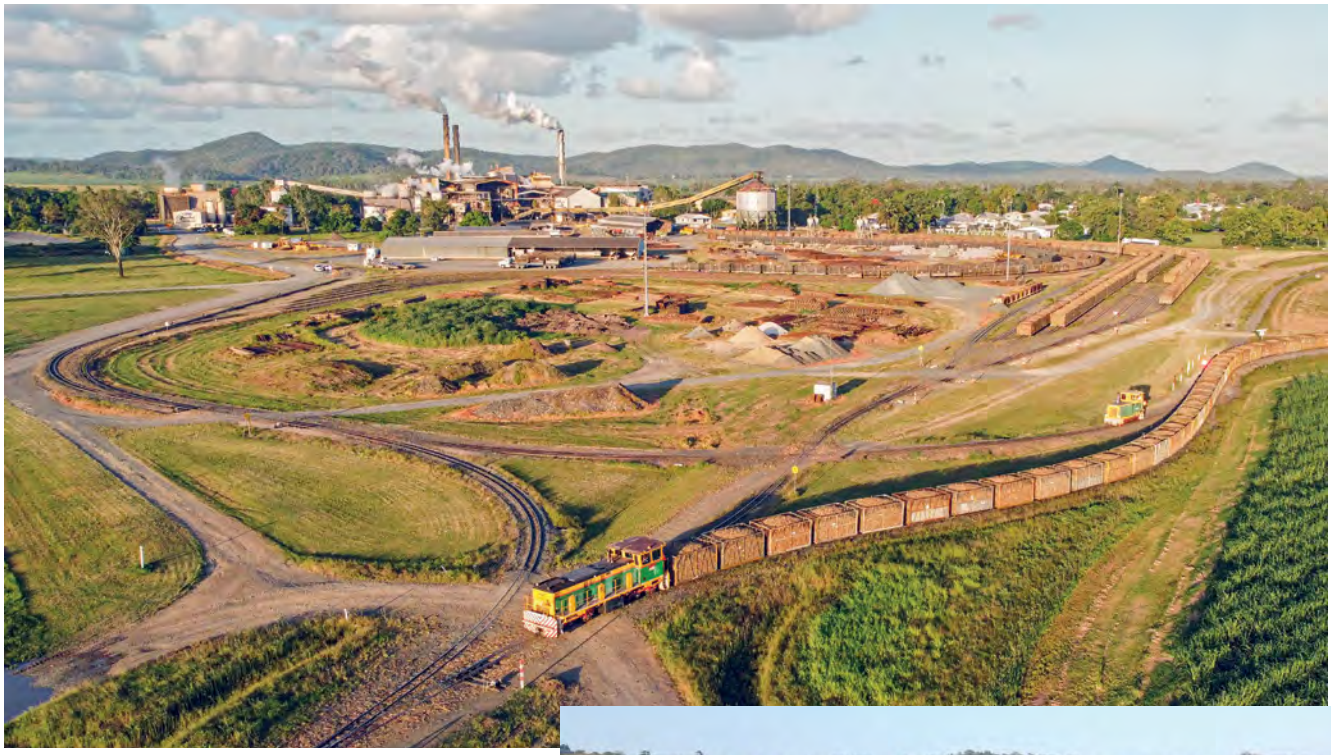
Top: *Marian Mill's EM Baldwin B-B DH 17* Langdon *(9562.2 6.81 of 1981) brings a rake of fulls destined for Farleigh Mill up the Victoria Plains Range on 28 December. Photo: Steven Jesser* ***Above:*** *Downer EDI Walkers B-B DH locos 1104 (641 of 1970) and DH73* Hugh Boge *(718 of 1974) in a scenic setting beside the Mary River on the Maryborough Wharf branch line on 22 December. Photo: Luke Horniblow*

NEW SOUTH WALES

BLUESCOPE STEEL LTD, Port Kembla Steelworks
(see LR 281 p.39)
1435 mm gauge
Watco appeared to be taking over internal rail operations here from Pacific National during January although none of the locos were seen to have been rebranded. A Watco loco, Clyde Co-Co DE T373 (64-328 of 1964), was seen at Steelhaven on 4 January. Watco will end up in possession of the PB and D class locos that Pacific National has been using. Clyde Co-Co DE T379 (64-334 of 1964) was cut up behind Steelhaven during December in the days leading up to Christmas. English Electric Australia Bo-Bo DE D27 (A-040 of 1960) and National Railway Equipment Bo-Bo DE PB5 (209-PB5 of 2014) were seen working at Cringila on 26 December. D27 was also seen in use in mid-January.
Phil Martin 12/21; Tim Carter 12/21; Brad Peadon 1/22; Ben Koperberg 1/22; Anthony Snedden 1/22

OVERSEAS

FIJI SUGAR CORPORATION
(see LR 283 p.32)
610 mm gauge
FSC is anticipating a crop of more than two million tonnes of cane for its three mills in the forthcoming 2022 crushing season. More mechanical cane harvesters will be in use during the crushing season this year. At present, the harvesters are used on flat fields but harvesters for hilly fields are being considered.
FBC News 1/22; FBC News 31/1/2022



Above: *Clyde 0-6-0DH* Alexandra *(61-235 of 1961) waits for Walkers B-B DH* Calen *(692 of 1972) to enter the Marian Mill yard system on 19 December. Photo: Steven Jesser* ***Right:*** *Farleigh Mill's EM Baldwin B-B DH* Foulden *(7220.1 6.77 of 1977) at Burstons on the North Coast line on 3 October. Photo: Steven Jesser* ***Below:*** *Centred in this spectacular view of Marian Mill on 19 December is the loco shed, outside of which a Clyde 0-6-0DH, an EM Baldwin B-B DH and the Gemco double 4 wheeled brake wagon B VAN 2 (CV001-WR20911-85 of 1985) can be seen. Photo: Steven Jesser*

LETTERS

Confidence Saddle tramway (LR 281 p35 and LR 282, 283 Letters)

I must express my gratitude to Jim Stokes and Terry Reid for sharing their detailed knowledge of the Dunkley/Wallace tramway's construction, use and subsequent preservation over the past 100 years.

I can make one modest further contribution. On the spur of the moment one sunny day in late January I parked my car at Melba and walked the 11 km to Confidence Saddle along the formation of the North East Dundas Tramway. It is a wonderful walk with deep cuttings, high embankments, sleeper and dog spike remnants and an unrelenting but manageable gradient. Views are sparse given the tall surrounding trees, but it is impossible not to pass the time daydreaming of diminutive H class, husky G class, oversized J class and innovative K class locos working empties back up towards the mines! But I digress.

At the saddle there is a track heading due south, perpendicular to the NEDT formation, corresponding to the Dunkley Bros route shown on the TAHO mineral lease chart unearthed by Jim and reproduced on p41 of LR282. There is however no trace of any formation that matches the Lands Department Pieman map depiction of the junction, which shows a gradual diverge to the south east commencing a few hundred metres further east, which was used as the basis of the map on p35 of LR 281.

Indeed, this area traverses a steep hillside which no tramway could negotiate without substantial remnant earthworks. So I am reasonably confident that the mineral lease map shows the correct location of the junction and commencement of the tramway formation.

Frustratingly, because I spent an hour searching for the old Confidence Saddle station/junction site there was no time to walk more than a few hundred metres along the formation once I had established its location, certainly not far enough to come across Terry's preserved section of timber tramway. I'd also run out of water, but on the two hour hike back to my car there was plenty of opportunity to refill my bottle from very sweet mountain streams, while vowing to return allowing more time for a thorough exploration of the intriguing Saddle tram.

James Shugg
Hobart, Tasmania

One of the cuttings along the formation of the North East Dundas tramway in February 2022. Photo: James Shugg

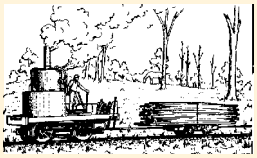
An Angourie Surprise (LR 283)

I noticed with great interest the letter "An Angourie Surprise", in LR 283 and applaud the brilliant detective work involved. I was, however, a little disappointed that my modest contribution appeared to have been somewhat unrecognised.

I had long been sure that the "tunnel locomotive" at Mittagong did in fact arrive in NSW although I had no idea of its make. In addition, despite mountains of intensive railway related research on Lithgow, I had not over the years noticed any mention of Higgins having a tank locomotive, which I thought was rather odd to say the least, so I decided to research Higgins to the absolute nth degree on Trove confident that the English "tunnel locomotive" from Mittagong went to Higgins and eventually, voila, there it was!

Still none the wiser on make and with nothing to suggest to me an Angourie connection, I passed the information on and it fitted the puzzle like a jigsaw piece much to my astonishment. My sincere congratulations to John Browning and Jon Henry.

Ron Madden
via email



LRRSA NEWS

MEETINGS

LRRSA members on line meetings
The LRRSA will be holding regular members meetings on line via Zoom conferencing on the dates below. Members wishing to "virtually" attend will need to pre-register by responding to an email inviting you to attend or via our website lrrsa.org.au. After registration, details of how to join the meeting will be provided to those that have registered.

April 2022 Members Zoom meeting
Date: Thursday 14 April 2022 at 8.00pm AEDT
Frank Stamford will make a presentation on the ARHS Victorian Division tour of Queensland that was held in 1964. The presentation will include details of what was included in the tour with special emphasis on sugar tramways and the quirky and unusual.

June 2022 members Zoom meeting
Date: Thursday 9 June 2022 at 8.00pm AEDT
Jim Longworth will make a presentation titled "Early Australian railed – ways: 1788 to 1855". This promises to be a fascinating subject and you are encouraged to book early to avoid disappointment.

BRISBANE: "No Meeting"
It has been decided to postpone the Brisbane meetings until 21 October 2022. This decision will be reviewed in September 2022.e

SYDNEY: "The Clyde Engineering Co. Ltd."
Member David Jehan has recently written and published an excellent book on the Clyde Engineering Company Ltd. of Clyde, NSW. This company was heavily involved in the construction of railway equipment for most States of Australia plus a plethora of other machinery to satisfy the needs of private industry and the domestic consumer. David will present an overview of his new book and will have available books for purchase on the night..
Location: Woodstock Community Centre, Church Street, Burwood. Free Council car park behind building (entry via Fitzroy Street) or close-by street parking. Only 10 minutes easy walk from Burwood railway station.
Date: Wednesday 27 April 2022 at 7:30pm
NOTE: Due to the Covid precautions the large meeting room at Woodstock (Penfold Room) will be limited to 14 attendees for safe spacing requirements. Please contact the Secretary (0415995304) in advance if wishing to attend.

MELBOURNE: "No meeting"
There will be no meetings in Melbourne until further notice.

ADELAIDE: "Bi monthly meeting"
The SA group meets every second month on the first Thursday of every even month to discuss matters of light railway interest. As accommodation is limited, interested persons should contact Les Howard at sa_group@lrrsa.org.au for details if you have not been to a meeting before.
Location: 1 Kindergarten Drive, Hawthorndene
Date: The first Thursday of each even month at 7.30 pm

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

QUEENSLAND

FRIENDS OF ARCHER PARK STATION AND STEAM TRAM MUSEUM, Rockhampton

1067 mm gauge

The Museum started off very quietly with quite a few volunteers away on holidays or absenting themselves due to Covid issues. With Covid 19 rates rising and safety the first priority, the Management Committee made the decision to cancel the February Family Fun Day as the risks were too high.

The Railway has been successful in gaining a Culture, Heritage and Arts Regional Tourism Grant to purchase a large A3 Digital Scanner to commence digitising the historic documents and photographs. These grants amount to around $6,000 and will certainly help the Museum. Management applied for and received funds under the Covid Support Grant in November 2021 due to the dramatic drop in visitors and income in August 2021.

Management had concerns about the boiler on the Purrey steam tram passing inspection. Fortunately, the inspector with AICIP qualifications has passed the boiler and has also advised that he can assist in making sure that it will be able to continue for many years to come. This is very important as the tram is an important part of bringing visitors to the Museum and creating income. Unfortunately with Covid, the work required to get the tram back on the track has been delayed, but it is hoped to have the tram back in service by mid/late February 2022.

Tram Tracks: Volume 16 Number 1, 1 February 2022

DURUNDUR RAILWAY, Woodford

610 mm gauge

COVID continued to affect the Railway during 2021 with seven running days cancelled due to either lockdowns or increased physical distancing restrictions which made it unviable to run. During 2021, 2376 passengers were carried in comparison to 4558 in 2019 (ignoring 2020 due to shut down for most of the year). If you look at this on an average per running day basis, this represents 140 per running day during 2021 compared to 182 per running day in 2019

During the year information was provided to ATHRA which was working on a group Public Liability Insurance policy. The Railway's existing insurer had raised the premium 25% for each of the last two years and quoted another 25% price rise for 2020/2021, despite risk being significantly reduced in recent years due to the extensive amount of time the Railway was closed to the general public. The prices being quoted were rapidly approaching being unviable to continue public operations, particularly when looking ahead at additional increases once the Railway returns to steam operation and across Peterson Road. Fortunately, the group negotiation has resulted in a significant cost saving with no reduction in the level of cover. This action could well be of interest to other tourist railways that are facing insurance premiums that may put them out of business.

Following on from suggestions by several members, and obviously subject to COVID, etc., management has decided to hold a gala weekend on the first weekend in October (the long weekend) to mark ANGRMS Fiftieth Anniversary. As part of this, workers are planning some new exhibits as well as changes to existing exhibits in public areas of the site, plus the restoration/overhaul of several items of rollingstock to be displayed/used on the day.

Durundur Railway Bulletin 43: 373 January/February

BUDERIM PALMWOODS HERITAGE TRAMWAY Inc, Buderim

762 mm gauge

Phillip Morrow from the BPHTI advises that a final design for the display of the Krauss locomotive has now been prepared and accepted by all parties. The next steps are to obtain the Sunshine Coast Council approval and the completion of funding before work can finally start.

Phillip Morrow, *Light Railways of Australia* Facebook Group, 18 February 2022

NEW SOUTH WALES

ILLAWARRA LIGHT RAILWAY MUSEUM SOCIETY, Albion Park

610 mm gauge

On Sunday 13 February, the ILRMS celebrated 50 years since it was founded in 1972. The day saw many visitors and invited guests re-live their memories of the Society and enjoy the spectacular day that was on offer. Both *Kiama* (Davenport 0-4-0ST B/No.1596 of 1917) and *Burra* (Hawthorn Leslie 0-4-0ST B/No.3574 of 1923) performed to perfection on both the main line and Bay Road rides and there was a late afternoon treat seeing *Shellharbour* (John Fowler 0-6-0DM B/No.21912 of 1937) in operation.

Welcome speeches were made and an official cake cut to mark the milestone of 50 years. Among the invited guests were local Members of Parliament and past members.

Displays on the day included the Jamberoo Valley Car Club heritage car display, Hyland's Vintage Farm Machinery display, a 1987 Leyland Tiger Bus thanks to Warrigal Charters, a collection of WW2 trucks and tanks from the Historical WW2 motor vehicle collectors group, and an historical fire truck as well as the ILRMS railway attractions. The ILRMS fleet was on display outside the loco shed, with old-time favourite *Cairns* (Hudswell Clarke 0-6-0 B/No.1706 of 1939) out in the sun sharing the limelight with the diesel fleet. The event had been well publicised in local media and a big thank you goes to all who had helped arrange the trip back in time which everyone enjoyed.

Brad Johns, life member, ILRMS, Albion Park 16/2/2022

Locomotive Kiama *fitted with the special 50th birthday plaque together with her train on Sunday 13 February 2022 at Albion Park. Photo: Brad Johns*

Locomotive Burra *also fitted with the 50th anniversary plaque heads through the bush with her train on Sunday 13 February 2022. Photo: Brad Johns*

VICTORIA

PUFFING BILLY RAILWAY, Belgrave

762 mm gauge

Friday 4 February saw the return of sitting on the window sills and dangling legs from the carriages at Puffing Billy. The return was long awaited and welcomed at Belgrave by visiting politicians and officers of the the ETRB. To mark the occasion, television and newspapers covered the event and passengers on the first train out of Belgrave at 10 am, were given yellow socks with the image of railway lines on them to wear as they put their feet out the side of the carriages. There were rules to obey, such as no children under four were permitted to put their feet out (and were issued with red wrist bands to indicate this). Those children over four were issued with green wrist bands and had to be closely supervised by adults. Adults, fortunately, were responsible for themselves.

On the first day of running with legs out, no problems were experienced. However, the event caused uproar on social media pages as many people bemoaned the lengthy delay in the reintroduction. Also under attack was the high cost of safety measures that were needed, such as the rebuilding of all carriages with widened and backward facing sills and the conversion of many rail crossings. Others complained of the 'nanny state' of affairs and likened the whole saga to 'Yes Minister'. What many of these people did not appreciate was that operating conditions have changed greatly during the past 100 years, and that Covid had delayed the re-introduction of sitting on sills by many months.

The railway has also announced the return of *Day out with Thomas* scheduled for March. This event will see the third site to be used: at Lakeside. Previous locations were at Emerald and Gembrook. Passengers will board the train at Emerald, travel to Cockatoo with *Thomas* and then return to the Lakeside Visitor Centre for their Thomas experience, after which they will return by train to Emerald.

The railway has been successful in its submission to the Copland Foundation for support to restore another historic goods wagon, 103 NQR. The grant allows for the manufacture of patterns required to produce all the hinges, hinge brackets, side and corner posts, and brackets. Having these patterns will be most beneficial for future NQR restorations and works into the railway's strategy of building up a roster of operable goods stock, not only for works trains, but also for demonstrating and interpreting the history of the Puffing Billy Railway.

The level crossing re-build at Emerald is now complete. It took just over 30 hours to remove the old rails and sleepers, dig out the formation, install and compact the new sub-base, place and align the new sleepers and 94 lb/yd rails, add and pack the new ballast under the sleepers, asphalt the roadway and reconnect and certify the electricals and signals. This work also required Pinnocks Rd controls to be de-activated for the duration. Towards the end of the works, arrangements were made to enable a vehicle transfer train to operate from and return to Belgrave under the Absolute Occupation covering the worksite. The next day, the same events happened at the Cockatoo level crossing.

Andrew Webster, site visit 4 February 2022: Puffing Billy Railway *Monthly News*, No. 583, February 2022; Puffing Billy Volunteers Facebook Group post by Andrew Wheatland, 9 February.

WALHALLA GOLDFIELDS RAILWAY, Walhalla

762 mm gauge

The Railway has seen good numbers over the holiday period with three trains running on most days. A few times only two trains were run due to the excess heat at Walhalla.

The Railway has been fortunate to gain permission from ONRSR to carry passengers on its trolleys. This practice had been done in the past but was stopped due to passenger safety problems. With a powered trolley at each end and a small passenger conveyance in between, workers will be able to take passengers when there is no locomotive available or when passenger numbers are low. From experience of track patrols, travelling in the trolleys along the line is quite a different experience from travelling in the carriages and could become a sought after experience.

Andrew Webster, site visit 6/2/2022

YARRA VALLEY RAILWAY, Healesville

1610 mm gauge

The Yarra Valley Railway is extending the line which currently runs from Healesville to the tunnel. The line will be soon be extended to Yarra Glen Railway Station. At Yarra Glen the track base has been prepared and now the track and yard layout is being developed. Much of the rail has been sourced from The Level Crossing Removal Projects in Melbourne.

Victorian Railway Enthusiasts Facebook Group, January 26, 2022

TASMANIA

WEE GEORGIE WOOD RAILWAY, Tullah

610 mm gauge

Recent weather conditions, including a wet and mild spring followed by a hot and dry summer, have created a significant bushfire risk across Tasmania, with several total fire ban days declared early in January. On Saturday 22 January, a bushfire sweeping in from the north threatened the township of Tullah, and burnt right up to edge of the clearing around the Wee

In the burnt-out forest to the immediate north of the current railway, the old formation along a substantial embankment of the branch line that was used to deliver firewood to the mine manager's residence up until the early 1960s. Photo: James Shugg

Georgie station yard, even jumping the railway line near the Elliot St. crossing. The sterling efforts of the Tasmanian Fire Service, the State Emergency Service, police and local volunteers who fought through the night to prevent the fire from advancing further into town, meant the railway suffered no significant damage, although at one point, the two locomotives and two carriages were moved out of the shed as a precautionary measure. In the burnt-out forest to the immediate north of the current railway, it is now possible to trace the old formation along a substantial embankment, which curves gently to the northeast. It is believed this branch line was used to deliver firewood to the mine manager's residence up until the early 1960s.

Although Steamfest in Sheffield was cancelled this year, there is still a firm intention for the Fowler locomotive and train to participate in next year's event. Meanwhile, Wee Georgie will continue to operate on the first and last weekends of the month until late April, with the Nicola Romeo petrol locomotive substituting for the steam loco on higher fire risk days.
James Shugg

IDA BAY RAILWAY,
610 mm gauge
The Preservation Society is still awaiting the first draft of the new five-year licence to restore and operate the railway from Parks Tasmania. At the meeting with Parks in December they indicated that the Society should have something from them in January, so there is no reason to fret about further timetable slippage at this stage.
The Society was granted a one-day licence to conduct some specific activities on site on Saturday, January 22. These activities included tidying up the carpenter's workshop to make it more amenable as the Society's meeting place, making a start on organising the workshop interior and further grounds maintenance.
James Shugg (for IBRPS steering committee) Facebook post January 17

REDWATER CREEK RAILWAY, Sheffield
610mm gauge
The tough decision to cancel Steamfest in March 2022, was taken by the Redwater Creek committee in early January, citing Covid concerns, although it was planned to operate the railway and for steam traction engines to do a few street runs up to the pub on the 12 to 14 March long weekend. The railway was well patronised while running continuously from 27 December to 6 January, although passenger numbers tapered off by the February running weekend. The Work for the Dole team was expected to finish work on the Dulverton station platform in late February.
James Shugg

SOUTH AUSTRALIA

SEMAPHORE TO FORT GLANVILLE RAILWAY, Semaphore
457 mm gauge
The Semaphore to Fort Glanville Railway was officially opened in December 1992 and it is intended to have a special 30th Anniversary event, with two separate trains running, over one weekend in January 2023 to celebrate the thirtieth year of operation.
Facebook post by Jeff Brown February 9, 2022.

Thirsty engine – water for No. 20A

The 28th of January 1963 found railfan Weston Langford in north-west Tasmania, intent on riding and photographing the trains on the Emu Bay Railway. The word must have been around that the Australian Standard Garratt's (ASGs) for which the line was renown were shortly going to be replaced. These Garratt locomotives, designed and built during WWII, in just 12 months in 1942-43, were intended to relieve the chronic locomotive shortage on the main 3ft 6in gauge systems in Queensland and Western Australia. With an axle load limited to 8½ tons, they none-the-less produced over 34,200 lbs tractive effort and were easily able to lift heavy trains, thus avoiding double-heading of the existing small locomotive types.

This speed of introduction, however, led to some faults in their design which saw their early withdrawal from the two principle 3ft 6in-gauge systems. However, in Tasmania they received an extended lease of life, initially on the Tasmanian Government Railways and then on the Emu Bay Railway. The TGR purchased 14 ASGs whilst the EBR purchased five, three from Queensland and two from the TGR. The last of the EBR's purchases was No.20A, ex-TGR 'G12', obtained in 1962 to replace No.20, damaged in the Burnie roll-over in 1962.

The EBR modified its ASGs and produced a serviceable engine that did good service on its 88-mile line from Burnie to Zeehan. They proved their worth mainly between Rosebery and Burnie on heavy ore trains, supplementing the EBRs ageing Beyer-Garratts dating from 1930. In these photos we see 4-8-2+2-8-4 No.20A (built Islington 1943) on a south-bound goods train.

Top left: *At Ridgely, some 10 miles and 900 ft above Burnie, on a cool, damp West Coast morning under overcast skies.*
Above left: *A well-earned rest for the fireman at the 32½-Mile Tank – provided fire cleaning is not required!*
Left: *Watering at the 63 Mile Tank, just north of Farrell Junction.*

Photos: Weston Langford images 102448, 102451, 102457 courtesy www.westonlangford.com Images converted from colour to B&W. Captions: Phil Rickard