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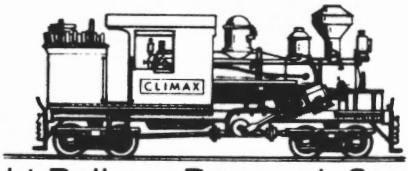

Light Railway Research Society of Australia

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Cover: Locomotive Samson No.2, Beyer Peacock 2-4-0 T (3120 of 1889) taking on water from a wayside pool. This photograph is thought to have been taken on the Jarrahdale Jarrah Forests and Railway Ltd Rockingham-Jarrahdale line c1897.
W.A. Forests Department.

Volume XIX No. 1
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Editorial

The feature article this issue is an authoratitive account of the tramways of the Geelong Harbor Trust by Norm Houghton. An unusual facit of the Trust's operations, at least for Australia, was the application of an extensive light railway system to an agricultural enterprise.

The letters section covers a wide range of topics, including some letters which were written during the period when the Society did not have a permanent editor for *Light Railways*. My apologies to those writers who have experienced long delays in the publication of their letters - I hope to ensure that all articles and letters receive prompt attention in future. Readers will also note that production of *Light Railways* is now according to the advertised schedule.

A minor change introduced with this new volume of *Light Railways* is to identify issues by volume and issue number. Page numbering will be continuous for each volume. Also a special section for book reviews is introduced. Further reviews from members are welcome in order that this might become a regular feature of our journal.

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

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

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

Historical references to sums of money in *Light Railways* are in Australian pounds (£).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

Geelong Harbor Trust Tramways

by Norm Houghton

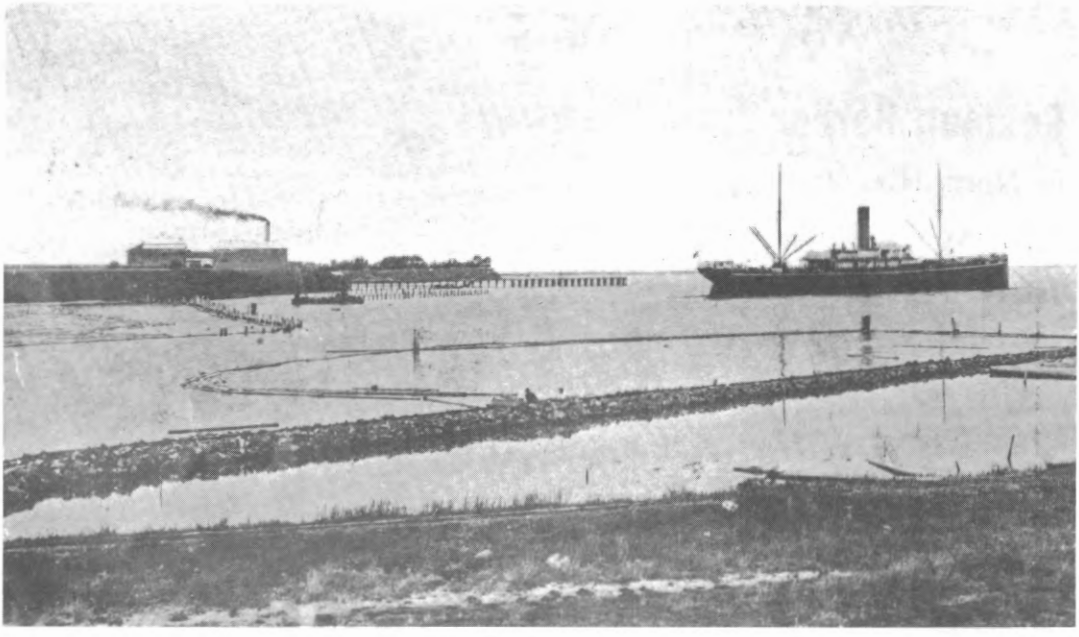
Victoria's second city was given a separate port authority divorced from the tentacles of Melbourne commercial and governmental interests in 1905 with the passing of the Geelong Harbor Trust Act. The rationale behind the Bill was to encourage decentralisation. The fledgling Trust under the Chairmanship of Commissioner G.F. Holden wasted no time in embarking on a number of projects deemed to be in the interests of the Port of Geelong, and in doing so came to establish various tramway systems to effect these improvements. Control of the Pier at Portarlington and its tramway was also vested with the Trust.

Corio Quay

In 1905 there was a shortage of cool storage space in Victoria so, with the backing of the State Government, the Trust decided to erect a cool store and meat works at North Geelong. Simultaneous with this project was the provision of berthing accommodation adjacent to the cool stores. The ultimate aim of these works was to improve the Port facilities and encourage trade with the hinterland[1]. The Trust also embarked on a canvass of industries to persuade them to establish premises in the vicinity, and amongst these was the Oriental Timber Corporation Ltd. of Sydney. This development was to have an important influence on the plans for Corio Quay, so is worth mentioning in more detail.

The Oriental Company had secured timber concessions from the Russian Government in 1907 or 1908 to extract pine logs from the area around Imperial Harbour, Barracoutta Inlet, Siberia, for shipping to Australia. The Trust offered to provide the Corporation berthing and log storage facilities plus space for a sawmill if it came to Geelong, and this offer was accepted. The Trust entered into a 21-years lease with the Corporation, and a mill was erected and in operation by December 1909[2]. The first load of logs had arrived in August 1908 and

View of the Geelong Harbor Trust Commissioner's freezing works in 1909 with levee tram in foreground.



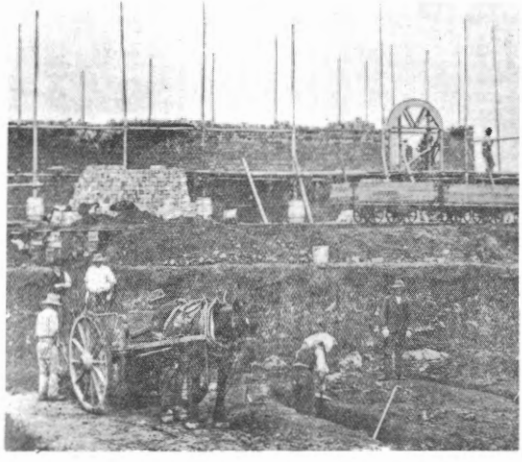
Log booms and levee, Corio Quay, 1911. Note tram on levee and tracks on shore in foreground.

been stored behind temporary booms at Corio Quay.

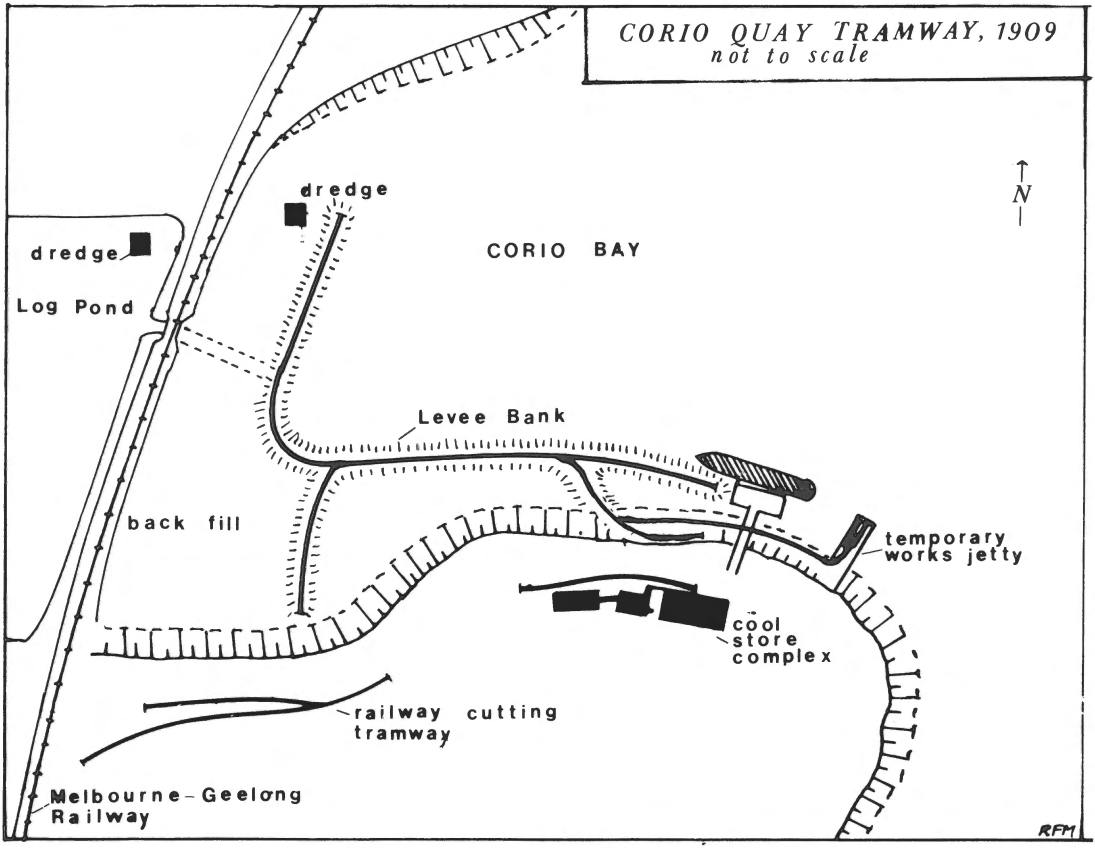
The master plan for Corio Quay, as published in 1909, provided for the cool stores, abattoirs, manure and tallow works, skin drying shed, rail access, stock pens, power house, new quays, log pond and canal and all ancillary facilities. The cool stores were designed by C. D'Ebro of Melbourne and had a capacity of 100,000 cubic feet. The Trust hoped to build up an export trade in meat, butter, fruit, eggs, rabbits and poultry, (the latter to be delivered live and the feathers to become the property of the Trust).

The plan for berthing accommodation, which was carried out by Trust staff and day labour, called for dredging and back filling, and in order to do this levee banks were raised across the waters of the Bay. Two gold dredges from central Victoria were purchased in 1908, and one was sited west of the Geelong-Melbourne railway to form the log pond, while the other was placed east of the railway to remove the foreshore. The levee banks were formed by means of tramways.

The Trust engineer Mr A.C. McKenzie had submitted a report to the Commissioners in December 1908 on a portable tramway system, but the Trust's abrupt minute recorder mentioned nothing of its contents when it was discussed save that the report was approved. Presumably the report was a recommendation to use a portable tramway at North Geelong for on 8th February 1909 the Commissioners approved the purchase of such a tramway. The following incomplete information on the tramway has been gleaned from the surviving minute books and photographs, as most of the Trust's early records have been lost or destroyed



Building power house, Corio Quay, 1909.



through the passage of time and a shift to new premises in 1958.

The tramway comprised portable track panels of 14 lbs and 20 lbs sections laid on steel sleepers to a gauge of around 2 ft or 2 ft 6 ins. The original trucks were iron-framed 'V' skips propelled by horses or men. The Engineer must have required trucks of larger capacity for he also asked the Trust for approval to purchase trucks of 40 cubic feet. This was agreed to. Photographs show two types of wooden-bodied trucks, one approximately 7 x 3 x 2 ft, the other 7 x 3 x 3 ft, so presumably these are the additional rolling stock provided.

The Trust also purchased a locomotive, but the cryptic notations in the minute book make it difficult to confirm whether it was used at North Geelong at all or whether it exclusively remained at the Trust's model farm, *Sparrovale*. In August 1908 the firm of machinery brokers, Cameron & Sutherland, offered to sell the Trust an 'engine' for five hundred pounds. The Trust settled the price at four hundred and fifty pounds and agreed at its meeting of 10th August 1908 to buy the 'engine'. Cameron and Sutherland were also trying to sell a traction engine so the 'engine' purchase could have been either a locomotive or road vehicle. The puzzle was solved by surviving accounts showing that at some time in the 1908-1909 financial year a locomotive was purchased at an all up cost of five hundred and eighty pounds. Unfortunately no invoices or reports survive that could show its make, type or previous history.

Works

The levee banks at Corio Quay were very temporary affairs that snaked across the waters in several directions as the Bay was filled in to conform with the new foreshore profile. Tram tracks were laid on the crest of the banks to dump earth and stone in order to extend them to the required length.

Simultaneous with the above work, the Trust called tenders for construction of the cool store complex, but when tenders were opened on 11th February 1909 they were all found to be unsatisfactory as regards completion date so the Trust resolved to proceed with their own staff and day

Hauling stone from railway cutting, 1909. In the distance can be seen the Oriental Timber Corporation's sawmill, which was blown over by a gale in 1909 with the loss of two lives and with a number of injuries.

labour. This decision was taken on 22nd February 1909. A tramway system was used on the building site and was probably part of the original tramway plant approved for the Quay works, as no further endorsements were given to the Engineer to purchase additional plant for North Geelong.

A third tramway system was put to work in excavating the cutting and other earth works to enable siding access to the Victorian Railways' lines to be effected.

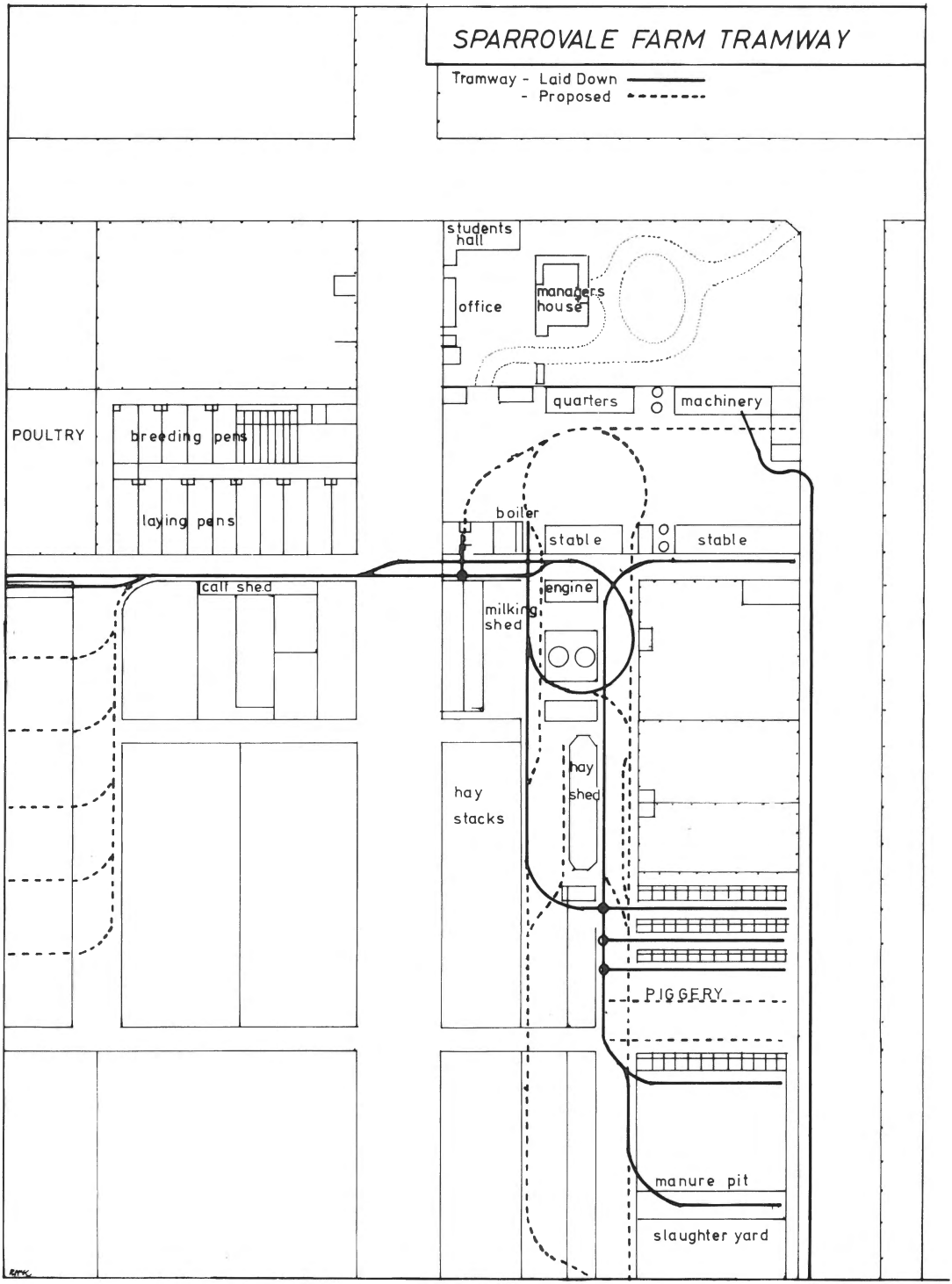
Construction on all phases proceeded throughout 1909 and most of 1910 and was advanced enough by October of that year for the Trust to throw the complex open for inspection by Geelong business-men, and culminated with a visit by the Governor on 11th November. After this initial construction period the cool stores and power house were extended over the next two years and the tramway remained in use. The quay works proceeded at a slower pace over the next 5 years. A major effort was made to complete the railway sidings and extra tramway plant was purchased early in 1914 to assist this work. By 1916 the bulk of the North Geelong project had been finalised and, having no further use for the tram rails, the Trust sold them in August 1916 to S & M Edwards. The rolling stock appears to have been retained as the minutes make no mention of any decision to sell the trucks. They were disposed of in the sale of January 1917 (see below).

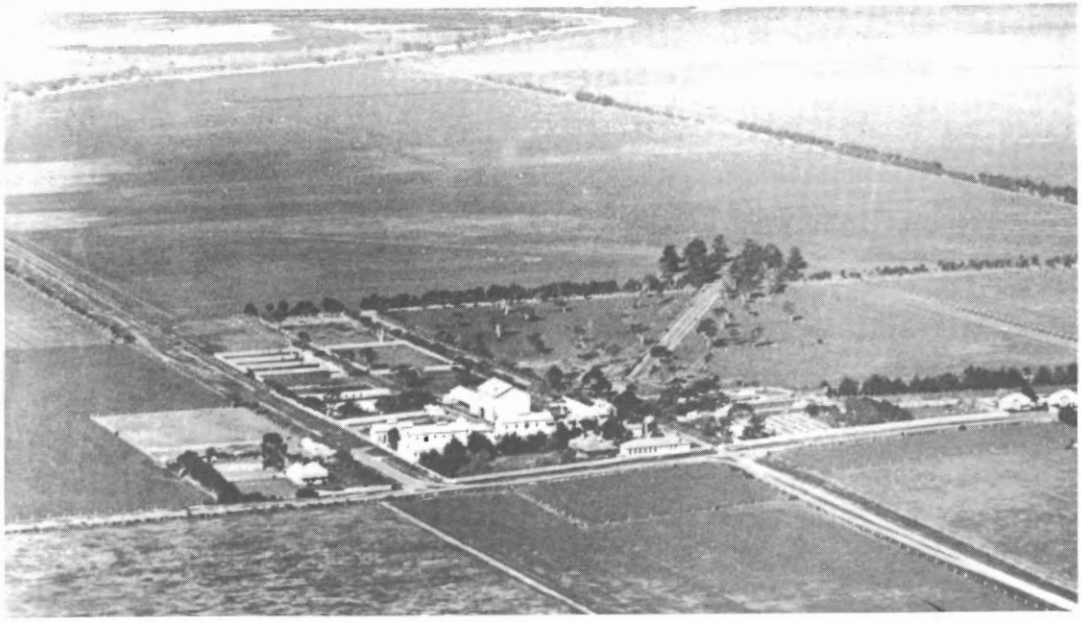
Excavating the railway cutting for access to VR lines, Corio Quay, 1909.

Sparrovale Farm

The Act establishing the Geelong Harbor Trust endowed the Trust with certain lands, amongst which was the old Geelong Race Course and Connewarre Farmers' Common fronting the Barwon River three miles south-east of Geelong. The Trust decided to reclaim these low-lying, salt-ridden flats in order to increase their capital value to the point where income could be derived to offset the vagaries of port revenue[3]. Thus *Sparrovale Farm* was born.

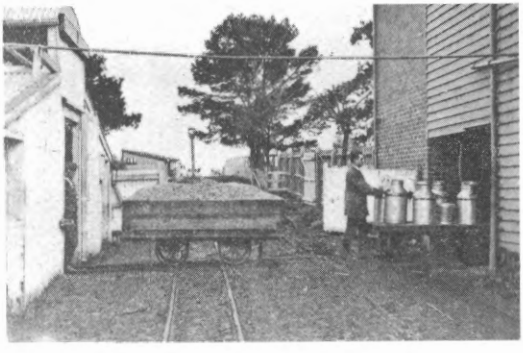
In 1906 a start was made on draining the flats by open channelling and agricultural drains, and in the next year the initial buildings necessary for a farm were constructed on the high ground. The first structures comprised two storage silos for stock feed, milking shed, feeding sheds, dairy, pig styes, poultry runs and fencing. The scale of the farm was quite large as shown by its area of 1,612 acres, fifty-stall milking shed and 35 feet high silos[4], so in order to keep fodder-handling costs to a minimum the Trust opted for a tramway system.





Aerial view of Sparrovale farm, 1925.

A master plan was drawn up in 1907 and showed over two miles of tramway running to practically every present and proposed building and onto the flats by two routes. The first lot of tramway materials were purchased in 1907[5] and laid down between the silo and the milking shed, dairy, feeding sheds and pig styes. Additional plant was obtained in the next year and a number of trucks was constructed. The gauge of the tram is not stated in any of the sources examined by the writer, but from photographic evidence to appears to be 2 ft or 2 ft 6 ins.

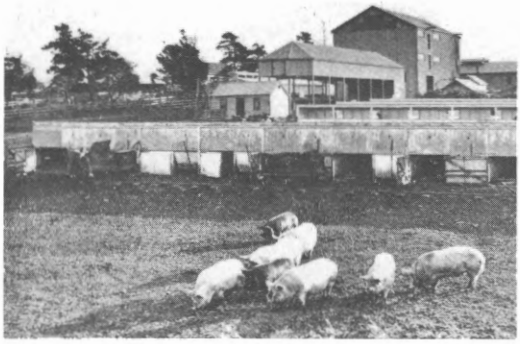


Tramway operations at Sparrovale farm.

There were four distinct types of four wheel trucks employed on the tramway:-

flat top trolleys
wooden body, open top feed trucks
iron body, enclosed top manure trucks
'V' skips, probably ex North Geelong, also used on manure and slop cartage.

Motive power was provided in the first instance by the farm employees who pushed the trucks, but a locomotive may have been used later on. The master plan of the farm provided for an engine shed, and a locomotive was purchased in 1908, but it has been impossible to determine how it was used between 1908 and 1911 as the plan was not fully implemented. Some of the tramway put down in the early days was out of use in 1912[6], e.g. one of the double lines situated parallel to the creamery and milking shed, and some of the early tramway was not there in 1912 e.g. the tracks to the engine shed and the loops in the yard between the workmen's quarters and the stables. So far as can be judged, the half mile or so of tramway laid down in 1907 remained the core of the system and was not extended to any great degree in later years. The extra feeding sheds and pig styes that would justify the extensions were never built.



Slop and manure trucks on Sparrovale farm in front of pigstyes, 1912.

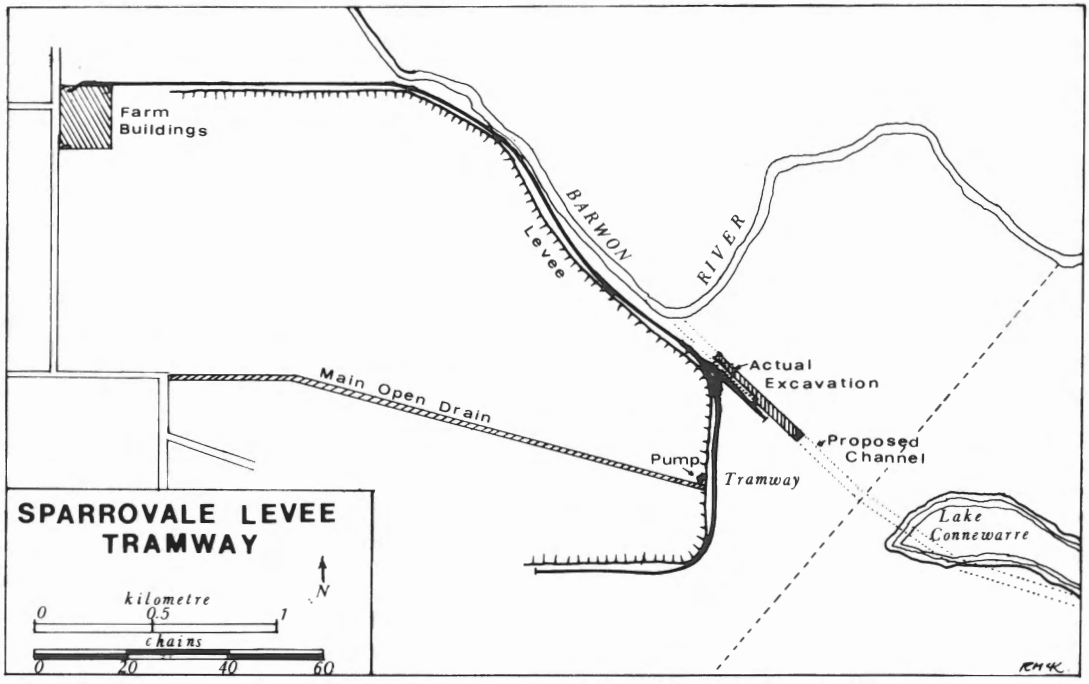
Levee Bank

Sparrovale was prone to flooding by virtue of its site, and after damaging inundations in 1909 and 1911 the Trust decided in January 1912 to protect the property by a levee bank almost three miles in length. Preliminary work using horse-drawn equipment got under way in the next month while the Trust made enquiries around the country about the availability of a mechanical contrivance to make levee banks. The search proved fruitless so the Trust proceeded with the project using traditional methods of steam shovels and tramways.

Material for the bank was obtained from a channel that was intended to be excavated from a sharp bend of the Barwon River across to an arm of Lake Connewarre to open a new direct course for the river and relieve the build-up of flood waters. The channel was dug by a grab crane and the spoil conveyed to the bank site by means of a tramway. This 3 mile tram was separate from the system in use at the farm and was operated by the Trust's locomotive[7].

The levee tram began at the machine shed near the farm manager's house, turned out the north gate and ran east along the road to the river 70 chains away; then followed the river for one mile before continuing across the flats to where the channel was being excavated. A branch line ran south for less than half a mile and then west for half a mile to the end of the bank. The spoil was dumped into four wheel wooden-body trucks with flat ends, but whose sides flared out from the base and hauled by the locomotive to the bank where labourers formed the mound.

Work carried on throughout 1913 and 1914 with a sufficient height being established to prevent ordinary flooding but short of the optimum height of 15 feet thought necessary to stop abnormal flows. In January 1915 the Trust realised it probably would not have sufficient funds to raise the bank to 15 feet, and proposed to the Engineer Mr R. Trevor



Geelong Harbor Trust locomotive at work on Sparrovale levee, 1912.

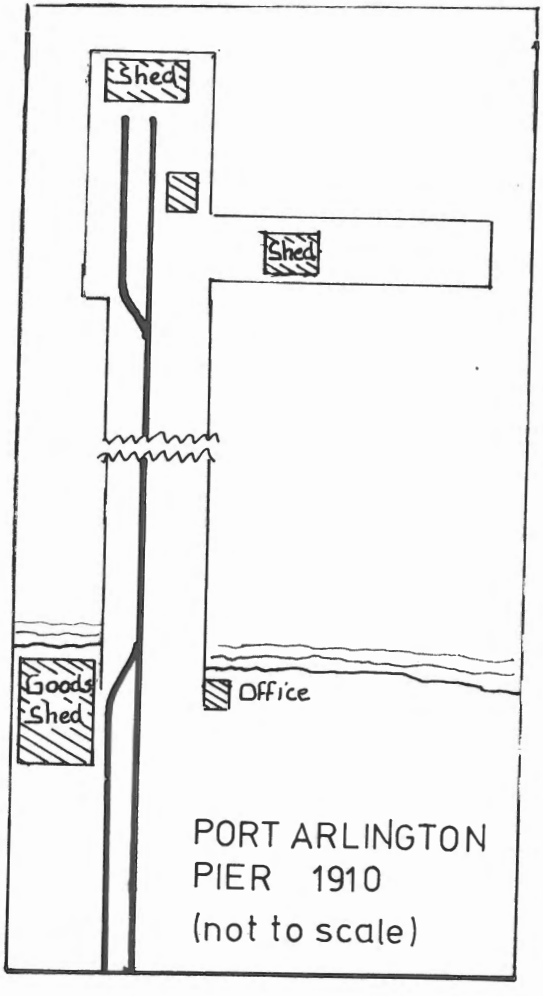
Williams that he level it off at around 9 feet. He demurred and stated that the bank was nowhere near high enough at the lower (south) end, so the Trust reluctantly agreed to complete the original plans. The Engineer, however, received only a nine months reprieve for by September 1915 funds had run out, so on 6th October 1915 the Trust paid off the levee labourers and work ceased altogether.

The tramway plant was made idle and remained so for the next year until Cameron and Sutherland offered to purchase the locomotive. In December 1916 the Trust agreed to sell the locomotive for four hundred and fifty pounds and Cameron and Sutherland took it away. The next month saw another enquiry from the same firm asking whether the Trust had any surplus tramway rails and plant for sale and on receiving an affirmative reply placed a holding deposit of two hundred and fifty pounds on the materials. Miller and Co directed a similar question to the Trust but was too late, and at its meeting of 8th January 1917 the Trust agreed to dispose of the surplus materials to Cameron and Sutherland.

The Trust continued to operate *Sparrovale* and its tramway until 1927 when it gave up direct management of the property in favour of a leaseholder. Reconstruction of the Trust in 1934 compelled it to divest itself of lands extraneous to its activities as a port authority and after 2 years of seekling a buyer finally sold *Sparrovale* in 1936[8]

Portarlington Pier

The eastern boundary for the Geelong Harbor Trust as defined in the 1905 Act included the foreshore and pier at Portarlington, so this facility was taken over from Department of Ports and Harbours. At this time Portarlington was an established holiday resort and agricultural district



Portarlington, 1911.

that tended to rely on sea transport because of its distance from the Queenscliff railway. Regular steamer services between Geelong and Melbourne via Portarlington employed two vessels, Howard Smith and Co.'s *Edina* and Huddart Parker's *Courier*, that were supplemented by a third vessel in summer. Each year thousands of holiday-makers and day trippers arrived and departed by steamer, while after harvest time the Portarlington agriculturists despatched wheat, barley, potatoes, onions, peas etc. to markets in Geelong and Melbourne via the sea[9]

When the Geelong Harbor Trust assumed responsibility for the Portarlington facilities, they consisted of the pier (with an extension for the fishing fleet), a goods shed on the foreshore, a tramway from this shed to the end of the pier, and some sheds on the pier itself. The pier was in a poor state of repair, the tramway decking was rotten in places because of the previous management's practise of using earth as filling between the rails to form a walkway and revenue was low so, all in all, the Trust faced large repair bills in order to bring everything up to reasonable standards. The Trust procrastinated over these repairs until protests in 1912 forced action.

The tramway was of 3 ft gauge and its layout comprised a single line having one dead-end siding at each extremity. Iron rails were used for the most part but wooden rails were to be seen at the Bay end of the pier in the 1930's. Rolling stock was a motley collection of 10 flat top, four wheel trolleys whose total worth was placed at around twenty five pounds in 1907. Manpower and horses were used to propel the trolleys.

The Trust re-organised the operation of the pier. They appointed an Assistant Harbour Master and arranged for all goods, luggage, produce etc. to be trolleyed to and from vessels. A charge was made for the service with the exception of luggage, which was carried free, and no tips were to be given to the trolley man. No vehicles or horses were permitted on the pier unless engaged in trolleying. The shipping companies were not completely satisfied with the Trust's monopoly on pier cartage, and objected on a couple of occasions to the trolley rates which were negotiated as a certain percentage of the steamer freight rates.

Various minor improvements were put in hand by the Trust as part of its responsibility to refurbish the tramway. Two new trolleys were provided, as was one tarpaulin to protect goods on the trolleys, but the state of the rotting pier planking and condition of the old trolleys was such as to provoke protests from local interests. These interests made strong representations to the Trust in July 1912, complaining that the new trolleys had never been used, that only one of the old trolleys would stay on the

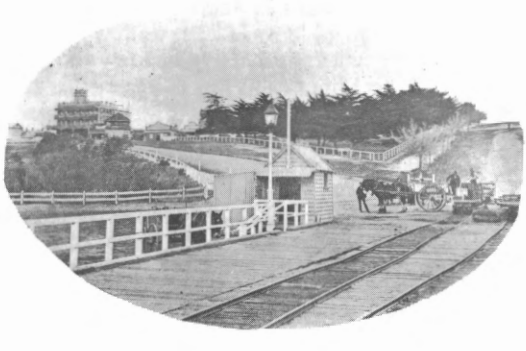
rails, with the remainder of the trolleys being in such poor repair as to be unusable. The Trust minute book is silent on the measures taken to remedy the trolley situation, but approval was immediately given to the Engineer to repair the decaying woodwork on the pier. The renewal and strengthening of the pier, including tarring and sanding between the tram rails, was completed in July 1913.

The possibility of duplicating the tramway was examined in November 1912 in response to a proposal by a local syndicate to mine sand on the old race course reserve. The project entailed laying a tram line from the reserve to follow the foreshore around for about 30 chains in an easterly direction to the pier and then continue along the structure on the western side of the existing tram line. The sand was to be lightered to Melbourne. The Trust requested the syndicate to submit a written plan before approval could be given, but the plan apparently never arrived and the scheme quietly faded into oblivion.

One menace the Trust had to contend with was the temptation of idlers on the pier to commandeer empty trolleys for joy rides. This practice persisted until rules were enacted declaring it illegal, following an accident in which a child was injured.

After the initial reorganisation and shake-out of 1906-13 the pier settled down to a routine existence that was only disturbed on the odd occasion when a steamer collided with the structure or when the Trust bestirred itself to make some improvements at the behest of the persistent Portarlington Fishermen's Association. In 1928-29 the Trust reluctantly undertook a dredging programme and installed some sheet piling on the fishing boat arm of the pier. Its reluctance was due to the realisation that the shifting nature of the sea bed at Portarlington would nullify its dredging efforts, and it would not be able to recoup any of its expenses for this type of work[10].

The same period saw the beginnings of a threat to trolley receipts in the form of road motor competition. The Trust was compelled to re-negotiate trolley rates with Howard Smith and Co in 1928 on account of declining steamer traffic due to road competition. Clearly, the Bay trade was in its demise, and was finally extinguished in 1938 when the *Edina* was withdrawn. The Trust found itself saddled with a pier from which little revenue was derived, but it took until 1948 before it divested itself of this encumbrance[11]. Parliamentary Act 5303 transferred the Portarlington Pier to the Department of Public Works, and the curtain was rung down on 43 years of tramway operations by the Geelong Harbor Trust.



This postcard view of Portarlington in 1912 gives an illustration of the track conditions.

References:

Unless otherwise stated, all information for this article has been derived from a reading of the Minutes for each Meeting of the Geelong Harbor Trust Commissioners from July 1908 to February 1917.

1. *Geelong Harbor Trust Annual Report* (GHTAR) 1906.
2. *GHTAR* 1908.
3. *GHTAR* 1905 and 'Geelong Harbor Trust - Abridged General History of the Port prior to and since the Incorporation of the Trust in 1905', prepared by the Secretary, 1959, p. 8.
4. *Journal of Agriculture,* August 1908.
5. *GHTAR* 1907.
6. *Journal of Agriculture,* November 1913.
7. Tramway details obtained from above reference as Engineer's Reports no longer survive.
8. *GHTAR* 1927-1936.
9. *Geelong Advertiser* 9/1/1917.
10. *GHTAR* 1929 and 1929.
11. *GHTAR* 1948.

Acknowledgements:

I acknowledge the assistance readily given by Mr W. Murrow, Secretary to the Geelong Harbor Trust, for making available minute books, plans and photographs, and the Geelong Historical Records Centre for photographs and plans. Mr P. Alsop, C.R.B. Engineer, examined the text and suggested amendments and improvements.

An Introduction to the Timber Tramways of Western Australia

by M. Southcombe*

* This article has been prepared from Information Sheets Nos. 31 and 32 of the Forests Department of Western Australia. Reproduction of the article it intended to stimulate interest in further research on the extensive and interesting timber tramway systems of Western Australia. As a starting point a selected bibliography is provided at the conclusion of the article.

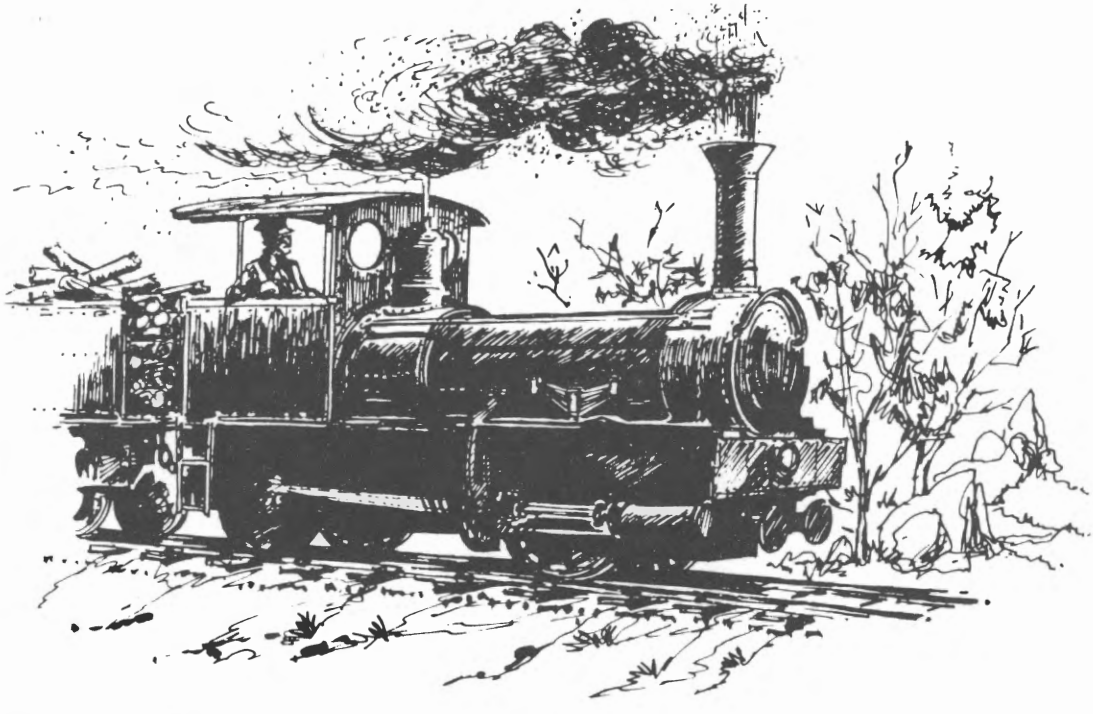
First Locomotive

When the first settlers arrived in the State they found huge areas of forests. Sawmilling on a small scale was begun immediately, but as the logs had to be hauled to the mill by horses or bullocks this severely restricted the area in which they could operate.

Two men who operated a small mill near Busselton, John Ditchburn and another known as "Money Malloy" conceived the idea of a locomotive to haul timber. During 1870 they placed an order with James Hunt of Ballarat, Victoria, to construct a locomotive for the cost of £800 ($1600). The loco was completed in March 1871 and tested in the foundry. Then, as there were no railways or roads to the west in those days, they dismantled the engine and packed it in cases and shipped it to WA aboard the barque *Nightingale.* The locomotive made its first run in either August or September of that year and was pronounced a great success. It was christened *Ballarat.*

This pioneer which created railway history in this State was followed soon after by another at Jarrahdale and was called the *Governor Weld* after the then Governor of the State.

These first locomotives ran on wooden rails, but the wear was so great it was not long before they were replaced by steel ones. So successful were these early engines, it was not long before a large fleet of locomotives was operating in the timber



Artist's impression of pioneer locomotive Ballarat operating at John Ditchburn's mill near Busselton.

Jarrahdale Jarrah Forests and Railway Ltd locomotive Samson No.2 and passenger carriage c1897.

W.A. Forests Department.

industry. This was, of course, before the first government railway in 1879.

By the beginning of this century it was established that a total of seventy locomotives were working on the various timber lines of the State.

Tramway Operations

Normally the first line to be built was the one to convey all the sawn timber from the mill to the nearest shipping point. Then lines were constructed leading to the bush to enable logs to be hauled to the mill.

Naturally, these engines were fired with wood from the mill, and as there was an abundance of water in the forest streams, they provided a cheap means of transport.

All the formations for the line were constructed by hand and many men were employed doing nothing else but laying line and pulling it up again after the timber had been cut in that area. No one knows how much line was laid in this manner, but during the life of a mill lines were laid to all sections of its concession.

These lines usually followed the valleys between the hills so as to acquire an easy grade. Life was not easy for these men who built the lines. Long hours of heartbreaking toil were their lot. Their homes were small huts built in such a manner they could be lifted bodily on to a railway wagon and moved to a new position as the line advanced. Only at week-ends did they have the opportunity to visit the mill perhaps some fifteen or twenty miles away.

Train Working

What was it like to work on a timber mill locomotive? Let us take an imaginary trip and find out.

The story starts on a dark winter's morning. The mill town is in total darkness except for the glow from the firechute at the mill where the waste timber is burnt. In a large shed near the mill a young man is throwing wood into the firebox of the loco by the light of a "slushlamp", a contrivance like a coffee

Opposite: An early logging train in the Western Australian forests.

W.A. Forests Department.

pot with a wick issuing from the spout emitting a smokey flame.

Having finished the fire, the cleaner dons a waterproof coat and with the slushlamp in hand, heads out to call the crew.

It is still dark when the glimmer of a hurricane lamp and voices announce the arrival of the driver and fireman. They immediately set to work, the driver oiling the working parts of the engine while the fireman busies himself in the cab raising steam, etc.

Having finished the oiling the driver climbs into the cab and the engine moves out to the wood stack where all hands throw firewood on to the tender until it is stacked high. Then having filled the tender with water they move on over the points and back to the waiting rake of empty log trucks.

Exactly at six o'clock the locomotive gives a shrill blast on its whistle and with a clatter of choppers the train is on its way. The only illumination is from an oil lamp which throws a feeble glow a few feet ahead. From the funnel of the engine a steady stream of sparks sail high into the air to fall back half-way along the rake where the guard sits huddled in his coat trying to keep dry in the driving rain.

Little can be seen for the first few miles, but as the wintery dawn breaks, huge trees can be seen growing almost to the edge of the line, for this is the heart of the jarrah forest which feeds the mill with logs.

Soon the train comes to a branch in the line, and the guard turns the points and then enters a small tin shed which houses the telephone—the lifeline of this tiny railway system. Here he leaves the staff and fills in the book, giving the name of the loco, time and direction of travel.

Another blast of the whistle and the train is on its way down the branch line to the bush workings. On both sides of the line can be seen evidence of man's work. Tumbled forest giants lay on the ground denuded of their branches and bark. Soon the bush landing comes into sight. On one side is a huge iron monster, with a boiler and steam engine at one end from which a thick wire rope disappears into the bush. This is the steam hauler which was last used during the 1930s.

On the other side of the line is a small winch and boiler which is used to load the logs on to the train. A full rake is loaded, waiting, and the engine shunts the empty rake into a siding, then hooks on to the full one.

Slowly, and with much skidding of wheels, the train gets under way. The train now is much longer than the empty one owing to the long steel bars being placed between the trucks to make them long enough for the logs to rest with one end on one truck and the other end on the truck following. If the log is very big, only one is placed on each set of trucks. However, the smaller ones are loaded two and sometimes three to a truck, the guard sitting on the last truck.

As the train gathers speed the logs sway alarmingly, but it is seldom that any leave the trucks.

On the steeper downhill runs, the locomotive sometimes gives a short blast on the whistle as a signal to the guard that the loco is unable to hold the load down to a safe speed. When this happens, the guard starts from the rear of the train and applies the brakes on the wagons, running along the top of the logs to get from one truck to another.

At the junction the fireman again picks up the staff if they are the only locomotive using the line. If not the staff is left and a ticket is written out as before.

Now it is possible to see the country that we traversed this morning. Mostly the forest is composed of massive jarrah trees but occasionally the line goes through a gully which is thick with bracken fern and redgums and black-butts take the place of the jarrah.

A long-drawn out blast on the whistle warns that we are nearing the mill and soon the clearing comes into sight, with the small timber cottages of the workers on one side of the valley and the mill buildings on the other.

As the train draws into the landing the timber clerk is waiting to measure the logs before they are unloaded. The locomotive is uncoupled and makes its way again to the wood-stack to replenish the almost exhausted supply of firewood.

Soon, amid a thunder that shakes the very ground under your feet, the logs are rolling down the landing ready for the mill, but that is another story.

Withdrawal of Tramway Operations

The large numbers of steam locomotives remained in service until the mid-1930s when the huge cost of pulling up and re-laying lines in the now thinned out bush made their operation uneconomic, and motor transport started to take their place.

Many of the old railway formations and bridges are now used by the Forests Department as firebreaks and for rapid means of transport to the scene of bush fires, etc. One bridge of fourteen spans and 40 metres long with a width of 4 metres, which was built over the Wonnerup Estuary for the first locomotive, the *Ballarat*, is still standing and is as solid as when it was built 100 years ago.

Many of these locos are now preserved in museums in various parts of the State. The pioneer locomotive *Ballarat* is in Victoria Square, Busselton

Vertical boilered winch used for loading logs onto train.
W.A. Forests Department.

and a plaque near Wonnerup siding marks the position of the line along which it ran. *Katie*, which was used at Karridale, is preserved on the banks of the Margaret River near the town of that name.

The last steam locomotive to operate on timber mill lines is the old No. 71 which for over eighty years had served its masters, Millars Ltd., faithfully and well. In 1973 it found its last resting place near the government railway line in Yarloop, where it will fire the imaginations of future generations with all the glamour of its romantic past.

Several of the old engines are preserved in the Australian Railways Historical Museum at Bassendean, where one is coupled to a rake of log-wagons giving a good idea of what the old log trains were like.

Undoubtedly, without these engines the timber industry in this State could never have achieved the efficiency which it did, and the development of the State would have been delayed for many years.

Selected Bibliography - Western Australian Timber Tramways

Anon. 'Preservation of old locomotives' *ARHS Bulletin* No. 235, May 1957. pp 65-88.

Boot, W. H. '*Kate* of the MC Davies Karri & Jarrah Coy' *ARHS Bulletin* No. 365, March 1968, p. 72.

Buckland, J. L. '*Kate* of the MC Davies Karri & Jarrah Coy'. *ARHS Bulletin* No. 356, June 1967, pp. 134-6 and No. 359, September 1967, p. 203.

---- 'Early locomotives of Jarrahdale *Light Railways* No. 41, Spring 1972, pp. 8-10.

Crellin, I. A. 'Early locomotives of Jarrahdale' *Light Railways* No. 42, Summer 1972, pp. 21-23.

---- 'The Mason's Landing tramway'. *Light Railways* No. 44, Winter 1973, pp. 20-21.

Crowley, F. G. *Australia's western third.* London, Macmillan, 1960.

Downes, E. A. 'Two Shay locomotives in the west'. *ARHS Bulletin* No. 329, March 1965, p. 60.

Fall, V. G. *The sea and the forest.* Perth, Western Australia University Press, 1972.

Gunzburg, A. 'Early locomotives of Jarrahdale'. *Light Railways* No. 44, Winter 1973, pp. 21-22.

Jessup, C. W. 'Millar's Denmark railway'. *Light Railways* No. 33 Spring 1970, pp. 5-10.

Macdonald, B. 'The Climax locomotive'. *Light Railways* No. 24 Winter 1968, pp. 9-20.

Moss, R. L. 'Journey to Jarrahdale' *ARHS Bulletin* No. 276, October 1960, pp. 160-163.

---- 'The *Jubilee* accident' *ARHS Bulletin* No. 284 June 1961, pp. 85-87.

---- 'South-west safari'. *ARHS Bulletin* No. 285, July 1961, pp. 112-115.

---- 'Two Shays in the west'. *ARHS Bulletin* No. 335, September 1965, pp. 178-9.

Purcell, L. J. 'Ferguson's timber tramway at Logue Brook'. *ARHS Bulletin* No. 295, April 1962, pp. 61-62.

---- 'Visit to Donnelly River timber milling centre' *ARHS Bulletin* No. 304, February 1963, p. 33-35.

---- 'Gala day at Wonnerup' *ARHS Bulletin* No. 324 October 1964, pp. 189-194.

Stamford, F. 'Shay locomotives in Australia'. *Light Railways* No. 18, Summer 1966, pp. 6-11.

Tilley, A. J. *Timber tramways of the Bridgetown-Pemberton Districts* Perth, ARHS (WA Division), 1968.

Woodward, E. W. 'Decline of the steam locomotive on the private timber lines in the south-west of Western Australia'. *ARHS Bulletin* No. 297, July 1963, p. 105-111.

---- 'The Jarrahdale-Rockingham excursion trains'. *ARHS Bulletin* No. 318, April 1964, pp. 77-79.

---- 'Two Shays in the west'. *ARHS Bulletin,* No. 328 November 1964, pp. 217-220.

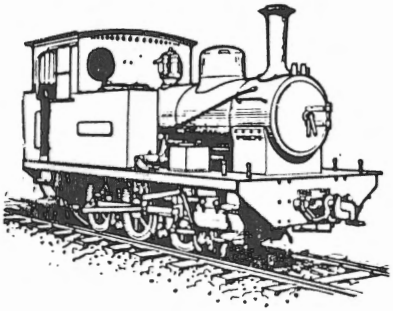
---- 'Whittaker's private timber railway'. *ARHS Bulletin* No. 331, May 1965 pp. 81-86.

---- '*Kate* of the MC Davies Karri & Jarrah Coy'. *ARHS Bulletin* No. 342, April 1966, pp. 83-85 and 371, September 1968, p. 228.

---- 'Locomotive *Samson No. 1* and *No. 2*'. *ARHS Bulletin* No. 356, June 1967, p. 132.

---- 'Locomotives of the Adelaide Timber Coy Ltd'. *ARHS Bulletin* No. 372, October 1968, pp. 249-253.

---- 'Shay locomotives in Australia'. *Light Railways* No. 19, Autumn 1967, p. 23.



BOOK REVIEWS

BROCKHAM MUSEUM GUIDE
Compiled by C. G. Down
Published by the Brockham Association,

46 The Alders, Hanworth, Middlesex

Britain is full of museums these days which shows that people are becoming aware of their interesting heritage. Understandably there are museums to just about suit everybody, and the narrow gauge railway enthusiast is no exception. The Brockham Museum located near Dorking in Surrey caters for this enthusiast and has some extremely interesting exhibits.

Brockham Museum had its origins when the narrow gauge railways operated by the Dorking Grey Stone Lime Co. at Betchworth Quarry closed in 1960. The museum was inaugurated by members of the Narrow Gauge Railway Society which grew to become a separate body in 1966, the Brockham Museum Trust being formed in 1972. Difficulties in finding a suitable location led to the decision to use the quarry site at Betchworth. Here the museum plans to display relics which illustrate the history and development of narrow gauge railways in their various facets. The Trust intends to build a working museum in which some of the exhibits can be demonstrated in action. The museum has a unique collection of steam, internal combustion and battery electric locomotives and rolling stock covering a variety of gauges, usual and unusual.

This little booklet, as its name implies, is a guide to the museum which is gradually being developed to the intended overall plan. It is well presented and illustrated. It contains two maps of the site - as a quarry line in 1935 and as intended in the future. The covers and inside include five beautiful pen drawings of steam exhibits. The book is not bursting with technical data, but there is sufficient there to satisfy most visitors.

Copies are available from the above address for 75 pence (sterling) for surface mail or £1.00 air mail.

R.F.E.

DIESEL LOCOMOTIVES OF AUSTRALIA
by Leon Oberg

In recent years, a market has developed for a range of publications of the 'picture book' variety, copiously illustrated and with a minimum of text, and this has been exploited eagerly by major publishers. The field of railways has not been neglected, and the success of Leon Oberg's *Locomotives of Australia* has led to the publication of this book.

Diesel Locomotives of Australia contains 122 photographs, 16 of which are in colour. It was pleasing to see that 42 photographs relate to locomotives built for, or operated by, non-government railways. Of these, 17 come from such 'heavy railways' as the Pilbara iron ore lines, the Emu Bay Railway or the defunct Midland Railway of Western Australia. Nevertheless, this leaves 25 photos, or about 20% of the book's content, on locomotives which might come under the particular area of interest of this Society, ranging over such diverse areas as BHP's railways, the power generation industry, the West Australian Public Works Department, and Queensland sugar mills. It is on this aspect of the book's content that this review concentrates. It is very pleasing to see recognition being given to private railways in Australia, and it is hoped that the publication of this book will lead to an awakening of interest in them among a wider audience.

While it is unrealistic to expect any book to be completely free from error, there do appear to be

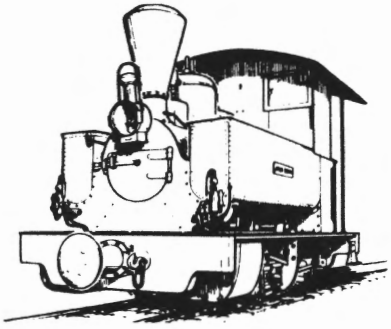
many in this book which need not have occurred if careful checking based on published sources had been carried out. Some operators are named incorrectly, and the misinformation is stated categorically in a number of instances. In addition, some basic information is left vaguely expressed, if at all, as if the author were uncertain of his facts. This is particularly obvious when details of transmission type (mechanical, hydraulic or electric) is omitted.

Examples of errors noted include the statement that E. M. Baldwin built their first locomotive in 1965 (it was 1962); that Ruston & Hornsby built petrol locomotives (all their production was diesel); and that the first internal combustion locomotive was introduced in South Australia in 1928 (there were already four in 1926). A comprehensive catalogue of errors occurs in the caption for Racecourse Mill's locomotive *LEO,* described as being 'an underground tunnel locomotive employed by Southern Portland Cement in New South Wales. Used here at the Medway Colliery, Baldwin rebuilt the unit for the Racecourse Sugar Mill.' A correct version would be that it was built by E. M. Baldwin for Pearson Bridge Pty Ltd in 1968 for tunnel construction work. It was purchased by Racecourse Mill in 1977 and rebuilt by them for their own use.

It would be wrong to criticise the author for stating that Australia's first diesel was the Kelly & Lewis at Alexandra in Victoria, for the book was published before Anthony Weston's article on the earlier Armstrong-Holland locomotives was published in *Light Railways.*

Priced at $12.95, this book must be rated as good value for the photographs alone, and these are well reproduced. However, as a book of reference, it should be treated with caution.

JB



LETTERS

LAHEY'S CANUNGRA TRAMWAY, LR.54

In reading the article on Lahey's Canungra tramway I noticed that it was not mentioned that the log trucks shown in the photographs were manufactured by the Climax Mfg. Co. Corry, PA. Climax built two sizes of cars and it appears that Lahey's had the small ones for sure and possibly the heavier ones as well. The small log trucks show up best in the photograph on page #11 and what I consider the larger trucks on page #19.

It may be that Climax varied their truck design of the light cars and Lahey's had purchased them at different times. This will probably never be known for sure and may not be of any interest to your readers, but I thought I would throw it in for further scrutinizing.

I have enclosed a copy of the information I have on the Climax log cars.

As for the Shay #2371 . . . The Lima erecting drawing lists it as 24 tons, but what's 3 tons?

Richard Dunn
Lafayette, CA, USA

ED. The Climax drawings of the log trucks are reproduced on the back cover of this issue. The 'light' trucks are listed by Climax as their No. 1 (narrow gauge) and No.2 (standard gauge) logging cars. The design features "iron truss equalising truck frames, permitting it to be run on rough or uneven track . . . The brakes are attached to the truck frames and swing on curves with the trucks independent of the body of the car, preventing corner binding." The 'heavy' trucks were classed as No.3 (narrow gauge) and No.4 (standard gauge). These logging trucks featured "diamond truss truck frames, with springs between the truck bolsters." The dimensions of the narrow gauge cars were:

	No. 1	No. 2
Weight	6,500 lbs	7,000 lbs
Diameter of Wheels	18 inches	18 or 24 inches
Diameter of Axles	3 inches	3½ inches
Size of Journal	6 x 2 ½ inches	6 x 3 inches
Capacity	10 tons	15 tons

MOUNT ELLISON-IRON BLOW TRAMWAY, NORTHERN TERRITORY AND THE MISIMA ISLAND RAILWAY PAPUA NEW GUINEA

With reference to correspondence from John Buckland regarding the Kerr Stuart locomotives employed on these railways, in LR 70, it should be noted that the B/No. of *Heasman* on page 19 should be 797 not 697. It is correctly referred to on page 20. I would suspect this is a typographical error more than an error on the part of Colin Cox as John and I both refer to it as 797, which is the correct number according to the builders records.

There is another piece of interesting information worth adding to the story of *Skylark* (B/N 743). The late Cyril Singleton, in his excellent series of articles entitled 'Rail Transport in the Broken Hill District' published in the *ARHS Bulletin* in 1962 makes specific reference to 743. On p. 74, Bulletin No. 295, May 1962, under the heading of the Junction Mine, Broken Hill, he noted 743 as being derelict at this mine on a section of 2ft gauge track in 1926 (in company with an Orenstein & Koppel, 0-0-4-0T, 5022/1911) but that they had been scrapped by 1930. Cyril obviously assumed that as the locomotive had gone it had been scrapped.

Cyril Singleton was a most meticulous recorder of such information and I (and John) have no reason to doubt his word. It would therefore seem that 743 was out of use at Misima in September 1922; was returned to Cameron & Sutherland in late 1923 and went to Broken Hill in the 1924-1926 period, left there by 1930 and went back to Melbourne to be regauged by Day's Engineering Works for sale to E.A.C. Russell's Timber Tramway at Gembrook.

There is also a so far unsubstatiated report that 743 went to Walkers Ltd, Maryborough, for overhaul prior to going to Misima. Whilst this is possible, it would seem unlikely, although obviously the locomotive would have been overhauled somewhere prior to its delivery to Misima.

Ray Ellis
Geebung, Qld.

John Buckland comments: The identity of the Gembrook Kerr Stewart will probably never be established with any certainty because, subsequent to publication of my letter in *LR 70*, I discovered among my papers a locomotive list for the Junction Mine, Broken Hill compiled by the late C.C. Singleton. He recorded KS 743 'derelict at the mine in 1935'. That being so, Russell's Kerr Stewart could scarcely have been No. 743. Unless another *Skylark* class engine made its appearance on the scene it must be assumed that the locomotive re-gauged and sold to E A C Russell, a sawmiller of Gembrook, was not KS 743, as I suggested, but its 'twin', KS 797 previously thought to have been abandoned at Whim Well, Western Australia.

Russell's 3ft gauge 'Skylark' class Kerr Stewart 0-4-2T derelict at Gembrook c1950. Was this locomotive KS 743 or 797?

L.G.Poole

TORRUMBARRY WEIR CONSTRUCTION TRAMWAY. LR.21 (1967)

The enclosed photographs are of the Patho-Torrumbarry railway for construction of the Torrumbarry Weir. The photo of the three men waiting with a train has John William George Mitchell nearest the locomotive. He was the driver of the locomotive and father of Harry Mitchell who provided the photographs.

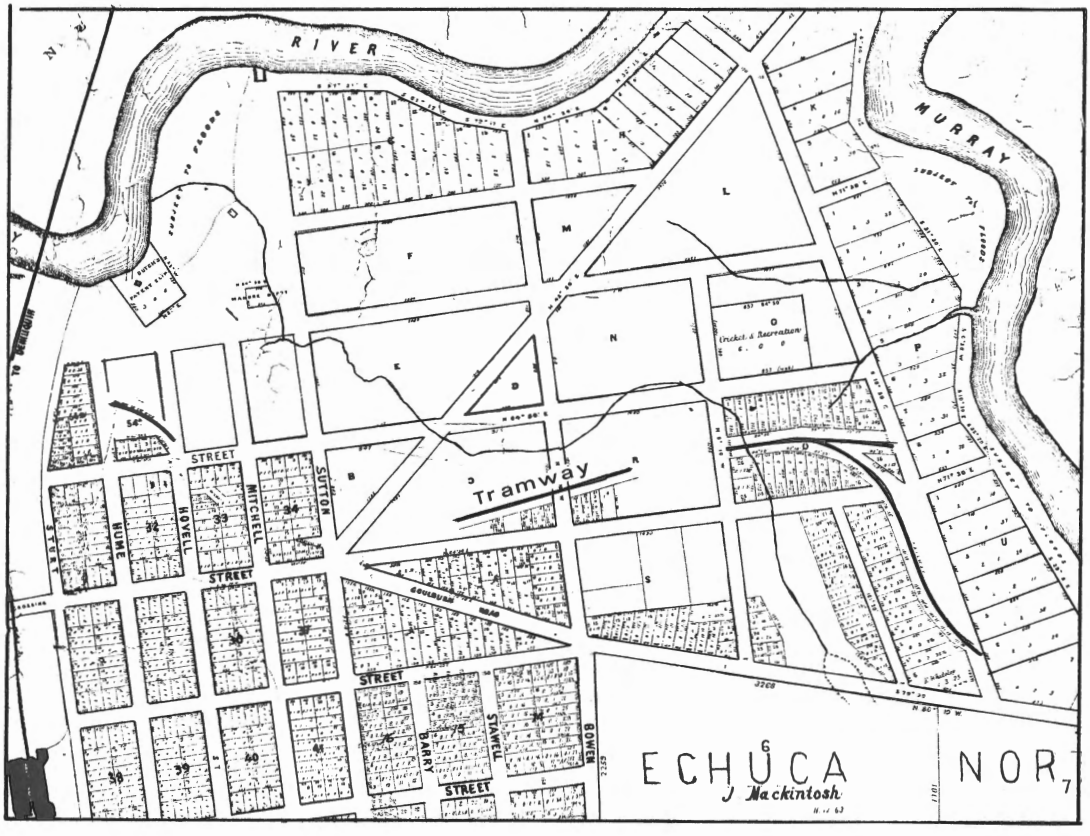
I am also enclosing a map of Echuca dated 1894, which shows part of the tram lines to the sawmill in Echuca East. Roy Mitchell, who worked for the Victorian Railways as a ganger in Echuca, says that this line served sawmills and a freezing works and was worked by a locomotive. He says that the bridge over the Southern Cross Creek had the rails

spiked directly to the bearers. There were not any timber between them for a horse to walk on.

Frank Sutton, Echuca, Vic.

References to the Torrumbarry Weir tramway may be found in *LR.21 (p. 22), 22* (p. 10 and 12) and *24* (pp. 28-9). The 2ft gauge tramway ran from Torrumbarry Weir siding near Patho on the Elmore-Cohuna railway to the Weir. It was constructed in 1919 using 16 lb rails. Two locomotives were used on the line, probably between 1921 and 1923. One was an 0-4-0WT built by Krauss in 1890 (B/N 2437) for the Oceana-Argeton tramway near Zeehan in Tasmania. It went to the Zeehan Tramway Company in 1893 and c1917 it went to the Queensland Railways for construction work. It was purchased by the State Rivers & Water Supply Commission in 1920 and worked at Torrumbarry and then Maffra. It was advertised for sale in 1939 and scrapped in 1940. The other locomotive was an 0-4-2WT built by Black Hawthorn (B/N 1134 of 1897) which originally came from the Zeehan & Western Silver Mining Co. in Tasmania where it was known as *Western*. It was purchased from the Melbourne Harbour Trust and, after working at Torrumbarry, it went to No. 11 lock near Mildura in 1924 and then probably to Yarrawonga Weir in 1936. It has been reported that this locomotive was at a West Melbourne scrap yard in 1941. (Ed.)

SRWSC Black Hawthorn locomotive at Torrumbarry Weir siding on the VR Elmore-Cohuna line.
L.E. Mitchell collection.

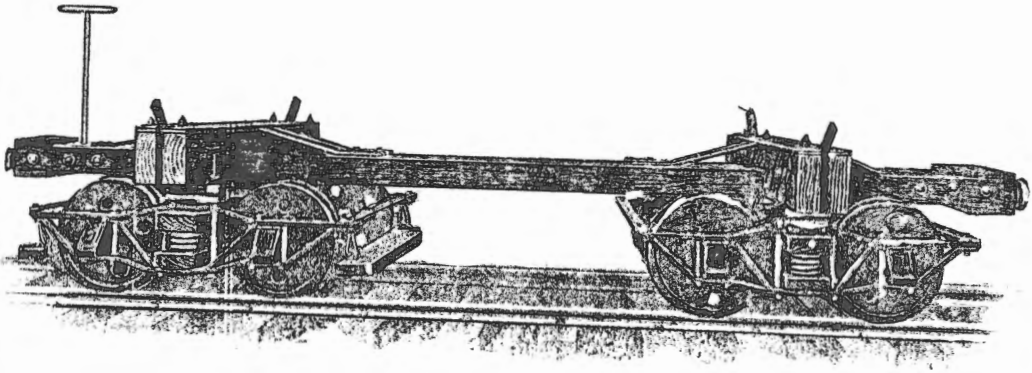


Department of Lands and Surveys map of Echuca dated 8 June 1894 showing tramway to East Echuca.

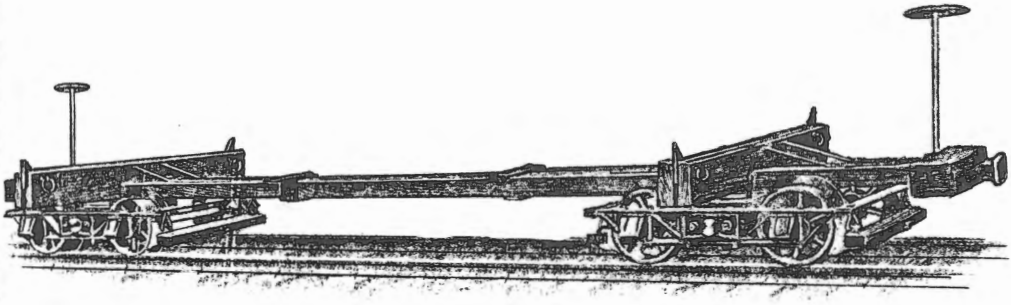
'Smoko' time on the Torrumbarry Weir Construction tramway.
L.E.Mitchell collection.

Krauss 04-0WT(2437/1890) on the Torrumbarry Weir construction tramway.

CLIMAX PATENT GEARED LOCOMOTIVE



Logging Car, with Springs.



Logging Car, without Springs.