LIGHT RAILWAYS

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Cave Hill Tramway, Victoria
Tonalli River Incline, NSW
WA Woodlines

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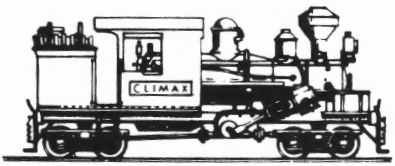

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EDITORIAL

Personal reminiscences and field observation are two important elements of historical research. There are probably not a lot of people around to day who remember a journey on the Cave Hill tramway near Lilydale in 1926, but Ralph Alger's recording of this experience offers a unique insight into what it was like. Ralph has gone onto relate this experience to the image which this tramway - which closed in 1934 - has left on to day's landscape. Jim Longworth pursues a similar path in following up a map feature to locate and record a little-known incline operation near the Warragamba Dam in New South Wales.

An item from the archives, submitted by Norm Houghton, provides a record by a very perceptive observer, Grace Muller, of life on the Western Australian Goldfields woodlines around 1949. It provides useful background material for a future historical assessment of these fascinating railway operations.

Cover: A scene on the Cave Hill tramway near Lilydale in Victoria, the subject of our lead article. It shows wood stacks beside the line about half a kilometre south of Hull Road. The photo is taken looking south towards Mt Dandenong, which can be faintly seen. The ex-Bendigo tramway locomotive still had its enclosed cab in this scene, but it is uncertain whether this was the first or second motor to be used on the line, as it seems the stacks were present at this location in 1915 and still there in 1928.

REMINISCENCES OF THE CAVE HILL TRAMWAY

By Ralph Alger

A Childhood Encounter.

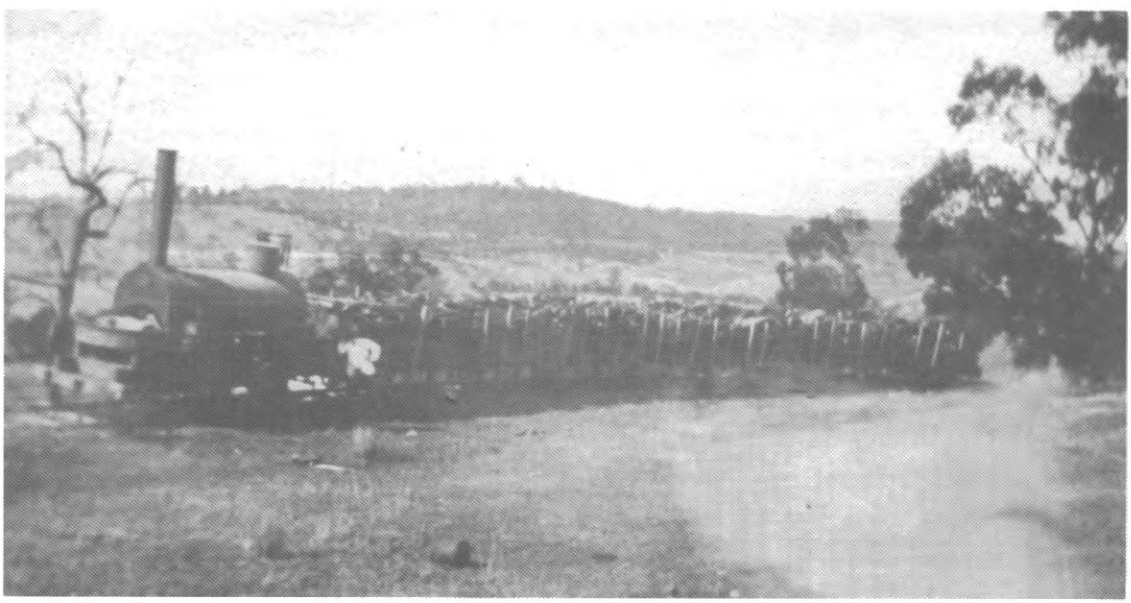
When my family went camping on the Olinda Creek some time in 1926, it had to be because my father wanted to see the Cave Hill Tram. He was interested in all kinds of railways and quite often when we camped somewhere there would be a railway or bush tramway not far away. The Cave Hill Tramway had been built around 1903 by David Mitchell, a prominent Melbourne building contractor, to transport firewood for use in his lime kilns at Cave Hill near Lilydale. We camped near the junction of York and Swansea roads and at that time it was a charming area with plenty of trees, a crystal clear creek and not many houses. The unsealed roads carried little traffic. For me the main attraction was the railway or tramway nearby with its steam train that came along every day.

Although only five or six years old, I was quite familiar with trains, electric or steam. I travelled to school regularly on the steam-hauled Deepdene Dasher so thought I knew how a steam engine should look. It should be black, with a driver's cab behind a big round boiler, have a funnel and steam dome and underneath, big wheels and connecting rods. This engine was definitely queer: it had windows along the sides and a roof that covered it from end to end. It was not black but painted reddish-brown with lighter brown around the windows. However, it ran on rails and puffed, so it was OK by me.

At that time I was also familiar with the cable trams and electric trams that ran along the city streets of Melbourne. If I had known as much about Sydney's steam trams, I might have recognised this Cave Hill engine as a similar machine.

One day my father stopped the train and asked the driver if we could have a ride. He said we could, but to wait till tomorrow when the run would be only as far as the wood stacks at Mistletoe bend (which was where the Mount Evelyn Recreation Reserve would later be located.)

The big day arrived and we were on our way, my father, my brother and myself riding on a footplate. There were footplates at each end and, as I remember, we were on the rear end which would have been the chimney end. I don't remember what other crew were



The first ex-Bendigo tramway locomotive and train approaches Cave Hill on the line which was abandoned c1928.
Courtesy Sandy Ross, Lilydale

on the train. I can still recall the pleasant swaying movement - was it due to well-laid track or a well-sprung vehicle? We travelled along the North side of York Road and where it swung away to the left, we crossed it, maintaining a fairly straight line. Shortly we came to a place where the line forked. There was a house on the right side and a woman came down to speak to the driver; she may have set the points. We took the left branch and soon came to the end of the line where there were long stacks of wood on both sides. Something other than firewood made this place memorable - it was mud. Everything seemed to be floating on a sea of mud, except that further down there was a bullock team looking bogged rather than floating.

I took no note of any shunting movements but when we set off with a loaded train the engine was again in front. This time we rode with the driver and fireman. The return journey was finished much too soon and I never again saw the tram in action, but a treasured memory remained.

Twenty Years On

These were years when most of our bush tramways disappeared. Like many other people, I did little to enjoy or record them as we thought they would go on for ever. Something else soon to disappear were the steam-hauled Sunday excursion trains that ran on most lines out of Melbourne. Trains to Warburton or Healesville ran via Lilydale and any passengers who looked towards the Cave Hill Quarry could see the front portion of the tram engine dumped against the railways fence. I saw it on numerous occasions and it never failed to stir my memories.

So in 1946 with a few friends, I set out to find and follow the old line which had closed in 1934. I was not sure of its route from the quarry, but knew I could pick it up along the Olinda Creek. We walked around the south side of the quarry and headed east across the paddocks. We found relics where we expected them - no rails, only sleepers and dogspikes. We estimated the gauge and were surprised to find standard gauge (1435mm).

Until that time I had never tried to find out what the strange engine was that I had ridden on years ago. From a few enquiries I was able to ascertain that it had come from the street tramways of Bendigo, a Victorian provincial city.

We set off southwards, soon crossing Hull Road and continuing past the Melbourne and Metropolitan Board of Works (MMBW, Melbourne's water supply authority) syphon. We went near our old campsite of 1926 and a new shop called Do Drop In then turned east along York Road. The tramway formation here was something that disappeared quite early and I forget whether it was still evident that day, but further on it was easy to follow. The house I had seen in 1926 was still there but the quagmire had disappeared in the development of Mt. Evelyn Recreation Reserve. [The house as I found out later was owned by Luckman and lasted till about 1958 when a pipeline went through.]

About 200 metres from here the line curved round to the south for about a half a kilometre before turning east again, crossing a small creek via a trestle bridge [As I will need to refer to this creek again I will give it a name, "Y" Creek]. For the rest of the way the line went quite close to Olinda Creek, finishing in a shallow cutting with no sign of sidings or loop. It would appear that wagons were pushed in, and then pulled out. We returned to Lilydale by the same route as we had come.

A Spin-off

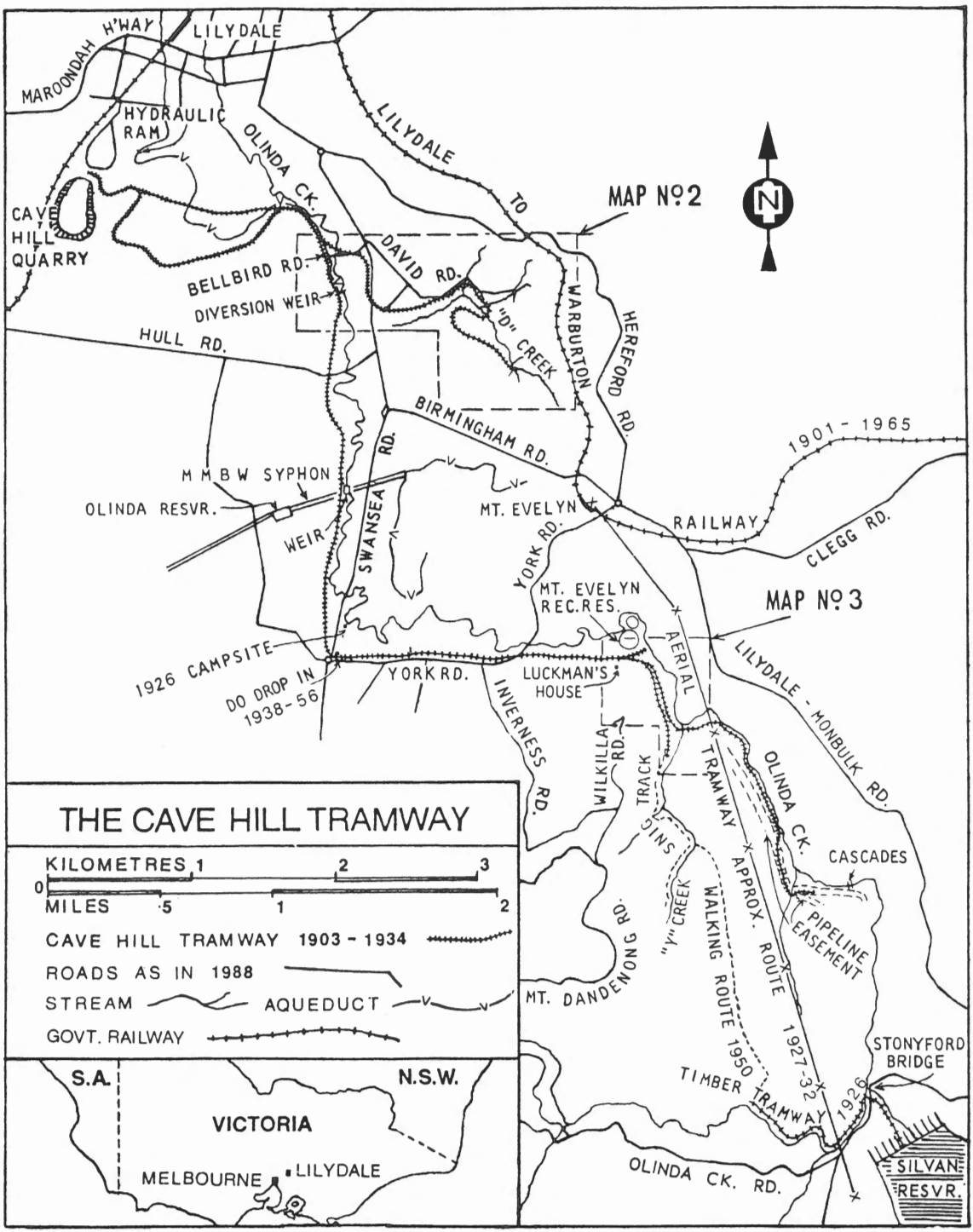
1926 must have been a good year for us. Cave Hill was not the only bush tramway we saw and I can remember a picnic visit to a tramway at Silvan. This visit was recorded in a photograph we had of my paternal grandparents standing by well-used wooden rails on a curved bridge over Olinda Creek.

The rails were part of a logging tramway serving a timber mill located at a site now submerged under the Silvan Reservoir. It was inevitable that I would return to this spot, and this I did in 1950. With a friend, I set out to find the old line and see where it went. It was not hard to find as the rails were still in place and although heavily overgrown and guarded by leeches, we bashed through without much trouble. Disapointingly it was only about $1^1/_2$ km long.

Our day of exploration seemed to have fizzled out slightly, so we decided to walk the range to Mt. Evelyn. We came to a valley running north-south and dropped down to a small creek. This turned out to be the upper section of the creek I have named "Y" Creek. Running along the far side of the creek was a snig track and we followed this in a northerly direction. After about a kilometre along this track we came to what appeared to have been a loading platform facing an exciting discovery: a tramline formation. The length of sleeper impressions in the ground indicated it was probably part of the Cave Hill Tramway, in a place I had not thought to look. We followed the formation down to where it joined the Olinda Creek line somwhere west of the "Y" Creek trestle bridge. From there it was an easy walk into Mt. Evelyn.

The Plot Thickens

In 1955 I met with Alan Knox. He soon came up with some information about "David Mitchell's tramway at Lilydale". His son Douglas had been boarding at a house in David Road and during a visit the pair of them



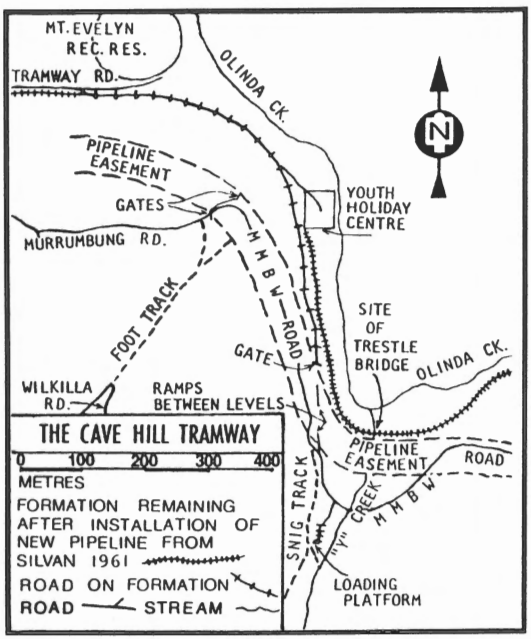
had scouted round the bush and found what looked like a railway formation. The obvious connection seemed to be the Cave Hill Tramway which was only a half a kilometre away. To me this was startling stuff. I checked on four old maps I had and one, the 1922 military map Ringwood, showed the Cave Hill Tramway with a branch spur line pointing directly at where David Road would later be built. It was imperative that I went there to investigate. This I did 32 years later.

Some time in 1987 the thought came to me that not many people around now would have had a ride on the Cave Hill Tram, so perhaps I should write a few words about it. However, after writing a few pages it was obvious that memories alone were not enough. A few hard facts were also needed.

Fact-Finding Mission No. 1

December 30, 1987 was the day we set out on field work and the first site to be investigated had to be the Knoxs' discoveries at David Road. As a starting point the spur line shown on the 1922 map should be found. There had been many changes in the 65 intervening years and one of these was Bellbird Road, which had a bridge over Olinda Creek, and had been put in to serve a sub-division which had not gone ahead. Associated works had changed the tramway formation along Olinda Creek, although it could still be visualised.

David Mitchell's aqueduct, obliterated at Bellbird Road, was still visible elsewhere. I looked at old levee



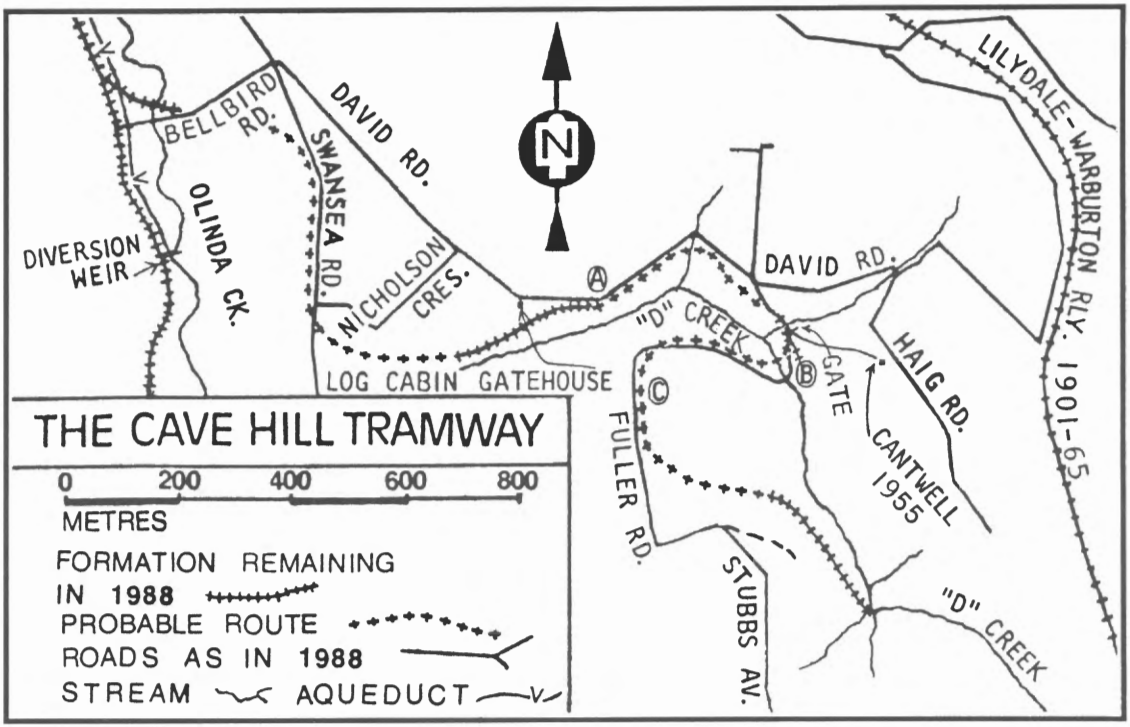
banks and ditches, but nearly missed an important clue. It was an embankment about a metre high curving gently from the Olinda Creek formation and continuing on the other (east) side of the creek, but with no sign of bridgeworks, just a gap where the creek went through. Where this embankment crossed the David Mitchell aqueduct there were the remains of a culvert - a heavy timber beam with a bolt in it. This was exactly right.

I then explored the tram formation from here to Cave Hill. It soon turned west to where the quarry surrounds could be seen about a kilometre away. Near this point the formation forked, with the right hand branch crossing the aqueduct and taking an almost direct line to the quarry. I followed the left hand branch which took a graded route around the side of the valley, rejoining the straighter formation after a couple of tight curves. The formation continued towards the quarry until it became buried in piles of quarry waste. I returned via the straight line, down through a three-metre deep cutting at a fairly steep grade and then across the flats on a metre high embankment till it rose slightly to rejoin the other line. There were three culverts on the way, two over the aqueduct and one over a drainage opening.

At David Road a young lady referred me to Percy Sinclair in Lilydale, a retired employee of the David Mitchell Estate Company. Percy and his daughter Ruth were both interested in Lilydale history. I learnt that the David Mitchell aqueduct had been installed to supply water to the Cave Hill complex, the water being pumped from the aqueduct by hydraulic rams. Later when reticulated water became available, this system went out of use and the two rams finished up in the Lilydale museum. The Sinclairs told me where to find Laurie Rogerson who had been fireman on the tram for two years from 1928.

In 1961 and again in 1972 pipelines had been installed in the "Y" Creek area by the MMBW. The pipeline easement was more than 50 metres wide and near "Y" Creek where the hillside was steep, it was on three levels. The tramline had been on the west side of "Y" Creek but in the pipeline easement there was nothing left of the original hillside. Over on the far (north) side of the easement the site of the "Y" Creek trestle bridge could be seen. It had barely missed being smothered by the pipeline workings.

It took me three more trips to this area before everything clicked into place. I had thought the two lines diverged close to the trestle bridge but actually this happened further north just where the youth camp is now. The length of the "Y" Creek line from here to the loading platform was just as I remembered, and it made a nice grade about 1 in 35. The formation as far as the easement consisting of two ramps (between levels) and the overgrown track to the loading platform, although,



obviously, no one visits it these days. This "Y" Creek line was shown on my 1920 tourist map and the 1922 military map but I, and perhaps others as well, had thought it was the later Olinda Creek line carelessly drawn. Another interesting discovery here was that the snig track I had found in 1950 continued north of the loading platform. It probably served an earlier timber mill at Mistletoe Bend and was then re-used for the tramline. [Ed: See map on page 6]

Back to Grassroots

In January 1988, I contacted Alan Knox who had by then retired. We went to the house where his son had boarded with Mr and Mrs Jim Erskine in 1952-56. It was further along David Road in an area not yet built up. It was no ordinary house - a log cabin, small and quaint, probably dating from about 1920 and had been gatehouse to an area of bushland used by nudists. Further back there had been another log cabin, large and well-appointed. This burned down in about 1960.

We walked down a private driveway to a house on the far side of the creek to ask its owner, Mrs Freeman for permission to look around. She had lived there for 20 years and knew nothing about a tramway - but we had seen it already, on the way in. To me it looked a very handsome formation curving up and around the north side of the creek gully. (As I will need to refer to this creek again, I will call it "D" Creek.) We followed the formation through a fence into the next property and suddenly it petered out. The gully was narrow at this point and a bridge could have carried the line across to the other side. So we scrambled over but found no formation of any kind. Here was a mystery we would have to try to solve later. The line could not have ended there.

I returned to David Road in November 1989 and was disappointed to find the little gatehouse had been demolished, with only one chimney still standing. I drove further up David and Fuller Roads and found a disconnected stretch of formation (or old road?) about 150 metres long and a short spur which could have been a loading point.

A fresh start was called for. The Lillydale Shire Offices had an old map dated, I think, 1860, showing land ownership at that time. Cave Hill Quarry was not shown on the map (but had been pencilled in later) and that area was owned by Nicholson. A large block east of Olinda Creek was owned by David Mitchell and this included all the area where a line up "D" Creek might have gone. The David Mitchell Estate office had a

A Cave Hill tramway cutting on the southern or 'straight' branch line near the junction with the 'curved' branch to the David Road area, about 500 metres from the quarry.

Author's photo, 1990

pamphlet issued to celebrate the company's centenary, but this had no information on the bush tramway.

Laurie Rogerson

Laurie Rogerson had retired in 1978. He was David Mitchell Estate's longest-serving employee, having started with them in 1928. He said they were good employers. His first job was fireman on the tram which he did for two years before being transferred to other duties at the works. At that time Roy Fulton was driver. Regarding the two routes to Cave Hill, Laurie said that when he was on the tram the straight line was used and the curved had gone out of use because it was more trouble. It was necessary to get up a good speed along the flat which would carry the tram almost up the slope before feeling the grade.

Asked about Mistletoe Bend, Laurie confirmed my memory of the points being opposite a house which he remembered as Luckman's. He said it was possible but not likely, that a woman from the house had set the points that day in 1926. About the motive power, he said that in his time there had been only locomotive. There were no facilities to turn it around so it always faced Cave Hill. The fuel burnt was wood and this was stacked by the side of the boiler. The loco had a sharp whistle which would be blown loud and long approaching a crossing such as Swansea Road. It was his job to open and close gates along the line. The main purpose of these was to contain grazing stock in their paddocks.

I had with me a copy of the LRRSA publication *Tall Timber and Tramlines* with it's excellent photo [Ed: see cover] of the Cave Hill Tram surrounded by stacks of wood[1]. I had always assumed the photo had been taken at the mud-soaked site which I had seen in 1926, but Laurie had no hesitation in placing it near the MMBW syphon. Thus, the mountain would be Mt. Dandenong and the orientation of the tramline to the mount showed these wood stacks to be about halfway between Hull Road and the syphon. Laurie pointed to the loop line in the photo and said it was the practice to leave four empty wagons and pick up four full. This conflicts with the idea sometimes expressed that the company had only four wagons. The wagons were either pushed or pulled and this would have been necessary at the extremities of the lines where there were no loops. Passing loops at other places would be used to put the engine in front. He had no knowledge of a tramline in the David Road area.

Laurie told an amusing story about an old chap the tram crew knew as "Deafy" who used to walk along the tramway to pick up his fortnightly pension at Lilydale PO. One day this character didn't hear the tram approaching but jumped round startled as the ground began to shake. They offered him a lift but instead he wanted to give them money for saving his life.

After the tramway closed the tram engine was dumped near the Railways fence. Some time after this a chemist approached the company with a proposition to manufacture carbide. [Calcium carbide could be used to produce acetylene gas.] A boiler was needed so the tram boiler was requisitioned. The process must have been unsuccessful and was abandoned. Workers had not liked it because it produced a powerful smell of ammonia, and silver coins in their pockets went black.

There had been a Government Railways siding for many years at Cave Hill but this was removed in 1989 although the points on the main line remained.

Latrobe Library

This library in Melbourne has extensive historical records and I went there one day to look through files of the Lilydale Express a weekly newspaper. I started at year 1903 and several hours later I was still on 1903. David Mitchell was mentioned here and there. He had objected to people swimming in Olinda Ceek on his property and objected more strongly to someone who set fire to his stacks of firewood. Issues of the Lilydale Express over the next 30 years must have had other references to David Mitchell's enterprises, but I decided to leave the search to someone else. The library had a 1915 military map showing the tramline going up Olinda Creek to within about a half kilometre of York Road. The spur line near the future site of David Road was shown just as on the 1922 map.

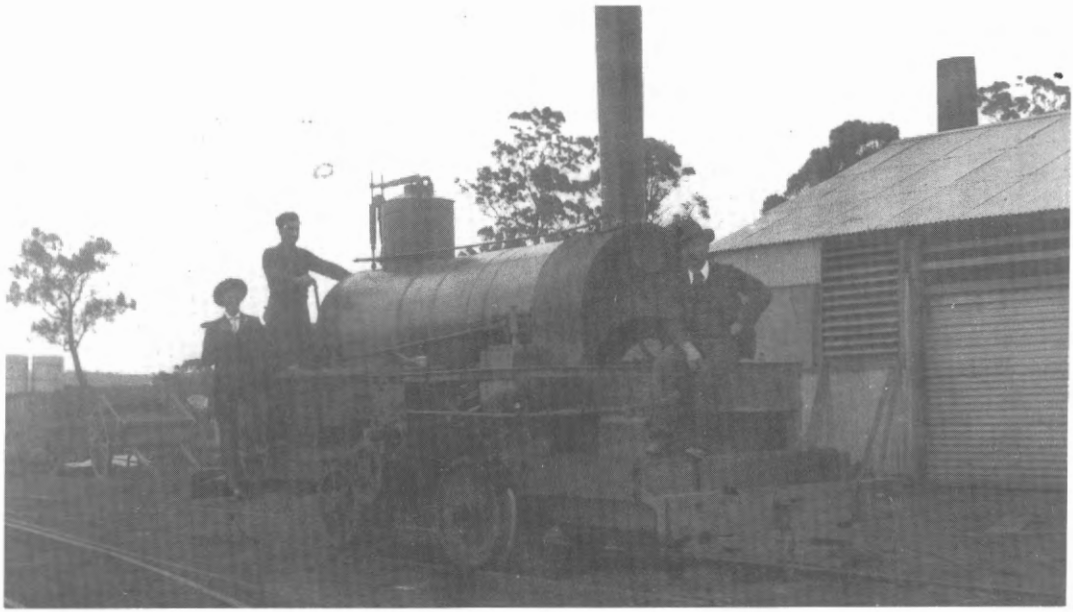
Into the Mountains

The third and final line diverged from the "Y" Creek line where the youth camp is now located. From here it ran for about $2^1/_2$ km into reserved forest in fairly mountainous country. It followed Olinda Creek all the way so had no severe grades.

This was the line I had explored in 1946. Then it was the more prominent branch but now some of it has been cut away to make a level area for the youth camp. The proximity of the pipeline provides easy access to the tram formation and beyond "Y" Creek it shows signs of many "pilgrims", in contrast to the neglect of the other two lines. Every log to be crossed has boot marks on it and in one place I saw a dogspike reverently placed on a pad of fern fronds. About a kilometre past the trestle bridge, on a side cutting round a steep hillside, the formation suddenly cut out. I knew from 1946 that this was not where the line ended and soon found an explanation. The pipeline was about 40 metres above, and during its construction earth and rock tipped over the side had fallen down the slope and filled the cutting. In the intervening 30 years scrub has grown on this earthfall till it looked like the original hillside. Thus the formation should re-appear further on. However, it was

The remains of David Mitchell's diversion weir: a neglected historical feature.

Author's photo



Cave Hill tramway locomotive. This is thought to be the first engine used on the line. Oliver Dolphin is driving, with Frank Dawes next to him.

Courtesy Sandy Ross, Lilydale

getting late, so I decided to leave it to another day.

If at First You Don't Succeed...

We were still seeking evidence on the elusive tramline at David Road. Doug Knox had roamed the area as a boy and offered to show me the weir where he used to swim. This was 260 metres upstream from Bellbird Road and was instantly recognisable as David Mitchell's diversion weir. This 100 years old structure was built in brick and bluestone and had a pleasing appearance. I was inspired to write to the Lillydale Shire Engineer suggesting that the weir and tramway embankments or cuttings should be preserved where possible.

When Doug Knox had lived in the area, Fuller Road had not existed and David Road had ended at Cantwell's house where he had been a frequent visitor. Doug recognised the formation running parallel to Fuller Road as the old road to Cantwell's but that did not prove it had never been tramway. Doug remembered a cutting on the far (west) side of "D" Creek which he had seen looking from Cantwell's gate. If this had been tramway, as he thinks it was, it could have been reached from the east side by a curved bridge. However the construction of Fuller Road would have destroyed evidence. There is what looks like a short section of formation remaining near (B) [see map page 7] which could have been a loading spur. It should be remembered that the purpose of this tramline was not just to go from one place to another, but to provide points where firewood could be stacked and collected.

Higher up "D" Creek there is another length of formation about 250 metres long, which ends in a small level spot where five gullies converge. There are spurs down which firewood could have been moved. No connecting line can be found down "D" Creek gully but its route could have been via point (C) as shown on the map. Point (C) is a fairly flat elevated area about 60 metres higher than Swansea Road. We had made a hypothesis but was it correct? We needed someone from the early days who could say yes or no.

Not Quite an Answer

In early April 1990, Alan Knox rang me to say he had found another contact. This was Mr Robert Adams, aged 96, who had established the Do Drop In general store in York Road (1938-56) and also a bus run in the area (1947-78). He still lived with his daughter, Mrs Joyce Evans in York Road. I rang Mrs Evans but she said her father was unwell. She remembered the trams passing the front gate. Fortunately, I told her of my need for information about the David Road area, because when I rang again later, I was sorry to hear that Mr

Adams had died on April 29. She had been able to ask him my question and he said he remembered a tramline in the David Road area but had never followed it up.

Every approach to this question seemed to lead almost nowhere. The relics of this line are almost entirely on private property or road reservation and change has taken place at an accelerating pace since the area known as The Cave Hill Estate was subdivided in 1924.

On 21 May 1990, I was again at point (A) [Map page 7] pondering over the mystery of the disappearing tramline. This area had been owned by David Mitchell, it was well wooded and close to his lime kilns. Also the line up Olinda Creek had not reached York Road by 1915. Twelve year's supply of firewood must have come from somewhere.

I met Peter Straw who owns the land between points (A) and (B). After some investigation, we decided that the tram formation had been covered during the making of David Road. This still left points of uncertainty which may never be cleared up unless an old map is discovered. Even the existence of this line cannot be claimed with certainty although the two maps showing the start of a line are good evidence.

One Problem Solved, At Least

From 1946 I remembered there had been an "S" bend just before the end of the line up Olinda Creek. We searched through the bush beyond the landslide to find some evidence of this. The scrub was thick and wet and there were plenty of logs and debris. Nothing looked right though and I crossed over the creek. I found a formation which turned out to be an old aqueduct and I followed it up to an old weir at the Cascades which is where Olinda Creek runs over a series of small waterfalls. The gully here is narrow and not so scrubby. No tramline formation was visible at this level so I turned back down the aqueduct.

I crossed the creek and climbed the steep slope on the other side. Suddenly, less than a metre in front of me I saw a loading platform. The tramline must have been here and it was converging on the easement, only ten metres away. I realized that the "S" bend I was seeking would be buried with the pipes, but once the tramline was placed on the easement, the position of the "S" bend became clear. About 300 metres ahead was a tributary creek where the line would have curved left out of its gully and then right to turn eastward. The end of the line was about a quarter kilometre beyond that.

Mortal Timber

There was still one part of the tramway which I hadn't traversed since before 1950. It was the section

This photograph was taken in 1990 from the same spot as that on page 3. The horizon has not changes much, although there is more tree cover. The 'curved' line ran between the grazing horse and the mound of earth, which was thrown up during construction of the southern or 'straight' line c1928.

Author's photo

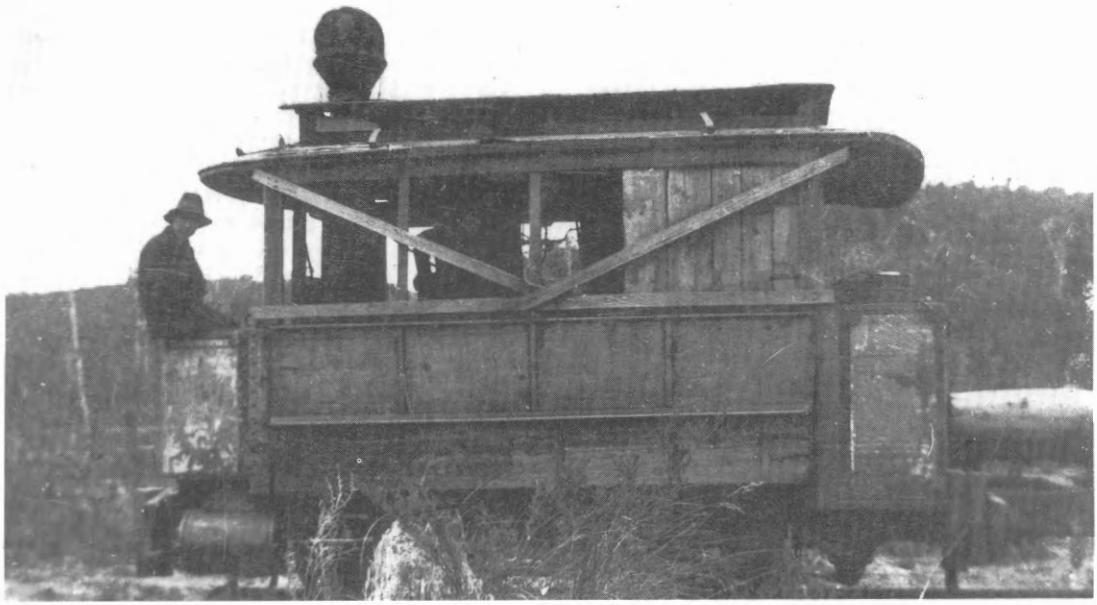


Photo of Cave Hill locomotive in storage, attributed to Norm Waderson. *Courtesy Sandy Ross, Lilydale*

between the diversion weir and the MMBW syphon. I set out from Hull Road and went north across a small flood plain. Nearer the weir the line had skirted the base of a spur and it was easier to find, although the formation was changed some years before in the Bellbird Road subdivision. I could pick out the formation across the flood plain even though it was only slightly raised above the surface, and ditches along either side were very shallow. About 130 metres north of Hull Road I found a tramway sleeper, the only one I had found still existing over the whole tramline. On the other side of Hull Road, the formation went through a gate with a sign, "Lot 5 Private Property" and with a phone number. I decided there was no need for me to walk this section- about one kilometre.

That long-lived sleeper was anything from 60 to 75 years old. What other timber relics had I found? The oldest was the beam in the culvert near Bellbird Road. That must be about 87 years old. The loading platform at "Y" creek was genuine because when I saw it in 1950 there were still sleeper impressions in front of it. It would be about 70 years old. The other loading platform near "S" bend, if original, would be 65 years old. Most loading points on the tramway were on fairly level ground and had no platforms; the two mentioned here were on sloping ground and a platform on the high side was necessary.

The Locomotives

When steam traction on the Bendigo street tramways ceased on 31 January 1903, Two engines were sold to David Mitchell. One was built by Baldwin in the USA (Builder's No. 12242), and the other by Phoenix Foundry in Ballarat, Victoria (Builder's No. 317)[2]. Both were 0-4-0 saddle tank locos with 10 inch diameter cylinders and 36 inch diameter driving wheels [3].

Laurie Rogerson says there was only one locomotive on the tramway in 1928. When I rode on the tram in 1926, the line had been going for 23 years and yet I remember a nicely painted exterior, definitely not shabby. It is hard to imagine the David Mitchell Company would have repainted the engine, particularity in the two tones I remember, and just as hard to see how it would have kept its paint over 23 years, unless it had been kept in a sheltered place. The idea was beginning to form in my mind that perhaps one engine had been kept in reserve until the other finished its useful life. If so, was there any evidence? One photograph attributed to Norm Wadeson showed the tram shortly after closure of the line. It had sideplates of sheet-metal and timber, and a roof of corrugated iron. Other undated photos show a bare engine without sides or roof and with an uncovered chimney looking very tall. It is unlikely that these are the same engine.

A photo printed in *Tall Timber and Tramlines* shows

the bare engine surmounting the last climb into Cave Hill. If this should prove to be on the curved line, it would date the picture within a few years because Laurie Rogerson said this line went out of use before 1928. I went back to Cave Hill to try and find the point where the photographer had stood. This task turned out to be surprisingly easy. The formations of both the curved and the straight lines were still there and the shape of the hills on the horizon pointed me in the right direction. There was no doubt that the tram with the tall chimney was on the curved line, which dated the photo at pre-1928, probably 1925 or 1926. Thus, for my ride in 1926, the smart-looking tram motor must have been put into service only recently. When Laurie Rogerson came on the scene in 1928 the first engine must have disappeared. Later the exterior of the second engine would have deteriorated, so it was built up with various materials to the condition shown in Norm Wadeson's photo.

Baldwin Versus Phoenix

It may be asked why one engine was not kept to be used for spare parts for the other. As they were of different manufacture their parts were probably not interchangeable. Visible differences between Baldwin and Phoenix steam motors involved steam chest covers, frame support for rear end of slidebars, crosshead and steam dome[4]. The Phoenix motors were slightly larger than Baldwins[5].

The Disappearing Past

The last field trip to Cave Hill was made on 10 July 1990. Since my visit to the same spot in 1987 there have been changes advancing from three directions. To the west, ever larger mounds of quarry waste were being dumped and had already covered the curved line in two places. To the south-east, Melbourne's suburban sprawl was spreading over the hills - sealed streets with concrete kerbs and drains, and houses looking like big pink mushrooms. To the north-east landscaping work in connection with Lilydale Lake was well advanced. Olinda Creek had been dammed and water was spreading over a large area, even into a little bay where excavations had destroyed about 150 metres of the straight line. Before leaving I searched for the one remaining culvert where the straight line had crossed the aqueduct. This was partly covered by blackberry bushes but was found to consist of a riveted steel pipe about 0.5 metre diameter with earth on top.

Going towards Hull Road on my way out, I looked back where there is a good view of the straight line, and it was easy to imagine the brave little tram motor

To day, Melbourne's suburban sprawl has reached the areas where David Mitchell's tramway once collected firewood. However, the formation of the two branch lines are still clearly visible in this northerly view towards Lilydale. The earlier 'curved' line runs past the tree to the left of the photograph, while the 'straight' line enters a cutting at the centre of the scene.
Author's photo

fighting up the steep grade with its four wagons loaded high with firewood.

David Strickland at Mount Evelyn Youth Camp had not seen the booklet, *Tall Timber and Tramlines*, so I drove up there to show it. This was a worthwhile trip because he had found another contact, Mrs Kath Hill, a daughter of Roy Fulton, driver on the tram in the 1920's. She had often ridden on the tram when a child in the early 20's. Mrs Hill confirmed that the tram engine had no sides or roof. My burning question was about the tramline in the David Road area and she thought there had been a line there. But it was vague because, after all, that line would have been closed before she was born.

Another contact at this time was Mrs Hazel Little whom my wife had known previously, but not that she had spent most of her childhood in Mt. Evelyn. She remembered the tramline very well and mentioned a "high trestle bridge". (at "Y" Creek)

In Conclusion

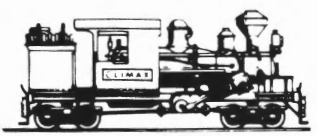
The 16 km Cave Hill tramway was full of the things that fascinate light-rail fans. As I wrote at the start, it provided a treasured memory for me. A lot of the writing has been about my search for information which, in the David Road area, was not fulfilled. I only hope that the story I managed to bring together will be of interest to readers of Light Railways.

Acknowledgements

My sincere thanks go to Alan and Douglas Knox, Percy Sinclair, Laurie Rogerson, David Strickland, Joyce Evans, Kath Hill and Hazel Little who assisted with my investigations as indicated in the text. In addition, Norm Robins supplied me with maps and specifications of the MMBW installations in the Lilydale-Mt Evelyn area.

References

1. LRRSA, *Tall Timbers and Tramlines*
2. John L Buckland, *Light Railway News* No. 4 June 1978.
3. From the Cave Hill Tram, APW Research Report quoting EG Stuckey.
4. Bruce Macdonald, *Light Railway News* No. 5. August 1978.
5. Ken Milbourne, 'Letters' *Light Railways* No. 110, July 1990.



Bennet Brook Railway, Western Australia. The Planet locomotive heads a train in January 1990 after the Gemco diesel failed.

Photo: Keith Watson

Tonalli River Incline

By Jim Longworth

Introduction

The Blue Mountains, to the west of Sydney, are essentially a large plateau at a fairly uniform elevation. A series of deeply entrenched, steep sided river valleys dissect the raised surface. Massive sandstone cliffs ring the gorges, overlying shales which form the valley's lower slopes.

Roads are generally restricted to the plateaux tops or the valley floors. Access between valley floor and plateaux top tends to follow natural breakages in the cliffline. Roads are often tortuous with multiple hairpin bends. At several locations, rope-worked inclines are known to have operated between the valley's slopes and plateaux top above. Examples include the inclines for chert at Mt Victoria; coal and shale at Katoomba; shale at Joadja, Torbane and Hartley Vale; and for coal at Mittagong. This article describes field investigations of one such incline at Tonalli River, in the Warragamba Catchment Area, some 60 km south-west of Sydney.

The Quest

During the 1950s, the Sydney Water Board carried out a forest survey of the Warragamba Catchment Area to assess its timber resources. The mapping was carried out using air photo interpretation (API). Sheet 16, dated 16 May 1958, shows quite clearly a straight identifiable feature, running directly up the valley side above the Tonalli River. Reference to 1:25,000 topographic maps indicates that this feature would rise about 200 metres over a distance of 700 metres.

In January 1977, I set out to check in the field this anomalous feature identified on the forest survey maps. I was accompanied by the Water Board Ranger for the area, Mr Ron Mortimer. Ron told me of a rumour that a mine had operated in the Tonalli River area in the 1950s, but was unable to provide any details to substantiate the rumour or location of the mine.

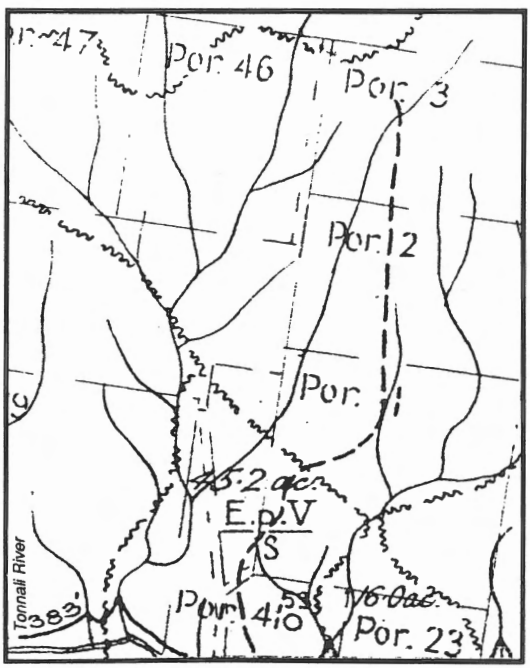
We crossed the stored waters of the Warragamba Dam by boat, landing at the junction of the Tonalli River where the road shown on the forest survey map disappeared beneath the stored waters. Following this road uphill, we eventually came across the remains of a timber trestle and derailed incline skip, evidence that the rumour had substance.

Following the incline uphill, we passed substantial masonry flanked earthworks to about 1.5m high. A second derailed incline skip was passed, together with some further short lengths of timber trestle made out of rough-cut round log poles. Wire rope lying where abandoned was draped over a variety of different styled rollers.

Some rail had been abandoned along the incline. It was of conventional flat-bottomed style of various weights, spiked direct to the round or rough split log sleepers. I do not recollect finding any signs of passing loops, nor did I think to measure the gauge between the rails. Some rollers showed wear marks from contact with the wire haul ropes.

The top of the incline was found to lie immediately below a band of steep and rock ground, the base of the valley's ringing cliffline. Here we located the incline's winding engine, built by "Malcolm Moore and Son, Machinery, Melbourne" (from memory). The winch winding drum was driven by a stationary engine of the International make. It was obviously salvaged from a truck.

Insulators attached to tree stumps indicated a previous telephone line, probably between the top and bottom incline stations. At least one "V" skip, without wheels, littered the top area. This may have been from some sort of a tramline connecting the mine adit with the top of the incline. We did not locate the actual adit entry.



1958 Forest Survey sheet 16 showing the straight feature investigated by the author.

The lower trestle where the mined material was probably loaded into road vehicles, and the specially designed incline skip. Author's photo

Official Records

A check with the NSW Department of Minerals & Energy (Coal Resources Administration Branch) on 23 March, 1990, revealed little information about the Tonalli River operation. The incline does not fall within any existing colliery lease areas. However, the top of the incline area falls within or about ML3, Parish of Wingecarribee, County of Westmoreland. ML3 was a mineral lease applied for by WJ McDonald on 5 August 1941 and forfeited 14 February 1947. The application was to mine coal and shale. The incline itself seems to be located within Private Mining Lease 72 of the same parish plus the Parish of Peaks. This was applied for by JW Clinton on 1 August 1942 and refused 24 December 1943. The application was for "roadway, treatment works, etc".

Conclusion

While the incline is a significant engineering work in itself, there is little onsite evidence of much movement of mined material. I surmise from this that it was probably an exploratory adit that did not show promise of further development or economic extraction. Rising water from the Warragamba Dam cut off regular vehicular access down the valley floor in 1959, isolating the site.

The incline is within the Water Board's Prohibited Entry Area, a 3km wide band around Warragamba Dam stored waters. Unofficial access is prohibited. Access to this remote and isolated area is therefore difficult, so I suppose the site is still as it was in 1977. However, bushfires may have burnt some of the trestle structures.

FROM THE ARCHIVES:

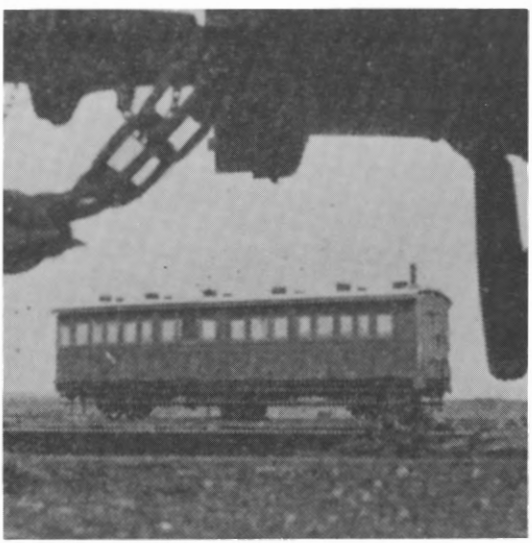
GOLDFIELD WOODLINES, WESTERN AUSTRALIA

by Grace Muller

Ed: The 'woodlines' built to extract firewood for the Western Australian goldfields are the subject of much interest among railway historians. a firsthand account of a journey on the Goldfields Firewood Supply Company's line appeared in *Walkabout* magazine in August 1949. This edited version offers a fascinating description of life along the woodlines. We hope to bring further articles on this topic in future.

Lakewood, the headquarters of the Goldfields Firewood Supply Pty Limited, is one of those stranger-than-fiction towns: and its citizens can claim to be one of the most active communities in Australia, for they have been roaming the Western Australian bush for the past quarter of a century.

The Company, which caters for the wood consumption of the gold mines and power-houses of Kalgoorlie, began its activities in the year 1902 on the line that runs from Coolgardie to Norseman, and ever since has been blazing a wide trail though the timber country that lies within reasonable distance of the goldfields. As the timber is cut out from one lease, the community moves on to a new lease in virgin country.



Mobile classroom at Lakewood, c1949.
Walkabout Magazine

Lakewood

The most striking thing about Lakewood is the air of permanence. Nevertheless, ten years ago the Lakewood community went about its business a dozen miles away at the now deserted town site of Kurrawang, and Lakewood (then called Lakeside) was only a name. But when the Goldfields Firewood Supply Company move - they move!

Ten years ago these comfortable homes were unrooted from their sites at Kurrawang, loaded on to "jinkers" and on these hauled to the company-owned railway, where they were hoisted onto railway trucks and started off on the trek to Lakewood. And with them came, lock, stock and barrel, the company's offices, butcher shop, bakery, general store, post office, petrol station, school, hall, saw-mill and workshops. And following in their wake came the fruit trees, rosebushes and gardens, one hundred men, one hundred women, and one hundred children - mechanised nomads, with all mod cons.

The Woodline

Southwards, the woodline winds its way in search of timber for over one hundred miles. To the northwest, silhoutted against the skyline, can be seen the slim smoke-stacks of the hungry gold mines, pencilling their long smoke-streamers across the open slate of the sky. Each year between 250,000 and 300,000 tons of firewood pass through the little town from south to north, the Kalgoorlie powerhouse alone using 300-400 tons a day.

By courtesy of the Company, I was allowed to make the journey on the weekly Pay Train to the Main Camp at the end of the wood line - 102 miles (163 km) into a real-life storybook world.

The Pay Train was ready waiting for its engine when I arrived at Lakewood shortly before 8.30 am - a long train composed mostly of empty wood-trucks, with one passenger coach. I discovered that I had been given sanctuary on the woodline doctor's "surgery", which to the untrained eye looked very like any other railway compartment, except perhaps for the presence of the

Kalgoorlie & Boulder Firewood Company train in 1910. The locomotive is ex-WAGR A-class No. 5, which was purchased by the KBFC in 1902.

Courtesy EG Stuckey

doctor's little black bag.

At 8.30 am precisely, our haughty little engine came bustling up with a fine head of steam and a tender piled high with five-foot lengths of firewood. With very little to-do about it, it hitched itself onto the train, said "toot", and we were off.

Our first stop was six miles out at the company-owned abattoirs, which supply meat for Lakewood and the woodline. Next was the Company's large twin dam, where the engine thirstily took in water for its long journey.

The country so far was bare of timber. Every tree above two inches in diameter had been felled, with the exception of those which had been eaten to hollow shells by termites or were otherwise unprofitable. We continued through similar country for many chopped-out miles. The gradually the bush began to creep in on us.

We passed through silver-miles of saltbush, in the midst of which stood a little white house with tomato bushes growing by it. Presently we stopped, for no apparent reason whatever. No station. Nothing but bush! Oh, yes; there was one man - and the first pay envelope was handed out.

We made many such halts; first for small groups of two or three men, who came to the door of the railway carriage. Later the groups grew larger, and an overturned water-tank was used for pay office and Commonwealth Bank. At these places a patient or two would step inside the "surgery" - and I would step out.

Mobile Communities

As we entered the real timber country, the small white houses became gradually more numerous - shining white, neat, and uniform in size. They were built of hessian or canvas drawn over a framework of Gimlet - timber, with a roof of corrugated iron; they are white-washed, and trimmed with apple trees, and look unbelievably neat and tidy. Many of them have brushwood kitchens attached, or nearby. There are some thirty to forty housewives on the line, and as a family grows new houses are attached, all of the same uniform size.

The Company's 3ft 6in gauge woodline is a mobile line; it does not stay in one place like other mundane railway lines, but follows the timber. Periodically, as the timber is bled from one section, these little white houses have skids placed under them, and with the aid of some half-dozen stalwart men they are slid up the skids onto railway trucks, which they fit exactly - it can take up to five or six trucks to move a family man. Then a whole trainful of little white houses goes off through the bush to a new resting place amongst virgin timber.

The old line is taken up and relaid in a new direction.

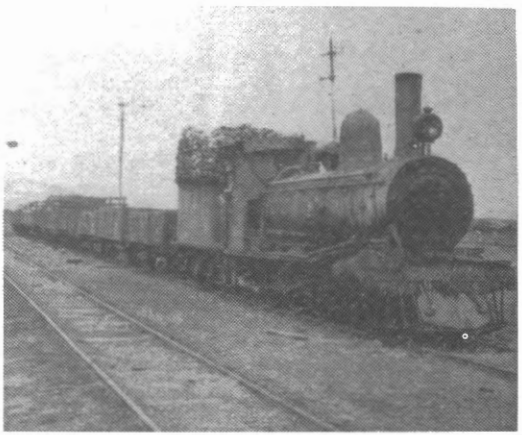
Timber Cutting

At one place where we halted they were laying a new spur line. These spur lines radiate out from the main line like the ribs of a fan. The country between the spurs is divided into so many lots. Each lot is numbered, and the numbers go into a hat and are drawn for by the timber gangs. Each gang consists of one or two men, to fell and trim and cut them into five-foot lengths, and one carter, who transports the timber in a heavy teakwood dray to the line, at the side of which he stacks it into truck loads. It is loaded onto the timber train by two truck-hands. A card is then attached to the truck with the name of the fellers, the drayman and the truck loaders. When the timber arrives at Lakewood, it is weighed, and the men are credited with their proportional earnings.

Operations

We met one such train. It was drawn by two engines, and seemed to stretch over hill and dale until it vanished from sight in the distance. I never thought to see so much firewood in my life, and yet trainloads like this have been coming in from the bush day after day - for half a century!

These timber trains are equipped with emergency fire extinguishers; the engines use wood for fuel, the smoke from which gives off clouds of large sparks (a most spectacular display when seen at night). One spark harbouring within a hollow log could be fanned into flame by the rush of air and set fire to the trainload of timber if constant watch were not kept.



Wood train arriving at Lakewood, c1949.
Walkabout Magazine

Bush Camps

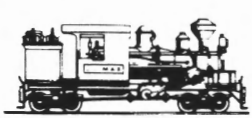
It was already late afternoon before we reached No.2 Camp, the second largest on the line, where the general store had its temporary stand. At this place there was quite a large crowd waiting for their pay, and some of them to consult the doctor.

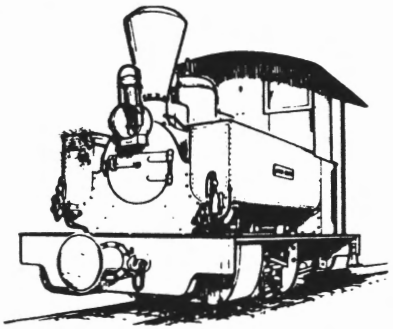
The workers on the woodline are mostly Slavs. They are contented workers, appreciate their little white homes and their good wages, and accommodate themselves easily to the streamlined roughing it in the bush. Some of them have been living this rail-borne nomad life for upward of thirty years; they have their own community life, concerts and dances, and do not hanker after anything else, even when the Company closes down for three weeks holiday at Christmas. But should they wish to see the world of other men, there are two trains a day to Lakewood, and from there, on Thursdays and Saturdays, a bus to Boulder City or Kalgoorlie - and the picture show. After all, what are 102 miles of railway travel when there are no fares to pay?

To my regret, it was dark before we reached the Main Camp, the last and largest on the line. Here they have a whole street of little white houses, and a school on wheels, built from an old railway day coach about thirty feet long and fitted with desks instead of seats. It caters for about twenty-seven children, who are taught by an Education Department teacher. The Camp also has a post office, a first-aid centre, general store, and accommodation for the executives of the Company, all permanently on wheels. There was also a policeman - all ready to hitch to the back of the first train, and literally haul the woodline transgressors to justice.

I made my way to the grounded little white boarding house (which incidently consisted of three little white houses) and partook of a three-course dinner in the light of electricity generated over the track by the plant which had been installed by an up-and-doing woodcutter.

There are about 350 people living on the woodline, with another 150 on the branch line some six miles distant, where most of the cutting is done at present. The Main Camp was preparing to move again in a few months' time when I was there and, as the Pay Train engine headed once more for home, my only regret was that I should not be there to see.





LETTERS

KAURI TIMBER COMPANY, VANIKORO, SOLOMON ISLANDS: LR.20

In *Light Railways* No.20, Bruce Macdonald noted that the Shay locomotive from the Huon Timber Company in Tasmania (B/No. 2029) was sold to the Kauri Timber Company for use on Vanikoro Island in the Solomons Islands. This Melbourne based company had taken over the Barabup sawmill in Western Australia in 1912 and subsequently established the Ellis Creek (1913), Northcliffe (1921) and Nannup mills (1926).

During a recent assignment in the Solomon Islands, I was able to gain some information on this operation from the Annual Reports of the Forestry Department. They provide some information on the Vanikoro operation which may be of interest to LRRSA members. However, the Department was only established in the 1950s, and issued its first report in 1957, so the information provided in the reports on pre-War operations is of a general nature.

The Kauri Timber Company of Melbourne gained a concession to cut kauri timber *(Agathis macrophylla)* on Vanikoro in 1924 for export to Australia. Tramways were apparently established to extract the logs. The Company was the only commercial logging operation in the Solomon Islands between 1924 and 1963. Logging was suspended with the outbreak of the European War in 1939, and commenced again in 1949. By the mid-1950s, the annual cut of kauri logs approached 3 million su ft. The 1957 AR indicates that the timber was being extracted from the Willi Willi area with log haulers and 'caterpillar' tractors.

A dispute arose between the company and the new Forestry Department over royalty payments necessitating an independent assessment by AG Hanson of Australian Commonwealth Forestry & Timber Bureau in 1958. Mr Hanson's recommended a significant increase in royalty payments, which resulted in the Company deciding to keep their level of operations at 3 million su ft of logs per year.

The Company extended operations to new areas at Levaka and an area between Willi Willi and Sundi valleys known as 'middle ridge' in 1959 and 'haulers' were replaced by 'caterpillar' tractors in one area. From this time, increasing problems of management are reported and log exports declined to 1.13 million su ft of kauri and 31,000 su ft hardwood logs in 1962. Preparations were being made to open a new area at head of Lawrence River in 1963, but the company abruptly ceased operations the following year. The Forestry Department estimated that 13,000 acres of kauri were been exploited at Vanikolo between 1924 and 1964.

Mr Ken Marten, the former Principal Forestry Officer in the Solomon Islands, has advised me that he walked along timber tramlines on Vanikolo during the late 1960s. In his view, some of this tramline was established in the post-1949 period, but he was unable to identify the motive power used.

Bob McKillop
Castlecrag, NSW

NORTH MT LYELL RAILWAY, LR.105, 106 AND 109.

I found Part 3 of the North Mt Lyell Railway article by Ray Ellis very interesting, with many photographs I had not seen before. Unfortunately, a line had been left out of the manuscript of my letter, resulting in the section on tunnels being almost useless, and I would be grateful if you could publish a correction in a future issue. The end of the first sentence on 'Tunnels' should read:

> ... initially three tunnels were proposed - the first "about 170 ft long" at $3^1/_4$ miles, the second "about 780 ft long" at $10^1/_4$ miles and the third "about 200 ft long" at $20^1/_2$ miles.

I believe that the new 'Research Column' will be a most useful feature for *Light Railways*.

Lindsay Witham
Mt Stuart, Tas

Ray Ellis is to be congratulated on the comprehensive Inevitably in any account as comprehensive as Ray's, there will be some points which will give rise to further

comment. The "Letters" column of *Light Railways* No. 109 indicates that Rays' article has done just that. I too wish to supplement some of the information included in the three parts of the history.

1. The picture on page 13 of LR 105 appears to be of a selection of the various types of rolling stock operated by the North Lyell Railway. This was almost certainly the time when all items of rolling stock were photographed by the Mt Lyell officials who, as the new owners of the railway, were keen to establish a photographic record of all vehicles. A close inspection of the photo reveals what appears to be the Hartley & Teeter inspection trolley on an adjacent track. Whether this was there purely by chance or was paraded for record purposes is not apparent. An excellent picture of this delightful oddity at the Kelly Basin station exists and was featured on the dust jacket of a volume of photographs entitled *Tasmania Remembered.* In 1938 this vehicle was reported at Regatta Point.
2. The absence of facilities for turning locomotives at the Kelly Basin terminus seems remarkable, especially in view of the very high standard to which the rest of the railway was equipped. Pictures of trains on the line invariably show engines running funnel first. The absence of a turning facility at Kelly Basin would mean that in order for an engine to leave that station funnel first, it must have arrived tender first. Photographic evidence clearly shows that north-bound trains were hauled by engines running funnel first. However, the absence of any picture of south-bound trains is rather strange.
3. In the yard layout diagrams (LR 106, pp. 18-19), the position of signals is shown for Brickworks Area, Darwin, Smelters Junction, Crotty, Gormanston Junction and Gormanston. Apart from the signals at Smethers Junction, there appears to be no documentary evidence to suggest that there were signalls at and other place on the line. The statement on page 20, "photographic evidence shows other stations did have them as shown in the layout diagrams" is not convincing. If signals were installed at minor stops, such as Darwin, they surely would have been installed at Linda and Kelly Basin. Admittedly, the railway had been built with an apparent disregard as to cost, but there was seldom more than one train on the line at a time. For picnic specials the trains were all running in the same direction. It would be hard to justify signals at any intermediate point other than Smelters Junction. I am far from convinced that they existed.
4. The Information given in LR 109 (page unnumbered) regarding the Krauss 2 ft gauge locomotive requires some supplementation. For a start, the statement that Tasmanian boiler records only identify boilers and not the locomotives on this they were placed is at best a half truth. In several instances the records show the numbers of locomotives, but this policy was not

universally followed. However, boilers were allocated an inspection number which was retained for subsequent inspections. The record clearly identifies the locomotive in question as Krauss 4087, purchased new by the North Mt Lyell Copper Company and tested at North Lyell on June 15, 1900. The boiler was subsequently tested annually until May 1910, before being condemned in September of that year. It was replaced with a new boiler and the loco returned to service. About 1928, the locomotive received the number "6" on the Mt Lyell narrow gauge roster. A previous No. 6 had been disposed of about 1921. However, a steam-hauled service continued to operate on the isolated North Lyell line until the underground tramway was opened in 1927. It is probable that there was no need to include 4087 in the numbering system of the Mt Lyell roster before that date.

5. Lack of freight was the reason Sharp Stewart 2030/1869 was withdrawn from service on the Mersey and Deloraine Tramway, not weakness of the track, although this was inferior. After conversion to 3 ft 6 in. gauge and 0-6-0 wheel arrangement, this engine worked on the TGR before going to Boland and Scott, contractors for the line from Launceston to Scottsdale, for a short period in 1888. Upon it return to TGR ownership, it worked on the Oatlands line. Its movements from 1896 are correctly listed in the article.

Ken Milbourne
Montrose, Tas.

It has been most pleasing to see the response to the articles on the North Lyell Railway in LR 105, 106 and 109 and it seems appropriate to comment on these and add some further information which has come to hand.

I can confirm Richard Horne's comment that no works photo exists of the two contractors locomotives *YALGOO* and *MURCHISON* from correspondence with the Mitchell Library, Glasgow, who hold the North British photographic files. The inclusion of a photo of a New Zealand loco was unfortunate (not the author's choice). A more appropriate selection would have been that of Commonwealth Railways NFA class 8 (ex-Yalgoo) which appeared in *Locomotives of the Commonwealth Railways* by Fluck, Marshall and Wilson. This probably best illustrates what these 2-6-0s looked like when on the NMLR.

Whilst on illustrations, the caption of the photo on p. 3 of LR.105 is a little misleading as the North Lyell mine was further to the north than the position from where this photo was taken. It is more likely taken from the Mt Lyell mine (see map on p. 17 of LR.105). The photo is still interesting, however, in that it shows the NMLT South Lyell branch and the haulage from the railhead to the mine.

Lindsay Whitham's comments were indeed most interesting and he included with his letter a copy of the "Section Showing Grades". This is unfortunately unsuitable for publication in its present form, although quite readable and confirms Lindsay's comments. The diagram highlights a fact, not often appreciated by people who have driven down the formation, that the line DOES climb from the King River bridge! From the bridge's location near the end if Mile 19, and excepting a short section of level (about one km) in Mile 20, the line is climbing until the begining of Mile 24. There are then some short descending grades, followed by a lengthy level section, before the line enters Linda Valley and begins to climb again.

The photo on page 13 of LR.105 to which Ken Milbourne draws our attention was indeed one of a set of magnificent shots taken at the time of the NMLR takeover by the Mt Lyell Company in 1903 and is referred to on p.26 of LR.106. The originals of these photos are held in the State Archives in Hobart and consist of of the photo referred to plus the ones of the locomotives and rolling stock. There may have been others, including ones of the trolleys and infrastructure, but none seems to have survived or, if so, have not so far been located.

The matter of turning facilities at Kelly Basin is indeed a puzzling one, yet none seems to have existed and locos seem to have generally run tender first in the return direction.

My source of information for the diagrams, including the positioning of the signals, was Tony Coen. I understand he drew this up based on photographic evidence. In correspondence with me he makes mention of this, though it has not been possible for me to view the photos to which he refers. Certainly the three signals at Smelter Junction are mentioned in reports. I had queried Tony on the signals question (but to date he has not replied) and was in two minds whether to include them or not. Maybe a comment on the accuracy of the diagrams would have been more appropriate. If Tony get a chance to read this he may care to enlighten us.

My visit to Tasmania some years ago now did not allow time to inspect the boiler records and I am pleased that Ken Milbourne has been able to do so and confirm that Krauss 4087 was indeed purchased new by the NMLR, as previous references to this locomotive have been vague on this point and its subsequent history.

Brian Nelson has very kindly made a personal inspection of Camp BA49 at the Don River Railway and forwarded me a most interesting account of its restoration there. Apparently BA50 was wrecked in a shunting accident at Launceston some years ago [can any some reader confirm the date and circumstances?]. However, with parts recovered from this car, there is every likelihood that BA49 will reach full restoration. Plans are to include the restored car in a Vintage Train which is being assembled.

I might add that the series of articles are NOT meant to be the definitive study of the NMLR - there is still much to be researched - but were meant to put down what I had been able to find out, as such an interesting railway and history needed to be documented. My wish is that it will encourage others with similar interest - and the letters so far received indicate this, to maybe go further than time and distance has allowed me.

Ray Ellis
Chermside, Qld.

BEN BULLEN AT LITHGOW LR.107

The caption to the photograph in page 21 of LR.107 showing *BEN BULLEN*, Hawthorn Leslie 2840 of 1910 in store at Lithgow in 1922, points out that there is another narrow gauge locomotive behind it. This is, of course, none other than *CULLEN BULLEN*, Andrew Barclay 310 of 1888, a 0-4-2ST.OC that worked with *BEN BULLEN* at J Edward's Ben Bullen limestone quarry (taken over in 1908 by G&C Hoskins Ltd, which became Hoskins Iron & Steel Company Ltd in 1919).

This is the only photograph I have seen of AB 310, and when compared with the enclosed drawing of it as built, it is interesting that the cab has been extended backwards by some 2 feet to give more floorspace and provide a small bunker. As the roof had not been extended, the stanchions supporting it had acquired a lean of some 20°, giving a most peculiar appearance.

Andrew Barclay 310 and twin 311 were delivered through the agency of Kerr Stuart & Company (who gave them numbers 538 and 539) to an unknown customer, possibly the Cullen Bullen Lime & Cement Company at Portland, NSW. While 311 went to the Powelltown tramway in Victoria, 310 went, as mentioned above, to the Ben Bullen quarry and then into store at Lithgow, where it was scrapped in the 1920s. It has been suggested that before this unhappy event occurred, it may have seen further use at Hoskins' Habilah quarry in NSW.

Richard Horne
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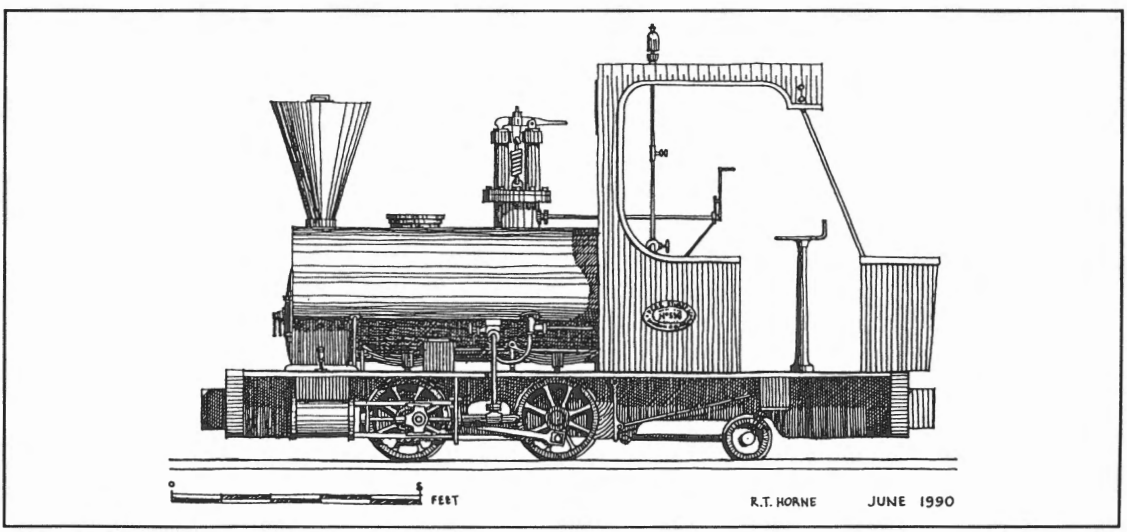
BUDERIM TRAMWAY, LR.109

The caption under the Shay locomotive accompanying Ella Hennell's article describes it as a "B-class Shay". This is not quite correct because the locomotive shown is an "Type A" (not class). Type A Shays had two trucks (bogies) and two cylinders, Type B had two trucks and three cylinders and Type C had three trucks and three cylinders. The word class was used with respect to the weight of the locomotive (in US tons).

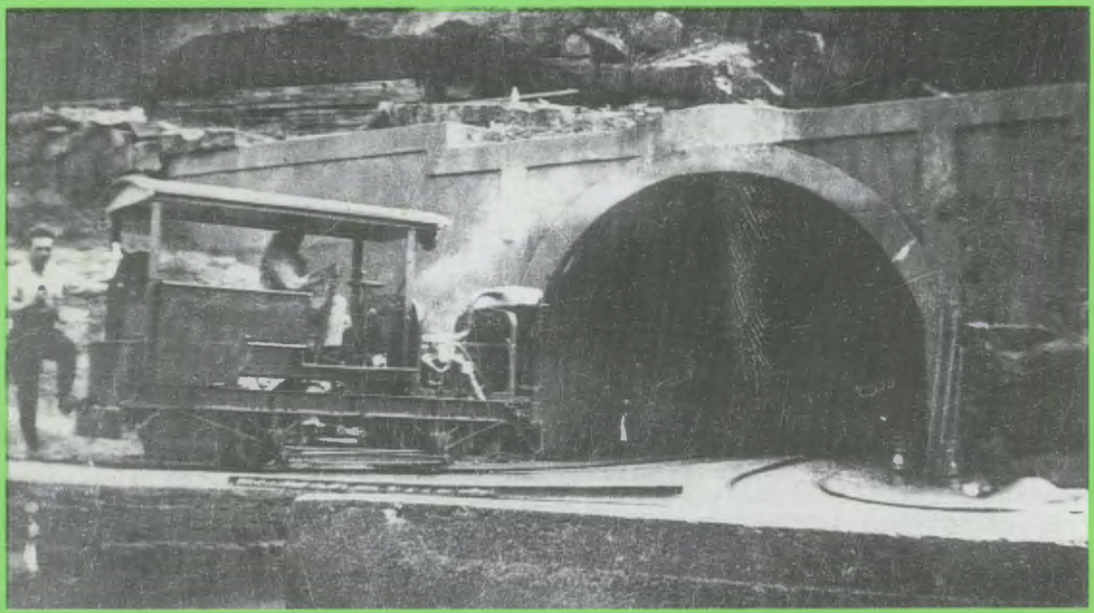
There have been rumours around for years that the Buderim Shay was not scrapped but lies buried alongside the main line. Maybe this could be checked out with a metal detector if somebody can roughly pin-point the location. Stories of buried locos about in railway world lore and Australia is not an exception. A subject for correspondence perhaps?

Bruce Macdonald
Chapman, ACT

[Ed. This letter corrects statements contained in the original article, "Shay Locomotives in Australia", which appeared in *Light Railways* No. 18.]



Andrew Barclay Locomotive, No.310/1888 as running Circa 1920



Purcell locomotive at Nepean Tunnel. *Waterboard Photo.*

PURCELL LOCOMOTIVES, LR. 105

The back cover of *Light Railways* No.105 carried a photograph of a 8-12 hp, 2 ft gauge Purcell locomotive.

The following extracts from the Metropolitan Board of Water Works & Sewage, Minutes of Meetings and Annual Reports (MM and AR) are provided as background information:

> The Nepean tunnel, that pierces the interventing ridge between the Nepean and Cataract Rivers, was roughly hewn out of rough rock and left unlined... In the latter zone [Wianamatta shale] large masses fall from the roof and obstruct passage, which involves the expenditure of fairly large amounts from the revenue vote for its removal, while, in addition to this, is the danger to human life, as the tunnel has to be patrolled regularly by maintenance men. In view of all these circumstances, it has been resolved to line the tunnel with concrete.
>
> In the original construction of the tunnel a light line of rails was laid along its bed. These rails, on examination, were found to have perished, after about three years service. Thy were therefore taken up and new rails laid for a distance of 7,930 lineal yards as a preliminary to the construction of the lining. As soon as funds are available this work will proceed, with the intention being to purchase a locomotive, driven by internal combustion engine for the transport of men and materials. [AR, 1914]

The locomotive was purchased during 1917 for a price of £510 and may have been exhibited at the Royal Agricultural Show [MM, 22 Nov, 1916, 14 Mar 1917, and 21 Mar 1917]. During 1920, Purcell fitted a dynamo and two electric headlights to the loco at a cost of £68 12s [MM 27 Sept 1920, 23 Feb 1921].

> Finally:
> The tunnel locomotive, ordered in 1916 and since retained by the manufacturers at the Board's request, was delivered and railed at Broughton's Pass in January. This locomotive, which is 2 feet gauge x 4 feet wheelbase x $2\frac{1}{4}$ tons weight and hauls a load of 2 tons at $3\frac{1}{2}$ miles per hour, is equipped with a 15 B.H.P. kerosene engine, has had several trial runs through the tunnel and functioned satisfactorily after certain modifications, such as a canopy to protect the driver's head from contact with the tunnel roof, cover boards to the coupling roods, and rewiring the headlights, had been carried out by the Board's staff. Before this loco can be used for lining the tunnel, the tracks at the Broughton's Pass portal will have to be modified, both as to grade and curvature. [AR, 1921]

I do not know what happened to the locomotive on completion of the tunnel job. Perhaps a reader can advise?

Jim Longworth
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