WOODEN RAILS TO BANGOR

A history of the Tasmanian Slate tramway which linked Bangor to the Tamar River

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TECHNICAL REPORT 1993/3

QUEEN VICTORIA MUSEUM AND ART GALLERY

LAUNCESTON

ACKNOWLEDGEMENTS

The majority of information contained in this publication was obtained from:

TAMAR VALLEY INDUSTRIAL HERITAGE - A SURVEY, by M. Morris-Nunn and C. Tassell. Queen Victoria Museum and Art Gallery Launceston, 1984.

Other reference sources: Northern Regional Library, Launceston; Local History and Maritime Museum, Launceston; Lands Department; Geoff Watkins, various others.

All dimensions, distances, and place names have been updated (where necessary) to their modern equivalent. With regards money as quoted herein, one pound has been transposed to read as two dollars.

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Located some 32 kilometres north of Launceston, Tasmania, can be found the rural hamlet of Bangor. Now the scene of open farmlands and timbered country, the region was at one time home for several slate extraction enterprises. One of these was the 32 hectare Bangor Quarry, whose section was first surveyed during 1872 for Messrs Aitkenhead and Blair. Even prior to this it seems to have had attention, for it had previously been in the hands of a Major L. Hood. About this time too, T.C. Just's quarry in a northern part of the district, appears to have been worked. At any rate, the early work at Bangor can be traced back to 1873.

Bangor, Tasmania, owes its name to the quarries in North Wales, from which district many of the workmen later came. These Welshmen pronounced Bangor as 'Banga'.

Late in 1873 a Launceston syndicate named the Bangor Slate Quarry Company (20 000 shares plus 10 793 uncalled, all shares at two dollars each) obtained a lease and started to extract slate. The slate was unfossiliferous and belonged to a group of sediments assumed to belong to the Ordovician (an ancient Welsh tribe) period. It was in general a dark grey to bluish black clay slate, carrying minute grains of iron pyrites. These were apt to weather out, leaving almost microscopic cavities in the stone. This phenomenon was not considered objectionable. The slate was readily cleavable and split true, except where it was hard, and was found to be the case in places towards the northern end of the field, where quartz veins and other mineralisation were present. The quarry was situated near the junction of Pipers, and Second River. Bangor slate was considered to be a uniform second to third grade quality.

Local roads were in an awful or non-existent condition, which meant that the slate could not be taken to market until a tramway was built. Subsequently, the Bangor Slate Quarry Company Pier and Tramway Act 33 Victoria No.3, enabled the Company to lease 8.728 kilometres of Crown land, and to purchase outright 7.726 kilometres of private land for their tramway. The width of tramway land throughout was 20 metres.

From January 1874, a tramway of about 16 kilometres in length was commenced by the Company. This was to link its terraced hillside open cut quarry to a ship loading pier, located a little south of Egg Island Creek, on the eastern bank of the Tamar River.

This horse tramway used wooden rails and was gauged at 760 mm. The initial 6.5 kilometres of track leading from the quarry was completed first, rails for this portion having been sawn by hand. From the river end the track was built inland to meet the finished section. Owing, however, to the great demand for timber, there was difficulty in procuring the rails from any of the local sawmills. These wooden rails were 75 mm x 125 mm in cross section and fixed to the sleepers (spaced at 914 mm) with dovetailed keys.

During June 1874, 19 men were working the quarry - 15 opening out and carting debris, 2 employed cutting and dressing slate, plus a blacksmith and his mate. For over 30 metres the hillside had been quarried into so as to form terraces. On each terrace men were hewing and hacking with picks and crowbars, drilling and boring into the solid rock, wedging off great lumps of slate, while others were wheeling away refuse to the spoil bank. The best pieces of slate were naturally carried off to be split and dressed. Occasionally, work would stop, to be followed a few seconds later by a dull thud, as a charge was fired and more rock dislodged from the hill. Mr Williams from Wales supervised the quarrying. All machinery was basically hand operated although augmented somewhat by a single stationary vertical steam engine. Nearly 220 000 slates had been stacked, ready for delivery as soon as the tramway was completed. By now, the weekly output was 50 000 slates plus assorted slabs. The most popular roof slate size at that time was known as 'Countess', but the smaller 'Ladies' size made for a firmer roof than 'Countess'. Imported slates from Wales were usually of the 'Countess' size. Naturally, there was a prejudice in Australia for the 'Countess', much to the dislike of the Bangor Slate Company, who preferred the 'Ladies' size. This was because the latter was more economical to produce.

As a matter of interest, slate roofing tile sizes were approximately as follows :

Ladies - 405 mm x 230 mm. Countess - 510 mm x 255 mm.

Duchess - 610 mm x 305 mm. Princess - 610 mm x 355 mm.

The tramway was reported to have been completed by 6 October. Construction costs for it and the jetty totalled $10 965.00 - inclusive of timber, labour, bridges, ironwork etc. Mr G. Barrett was given the contract to supply horses and convey slates down the tramway to Egg Island Creek jetty for shipment. The Company's 'horses and harness' account up to the tramways opening equalled $100.00. Typical journey time from quarry to jetty was in the vicinity of 3 hours.

Some two days after the tramway opened, an accident occurred at the Bangor Slate Company's jetty. About 1.8 kilometres from the jetty the tramway had a very steep gradient, and it was usual before commencing this descent to apply the brakes so that the trucks could be kept at a controllable pace. At the time of the accident referred to, and before the brakes could be secured, several trucks ran away and travelled downhill at a great pace finally shooting off the jetty, over one of the vessels tied up alongside, and into the water beyond. By good fortune, no one was injured.

Unrecorded events soon disappear with the passage of time. This, to a great extent, happened regarding the Bangor tramway and its operations. Fortunately a description of the line was penned down just after the tramway's completion. Basically, these observations revealed that the first 800 metres of line from the open cut quarry ran north-westerly around the hill of slate, and in consequence of this was rather costly in construction, as cutting and blasting had to be done along the whole distance. The sharpest curve on the line occurred in this section, being of 241 metres radius. (It was intended to later cut away part of the hill for ballast. This would enable the curve to be eased considerably.) All along this cutting slate had been exposed in an almost unbroken line. Near the end of this cutting, adjacent to Pipers River, stables for the tramway horses were located. The river was crossed by a substantial timber bridge, having a 14 metre clear span. Nearby were the tramway workshops, where trucks for the tramway were built. About 90 metres further on, and to minimise flooding, two waterways had been constructed. The line then, for a little over 1 kilometre, used very light earthworks, but these increased considerably in the next 800 metres as cuttings and embankments occurred throughout the distance, some of the former being over 2 metres deep.

Three waterways were also crossed in this section. Surface running for the most part was obtained for the next 800 metres, but the line then ran into a large hill. To surmount this hill two cuttings were made, one of which was 120 metres long and 2.4 metres deep. The grade at this point was rather steep being about 3%. Nothing particular occurred for the next 4.8 kilometres, the line running nearly the whole distance along the surface. At this point however, in order to avoid a 7.6 metre cutting, a zigzag (rising to west bound traffic) had to be formed. This is similar to the letter Z, and here the line reversed for about 90 metres before proceeding on again in a straight line. The zigzag was located about 3 kilometres east along the tramway from its intersection with Dalrymple (Old George Town) Road.

From the zigzag very little engineering difficulty was experienced until a short distance from the line's intersection with the old George Town Road at a place known as 'Bullock's Head'. There a lengthy cutting 1.5 metres deep had to be made and a 320 metre radius curve was experienced. The grade at that point was the steepest on the line, being 5%. From old George Town Road to the Tamar River, a distance of about 5 kilometres, the line, with little exception ran on a descending grade the whole way. This section had been made the most expensive in construction as the country traversed being rugged and rocky, considerable blasting had to be done.

The tramway route had been surveyed and engineered by one of the slate Company Directors, Mr Cresswell, who had previous railway building experience in India.

Between 150 to 200 men constructed the tramway. The jetty was 9 metres in length and 3.7 metres wide, built to a 'pig stye and sill' design. Vessels drawing 2.4 metres of water were able to moor alongside as there was fully that depth at low tide, and about 5 metres at high water.

The quarry was honoured by a visit from His Excellency, the State Governor on 10 October 1874. He was met late in the morning by slate company directors at Coward's Public House, the 'Mount Direction Hotel'. The party then walked for about 1 kilometre over one of the most abominable roads in the colony to 'Bullock's Head', where the tramway crossed old George Town Road. It would have been too dangerous to have driven the distance between hotel and tram. The Governor had thus an opportunity of seeing one of the Colony's 'first class bogs'.

At the intersection of the road with tramway, 3 tram cars were waiting, each lined out with a coarse woollen cloth of drugget, and comfortably filled with chairs. An Indian arm chair being placed for the Governor's use. A ride by tram of one and a half hours took the party to the Bangor Slate Quarry, a distance of some 10.4 kilometres. The trucks were run up alongside a temporary platform erected especially for the visitors.

After a detailed inspection of the workings, the Vice Regal party returned by tram to near the Mount Direction Hotel, reaching there at 5 pm. Manager of the slate quarry, Mr Nicholas, expressed to Governor Du Cane that the next time he should visit the works, a locomotive would be provided.

However, with the Company undercapitalised and the high expenditure required by the tramway, it soon found itself in financial difficulties. Only for one of the Directors lending money out of his own pocket, they would not have been able to meet the pay day for early October 1874 and there was another pay day coming up which had to be met.

Directors went to Melbourne to see whether they could refloat the Company and at the same time absorb another quarry near to Bangor. Nothing came of this proposal and at a special meeting on 16 July 1875, the Directors were empowered to dispose of the Company's assests. Subsequently, all property of the Company was seized and offered at auction by the Deputy Sherriff. The tramway claim and plant were bought on behalf of some shareholders for $2 140.00.

After an interval of nearly 10 years, the Bangor slate quarry lease was taken up by the Melbourne firm of David Blair and Joseph Clarke. Due to a shortage of local skilled labour, these gentlemen, early in 1885 began to import 120 Welsh and Cornish quarrymen. They also erected over 50 three and four roomed cottages, a police station, boarding house, school, shops, etc. An assembly room was built and used for religious services conducted in the Welsh language. As well, an extensive slate processing plant was installed.

The only newspaper reference made to the arrival of Welshmen was when Thomas Jones, quarryman, was charged with being of unsound mind after running through the bush naked, brandishing an axe. His insanity was said to have been excused, being caused by sunstroke on his voyage out from Wales.

From atop the quarry hill, the proprietors sunk a main shaft, said to be 78 m deep. The shaft was serviced by two cages. A side tunnel with a Cornish arch (unsupported roof) was bored about 122 metres into the southern section of hill, above flood level of nearby Second River. This tunnel connected with the main shaft at about 30 metre level. By means of this tunnel, all waste could be removed from the workings below, thus allowing slate to be hauled to the surface via the main shaft. From the main shaft a number of drives had been put in at various levels. Chambers in these drives measured from 18 metres wide and 9 metres high. At the north-eastern end of the deposit was an acutely raked tunnel, which penetrated the slate hill at an angle of 50% to connect below with the shaft and workings. The main function of this tunnel was to act as an air vent to the workings underground.

The working plant, in part, consisted of 8 slate saw benches, 13 slate dressing machines, 1 slate planing machine, 3 saw sharpening machines, 1 emery grinding machine, 5 wooden slate saw benches, 5 stationary steam engines ranging in power from 4.5 kW to 12 kW, 2 tubular boilers (22 kW and 15 kW) complete with iron chimney stacks, and 15 one half to one quarter tonne debris trucks.

The original tramway, after abandonment by the former Company, had fallen into a very dilapidated condition, but had been remade throughout and was in good working order. The jetty had also been repaired and lengthened by an angled south-west extension out to deeper water. Optimistic that slate traffic would be sufficient, the Company intimated they could upgrade to steam haulage, and be prepared to haul passengers and general freight on their tramway.

Tramway rolling stock consisted of an unknown number of wooden trucks, which included 3 tippers. Depending on size all vehicles had metal wheels ranging in diameter from 460 mm to 610 mm. About halfway along the tramway, the track repair crew possessed a two roomed hut adjacent to Five Mile Farm (1.2 kilometres east of the zigzag).

According to load, the slate laden tram consists could be hauled to the jetty by up to a maximum of 3 horses in tandem style. On the return journey, the tram trucks carried back to Bangor supplies and stores. Passengers were unofficially carried on the tramway. For instance, dissatisified navvies building the railway from Launceston to Scottsdale, used the Bangor tramway on part of their westward trek to the Beaconsfield mines, as they sought better working conditions. One of the tramway drivers was William Hammersley, who owned 34 hectares of land adjacent to Bangor quarry.

There existed between the new settlement at Bangor and the older, mainly Irish, settlement of Turners Marsh considerable tension. John Robertson, quarry manager, made no secret of his disrespect for the Irish, and refused to let Turners Marsh settlers on to Bangor land to sell their goods. Vitriolic correspondence in the newspapers ensued as did the blocking of the tramway with several 2 tonne piles of rubble. Lack of welcome to the quarry prevented much mining news reaching Launceston. The occasional concert given by the Bangor Minstrel troupe was written up, but such an event was somewhat marred by rotten eggs.

There were about 100 men on the works who were divided into 3 shifts so that from Monday morning to Saturday night the work was continuous. The workers were a mixture of English, Scots, Cornish, Irish, and Welsh, with a sprinkling of Australian.

Robertson was optimistic of his slate works. All hands were employed in opening out chambers etc. so that after preparations were completed, the quarry could be in continuous output for up to 20 years. It would be another 4 or 5 years before all the 'dead' work was done. By July 1885 they expected to have all their new machines installed, and the full compliment of 200 Welsh workmen a little later.

At the main shaft there was a powerful steam winding machine. The pumping gear consisted of one 4.5 kW and one 6 kW Tangye pumps. As the blocks of slate were dislodged from their beds below, they were lifted to the surface. The blocks of slate having been landed on the bank, were run away on a wagon to one of the saw benches, where they were roughly squared by fast turning circular saws. From the saw bench the blocks were handed over to the splitters, who having due regard to the proper line of cleavage, split each block, perhaps into three, each of these again divided, and even yet again divided, after which the only remaining process was to properly square and trim the edges which was done by machine, not unlike a chaffcutter. The trimmings from all the machines fell into trollies travelling on rails in a subway, and were taken to the shoot, and so got rid of. Waste dust from the saws was carried away in ducts filled with running water.

About 14 tonnes of slate was produced each day. Much of this was sold in Victoria in competition with the Welsh product. As well as roofing, slate was used for mantle pieces, cisterns, flooring (especially dairies), window sills, door stops, tables, benches, billiard tables, printing presses, and electric switchboards.

Mention was made of a sluice being at the quarry, so it could be presumed that the slate company was attempting to recover gold from its diggings, especially towards the northern end of its lease where quartz and other minerals were evident. Indeed, nearby to its lease are two gold shafts, now abandoned.

Late in 1887 it was learnt that about 45 employees at Bangor quarry, mostly young men, had been thrown out of work due to the depression of trade. This included the majority of that renowned Welsh choir 'Cambrian Glee Club'. As the choir had been practising for a concert in Launceston, concern arose over the future of this concert and the breaking up of the choir itself. There were many music lovers both in Launceston and from the surrounding countryside who had been looking forward to the pleasure of Welsh songs and choruses. Their concern was whether the concert would go ahead. Well, it did. On Boxing Day 1887, after a gala day of sporting activity at Bangor, which had included eating, drinking, and the final running of the quarrymen's handicap foot race, etc, the Cambrian Glee Club that evening gave a wonderful final performance, much to the delight of an assembled crowd. A lass sang her rendition of 'Twickenham Ferry', the lyrics of which nearly brought the house down. Dancing, singing, and drinking continued on underneath the hall till the early hours at Bangor's last 'hurrah'.

As iron roofing became increasingly popular as a cheaper alternative to slate, the quarry became increasingly uneconomic. On 2 March 1888, Messrs. W.T. Bell & Co. were instructed by the operators, Messrs Blair and Clarke, to sell by auction the whole of the machinery, plant, and cottages etc. of the Bangor Slate Quarry. Of the many items auctioned, mention was made of 12 tonnes of 5 to 6 kilogram/metre iron tram rails. Whether the Bangor Quarry to Egg Island Creek Tramway had, or was to be iron railed, we shall now, in all probability never know.

Several thousand tonnes of slate spoil had been left lying on tips, forming a mantle on the steep side of the hill, and over the years vegetation began to grow through as Mother Nature reclaimed her own at Bangor Slate Quarry.

By 1918, due to World War I, there existed a shortage of building materials including galvanised roofing iron. In consequence, the Government Geologist of Tasmania produced a descriptive update on the Bangor area, exploring the possibility of re-opening the quarry. However, no entrepreneur it seems seriously took up the suggestion.

In the mid 1920s, tramway equipment and broken slate tiles were still in evidence near the old Company's former jetty at Egg Island Creek (better known today as Hillwood).

In 1937, Lord Merthyr of Hean Castle in Pembrokeshire, Wales, donated 47 hectares of land to the Lilydale Council for a public reserve. The area, known as Merthyr Park, is situated between Lilydale and Bangor, in Tasmania. Of the many men who came out from Wales to work the slate quarries at Bangor, it is believed one of these men purchased the property, and later sold it to Lord Merthyr. The reserve is for the public's use for all time.

Many of the stately old homes, public buildings, and churches in Launceston were roofed with Bangor slates, with some confusion as to which Bangor. One of the latter structures still extant, is the Memorial Baptist Church in Wellington Street, of which it is claimed is clad in local Bangor tiles.

Today, one can still walk (in some sections drive) along the old tramway's formation, and amid bushland settings imagine for instance the horses, as they strained, hauling slate up through the zigzag. Likewise the gossip taking place on the jetty, as crewmen of a recently arrived ship related the latest news to the tramway's teamster.