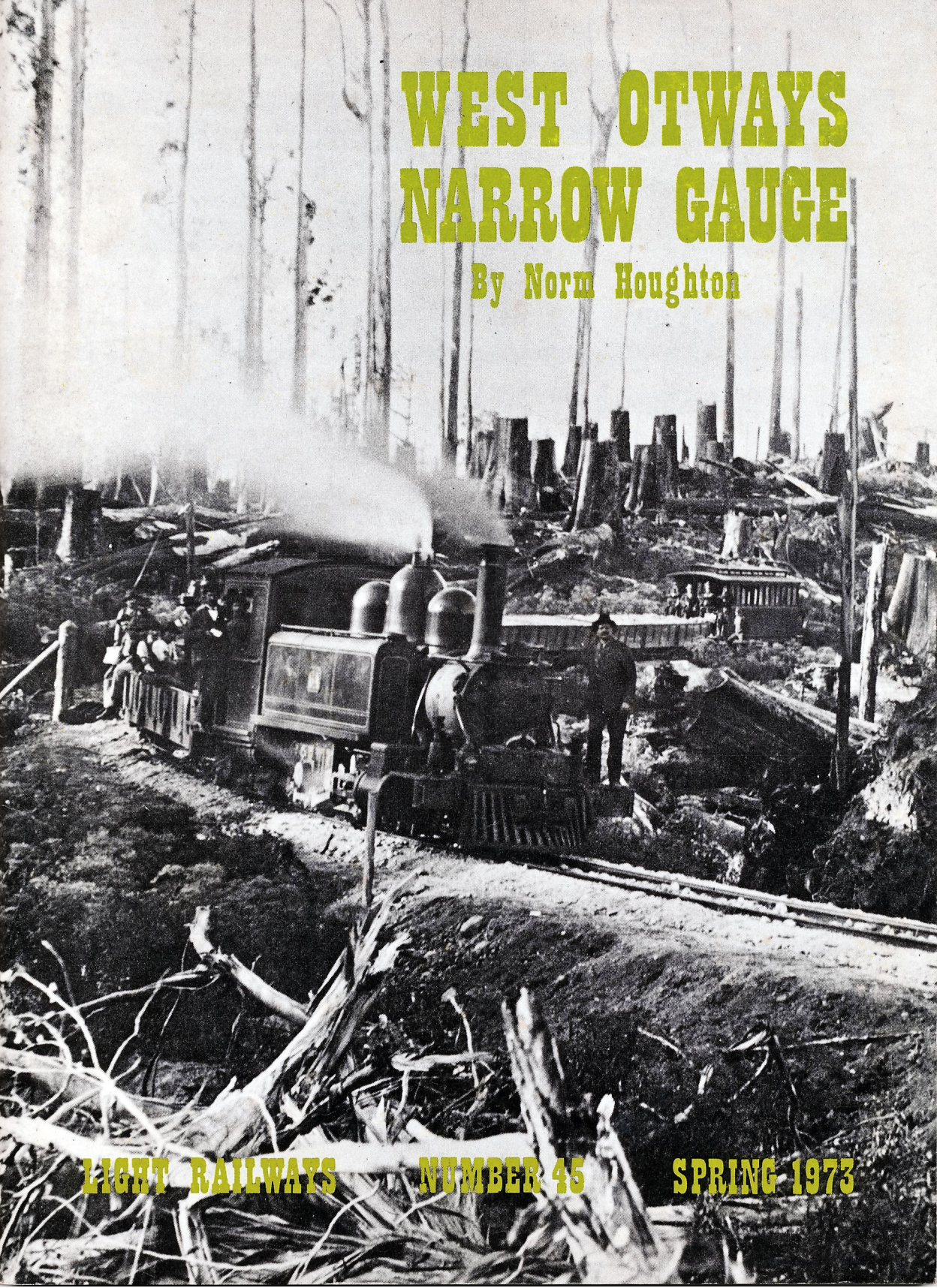
WEST OTWAYS NARROW GAUGE

By Norm Houghton



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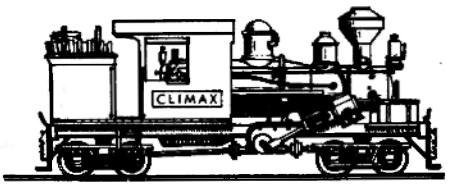

WEST OTWAYS NARROW GAUGE

The story of the Beech Forest 2 ft 6 in gauge railway and its connecting tramways.

CONTENTS

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

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

Articles and News Notes & Comments items are always welcome.

Historical references to sums of money in "Light Railways" are in Australian pounds (£).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

FRONT COVER A construction train headed by NA class locomotive 6A in 1902 near Beech Forest. Photograph - Victorian Railways.

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West Otways Narrow Gauge

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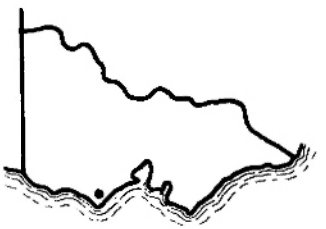


INTRODUCTION

The Otway Ranges were made available for selection in the mid 1880's and by 1896 about 700 pioneers resided between Barongarook and Wangerrip, but any hopes of further development of this area were limited by the lack of suitable all-weather transport. The few so-called "roads" and tracks in existence were inadequate in summer and impassable in winter and remained so for many years. In fact it was only in 1926 that the Colac Shire Council could announce that the road to Beech Forest had been grubbed and cleared along its entire length and that grading and forming could begin.[1]

The magnificent timber in the centre of the Otways was judged to be "second to none in the world" by Mr William Howitt, a timber expert commissioned by the Colac Shire Council to inspect the area in 1895, but the inability of settlers to transport the timber on their blocks to markets, plus the requirement to clear so much of their holdings in order to retain them meant that much of this splendid beech, blackwood, ash and satin box was either ringbarked or consumed by clearing brushfires.

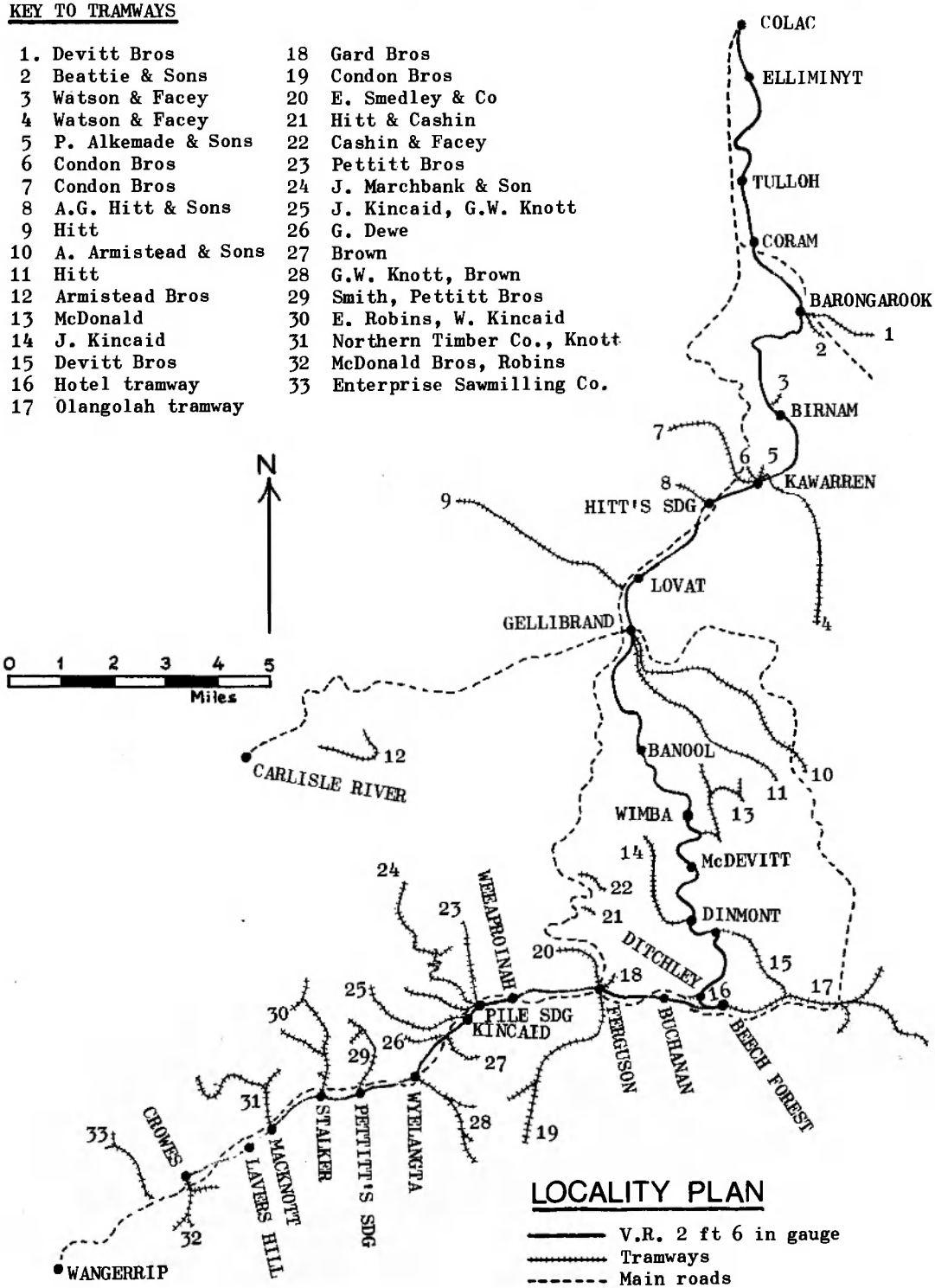
In the mid 1890's there were no sawmills in the area between Barongarook and the future site of the Crowes railway station. One of the nearest sawmills was a further fifteen miles west at Princetown, where Mr Hugh Cameron operated a small mill that cut for local requirements, though outside orders were taken when available and the timber despatched by sea. Amongst the few other organized timber activities in the area was that of a Mr William Raper, a contractor and carrier at Gellibrand, who obtained mining laths for the Rokewood gold mines. He possessed no sawmill for he employed contract labour to split laths at the stump. Such was progress without an adequate transport system, yet relief was to hand.

Mr R. Robertson MP, Chairman of the Sawmillers' Association and proprietor of a locomotive powered timber tramline at Wandong, examined the central Otways in about 1895. He was impressed, and offered to build a thirty mile light railway of 3 ft 6 in gauge from Colac to the foot of the spurs across the Gellibrand River and lay branches up the spurs to tap the timber. He estimated the cost at £1,000 per mile and planned to use government finance, but the government displayed scant enthusiasm for this private venture.[2] Instead, after suitable consideration, the Parliamentary Standing Committee on Railways recommended in 1898 that a 2 ft 6 in gauge railway of twenty-nine miles be constructed from Colac to Beech Forest in order to provide settlers and the timber industry with adequate all weather access to the Otways. The narrow-gauge was adopted on account of costs and the hilly nature of the terrain, especially south of Gellibrand. The line was opened in March 1902 and subsequently extended fourteen miles to Crowes, two miles west of Lavers Hill, in June 1911.

The first development in the timber industry following the opening of the railway was the proliferation of paling splitters who paid as much as £4 an acre for the right to remove timber from settler's blocks adjacent to the railway line. One firm of splitters at Beech Forest despatched over 300 truck loads of timber averaging $6\frac{1}{2}$ tons during the period from May 1902 to December 1903.[3] Mine workers from Ballarat and Trentham were also brought in to cut mining laths and it was usual to see anything up to twelve bullock wagons of timber being unloaded simultaneously in the Beech Forest railway yard.[4] The splitters and lath cutters were accompanied by the sawmillers who, over the years,

KEY TO TRAMWAYS

1. Devitt Bros
2 Beattie & Sons
3 Watson & Facey
4 Watson & Facey
5 P. Alkemade & Sons
6 Condon Bros
7 Condon Bros
8 A.G. Hitt & Sons
9 Hitt
10 A. Armistead & Sons
11 Hitt
12 Armistead Bros
13 McDonald
14 J. Kincaid
15 Devitt Bros
16 Hotel tramway
17 Olangolah tramway
18 Gard Bros
19 Condon Bros
20 E. Smedley & Co
21 Hitt & Cashin
22 Cashin & Facey
23 Pettitt Bros
24 J. Marchbank & Son
25 J. Kincaid, G.W. Knott
26 G. Dewe
27 Brown
28 G.W. Knott, Brown
29 Smith, Pettitt Bros
30 E. Robins, W. Kincaid
31 Northern Timber Co., Knott
32 McDonald Bros, Robins
33 Enterprise Sawmilling Co.



These two photographs illustrate the process of paling splitting. In the view above the tree has been felled and the trunk is being cut into sections of the length of a paling, and each section is then further subdivided. In the bottom shot Mr Dave Brown is seen wielding his paling knife to singly split each paling with a diagonal cut. The photographs were taken near Beech Forest.

Both photographs - courtesy Mrs Young.

established their log extraction and milling operations at or near almost every station on the Crowes line. Sawn timber and logs were carted to the railway by a variety of means:

(a) horse or bullock wagons and jinkers,
(b) wooden tramways usually hauled by horses and, in three instances, by by rail tractors,
(c) winch powered tramway inclines and,
(d) motor trucks, from the early 1930's.

Sawmillers who had no access to railway stations and sidings or had access to stations that lacked siding accommodation loaded their timber from the line-side while the train waited, demurrage at so many shillings per hour being charged for delaying the train. Millers relied totally on the railway to despatch timber to Colac and such was this dependence that Forestry Commission royalties were assessed on the railway consignment notes for truck loads of timber (at that time royalties were based on sawn timber)[5] and between the years 1915-30 the considerable sum of £51,317 in royalties was collected from timber consigned over the line.[6]

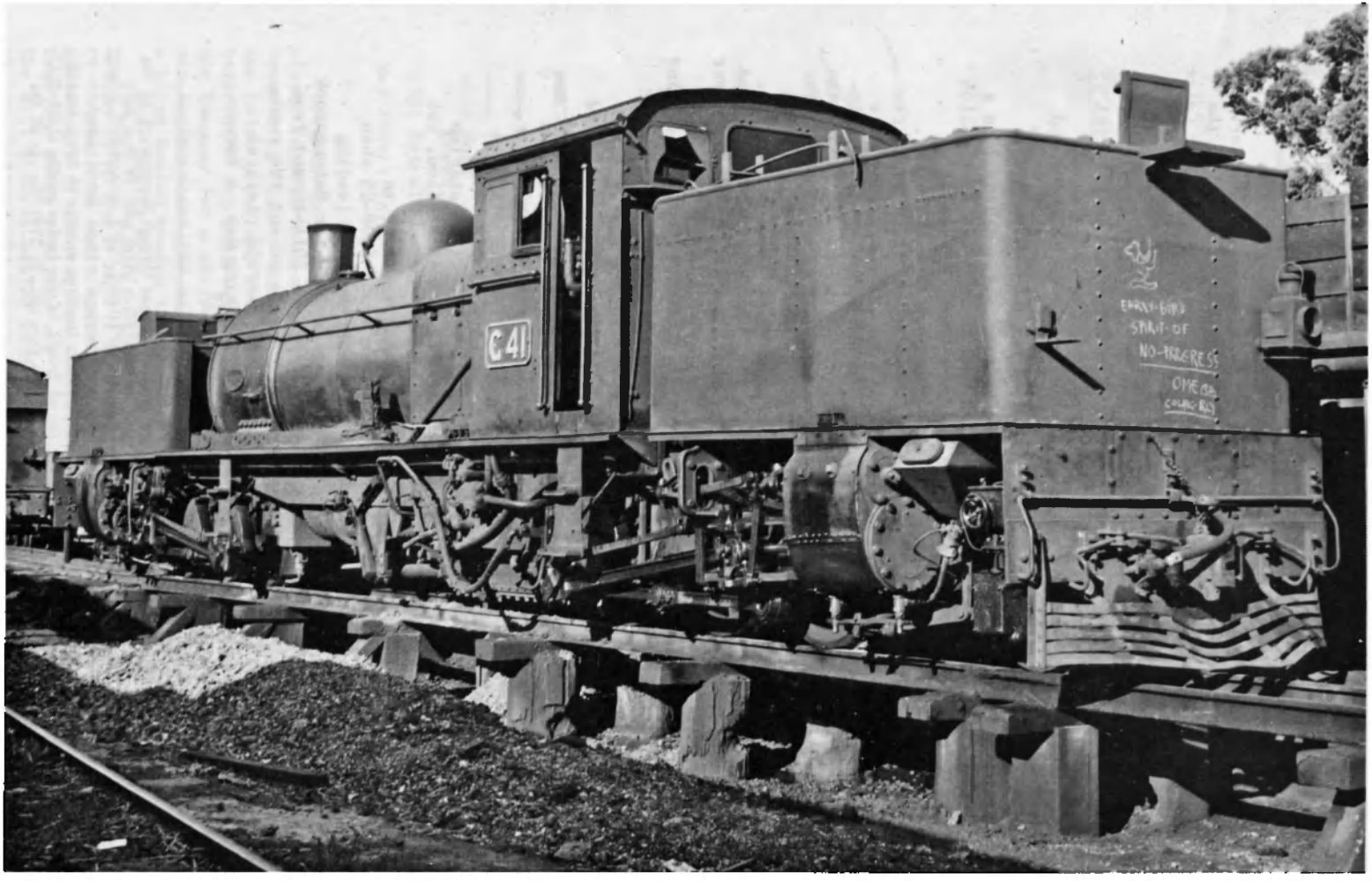
COLAC AND THE FOOTHILLS

Let us return to the boom years of the Crowes line for an examination of the railway and the sawmillers' wooden tramways that provided much of its traffic.

The Crowes railway commenced at Colac on the southern side of the broad gauge yard. The narrow gauge station yard was arranged in a fan shape, the base being where the present weighbridge is situated and at this end of the yard was a small goods shed, waiting room and stock race and yards. From this point the tracks radiated eastwards to the coal stage and water tank on one side and the sand house and engine shed on the other (south) side. Approximately in the middle were the transfer facilities where the labourers toiled transferring goods from the narrow to the broad gauge trucks and vice versa. During the busy times of the 1920's up to nine men were engaged in this activity[1] and in 1925, to quote an instance, they transferred a monthly average of 4,500 tons of goods and timber, and a yearly total of 38,081 tons of timber alone, including 100 tons of blackwood for railway carriage building.[2]

The transferring was done by a contractor who tendered a ton rate and whose contract stipulated that goods had to be transferred within twenty-four hours of arrival at Colac The last contractor, Mr. "Snow" Tibbits, tendered three shillings per ton in 1962,[3] an inflationary contrast to the 1931 rate of seven pence[4] and the 1918 rate of sixpence.[5] The first contractors were Messrs Hillman and Cant, and their efforts were characterised by lack of labour saving aids as no crane was provided and a gap of 7 ft 9 in yawned between the narrow gauge and broad gauge trucks on the transfer road. Every item had to be manhandled over this gap and one such item in May 1902 was a portable steam engine that was transferred from the broad gauge to the narrow gauge in an operation aptly described as "awkward" by a local newspaper. The contractors complained to the Railways Commissioners about these difficulties and the latter arranged for the narrow gauge transfer road to be moved closer to the broad gauge line by six inches! Real improvements did not come about until traffic increased to a sizeable level and then a gantry crane was installed and a shed erected over portion of the transfer area. The only items not handled by the contractors in the early years were supplies for the railway. Rails, dog-spikes etc were transferred by the Colac narrow gauge track gang.

The transferring of goods from one gauge to another was the permanent disadvantage of the Crowes line, for it resulted in double handling of goods and inconvenience for passengers, especially in wet weather. The Victorian Railways (VR) acknowledged this and in the early 1920's drew up plans for the improvement of the



G 41 rests at the Colac coal stage between assignments.
Photograph - Victorian Railways

transfer and general railway business at Colac. In about 1927 the VR acquired the Colac showground,[9] then adjacent to the railway yard, to effect these improvements but the Depression and decline in traffic caused the plan to be indefinitely postponed and today much of the former showground is still a paddock.

It was somewhere near this paddock in 1902 that Messrs Faroe & Jensen erected a sawmill and, allegedly, arranged for a short spur siding to be laid into the mill. These two Germans cut white gum at Barongarook and railed it to their Colac mill.

The Crowes railway left the Colac station as it curved past the engine shed and crossed Wilson Street in a southerly direction before it veered slightly to the east, near Hearn Street, and proceeded towards the hills. At Airey Street was the Elliminyt station, a boarding point used by a few passengers mainly between 1928-34.[10] The line then encountered its first heavy gradient and wound past the Railway Reservoir, which was built in 1876 to provide water for the Colac railway station until the town supply was installed in 1911.[11] Turning south-west the line continued towards the Beech Forest road and brushed it on a tight curve near the Colac reservoir. From the road near this point, the Tulloh hill, the squeal of brake blocks on the bullock wagons as they descended to Colac, over two miles away, could be heard all over the town on a clear day.

The line left the road on an easterly curve and rounded a small rise to re-emerge at Tulloh, a nameboard station within the circle of an access road to a farm house. The original survey was pegged behind this house but the then occupant complained that his farm would be bisected, a grievous inconvenience, so the survey was rerouted to the front of the house, across the Beech Forest road. The station opened in 1907 at the request of Mr Colin Tulloh who boarded the train at this point for his trips to Gellibrand to oversee his sheep station at Wonga. At a later date the Beech Forest road was realigned, leaving the station stranded on a small strip of land. Tulloh was a "passengers only" station but in 1923 over 4,000 tons of gravel was unloaded there for lining the bottom of the new Colac reservoir. The train waited at the station whenever the gravel, from Kopke, (nine miles east of Ballarat), was shovelled from the rail trucks onto the drays that carried it north to the reservoir.[12]

From Tulloh the line ran behind the present Colac Brickworks and up to Coram, the station where trains descending to Colac halted to enable the guard to wind on the handbrakes on some of the trucks. Coram had a corrugated iron passenger-shelter that was the cause of a comical tug-of-war between zealous officialdom and the people. At one time an eager Station Master arranged for the removal of the shelter because of "lack of use". The two passengers who regularly used the station complained to their local MP about their being forced to stand in the rain while waiting for the train. The Parliamentarian initiated action and another shelter, surplus from the Pennyroyal station, was erected.[13]

A turn to the east on the down grade from Coram brought the line to Barongarook. This settlement experienced its boom between about 1908-25 when, at times, it was usual to see four trains each way each day and, if loading warranted, an additional evening pick-up train from Colac solely for Barongarook traffic.* The station was staffed by a porter between the years 1914-16 and from about 1920 to January 1927.[14] The porter's principal duties were to set the roads for train crossings and exchange the staff, while none too onerous clerical duties such as waybilling trucks made up the rest of the working day. A former porter recalls that his usual daily occupation was sleeping.[15]

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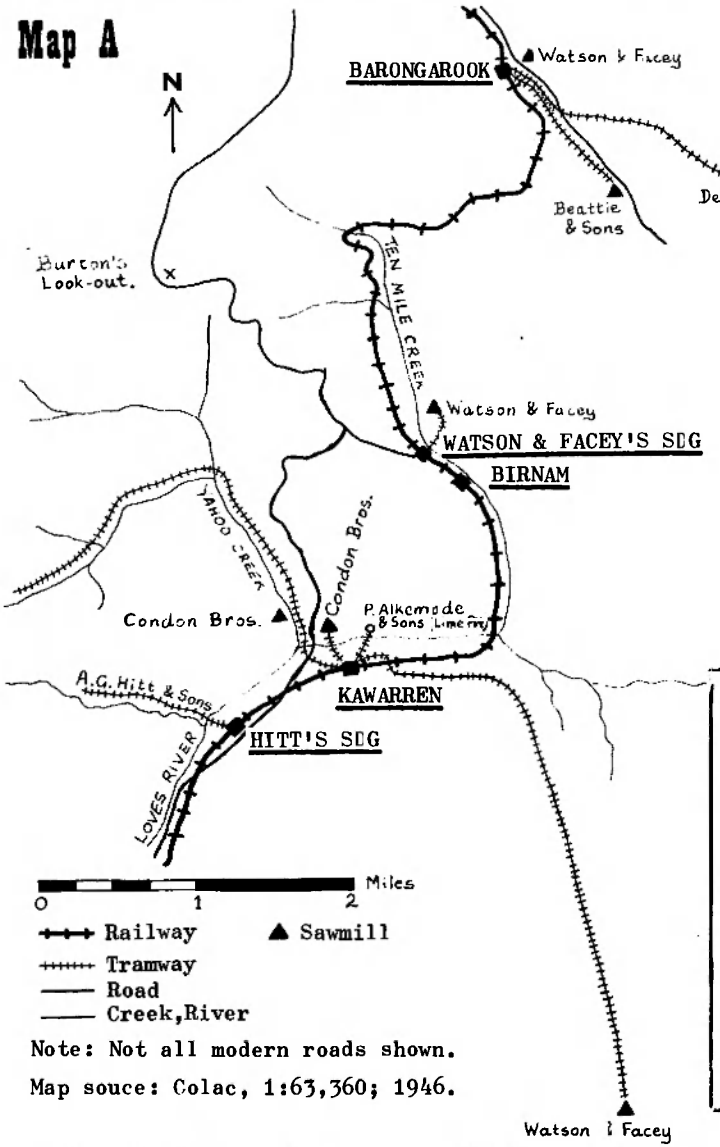
* Sceptical readers might find it hard to believe that nine trains a day passed through Barongarook in the early years of the line. Not all these train movements were shown in timetables since many of them were conditional goods trains whose running was arranged by the Station Master at Colac to suit traffic requirements. Around 1920 there were seven trains a day through Gellibrand, as residents there and elsewhere proudly told the author. The large number of trains was caused the small tonnages capable of being hauled by NA class locomotives; 70 to 120 tons depending on the section of track. In the twelve months (1925-26) prior to the introduction of the garratt locomotive 64,232 train miles were run. By 1930 the use of the garratt had reduced train miles to 29,551 for that year.



NOTE to all maps. The writer obtained details of tram routes and mill sites from descriptions and sketch maps provided by former mill owners and employees or knowledgeable local residents. As such the details are accurate only in general terms. Some of the minor tramways mentioned in the text are not mapped because of lack of reliable information about them.

Despite the somnolent porters, brisk activity characterised the rest of the place. In 1917 Messrs A. Gillam and J. and G. Norman formed the Barongarook Sawmilling Company and erected a mill about three miles to the south-east on the Colac pipeline. The sawn timber was carted to the station by wagons. At a later date the mill was moved closer to Barongarook and Mr B. Morrow took over the Company for a while before selling out, after 1919, to Beattie & Sons. The new owners moved the mill to within about a mile of the station and laid down a horse-hauled wooden tramline to connect the two points.[16]

When Devitt Bros., sawmillers at Beech Forest, were burnt out by the disastrous February 1919 bushfire they immediately abandoned their charred site and re-established their operations at Barongarook. Their mill was built about two miles east of the station and water for the mill's steam engine was obtained from the Colac pipeline via a one or two inch pipe laid for this purpose. From the mill a horse-hauled wooden tramline ran west for a mile and a half before it crossed the old Gerangamete road and swung north-west to follow Beattie's

tramline for the remaining half-mile to the station. On the road adjacent to the railway yard the two tramlines crossed each other to gain access to their station yard sites which were in the reverse order, direction wise, to their mill sites.[17]

In about 1919 Mr Jim Facey, a former teamster on Pettit's tramline near Wyelangta, joined with Mr Sam Watson to establish a sawmill on the rise opposite the Barongarook station. Wagons conveyed the timber the short distance to the railway. This mill had a short life of about twelve months before being moved to a site on the Ten Mile Creek, while both Devitt Bros. and Beattie & Sons cut out their leases by about 1926.[18]

Other Barongarook enterprises were charcoal burning, conducted by Messrs Pimm and Pell, and ironstone quarrying, engaged in by a Mr Parker. He employed up to eight men and on some days he despatched two fully loaded rail trucks of the stone which was used to purify coal gas. The industrial picture was rounded off by the usual complement of firewood cutters who operated from almost all the stations on the Crowes line.

The line continued south-east from Barongarook through the bush before swinging south, then west, at the railway crossing that marked the top of the $2\frac{1}{2}$ mile long Barongarook bank. About one mile down the bank was the original site of the water tank. The line along this stretch was built on the lee side of the hill and received very little sunlight, consequently the rails tended to be permanently wet and slippery. Only a couple of engine drivers were consistently capable of departing from the tank without slipping or reversing for a second attempt so the tank was relocated at the bottom of the bank.[19]

On one occasion driver Bill Brady was at the regulator of a garratt-hauled Colac-bound train that was heaving itself up the bank until it stalled on the two tight curves where the line swung over the Ten Mile Creek. The driver attempted to put down sand, but immediately discovered that it would not run because of condensation in the sand boxes. A trackside conference was held and an effective, if unorthodox, solution was agreed upon. Two travellers, who had been riding in the guardsvan, walked ahead of the engine and scooped up handfuls of the cinder ballast which they sprinkled on the rails. The engine wheels bit into the cinders, gained traction, and ran over the trouble spot.[20]

Three quarters of a mile south-east of the water tank was Watson & Facey's Siding, the loading point for the sawmill 400 yards up the hill in a north-easterly direction across the Ten Mile Creek. The sawn timber was gravitated down to the railway over a wooden tramline. The "siding" was one in name only as there was no siding accommodation, consequently the train waited while the timber was loaded. The timber was stacked at the lineside in readiness and as soon as the train was heard approaching all the mill hands rushed down to the stacks. The train halt signalled a feverish bout of activity that lasted until the timber was loaded, three trucks being loaded simultaneously to save time and demurrage charges.

Almost as soon as Watson & Facey established this mill, which was moved from Barongarook well before 1924, they approached the VR to install a spur line or siding but felt that the price quoted, allegedly in excess of £500, was too high to justify such expenditure in view of the anticipated short life of the mill. No siding was laid but the loading point was designated a siding in 1924 after much prior use. In 1925 Watson & Facey moved to Kawarren. A local farmer requested the VR to keep the siding open for passenger use, the VR agreed, changed the name to Birnam, and relocated the station (originally near the 106 mile post) about twenty chains south, where the houses were.[21]

The line left Birnam in a southerly direction and continued following the Ten Mile Creek to Loves River which was crossed near where the line swung west for the approach to Kawarren. This settlement had four tramlines operating from it at one time or another.

In 1912 Messrs J. H. & W. Condon obtained a small timber lease immediately to the north-west of the station. They installed a mill and laid down a 3 ft gauge horse-hauled wooden tramline to the station. The lease was cut out by 1915 and

Above G 41 sweeps around the curve into the Colac yard heading a consist of pulpwood from Beech Forest.

Photograph - Victorian Railways

Below The Colac track gang pause for the photographer near Kawarren. Left to right - Bill Jamieson, Albert Denning, and Don Loury. The gang's pet - the dog on the trolley - was later killed when the garratt unexpectedly rounded a bend in front of the speeding trolley, and he was not as quick as his masters in leaping to safety before the collision.

Photograph - courtesy Albert Denning

the mill equipment sold to Mr G. W. Knott who used it to set up a mill at Macknott in 1916. Soon after Condons left the area Mr G. Coppock established a sawmill on Yahoo Creek, about two miles north-west of the station. A 3 ft gauge horse-hauled wooden tramline provided connection to the station. Coppock became insolvent in 1919 and the mill was taken over by the Condon brothers who had returned from Macknott where they had been cutting timber under contract to G. W. Knott. Condon Bros erected their mill about 500 yards from the station and eventually laid a total of three miles of tramline along Yahoo Creek. The mill operated for twenty years, though only on a part time basis for its latter years, until the 1939 bushfire roared through the area and destroyed it.[22]

Sometime in 1925 Watson & Facey finished milling at the Ten Mile Creek and set up a new mill to the south-east of Kawarren. No sooner had the mill and its associated works been established than a bushfire swept through in December 1925 and incinerated "a quantity of sawn timber, a feed house, part of a stable and a considerable portion of new tramline"[23] all of which had to be replaced. The logs were obtained from James' selection at Kawarren East. A four mile horse-hauled wooden tramline ran north from the selection, down a ridge, then swung west and ran along the southern side of the railway for about three-quarters of a mile before it crossed the line, under the railway bridge that spanned Spring Creek, and continued west to the station. The timber on the selection was cut out by about 1930 and the area abandoned by Facey who then moved to Charleys Creek Road, below Ferguson, and set up another mill.[24]

Although large quantities of timber were railed from Kawarren the locality was best known for its limestone outcrop situated about 400 yards north of the station, across Loves River. In March 1903 the Colac Limestone Company was formed to exploit the deposits, its directors being Messrs Chas McIntosh and V. Pearson and its secretary Mr C. H. Johnstone.[25] The Company erected two kilns and laid a horse-hauled steel tramline across the river and up to the station where a shed and a covered area over a short length of siding was built.

To process the limestone it was first blasted from the outcrop, broken into four or five inch lumps, fed into the kilns, burnt, shovelled into bags (sixteen to twenty-three to the ton depending on the type of lime) and loaded onto the tramway cart. Up to two tons could be hauled to the station on the cart. Depending on the wind conditions and the consequent effect on combustion in the kilns two fully loaded rail trucks a day could be despatched. A former employee of the Company[26] told the author that the railway tarpaulins, then made of "thin black calico stuff like oilskin overcoat material" were so full of holes that up to five of them were needed to cover the lime. By 1919 the Colac Limestone Company, which had been managed on a hand to mouth basis since its formation, succumbed to difficulties and was taken over by Peter Alkemade & Sons. The new owner began operations with a fortunate impetus in winning a contract to supply the War Service Homes Commission with lime, for lime cement. Alkemade ran the lime pits for the next forty years during the course of which sluicing was introduced to remove the overburden, a third kiln was built, and the tramline extended a short distance when the quarry ate further into the hillside. Alkemade ceased operations in about 1957, finally signalling the end of the tramline era on the Beech Forest railway.[27]

The narrow-gauge metals left Kawarren and veered south-west for about two-thirds of a mile to arrive at Hitts Siding. This private siding of Arthur Hitt & Sons opened in 1914 as the loading point for timber brought in from the west over a horse-hauled wooden tramline that followed a small creek for a distance of somewhere between one to three miles, the length depending on one's informant. Most of the timber on the selection was milled and despatched between 1914-18 and only spasmodic consignments marked the following years.

The VR expressed disquiet at this lack of full use of the siding but Hitt retorted that since he had paid (an alleged £80) to have the siding installed it was solely his business how often he made use of it.[28] Nevertheless, as a sop to the VR to forestall closure, he railed out an occasional consignment. When Hitt moved from the area another resident, Henrickson, gave the siding its new

name but not much traffic and after 1928 no further use was made of it and it was soon pulled up, but not before it had added its share of excitement to the Otways.

At one time a Colac bound train of five trucks and a guardsvan halted on the grade to shunt one truck into the siding and while the engine and train crew were engaged in this the remaining four trucks and van suddenly rolled backwards and disappeared into the distance. The engineless vehicles rolled down the grade towards the track gang who were replacing a rail. Ganger Lou Emery heard the train approaching, quickly replaced the rail, and flagged the train to proceed slowly over the section being repaired, but to his anger the "train" flashed past without checking its speed as he raged impotently "she don't know the rules, she don't know the rules". The errant vehicles rolled through the Gellibrand station and up the grade before losing momentum near the home signal and returning through the station whereupon one of the staff boarded the van and applied the handbrake. It was a sheepish train crew who ran light engine from Hitts Siding to Gellibrand to pick up the train.[29]

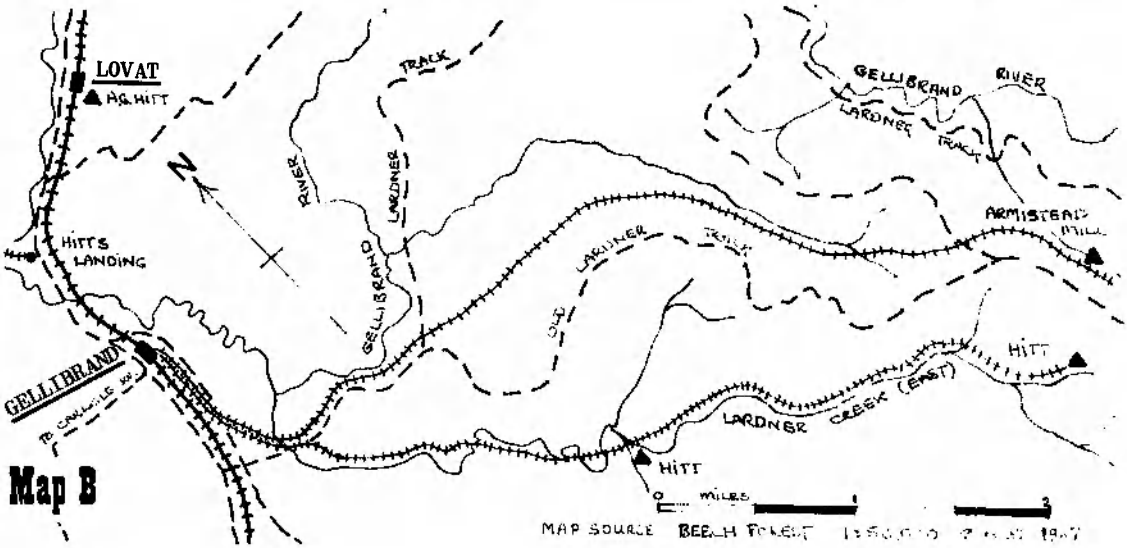
Continuing on the down grade from the siding the line followed the valley of the Loves River for another two miles before reaching Lovat. Arthur Hitt had a sawmill at this location, about one-hundred yards east of the station, before he moved nearer to Kawarren (Hitts Siding) to mill timber. Unconfirmed information is that Hitt had a tramline between the mill and the station. After 1914 a great deal of wood for the boilers of the Colac Dairying Company's factory was despatched from here by a contractor named Surtees who brought it to the station by sled. Sleds, some with one set of wheels to the rear, were a common mode of conveyance for wood, milk cans etc., in the muddy conditions that generally prevailed in the Otways.

After Lovat the line descended for another mile or so to reach the lowest point on the Crowes railway, 225 ft, at the Gellibrand River crossing. From the river it was but a short haul to the station at Gellibrand, that well known watering place for both man and engine.

THE CLIMB FROM GELLIBRAND

Gellibrand was one of the larger and more important stations, being staffed by a Station Master (Class 9)[1] until 1929 and a caretaker until the late 1930's, and was one of the few stations on the Crowes line to attract a satisfactory amount of inwards traffic, the shortage of which was the principal cause of the line's poor financial state. One railway guard who had experience on both the Crowes and the Walhalla narrow-gauge lines, Mr Norm Houghton (Snr), used to remark that he found the job on the former line to be much easier than on the latter. This highlights one of the glaring differences between the various narrow-gauge lines; the inwards loading on both the Walhalla and the Gembrook lines was a much higher percentage of total loading than it was on the Crowes line. Yet despite VR concern over this and Parliamentary enquiries in 1917 and 1931 the Beech Forest line outlived the other three narrow-gauge lines as a regular railway service. The Gellibrand inwards traffic of about 500 tons per year was primarily groceries and beer, plus salt, grain and general merchandise for the Carlisle River butter factory.

Gellibrand possessed a four road layout and a large station building made up of four seperate rooms, a waiting room, station office, parcels shed and refreshment room, joined by a common verandah. The refreshment room was managed for many years by Mrs O'Neill who offered a hot meal for one shilling, the orders for which were taken by a porter at Colac before the 11.15 am train departed, and telephoned through. Other patrons were the workers from the various establishments in the railway yard. In the afternoon a "cuppa and rock cakes" was available to the passengers on the train to Colac, and such were the rock cakes that it was said they would have made excellent ballast for the railway. The refreshment room closed in about 1927 but this made no difference to the well established custom of the train halting opposite the Gellibrand Hotel for the benefit of those thirsty souls who cared little for a cup of tea.

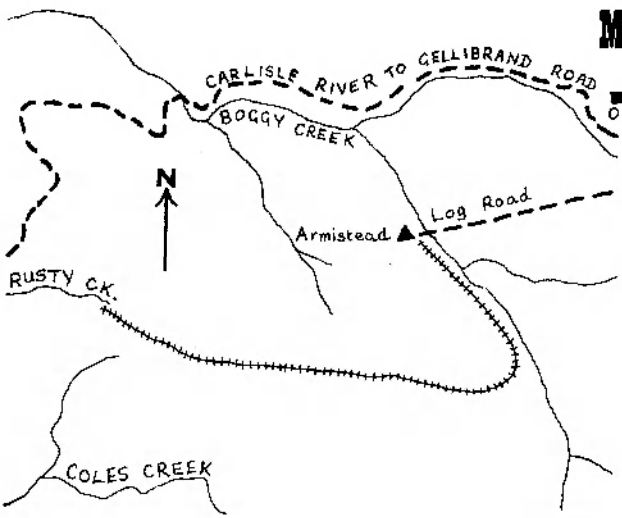


Top Gellibrand station during the mid 1920's. The buildings from left to right are the waiting room, station office, parcels shed and refreshment room.
Photograph - L. Stamford

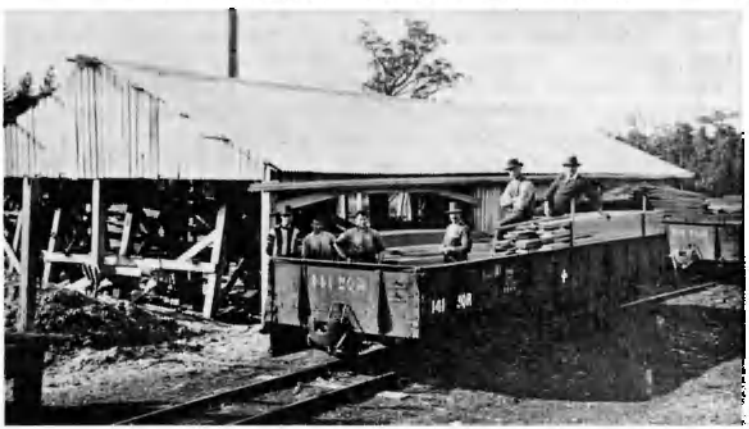
Bottom Refreshment room at Gellibrand during the early 1920's. Mrs O'Neill and her assistants pose in front of the building.
Photograph - courtesy Mrs J. Pierce

On the goods-shed road was a pig race and large yard for the many pigs brought in on Saturdays - mainly from the Carlisle River butter factory where pigs were kept to feed on factory refuse. Workers from Colac stock-agents loaded the pigs in the afternoon and despatched them on a cattle train. It was next to the pig yards in 1919 that the War Service Homes Commission built a weatherboard planing mill. The boards were sent from Driver's mill at Wyelangta, off-loaded at Gellibrand, cut and planed, and reloaded for transport to Colac. The neat little goods-shed stood next to the mill, while on the remaining space in the railway yard were the enormous stacks of timber brought in from the south-east over two tramlines.[3]

At some time before 1918-20 A. Armistead & Sons established a timber extraction and milling operation about two miles to the south-east of the station and laid down a horse-hauled wooden tramline, of about 3 ft gauge, from the mill to the station. In about 1918-20 the mill was moved to a point five miles south-east of Gellibrand. At a cost of £300 per mile the tramline was extended to the new (Lardner) mill which had a capacity of about 6,000 super feet a day and was powered by a 20 hp Marshall steam engine. A Harman "double eight" winch and a further 3½ miles of tramline (south) into the bush assisted in conveying logs to the mill. Armisteads had eight horses and possessed about seven sets of timber bogies, four for taking the sawn timber to the station and three for log extraction. In the station yard long stacking racks were built and a couple of men were engaged solely to make up and despatch orders. Armistead's Lardner mill operated until 1929 but a few months before it closed Mr Arthur Armistead withdrew (the mill then being run by Armistead Bros.) and proceeded to set up another mill near Bunker Hill, about three miles west of Gellibrand. When Armistead Bros. finished milling at their Lardner mill they moved six miles to the west of Gellibrand in the remote country between Carlisle River and Gellibrand and erected a new mill on the Boggy Creek. This mill was about three-quarters of a mile south of the Gellibrand-Carlisle River road and needed an access road to it. Armisteads made a wooden road from the sawmill to the main road consisting of three equally spaced rows of twelve inch planks cut from reject timber and set to the width of the wheels of the motor trucks that conveyed the sawn timber to the Gellibrand station. This practice made Armisteads the first miller in the Otways to carry timber to the railway by motor truck. The first truck could carry about 900 super feet of timber and four trips were needed to completely load an NQR rail truck. The logs for the Boggy Creek mill were brought in over a three mile long horse-hauled wooden tramline that ran up the creek in a southerly direction before it swung west over a ridge and down into the headwaters of the Rusty Creek.[4]



This is tramway No.12 shown on the Locality Plan on page 4.

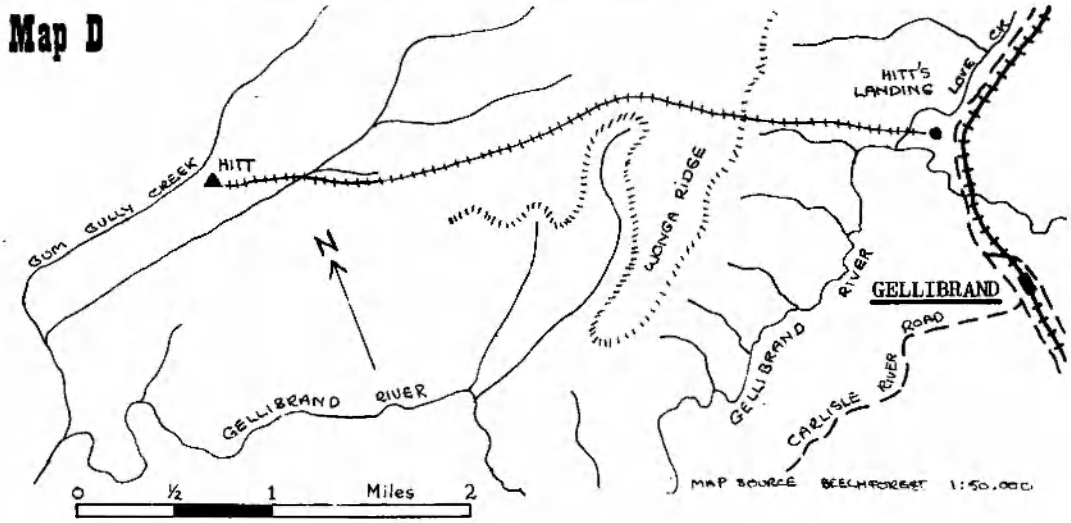


Above Harry Hitt snigging logs with a horse team in the bush around Gellibrand. Photograph - courtesy Mrs H. Hitt

Left The War Service Homes Commission planing mill in the Gellibrand station yard, 1920. Photograph - courtesy Mrs G. Armistead.

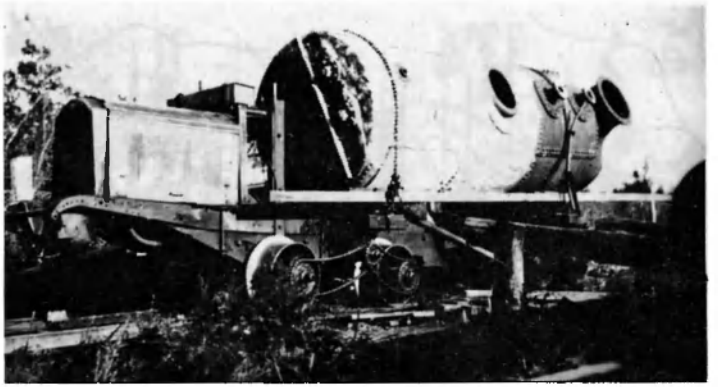
At about the same time as Armistead set up his Lardner mill Messrs Jack, Arthur and Harry Hitt put in a mill on the east branch of the Lardner Creek. The mill was about 2¼ miles from the station but was eventually shifted a further 2½ miles south-east. A horse-hauled wooden tramline provided connection to the station. Hitt's and Armistead's tramlines ran parallel between the Lardner Creek crossing and the station, a distance of about a mile. A popular misconception outside Gellibrand is that both Hitt and Armistead used the same tramline between the two points mentioned above but knowledgeable Gellibrand residents (the Dennings and Armisteads) emphatically stated to the author that there were two tramlines because the two millers agreed that a single shared tramline would raise annoying difficulties.

Hitt's Lardner mill operated until about 1926-27, after which time they operated two more mills (without tramlines) before setting up another one about four miles north-west of Gellibrand, near Gum Gully. This mill had a capacity of between 4000-5000 super feet a day and was powered by a 12 hp steam engine that drove both the saws and the winch. Originally the sawn timber was conveyed to Gellibrand by bullock wagons, but later a four-mile wooden tramline was laid from the mill over the Wonga ridge and down, on a steep gradient, to a landing on the north side of the Gellibrand River from where the sawn timber was taken by road the short distance across the river and up to the station.



Messrs Harry Hitt, Trotter and Wilson on Hitt's Lardner Creek tramline in 1920. Photo - courtesy Ern Denning.

Mr Jack Hitt was, like all sawmillers, concerned about the high costs of building fully-decked horse tramlines and, unlike some sawmillers, was also very mechanically minded so he decided to cut costs on the Wonga tramline by using a mechanical means of haulage thus obviating the need to fully deck the tramline. He removed part of the chassis, motor, gearbox and differential from a Buick motor car and mounted them on a lengthened timber bogie. On the driving axle ends he placed double four to five inch sprockets around which chains ran to larger



Top - Jack Hitt's home-made tractor at Hitt's Landing, terminus of Hitt's Wonga tramline (see Map D). To everybody's surprise the heavy load was pulled with little difficulty.

Photograph - courtesy Ern Denning.

Bottom - Hitt's Lardner Mill in 1925 showing the tramline (shown on Map B) in the foreground.

Photograph - courtesy Mrs H. Hitt

sprockets attached to the bogie wheels. The petrol tank was mounted on top, but to the rear of the bonnet. In order to gain adhesive weight for traction the front part of the load was carried on a bolster mounted behind the engine, which was overhung a couple of feet to provide the necessary space for the bolster. The driver stood in the gap between the motor and the load, and turning triangles were installed at the east and west ends of the tramline so that the tractor would be able to run forwards both ways.[5]

The Wonga mill operated until about 1938 and after this the tractor was taken up to Ferguson to work the tramline at Hitt & Cashin's mill. In 1939 the tractor was sold and changed hands a few times in the course of which it was converted to a winch, a simple operation for the drive chains were merely moved from the bogie wheels under the frame to the winch drum mounted on top of the frame. Armisteads were the final owners of the winch and at the end of its useful life it was scrapped at the urging of the ever marauding scrap metal dealers.

A third tramline ran directly to the Gellibrand station in the very early days of the line, for it was about 1905 - so the story goes - that a settler named O'Brien decided to mill the stand of gums on his land. He laid down a wooden tramline from his block on Charleys Creek, about one mile south of Gellibrand, to the west side of the station but never used it, either because he fell into financial difficulties or was unable to obtain permission from the VR to cross their railway to gain access to the station sidings on the eastern side of the station.[6]

The Crowes railway left Gellibrand to commence a twelve mile climb to Beech Forest on an almost continuous grade of 1 in 30 with over 150 curves. This sec-

tion of track was a difficult one for locomotive drivers who had to contend with the grade, slippery rails and multiple sharp curves that resulted in the train snaking in several directions at once, a prime cause of stalling.[7] The author can remember the sudden violent jerks that ran back through the train whenever the engine lost traction and it was little wonder that some travellers deadened their senses at the Gellibrand Hotel before they tackled this section.

A little less than two miles out of Gellibrand, at local mileage 19 miles, the line wound past the Ballast Siding, a spur line cut into the side of the hill on a higher level and fed by a ballast chute that ran down from a still higher level. No hard ballast was used when the line was built in 1901-2 but during 1903 the VR opened this quarry of silicified sandstone and replaced the original soft ballast.[8]

At one time, in a classic example of intra-governmental wrangling, the future of the area stretching from the ballast siding to Crowes was the centre of a fierce dispute between the VR and the Country Roads Board on one side, and the State Rivers & Water Supply Commission on the other. During the 1920's the SR & WSC declared a water catchment reserve of the above mentioned area for five miles each side of the railway, which was the approximate centre line, and pro-

The ballast siding located two miles beyond Gellibrand, which was used during 1903-04.

Photo - Victorian Railways.

ceeded to acquire land for this purpose. The VR and the CHB rightfully feared that their substantial Otway investments of £124,061 and £129,518 respectively would be wasted if the area was alienated for watershed or forest reservation and conjured-up painful visions of the railway and roads carrying no traffic and running through vast, deserted plantations. But sanity prevailed and a compromise solution was reached by 1931.[9]

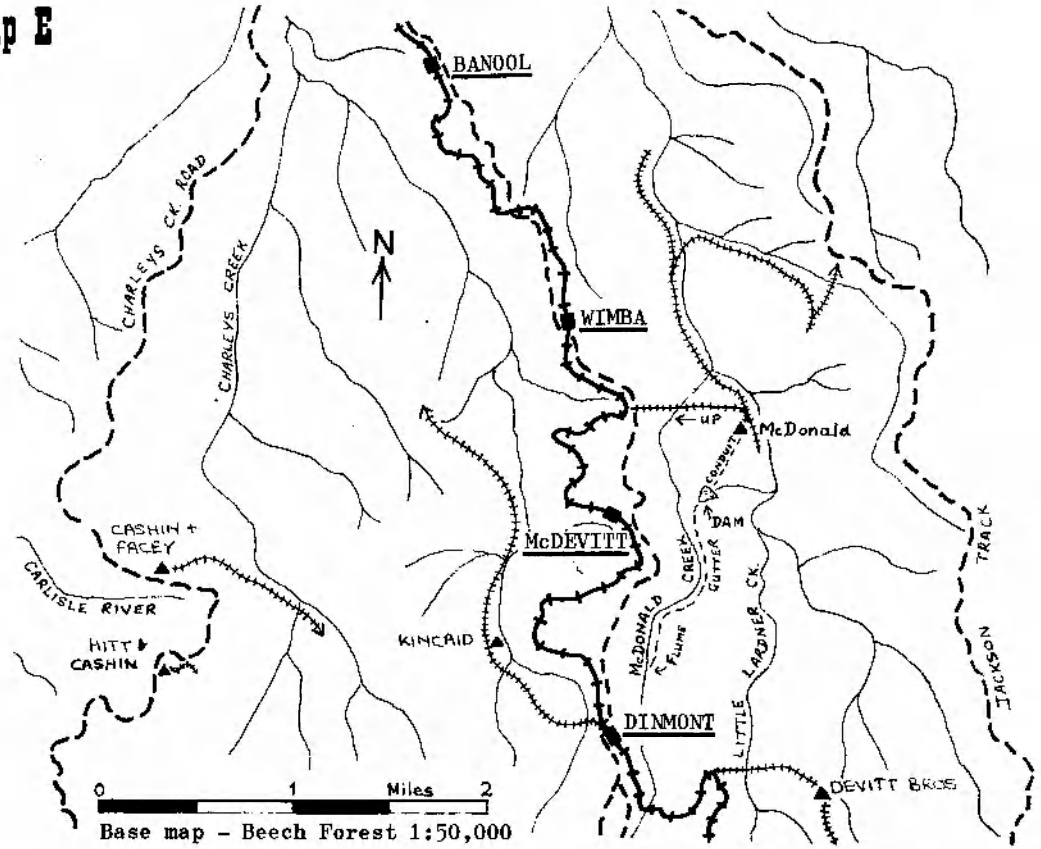
A mile south of the ballast siding the line levelled out near a bridge, at which spot some Gellibrand bound trains halted to enable handbrakes to be wound on, and at the end of the level section the line descended the short distance to Banool. This station was staffed between 1914-16 and from about 1920-24 when used as a train crossing place.[10] It was one of the few stations not to have a tramline running from it. A sawmill was nearby but bullock wagons brought the timber to the station.

In later years a track repairer lived in the railway house at Banool but at an earlier date an entire track gang operated out of the station. Originally there were seven gangs covering the entire length of the Crowes line. They were at Colac, Barongarook, Gellibrand, Banool, Beech Forest (two) and Wyelangta. The Colac gang maintained a short length since they also did some of the transferring, and the Banool gang was placed close to Gellibrand on account of the many curves in their length. The gangs relaid the line from Colac to about a mile and a half past Gellibrand. This work, covering several years, was conditional on receiving second-hand rails from somewhere off the broad gauge, and in consequence, replacement was in piecemeal fashion with the longest section relaid at any one time never exceeding one or two miles. Motorisation of the lengths (around 1930), economy measures and the closing of portion of the line in 1954 caused the number of gangs to decline until by 1962 there were two left, one at Colac and one at Beech Forest.[11]

Leaving Banool the line continued its tortuous climb with a brief respite over a level section and a slight downgrade before running on the upgrade through Wimba. This insignificant tin shed station was another point where handbrakes were wound on or off, depending on the load, on trains descending to Gellibrand. Not far beyond Wimba was the water tank that figured in one of the line's first serious accidents, for according to a report in the Colac Herald of 29 January 1906 the Beech Forest bound train of 25 January 1906 arrived at the Wimba station "the engine was detached for the purpose of taking in water and proceeded four chains up the line. On running back, it is said, the driver put on speed and the engine crashed into the train. The truck nearest the engine mounted the cab, driving the coal bunk almost onto the boiler. The driver and fireman narrowly escaped being crushed to death and the fireman, Horace Jones, was badly injured." Activity at Wimba was not at the station but a further half mile south on a sharp curve alongside the road where a tramway incline, powered by a small portable winch sited at the side of the road, dropped down a steep gradient of about 1 in 2 to the sawmill of Messrs Pat, Jack and Tom McDonald. This mill was water powered and operated from about 1924 on a site near the west branch of the Lardner Creek. McDonald's preference for hydraulic propulsion was derived from their connections with New Zealand where this form of power had a greater vogue than it did in Australia.

The mill was run by a Pelton wheel, an under-shot wheel with a diameter of less than 3 ft (a Pelton wheel is driven by the pressure of the water that hit it underneath whereas a water wheel is over-shot - i.e. water runs into the wheel's buckets at the top and drives it by weight). At the bottom of McDonald's Pelton wheel issued an eight inch conduit made of wood wrapped around with wire that ran to a dam situated 800 ft above the mill. When the mill was operating the water hurtled down the conduit and blasted out of a 1½ to 2 in. nozzle to hit the wheel cups with enough force to develop 30 hp, power such that logs were incapable of slowing the saws no matter how quickly they were pushed through. The one crippling disadvantage of the wheel was that during the summer months the water supply exhausted itself by mid-afternoon, as the dam was not large enough to hold sufficient reserves for a day's running. The dam was fed by creek water running into it via a narrow trench or gutter that followed McDonald Creek upstream for nearly

Map E



a mile to a wooden flume, about 75 yards in length, that ran into the creek to draw off the water. The activities of yabbies in causing the gutter to spring leaks did not help the water shortage.

Logs for the mill were brought in on two 400 yard horse-hauled wooden tramlines that ran both north and south from the mill, and the sawn timber was winched up to the railway over the narrower-gauged incline. A former employee of McDonald's told the author the incline experienced some spectacular runaways on the odd occasion when the cable snapped and the bogie loads of timber careered down and plunged straight through the bridge on the incline. There was no siding available at the railway so the timber was stacked alongside the line and loaded in the same fashion as did Watson & Facey, i.e. all hands simultaneously loaded several trucks when the train arrived. This manner of loading lasted until 1935 when McDonalds left the mill and leased it to Messrs Martin Knudsen & Jim Mulgrew of Barramunga, who used the incline to haul the timber up as far as the road, where it was loaded onto a motor truck and carted to the Banool station. This was more convenient to both parties as it eliminated the time consuming halt to the train, and enabled the timber to be loaded at leisure in a proper station.

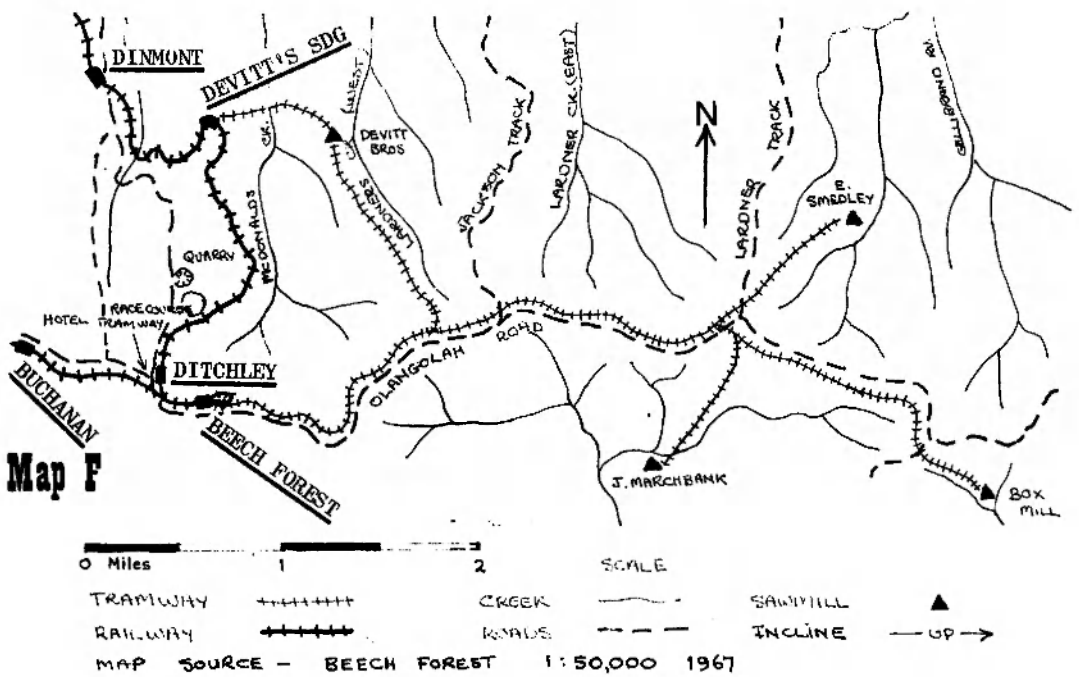
Knudsen & Mulgrew made various improvements at the mill, such as enlarging the dam and extending the tramline. The log tramline was extended about one mile north along Lardner Creek West, and then east up a tributary stream where a zig-zag was found necessary to carry the line up to the top of a ridge. This line had seven or eight bridges in its length and was of 3 ft 6 in gauge - at least this is how the author construes the gauge, for although Mr Jim Mulgrew told the author he could not remember its exact gauge he insists that it was "wide" and was the same gauge as Hayden Bros' tramline at Barwon Downs. Knudsen &

Mulgrew operated the mill for two years before they despaired of making their fortunes from a troublesome mill and from timber that was spoiled due to over-ripeness, and in 1937-8 surrendered their lease to a group led by a Mr Robins. The new lessee extended the Lardner Creek West tramline for at least a half-mile north to extract logs below Banool and continued milling for another three or four years until finally closing down.[12]

McDonald's timber stacks were left behind as the railway swung west and continued up the grade before it turned south-east to arrive at McDevitt. Not long after the line opened two settlers by the names of Devitt and McDonald approached the VR to install a siding on their account. The VR agreed and, to supply a name for the siding, took the prefix from "McDonald" and added it to "Devitt". Devitt & McDonald are supposed to have had short tramlines to their mills to the north and south of the station. VR loading figures scarcely suggest there were two mills and the author has been unable to obtain confirmation of even one mill, though one might have existed.

After McDevitt another mile and a half of stiff climbing brought the line to Dinmont, a watering station situated on a brief near-level (1 in 183) length of track. Almost as soon as the line opened in 1902 Mr Jack Kincaid established a sawmill, allegedly powered by an ex-VR engine boiler, about a mile into the bush to the north-west of the station.[13] From the station a horse-hauled wooden tramline went west "over a creek, up a cutting and then disappeared into the bush" (according to an octogenarian eye-witness)[14] on a northerly route of three to four miles that terminated on the ridge facing Charleys Creek. Kincaid finished milling at Dinmont in 1911.

At a much later date there were two other milling ventures with tramlines in the area west of Dinmont, towards Charleys Creek. A couple of miles north of



Left - A works train near Beech Forest in 1902. (The location is 27 miles 16 chains from Colac).

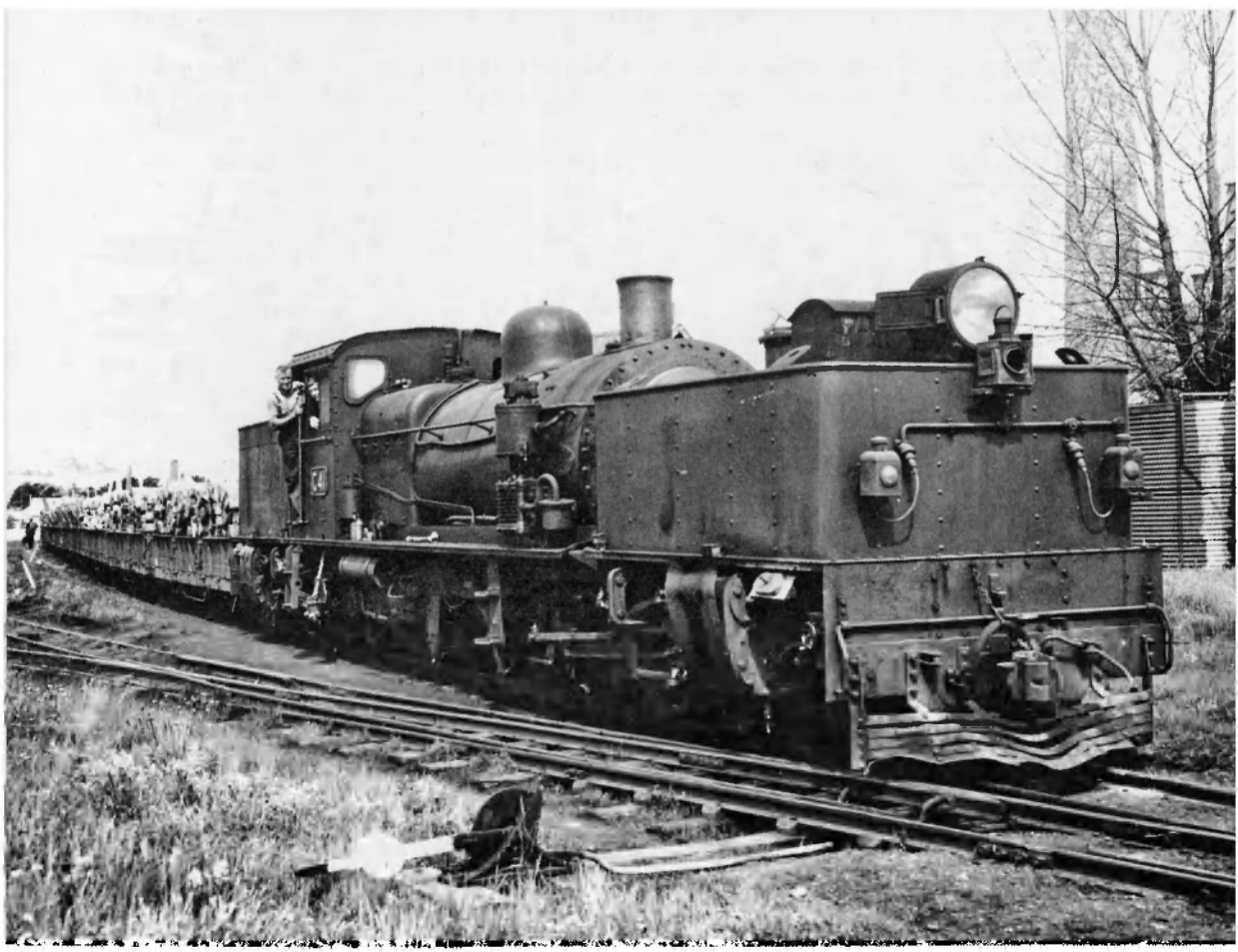
Photo - Victorian Railways.

Ferguson, on Charleys Creek Road, Mr Arthur Hitt & Cashin Bros opened a mill in about mid 1938. A short tramline of about 400 yards in length ran east from the mill and was worked by Jack Hitt's home-made tractor. The mill closed in December 1938 just three weeks before the 1939 bushfire swept through the area.[15] A little further north down Charleys Creek Road was Cashin & Facey's mill which operated between 1930-39 and possessed three miles of horse-hauled wooden tramline, most of which ran east from the mill.[16] The sawn timber from both these mills was taken to the Ferguson station by road vehicles.

The railway line passed the Dinmont water tank near the Beech Forest road crossing and re-entered the 1 in 30 gradient for the final stage of the climb. It was at this location, in the late 1940's, that one of the railway's spectacular "near misses" occurred. Driver Jock McLean and fireman Leo Moloney were crewing a Colac bound train hauled by the garratt, behind which trailed eighteen

Beyer-Garratt 2-6-0-0-6-2 locomotive G 41 arrives in Colac with a load of pulp wood from Beech Forest under the control of driver Bill Brady, who can be seen looking out the cab window, whilst loco depot labourer Mick Scott stands in the cab doorway. Pulp wood traffic was the mainstay of the Beech Forest railway in its last years of operation.

Photograph - Victorian Railways.



trucks of potatoes and a van bearing the guard, Roy Kellam. The day before this eventful trip the track gang had sprayed weed killer along this section and the oil based spray covered the rails for some distance. When more than 300 tons of train ran over this section next day the driver was in for trouble.

A combination of the gradient, oily rails and the train weight nullified the driver's brake action resulting in the train "getting away". The guard was alerted by the unusual jerking motions of the van and immediately realized that something was amiss, that the driver had lost control of the train even with a full brake application. The guard and fireman jumped from the train as it sped over the Dinmont crossing but the driver grimly remained in his engine as the train screeched and squealed through the station. Fortunately the train stopped on the short near-level track at the station, though the leading engine unit of the garratt was on the down gradient at the end of the yard. Had the train not stopped the imagination can readily picture the disaster as the engine and the trucks hurled themselves into the gully.[17]

About a mile from Dinmont was Devitt Bros Siding. This dead-end siding on the top of a rise was opened in 1908 to serve a mill to the east, that of Messrs Brian and Paddy Devitt, who were one of the early sawmilling firms around Beech Forest. Not long after the line opened they set up a mill to the north-east of Beech Forest and laid down a horse-hauled wooden tramline to that station. The tramline was three miles in length and followed the Olangolah Road and Ryans Track.[18] Devitt's mill was only half a mile from the railway line, 2½ miles out of Beech Forest so, presumably after they had cut out along the ridge and looked to the north-west for timber, they sought to take advantage of their proximity to the railway and arranged for a siding to be installed. They immediately laid down a tramline between the mill and the siding and made heavy use of it, for one source reports that about forty trucks of timber were despatched each month.[19]

A special engine was sent down from Beech Forest to do the shunting at the siding since mixed and goods trains were not permitted to work it.[20] The author thinks the reason for this peculiarity was that the siding, being a dead-end with the one set of points facing Beech Forest, made it difficult within safe-working procedures to shunt the loaded trucks out of the siding towards Colac, their destination. Actually the siding itself was not on the 1 in 30 grade, as Downs states in "Speed Limit 20", but was cut into the rise on the level beside and above the main line, which came up the grade through a cutting.[21]

In February 1919 an immense bushfire swept through the Otways and incinerated Devitt's mill, two miles of tramline, three 16 h.p. engines[22] and four truckloads of timber in the siding.[23] In the face of this heavy loss and the imminent exhaustion of the timber on their freehold Devitt Bros abandoned the area and moved to Barongarook to set up a new milling venture. The siding remained open until the early 1930's, probably indicating that it still had a use. This could verify a vague piece of information given to the author that an occasional truckload of goods was left at the siding for a nearby farmer.

The same flames that destroyed Devitt's mill were the cause of another "near miss" on the railway. The Beech Forest to Colac 3.05 p.m. mixed train was proceeding fully loaded, down the gradient and rounded a curve near Devitt Bros siding to run into a swirling barrage of flame. Driver Billy Wills slammed on the brakes and guard Dan Broderick, a railway veteran with thirty-four years service, closed all the windows in the carriages. The flames were licking the NA class locomotive and the thick smoke obscured vision to such an extent that Wills could scarcely see his fireman let alone the end of the train as he coaxed the engine to push the fully loaded train back up the gradient to safety. The "overtaxed toy", as a passenger later described it, was compelled to halt within sight of the Beech Forest yard through shortage of water. Wills whistled for assistance and the Crowes engine, which was in the Beech Forest yard, steamed down and hauled the train and passengers to safety. But even this "safety" was dubious for the fire swept through Beech Forest and destroyed most of the settlement and almost engulfed the station when it ignited the coal stack and oil supply near the loco shed, but luckily the voracious flames were extinguished by the desperate railway staff.[24]

Just before reaching Beech Forest was Ditchley, a nameboard station opened in 1906 to serve the Ditchley Park homestead and hotel of Mr J. Gardner, the first inhabitant of Beech Forest. What might best be described as a hotel tramway ran from the station up to the hotel on the hill. The conveyance was a horse-hauled four-wheeled trolley with a double seat in the middle on which patrons sat back to back, placing their luggage under the seat. The tramway had a short life, for it was soon realized that the trolley was an unsafe mode of transport on the steeply graded line.[25] A few years earlier than this, in 1903, another tramway skirted the side of the hill in a north-south direction. It was built by "two leading business residents of the town....to facilitate the carting of their goods from the railway siding, [at Beech Forest] it being impossible to convey goods along the endless quagmire otherwise known as a road".[26] The tramline was extended as far as the racecourse quarry to assist Gardner in carting gravel for making a footpath through the settlement. It is probable that Gardner's hotel tramway was a remnant of the gravel tramway.

THE RIDGE

A short sweep around the bend from Ditchley was Beech Forest, the original terminus of the line and largest settlement on the Crowes railway. Despite its size and large railway business (e.g. 13,335 outwards passenger journeys in 1921) it was one of the lesser timber loading points; Ferguson, Wyelangta and Kincaid being the busiest timber stations. Nevertheless, Beech Forest was the principal despatch centre for split timber and mining laths, most of which was carried to the station by bullock wagons.

But bullock wagons were not the only form of timber transport, for at the eastern end of the railway yard, near the six ton derrick crane, a horse-hauled wooden tramline curved out the gate and along the Olangolah Road for a distance of about five miles. This tramline ran to the Co-operative Box Company's mill, owned by the Victorian Dairy Farmer's Co-operative, and known locally as the Box mill because its purpose was the milling of timber for butter boxes. The mill closed in July 1926 but portion of its tramline continued in use for two other millers, Mr Jim Marchbank and Mr Ern Smedley. Marchbank set up a mill on Blackwood Creek about three-quarters of a mile south of the Olangolah Road. Logs were hauled to the mill by horses and the sawn timber despatched over a tramline that joined the Box mill line near the Lardner track turn-off. At this point another tram line swung north-east for about one mile to Smedley's mill, set up in about 1924 after Smedley terminated milling operations at Ferguson. Both Marchbank and

Left - A horse-shoe curve in the course of construction near McDevitt on the Beech Forest railway.
Photo - courtesy Bob Knox

Right - Bullock wagon loads of split palings being conveyed from the bush to the Beech Forest station.
Photo - courtesy Mrs Young

Above - Beech Forest station in 1902.

Photo - Victorian Railways

Right - These two views show the main street of Beech Forest during the 1920's. In the upper view the station boundary is marked by the fence on the extreme left. The large double storeyed building in the lower view is the Beech Forest Club. It was clad with weatherboarded iron, i.e. iron pressed to resemble weatherboards. The Club and the Ditchley Park Hotel provided most of the entertainment for the inhabitants.

Both photographs -
Courtesy Mrs Young.

Smedley closed their mills in the early 1930's and the tramline was subsequently dismantled.[1]

Let us return to the Beech Forest station which possessed a goods shed, stock race and yards, engine shed, coal stage and a substantial four-room station building. The latter remained in existence until the early 1950's when it was replaced by a single room office and a typical, cheap VR corrugated iron passenger-shelter. A large staff worked the station until the late 1920's and comprised a Station Master (Class 8),[2] a porter, guard, driver, fireman and an engine cleaner. The Station Master remained until 1929 when replaced by a Caretaker,[3] while the engine crew were withdrawn earlier, in 1926-7. This crew worked the NA locomotive assigned to the station until not long after the garratt was introduced in 1926. Immediately prior to this date there were five NA locomotives on the line: 8A at Crowes, 14A at Beech Forest, and 5A, 9A and 11A at Colac, and although the NA's almost immediately gave way to the garratt the loco at Beech Forest remained a while longer before being withdrawn. The Crowes loco survived a further two years as it was needed to handle the traffic along the ridge, since at that time the garratt only worked as far as Beech Forest. But so long as an NA was at Beech Forest the engine cleaner there had a busy time. His duties involved servicing the locomotive, stoking the boiling plant in the loco shed for the footwarmers used on the morning train, and shovelling forty to fifty tons of coal each week onto the coal stage.[4] In later years some of the coal found its way to strange places such as the odd domestic hearth at Beech Forest fired by the best, filched, Newcastle black diamonds that gave rise not only to black plumes of chymney smoke, but to jokes about poor locomotive firemen being the cause of the unusually swift exhaustion of the coal supplies.[5]

The refreshment facilities at Beech Forest were inferior to those at Gellibrand, a newspaper stand and a stall selling light refreshments being all there was. The author thinks there were two reasons for this. After 1919 the Ditchley Park Hotel was situated immediately across the road from the station and meals were readily available there and, as far as can be judged, mixed trains were generally not timetabled to arrive at Beech Forest around noon, hence there was no compulsion for elaborate refreshment facilities.

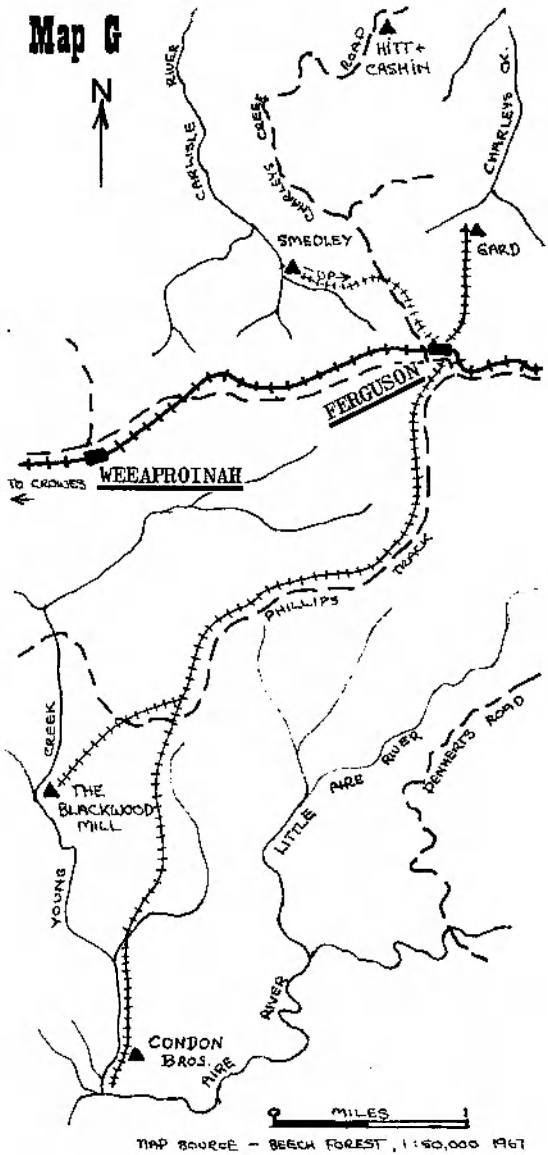
But whatever time the mixed train arrived from Colac its approach was the signal for the daily social event of "meeting the train". The old pioneers, children and others not occupied, gathered at the station to see who was arriving, exchange gossip and news with the passengers or perhaps collect a parcel. When the socialising was over and the railway business finalised the Crowes bound trains proceeded east along the Beech Forest yard and circled the loop at that end of the station to begin the westward journey along the ridge. The Crowes departure line was No. 2 road, and this paralleled the Colac line for a short distance before swinging under a road bridge to enter the Crowes extension proper. This portion of the line was built primarily to facilitate the extraction of timber along and below the ridge and this traffic so exceeded VR estimates of projected outward loadings that more staff and facilities were required than had been originally intended.[6]

The boom years along the ridge were between 1911 and the late 1920's. There were, despite many mill closures in 1918, twelve full-time mills along the ridge in 1922 but by 1931 the effects of the 1929 timber strike, the cutting out of timber areas and the Depression had reduced the number to three part-time mills.[7] A revival was experienced soon after this until about 1939, with a spurt provided by the war years, but by 1945 the days of "tall timber and tramlines" were over and traffic so dwindled that nine years later the extension was closed beyond Weeaproinah.

As the railway left Beech Forest it began a short climb to Buchanan, the highest station on the Crowes line at 1823 ft. The straggly settlement of Beech Forest was in effect provided with three railway stations, namely those at Ditchley, Beech Forest and Buchanan. The first dwellings in the area were erected on the hill (Mount Gardner) but with the coming of the railway and the effects of the 1919 bushfire they were either demolished or burnt, and rebuilt down by the Beech Forest station. A few buildings remained and one on the western side

of the hill was the Bush Nursing Hospital (1916-38)[8] that was served by the passenger station at Buchanan.

From this location the line began a two mile run down the grade to Ferguson. Most of the stations on the Crowes line were either nameboard stations or simple loop sidings, some with one or more roads added as at Barongarook, Gellibrand, Beech Forest and Crowes. But Ferguson possessed an added variation for besides the loop siding on the southern side of the main line a spur siding was laid on the northern side. This siding was the loading point for Smedley's and Gard's timber. Between about 1918-24 E. Smedley & Co. operated a mill to the north-west of Ferguson. A winch powered and horse-hauled wooden tramline ran east from the mill for about half-a-mile before it swung south at Charleys Creek Road and proceeded about half-a-mile up to the station. At a later date Messrs Mac and Sam Gard established a small sawmill about one mile north of the station. The mill and winch were powered by a single 8 h.p. Marshall steam engine.[9] Gard's milling interest was mainly in piles which were conveyed to the station over a horse-hauled wooden tramline.



The loop siding at Ferguson was the terminus of the tramline that ran to the largest sawmill in the central Otways. This mill had its crude genesis before the line was built when settlers named Riegel selected a block to the south-west of Ferguson and cut some of the first milled timber in the central Otways when they built their house out of pit-sawn timber. In 1908 the Riegels and their neighbouring selectors, the Condons, erected a sawmill three miles due south of the future site of Weeaproinah station. A well graded 3 ft gauge horse-hauled wooden tramline was laid for over four miles in a north-easterly direction to the future site of the Ferguson station where the sawn timber was stacked before being despatched to Beech Forest by bullock wagon. Condon & Riegel spent £2500 laying the tramline, setting up the mill and buying a 16 h.p. Brown & May engine. The following year they found themselves in financial difficulties and sold out to the Melbourne timber merchant Mr G. W. (Billy) Knott.

Knott soon rejuvenated the enterprise and achieved the best output in the central Otways, for Knott's No.1 Mill, as it was known, cut an average of 10,000 super feet a day for the next twelve years and often set loading records at the Ferguson station. In 1919 Knott fell into financial difficulties as a result of the bushfire and either sold or leased (the arrangement not being clear to the

The bridge over Young's Creek on Condon Bros logging tramway south of their Ferguson mill was fitted with handrails, as this 1926 view shows. Photograph - courtesy Jack Condon.

The charred remains of forest giants gauntly point skyward as the timber workers gather blackwood logs. The 1919 bushfire was responsible for the destruction of the trees.

Photo - courtesy Mrs Young.

author) all his Otway mills to R. Driver & Co., who built an additional mill - the Blackwood mill - to the north of the original one. A branch tramline was laid between the mill and the main tramline. The Blackwood mill operated but two years for in 1921 the original mill burnt down and Driver abandoned the area. Though Driver owned or leased all of Knott's mills at Ferguson, Kincaid, Wyelangta and Macknott they were (and still are) usually referred to as "Knott's" for in about 1923 Knott resumed possession. The author will refer to the mills as "Knott's", but will bracket Driver's name after Knott's for this period.

The fourth millers in the area were Messrs J. & W. Condon and Dick Perkins who, in about 1923 took over from where Driver had left off and rebuilt the original mill. In 1926 Perkins dropped out of the venture which thereafter traded as Condon Bros. They carried on for a few years before they abandoned the area in about 1930 and left to rot the miles of bush tramline for log extraction that had been laid from the mill during its twenty year life.[10]

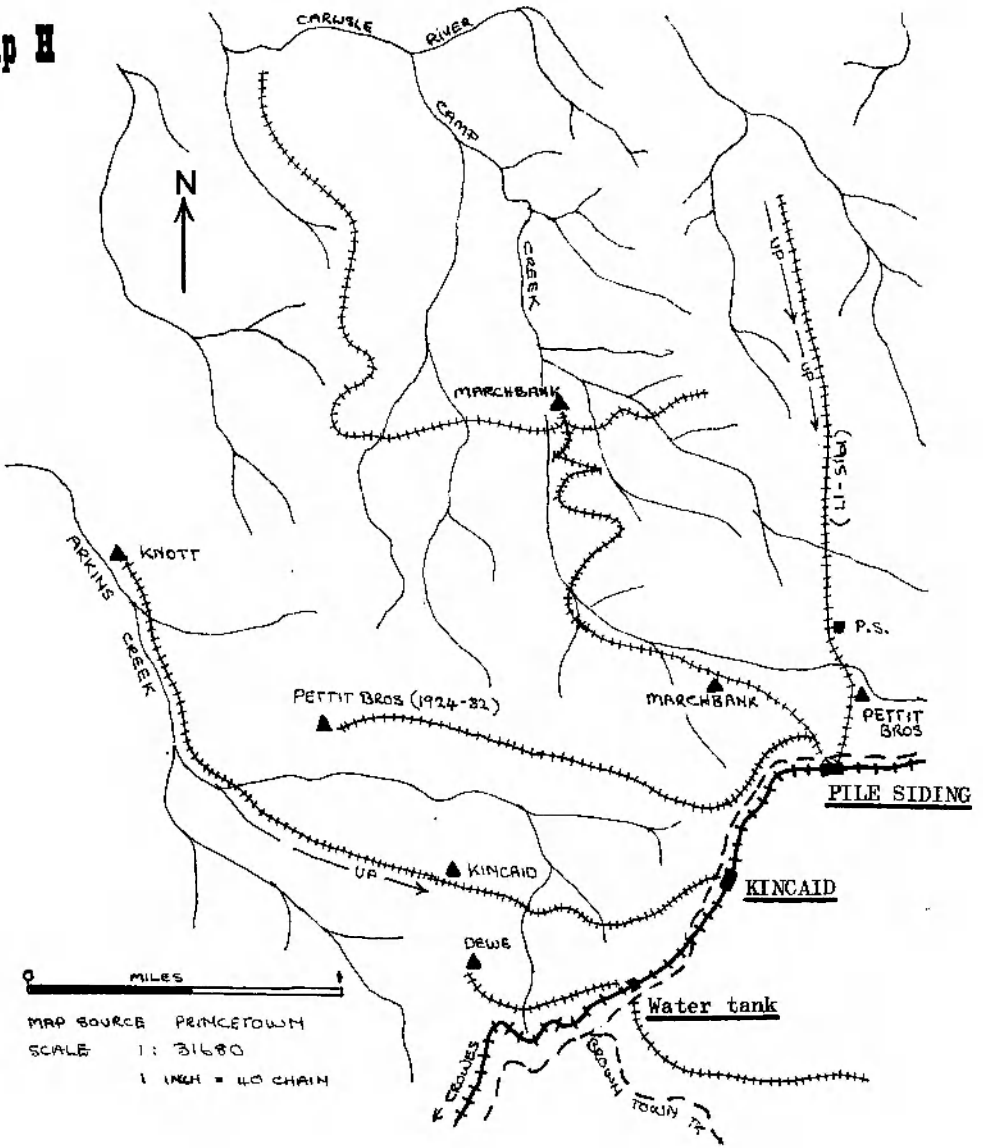
From Ferguson the railway line continued two miles west to arrive at Weeaproinah, a place where sawmills had little chance of being established because of the damage done to the trees by the first settlers. There was scarcely any millable timber in the area after Mr Neill McInnes and others had hacked and ringbarked in all directions to create the cleared acres that later became one of the premier potato areas in Victoria. Weeaproinah owes this to the rainfall, altitude and circulating winds that help keep pests and diseases to a minimum and guarantee large, high quality crops.

The first potatoes in the central Otways were planted here well before 1911 by two settlers from Tasmania, Butler and Morrow, but it was some time before commercial production commenced and before cultivation was extended west to

Lavers Hill and east to Olangolah. The peak of production was reached during the last war when, during a season, an average of thirty rail trucks a week were despatched from the potato areas west of Beech Forest. Weeaproinah and Ferguson have always had the largest and best crops and after the line closed beyond Weeaproinah, Weeaproinah and Ferguson became the principal loading points for Otway potatoes.[11]

A railway house for a track repairer was sited at the Weeaproinah station. At one time a repairer accepted a transfer from Melbourne and had his furniture railed to Weeaproinah, where it arrived in the morning, was placed in the house, and in the afternoon the 1919 bushfire roared through and reduced the house to ashes; a nasty Otway "housewarming" and quite distressing for the family concerned.

Map H



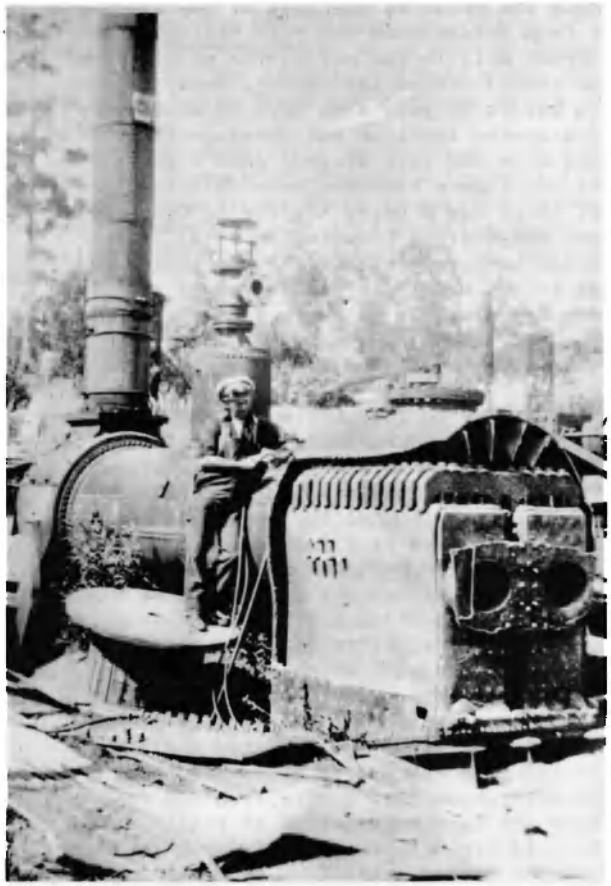
At Weeaproinah the run commenced down the grade to the foot of the Wyelangta bank, two miles west. Less than a mile from Weeaproinah was Pile Siding, a spur siding opened in 1915 to serve Pettit Bros mill to the north. The points faced Beech Forest and "up" trains (Melbourne bound) worked the siding. Empty trucks were kicked into the siding and left to horses to pull them down to where they were required. A 3 ft gauge horse-hauled wooden tramline ran three-quarters of a mile north from the railway to a winch site and then dropped down a steep incline for a similar distance. Much of the timber conveyed over this tramline consisted of piles, for between 1913-17 there was a heavy traffic in Otway piles for harbour works at Portland, Melbourne and Geelong (Cunningham Pier).[12] The piles were consigned from various stations between Beech Forest and Crowes and to cater for this traffic eighteen rail trucks had their sides removed and bolsters fitted.[13] Special pile trains ran to Colac and on some of the longer piles (up to 90 ft in length and spread over three trucks) a couple of men would ride to Gellibrand to ensure the piles negotiated the tight curves and narrow cuttings without mishap.[14]

Pettit Bros ceased operations at Pile Siding in 1917 but the first 700 yards of their tramline remained in use until 1931 for the convenience of a landholder who used it for the carriage of potatoes and chaff. An elevated potato storage shed ("P.S." on map H, p.34) marked the end of the tramline. In 1924 Pettits returned to Pile Siding and laid down another tramline to their new mill situated a couple of miles to the west. This mill was powered by a former VR "O" or "B" class locomotive boiler supplying steam to a single cylinder that spun a 17 ft flywheel! The boiler was obtained from Smith's Mill, to the north-west of Wyelangta, but it is not known when, or from where, Smith acquired it. Horses always were the sole motive power on this line but it is significant to note the interest shown by Pettit's manager, Joe Knox, in Sanderson & Grant's "Trail" tractor. Knox visited Forrest in 1928 to see the first trials of this new rail tractor[15] but for one reason or another did not obtain a tractor for use at Pile Siding. By the early 1930's Pettits were in financial difficulties and when their mill burnt down they finalised their affairs and were taken over by J. Marchbank & Son (in 1932?). Marchbank erected his first mill about half a mile from the rail siding, on yet another tramline, and used the former mill line of Pettit's for log extraction. The mill was powered by a 16 h.p. Clayton Shuttleworth engine and was the scene of many accidents, including a boiler explosion, before being shifted north at a later date. Marchbank's tramline eventually extended almost to the Carlisle River over a three mile route that used a zig-zag to rise 1400 ft on a workable gradient of 1 in 14. Horse traction was used until Marchbank bought a Malcolm Moore six-wheel rail-tractor at a cost of £1000. The tractor's engine was mounted crosswise over the front of the frame and a bolster was mounted on the rear. The driver sat next to the engine, well out to the side, and had a choice of one reverse and three forward gears either way the tractor travelled. Two years later Marchbank bought another tractor of similar design, but incorporating a few improvements suggested by the driver of the first, Mr Jack Haigh.

Marchbank milled at Pile Siding for the next few years until the 1939 bushfire destroyed the bottom mill and portion of the tramline, and forced him to close down temporarily. When he had rebuilt the top mill and relaid the damaged tramline he recommenced operations and continued for a further three or four years before he sold out to Keith King & Co. King relied on motor trucks for log extraction and haulage so the tramline at Pile Siding was closed, one of the last to do so along the ridge.[16]

The fourth tramline to operate from Pile Siding was that of the small enterprise of Messrs Phillips & Dewe who had a mill situated less than a mile south of the railway and connected to it by a horse-hauled wooden tramline.

Leaving Pile Siding the railway swung south-west and continued down the grade for half a mile to arrive at Kincaid.[17] In 1911 Mr J. Kincaid finished milling at Dinmont and moved to this area where he set up a mill a little over a mile to the west from the station, and connected to it by a horse-hauled wooden tramline. He used the tramline both for access to the station and for extracting the logs



Above Pettitt's second mill at Pile Siding was powered by an ex-VR "O" or "B" class loco boiler. The boiler was cut up in about 1932 after the mill burnt down. Note the twin firebox doors.
Top right Hauling logs over Pettitt's tramline at Pile Siding.
Right Pettitt's sawmill at Pile Siding, 1917.
All photographs - courtesy Bob Knox

off his lease. The mill closed in 1919, probably burnt down by the bushfire of that year[18] and Kincaid moved to Colac to run a hotel. Sometime after 1918 Knott (Driver) set up the Arkins Creek sawmill to mill timber for the War Service Homes Commission. This mill was more than a mile west of Kincaid's, so the original tramline was extended over a half-mile long incline of about 1 in 2 grade, followed by a further mile of tramline. This mill closed in 1929.

It was not many years after this, with the decline of the timber trade and the building of mills in the towns (post 1939), that the ubiquitous institution of the sawmill camp met its demise. Prior to this many sawmills (including most of the ones mentioned in this text) were isolated in the bush, thus compelling the mill workers and their families to live at the mills in a collection of huts, tents, and the usual boarding house. They were protected against bushfires, the scourge of the Otways, by dugouts and relied entirely on their own resources for amusement.

The mill workers, caked in mud to the waist, were sometimes so exhausted after a day's toil that they retired to bed soon after tea, but if they could keep their eyes open they participated in a variety of seasonally determined pastimes such as wrestling, shooting or wood chopping competitions, card parties or reading. Books circulated amongst the camp inhabitants until the print wore off the pages and one of the most heinous crimes capable of being committed at a mill was the deliberate destruction of a book. The children undertook their education by correspondence courses with the State Education Department and it is of interest to note that the Department initiated its correspondence school in response to a request in 1914 by a Mrs Prewett whose isolated abode somewhere around Beech Forest prevented her sons attending a regular primary school.[19]

With conditions such as these it was to be expected that residents of the mill camps and the timber settlements along the ridge looked to the railway as their narrow-gauge lifeline, as indeed it was. Numerous examples spring to mind. Towards the end of the week the guardsvan on the daily Crowes bound afternoon train was stacked to the roof with general merchandise, groceries, beer and rolls of meat bound for one or other of the mill settlements. The orders for these articles were given to the guard on the morning train to Beech Forest who arranged for the orders to be made up and readied for despatch by train departure time. Another service one guard offered was to take details of the mill workers' bets and telephone them to the bookmaker at Colac, using the railway phone of course! On a serious occasion, such as an accident at a mill, a train was hired to rush

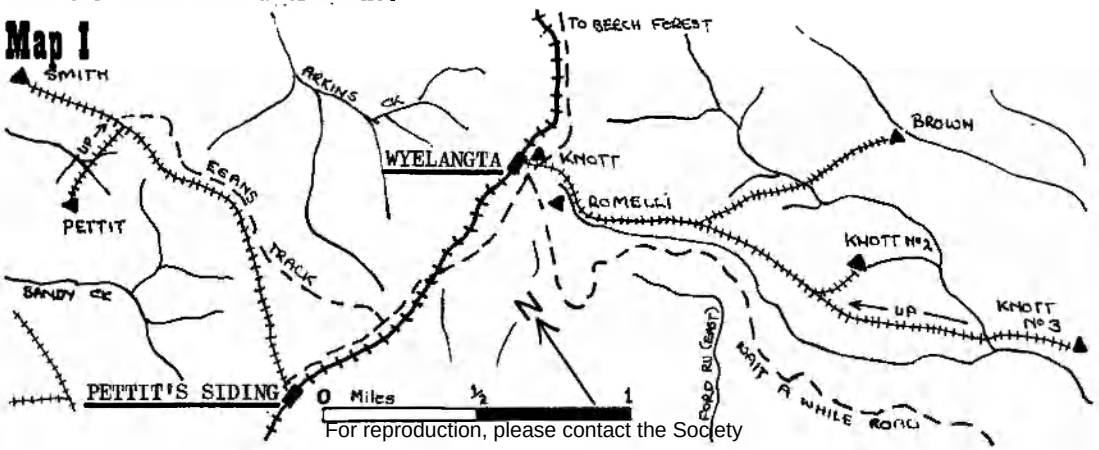
Marchbank's tractor and its driver pause for the camera on a trestle bridge to the north of Pile Siding in about 1937.
Photograph - courtesy Jack Haigh.

a Colac doctor to the victims. On Saturday afternoons the football teams, if playing away, hired a train to take them and their supporters to and from the match venue, and as passenger carriages were few the women and children were given first preference to them and the men rode in the open trucks, steeled against the cold by nothing more than their enthusiasm and numerous bottles of beer.

But the workers did not spend all their weekend hours in frivolous pursuits and if they so desired they could supplement their incomes by engaging in contract work to extend their mill's tramline. They split tramway packing, there being sixty pieces to the chain, for £1 per 100 pieces, or erected bridging for ten shillings per foot. The road bed for the tramline was formed (not necessarily by contract labour) by pick and shovel and single-scoop horse-drawn plough. Tram routes usually followed ridge tops or creeks and gullies to obtain a workable gradient and sawmills were usually sited near creeks, below the headwaters, to obtain water for their steam engines by gravity feed. One mill, Knott's No. 2 south of Wyelangta, was not so situated and relied on a ram to pump water up to the mill. It was often closed on account of water shortages.[20]

But to return to the railway where we left it at Kincaid. Not far past Kincaid was the end of the down gradient and the commencement of the steep two mile climb to Wyelangta over a bank that locomotive drivers found to be the most difficult section on the Crowes line.[21] Drivers laid sand and nursed their panting engines at 2 or 3 m.p.h. all the way up the bank and fettlers gave their motor trolleys full power as they commenced their run up before Pile Siding and hit the grade at a furious pace, stopping for neither passing snakes nor for their work-mates or pet dogs who fell off. This part of the line traversed a rain forest area where the blackberries grew as tall as small trees and threatened to swallow the slender 2 ft 6 in metal thread, much to the consternation of the special Weedex Gang who had difficulty trying to spray weed killer on blackberries whose menacing prickles towered over them.[22] About half a mile up the bank from Kincaid was a water tank for engine requirements and from near the standpipe two horse-hauled wooden tramlines ran to the east and to the west. D. Brown & Sons, a leading Otway split timber concern, laid down a tramline for about a mile to the east and Mr Charley Dewe ran his tramline about half a mile west to his mill. The timber was loaded onto the rail trucks while the train waited as no siding accomodation was available.

The dripping standpipe was left behind as the line continued its taxing climb to the bustling timber settlement of Wyelangta. This station was staffed by a porter who controlled the passing of trains and conducted the office work associated with the passenger and goods traffic. The porter was withdrawn in 1927 and Wyelangta became an unattended crossing station.[23] Wyelangta was the premier timber station on the Crowes line as shown by the average annual outwards loading of 4,200 tons between the years 1911-30, a figure only approached by Ferguson with 3,700 tons for the same period. Most of this timber was loaded with the assistance of the VR winches and derrick crane,[24] and a great deal of it was brought in from the south over a tramline.



Mr T. H. Robertson took this picture of a horse team in 1920-21. It is believed to be on the Arkin's Creek tramline. The devastation of the 1919 bushfire can be seen in the background. Photograph - courtesy Mrs Young

Not long after the railway opened D. Brown & Sons and G. W. Knott each opened a mill to the south. Knott's mill was immediately across the road from the station while Brown's was about a quarter of a mile south of the settlement. A horse-hauled wooden tramline was laid from the station to Knott's Mill, continued to Brown's, and further extended to the south for log extraction. In about 1919 Brown shifted his mill $1\frac{1}{4}$ miles to the south-east into the region of his original extraction area. Meanwhile the War Service Homes Commission erected a mill 500-600 yards south of the station, on the tramline, and installed a Mr Ronelli as manager. Knott took over this mill and ran it for a while before shifting about a mile to the south, to Knott's No.2 Mill. In about 1922-23 Knott again shifted the mill a further mile south. The tramline extensions to the new location, Knott's No.3, necessitated a winch powered incline half a mile in length and a further half mile of horse worked tramline. Knott worked this mill until 1929, the year he finished milling in the Otways.

In its heyday the Wyelangta settlement was spread on both sides of the main road for over half a mile and is best remembered for its stables and wine shanty. The stables were for Brown's, Knott's and other millers' horses and such were their numbers that a vet was employed on a full time basis. The wine shanty was for thirsty workers and itinerant drunks and was a place associated with roughness and violence, but apparently Wyelangta was quiet compared to Lavers Hill where, after a football match, drunken revellers were accustomed to kick down doors and shatter windows at the hotel. Bushfire damage in 1914, 1921 and 1939 and the decline in the timber trade have contributed to the extinction of old Wyelangta and all that remains today is the old grey house on the hill that was originally built by Mr Reynolds Driver for his son Barney. In the latter years of its existence Wyelangta was the venue for some train crews' betting activities. The local "S.P. bookie" played host to the riders of the iron horse as they listened to the races and usually bolted home with the bets much to the crews' disgust.[25]

The railway left Wyelangta as it skirted the summit of Mount Chapple and continued down to Smiths Siding, about a mile to the west. Around 1911 the Smith family arrived in the Otways from Darnum, where they had gained their sawmilling experience, and built a mill to the north-west of Wyelangta. The mill was sited below the end of Egans Track and from it Smiths laid a horse-hauled wooden tramline up the Gentle Annie slope for half a mile to the end of the track and continued it one mile in a southerly direction to the railway where a siding was opened in 1912. Smiths milled here for five years before selling out to Pettit Bros in 1917. The siding was renamed Pettits Siding and Pettits proceeded to build a mill about thirty chains south of Smith's mill. The sawn timber was originally carted out by bullock wagons, or at least that was attempted, but the mud and the slush caused such difficulties that Pettit's soon built a thirty chain incline from the mill to the tramline at the top of the ridge. The central Otways' tallest tramway bridge - allegedly 89 ft high - was sited on this incline. Pettits remained in this area until 1923 when the timber was cut out and then they moved back to Pile Siding.

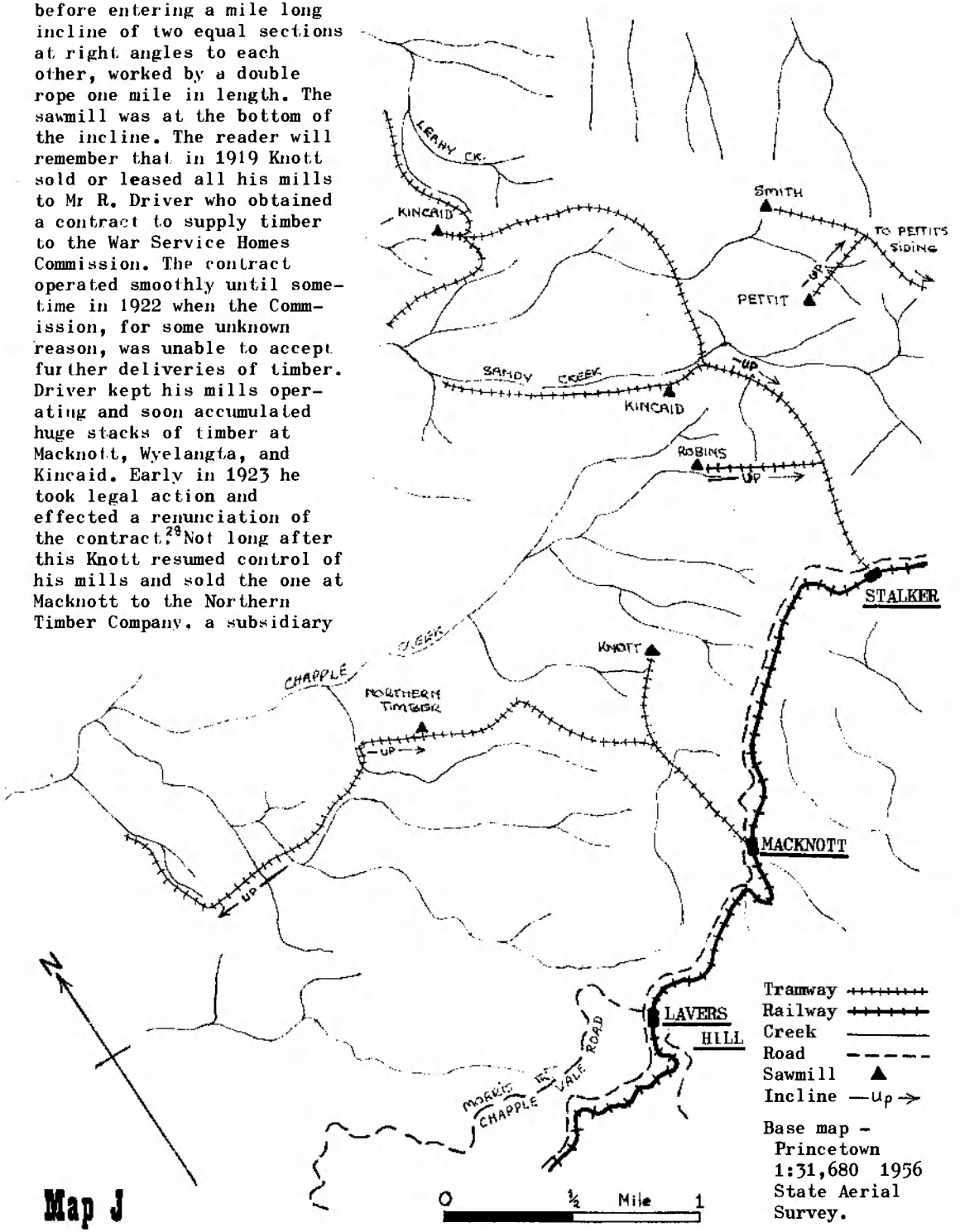
The line left Pettits Siding and began a short run down the grade and then up to a near level section to arrive at Stalker. It was here in 1911 that the Barramunga miller Mr Edwin "Cocky" Robins opened a mill about one mile north of the station. From here he laid a horse-hauled wooden tramline half a mile north to the top of an incline and then laid the incline half a mile west down to the mill. Robins had the distinction of being the first miller in the central Otways to have a steam logging winch, a single cylinder stationary machine with a pull of 2,000 ft and called "Old Mag".[26] Robins' main claim to fame was not this but notoriety throughout the Otways for the hard way he drove his employees. One of the many anecdotes related is that he kept the trains fully loaded and constantly on the move by having three gangs active at the same time, one coming, one going and one working. This colourful character died at Stalker and one of his sons (he had sixteen children) took over the mill only to be killed in an accident on the incline when the winch jerked the cable and spilled the bogie load of logs onto young Robins who happened to be following behind. A popular story in the Otways is that after this accident Robins' mill was taken over by Mr W. Kincaid, but Mr Harry Thomas, the former Forests Overseer at Wyelangta, says this was not so for the Robins' cut out their lease by about 1919.

In 1919 Messrs W. Kincaid and A. Lane (the latter previously had some interest in Robins' mill) commenced operations at Stalker as the Western Timber Company. At the end of Robins' first forty chains of tramline a forty chain incline was built, and from the bottom of this a further thirty chains of tramline was laid to the sawmill on Sandy Creek and further extended one mile along the creek to serve two winch lines. The mill cut about 7,000 super feet a day and was powered by two small steam engines linked together, a Clayton Shuttleworth and a Robinson Ainsworth, that were later replaced by a 20 h.p. Marshall obtained from G. W. Knott. In about 1927 the mill was moved about one and a half miles to the north-west, from which point branch tramlines radiated north along Leahy Creek and west towards Sandy Creek. A six-wheel Days rail-tractor with an International engine was purchased to work the tramline at this end, and when placed in service proved too light, so Kincaid built sandboxes all around the frame both to increase its weight and to give the crew plenty of sand for the rails.[27] The mill remained in operation for many years until the 1939 bushfire finally ended its days. After this holocaust the Western Timber Company abandoned the area and sold the tractor to the Forests Commission for use at Tanjil Bren.

About one mile to the west of Stalker was the point beyond which good timber became scarce and the last mills to obtain this timber were sited north of the station at Macknott. This siding opened in 1916 on account of G. W. Knott, and was named "Macknott" to distinguish it from "Knott's Siding" on the Walhalla line. Where the "Mac" originated from is a mystery to the author but despite this addition the siding was, and still is, usually referred to as "Knott's" by Otway residents.

Knott's first mill here was situated one mile north of the station and was connected to it by a horse hauled wooden tramline, but the later tramline to the second and more well known mill extended north from the siding for fifty chains

before entering a mile long incline of two equal sections at right angles to each other, worked by a double rope one mile in length. The sawmill was at the bottom of the incline. The reader will remember that in 1919 Knott sold or leased all his mills to Mr R. Driver who obtained a contract to supply timber to the War Service Homes Commission. The contract operated smoothly until sometime in 1922 when the Commission, for some unknown reason, was unable to accept further deliveries of timber. Driver kept his mills operating and soon accumulated huge stacks of timber at Macknott, Wyelangta, and Kincaid. Early in 1923 he took legal action and effected a renunciation of the contract.[28] Not long after this Knott resumed control of his mills and sold the one at Macknott to the Northern Timber Company, a subsidiary



Map J

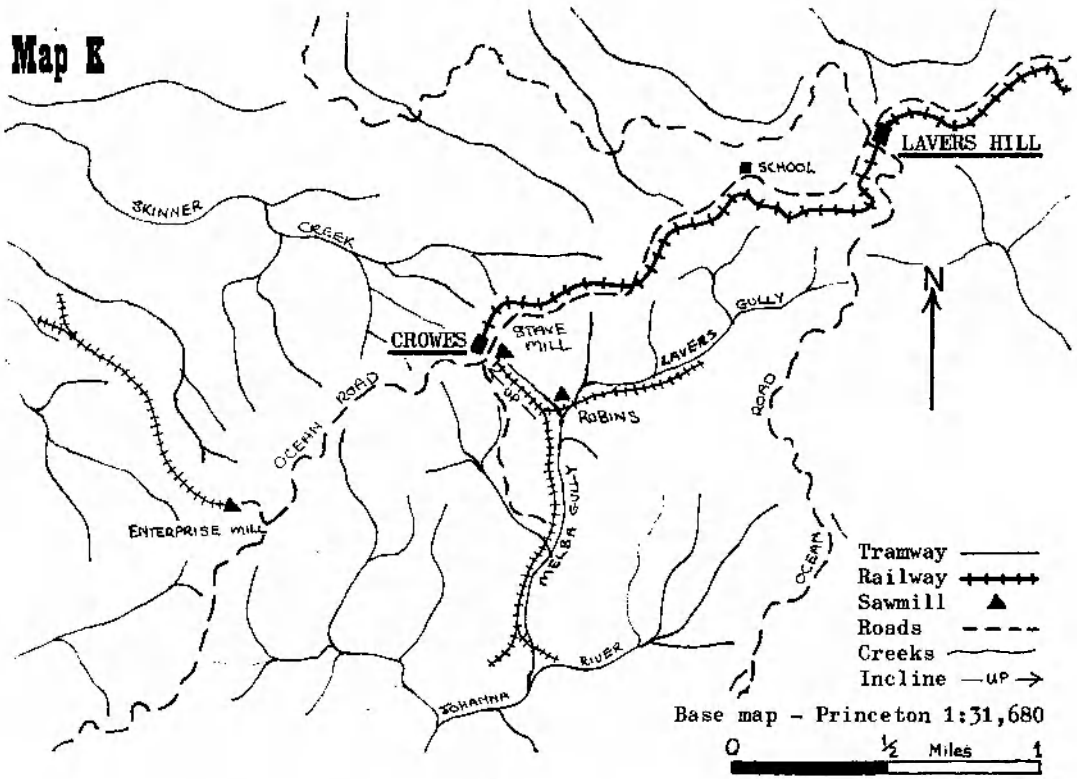
Above Mr Joe Knox, the manager of Pettitt Bros Mill, sits on the then uncompleted structure that was to become known as the highest tramway bridge in the Otways. This 89 ft high bridge was on Pettitt Bros' tramline, to the north of Pettitt's Siding.

Right A view underneath the same bridge.

Both photographs - courtesy - Bob Knox.

company of the meat processors William Angliss & Co. The Northern Timber Company built much of the two to three miles of log extraction tramline that ran in a westerly direction from the mill. The Company operated here until 1927-28 when the timber was cut out. It then abandoned the area.

A few bends to the west of Macknott brought the railway to Lavers Hill, one of the larger settlements on the Crowes railway. There were no sawmillers' tramlines operating out of here, as Daniel's mill, near the railway yard, relied on road vehicles for log haulage; as did the consignors of split timber and blackwood who used Lavers Hill as their loading point. A quarry tramway and Rickard's timber tramway, both short, were all the settlement possessed. Both were sited below the school and neither ran to the station.[29]



In the aftermath of the 1919 bushfire Lavers Hill became one of the major receivers of relief when this terrible fire - the worst to this day to hit the Otways since 1851 - cut a swathe of destruction for thirty miles along the railway between Gellibrand and Crowes. The fire swept over the Wonga Ridge at Gellibrand and continued to the coast during a few hours on that Saturday afternoon. Lavers Hill was almost wiped out, and such a shortage of shelter ensued that one man slept in a railway truck with two bags of chaff for a roof, and another four slept on a billiard table.[30] At the station the railway house was destroyed and cattle trucks in the siding had all their wooden fittings burnt, leaving only metal skeletons.[31] The fire-damaged railway was temporarily repaired to enable relief trains to run from Colac with desperately needed tents, food and clothing for distribution en-route to Crowes, and despite extreme difficulties these trains continued to run until the worst of the immediate effects of the fire were alleviated.

Lavers Hill was no exception to the unorthodox railway operations that characterised "The Beechy", and Hampshire's Store, immediately south-west of the station over the Ocean Road, was the recipient of the usual obliging consideration from the train crews. The store's supplies were not unloaded at the station, instead

the engine pulled the train over the crossing until the guardsvan or louvre van straddled the road. Then the consignment of up to fifty cartons, casks and cases was placed on the road in front of the store.[32] Any road vehicles desiring to use the crossing were forced to wait until the operation was finished.

From the store the line continued down the grade for about a mile and a half and again crossed the Ocean Road before running, on the north side of the road, the remaining half mile to Crowes, terminus of the line and most southerly station on the Australian mainland. The siting of the terminus at this point, on a Crown camping reserve, was a compromise solution to extending it to its proposed terminus three miles west, at Wangerrip. The Parliamentary Standing Committee on Railways sought to avoid the heavy costs for the earthworks needed to carry the line to a place whose traffic would not justify the expense and suggested it terminate opposite Mr Cornelius Crowe's selection. In the event the decision proved a wise one for most of the traffic west of Crowes came to this station anyway and up till 1934 the loading from Crowes maintained a respectable level. The station had an engine shed, goods shed, office (with palm trees in front), and two railway houses and was managed by a resident Station Master until 1916, and a Travelling Station Master (Class 9) after this.[33] The other staff comprised a vanman, driver, fireman and an engine cleaner, all of whom were withdrawn around 1928.[34] The station buildings survived a while longer until February 1934 when a bushfire erupted on Charleys Creek Road at Ferguson and swept towards Crowes where it consumed the three structures.[35] The office was replaced by a single room cabin with sleeping accommodation.

The Colac to Crowes railway actually ended at a giant tree stump seventy-eight feet in circumference[36] that made an ideal buffer stop until one dark night during the early 1940's (in the days before the electric headlight was fitted) when driver Jock McLean was piloting the garratt towards Crowes. The driver lost his bearings in the gloom and smashed the garratt into the stump, splintering the stump to pieces, and so far beyond the end of the track did the engine travel that the repair gang took three days to rerail it, though surprisingly, very little damage was done.[37]

In the latter years of the line the arrival of the weekly train at Crowes became the cause of much socialising. At the station would gather teachers from the Lavers Hill school, travellers on the Ocean Road, and some of the local citizens who emerged from the bush. After "tying down" the engine the crew would go fishing, or attend a picture show at Lavers Hill, or sit around yarning over a few bottles of beer. On one occasion the crew, with the Lavers Hill track repairer as a guide, plunged into the bush on a fishing expedition and after catching a few fine specimens made their way back to the station, but they became lost and twenty-four hours had elapsed by the time they found their way back to the station and were ready to depart. The delay in the train departure time was satisfactorily explained as being due to wet wood preventing the lighting up of the engine.[38] Between 1917 to 1934 much of the traffic was derived from sawmills situated nearby. In about 1916-17 Mr Charley Robins erected a mill in Melba Gully at a distance of 500 yards south of the station. A winch powered incline dropped down to the mill and a horse-hauled wooden tramline continued east along Lavers Gully for about 700-800 yards. As Robins' milling venture was only a small concern it is most likely that he cut-out around 1920. It was at about this time that William Angliss & Company erected a barrel stave mill opposite the station. The staves were cut by a drum saw i.e. a revolving cylinder with a saw blade encircling the rim at one end. This saw was the only one of its type in the Otways and only one man had a licence to operate it - Mr Neil Prestergard - and he was not partial to instructing others in its operation. Consequently, whenever he was absent the mill was idle. Timber for the mill was brought in over a horse-hauled wooden tramline operated by the McDonald brothers - Graham, Doug and Glen and no relation to the McDonalds at Wimba. From the foot of Robins' incline McDonalds laid a horse-hauled wooden tramline south along the gully for three quarters of a mile at which point it forked east and west for short distances. The mill, whose sole purpose was the milling of staves for the tallow barrels used at Angliss's meat works, closed in about 1926, but the tramline remained intact for many years after this and finally succumbed to the 1939 bushfire.

The Enterprise Sawmilling Company, in which William Angliss was a shareholder, established their mill about a mile to the west of Crowes. It was situated close to the Ocean Road and a horse-hauled wooden tramline ran north for about a mile before it branched in a couple of directions. The author's informants maintain that the sawn timber was taken to the Crowes station by road vehicles though one source[39] states that the tramline ran to the Crowes station.

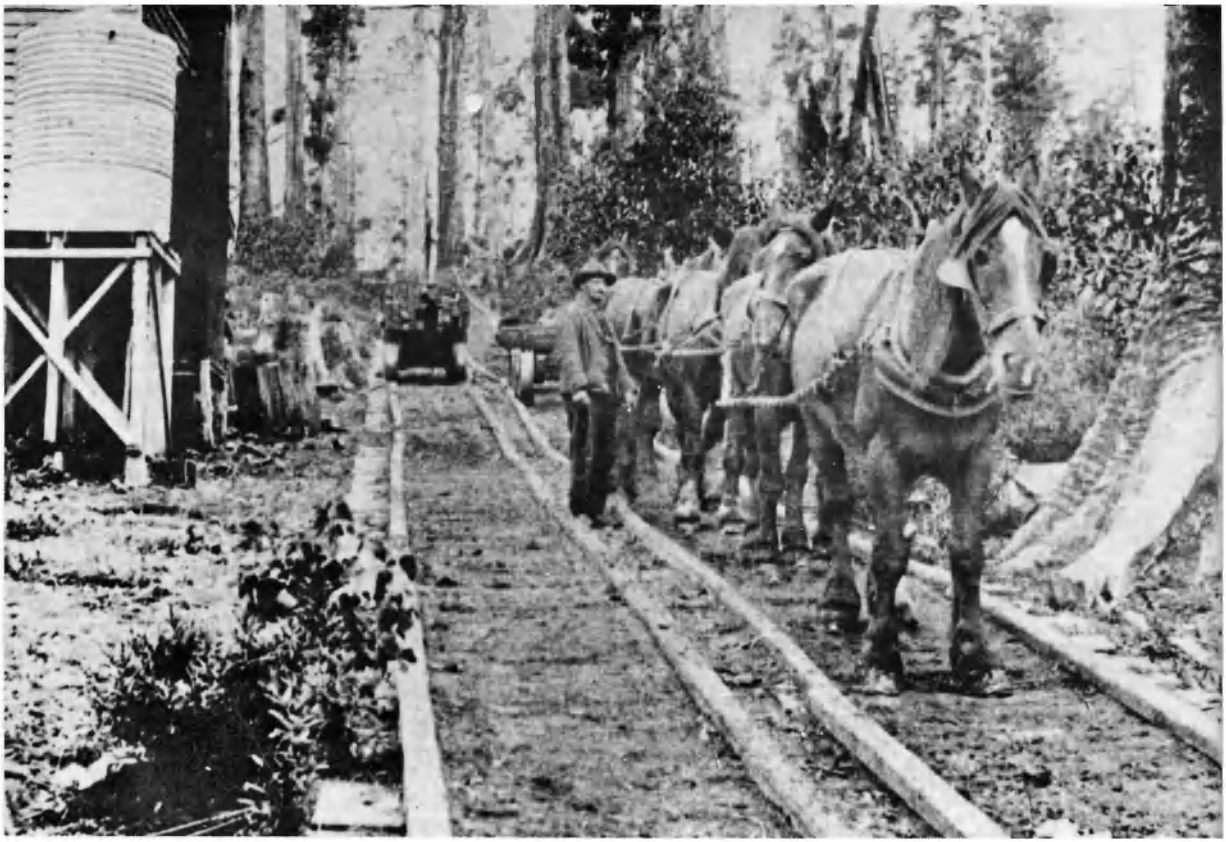
CLOSURE

Crowes lost its rail link in 1954 because of the negligible traffic offering beyond Weeaproinah; and Beech Forest was deprived of its railway in 1962. It is ironic that the line closed just two years after Beech Forest achieved its second highest outward loading of 11,087 tons, a figure only exceeded by the 1911 total of 12,959 tons, but it must be noted that most of the loading on the line from 1957 to 1962 was derived from Beech Forest itself and only represented about one fifth of the traffic handled during the boom times of the 1920's. The overall decline in traffic was caused by the diminution of the timber trade and the improvement in the roads. The latter development diverted much traffic from the railway, mainly because consignors found in road vehicles the means of avoiding the double handling, the risk of damage and the possible twenty-four hour delay involved in transferring from the narrow to the broad gauge.

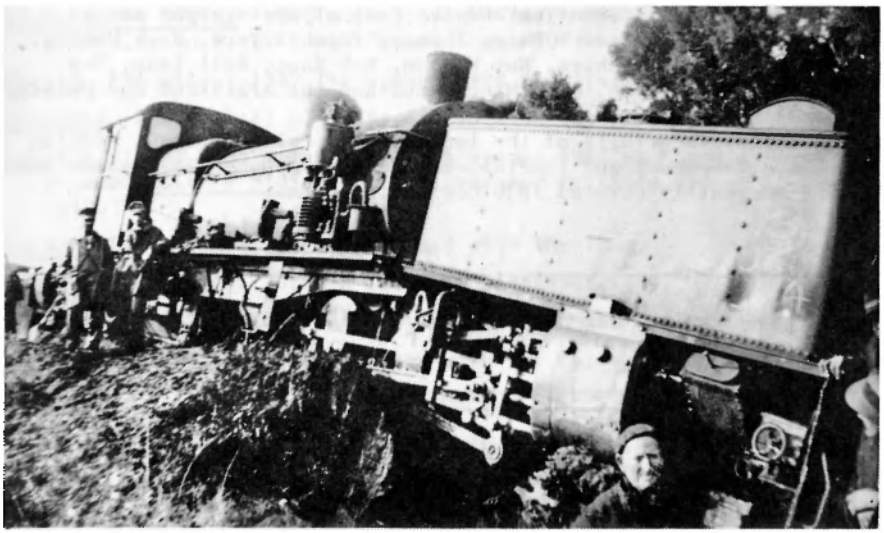
Despite much sentimental talk by Colac and Otway residents (including some who consciously avoided using the railway while it was in existence) about how the line should never have been closed it is remarkable that "The Beechy" lasted as long as it did in view of the condition of the track and rolling stock. Years of economy measures and the use of second-hand material contributed to the poor state of the permanent way, and the depleted survivors of the once numerous track gangs could scarcely keep even the drains unblocked let alone improve the condition of the track.

The Crowes line was a difficult and demanding one on locomotives and rolling stock and the constant repairs needed to maintain locomotive G41 in a serviceable condition were a perennial headache for the VR. Maintenance labour on G41 was readily available when the Colac locomotive depot was a full running shed with five fitters, a boilermaker and two train examiners, but economy measures and reduction of staff made this less possible and by 1940, if not earlier, maintenance difficulties were part of the usual state of affairs. In the 1940's it was not uncommon for the sole fitter and his mate to spend two full days repairing the garratt after its weekly trip to Crowes. Even then, some defects were not remedied, as to do a complete job would have meant withdrawing it from service for many weeks. This was not an action to be undertaken lightly as there was only one garratt on the line and the alternative of double-headed NA's was a poor substitute. It was only in 1955 with the arrival of the second garratt, G42, surplus from the closed Walhalla line, that G41 could receive a much needed overhaul. In the early 1950's a new locomotive was thought to be the answer to the maintenance problem and such a suggestion, for a diesel locomotive no less, emanated from the office of the Superintendant of Locomotive Maintenance. Several foreign designs for the diesel were briefly considered before the idea was abandoned when it was realized that very heavy expenditure would be needed to renew the track for diesel traction.

The ageing garratt locomotives were left on the line and the strains of hauling loads up the steep gradients and around multiple sharp curves continued "to wreck the garratts, such as no other line did to the particular engines that ran on them" recounts Mr Ted McGregor, a former locomotive fitter at Colac. Some troubles peculiar to the garratt were in the steam pipe, axle boxes and motion gear. The steam pipe that ran beneath the boiler barrel, cab and rear engine unit to the rear cylinders frequently blew out and, depending on the size of the leak, sometimes filled the cab with superheated steam and saturated the sand in the sand boxes by condensation. Some of the strongest curses ever uttered in the Otways came from the garratt crews riding home in an overheated, steam-filled cab. The strain of powering



Above Jim Facey on Pettitt's tramway which ran from Pettitt's Siding, circa 1919.
Below Knott's No.3 ("Wait a while") mill, south of Wyelangta, circa 1927. Note the horse troughs on the bridge. Photograph - courtesy Harry Thomas.



G 41 off the track at Crowes when it overshot the buffer stop in the early 1940's.

around the tight curves played havoc with the axle boxes and motion gear and contributed much to the tendency for the cylinder release cocks to fall off and the speed recorder arm to break, though a broken speed recorder was a blessing in disguise, for if the crew were at Crowes for the overnight rest they sometimes made an unauthorised trip to the dance at Beech Forest for their evening's entertainment. G41 received the worse treatment from the Crowes line as it spent all its operational life there, and became derelict shortly before the line closed. G42, the recipient of the less punishing treatment on the Walhalla line, continued in service to the last.[1]

But despite mechanical difficulties, so long as some substantial loading was offering the garratts struggled from Beech Forest and Weeaproinah. From about 1957 to 1962 the loading on the line was mostly pulp wood and once this traffic fell off in the second half of 1960 the "Beechy" was doomed because, as the VR said at the time, "owing to the paucity of traffic the provision of a regular goods train service on the Colac-Weeaproinah narrow-gauge line has involved substantial operating losses in recent years. A stage was reached where the continuance of the service would have involved greatly increased expenditure in maintaining the rolling stock and track facilities in a serviceable condition. As it was evident that the cost of retaining the service was quite disproportionate to the small amount of traffic offering, the line was closed".[2]

Today "The Beechy" and its tramlines are no more. The railway has been dismantled, and past its abandoned, tree-encrusted embankments and cuttings thunder the log trucks from the enormous Aire Valley plantation. The maturation of the trees in this plantation was the last glimmer of hope in saving the line for it had been hoped to carry these logs had the line survived another few years. But that was not to be. Meanwhile in the bush and around the farms south of Colac lie overgrown earthworks and the rusted remains of sawmill boilers and tram wheels, mute testimony to the Otway's former days as an area of tall timber and tramlines.

ACKNOWLEDGEMENTS

Most of the information for the text has been derived from interviews with Colac and Otway residents who have had first hand experience with either the Crowes railway, the sawmills and tramlines, or life in the Otways. I acknowledge the

assistance of all who offered information and the loan of photographs and in particular the contributions of Messrs Harry Thomas, Frank Alford, Jack Condon, Bill Brady, Jack Haigh, Perc Hampshire, Roy Kellam, Bob Knox, Bill Tann, Ted McGregor, Tom Smith, John Houghton, Jeff Minchinton and the Armistead and Denning families.

I have omitted extensive details of the locomotives, rolling stock, station layouts, safe-working procedures and timetables because of space limitations and these details being adequately covered in other publications.

Norm Houghton
Ballarat, 1973.

APPENDIX

Stations and sidings on the Colac - Crowes railway

Colac 95¼ miles; 437 ft.

Ellimynit 96½ miles; opened 1926.

Tulloh 99 miles; 767 ft; opened 1907.

Coram 100¼ miles; 891 ft; opened 1903.

Barongarook 102 miles; 739 ft; opened with the line.

Barongarook Water 104 miles; opened for passengers c. 1908, closed a few years later. The original site of the Barongarook water tank.

Birnam 106¼ miles; 462 ft; opened in 1924 as Watson & Facey's Siding, renamed Birnam in 1925 (see page 10.)

Kawarren 108¼ miles; 392 ft; opened with the line.

Henrickson's Siding 109¼ miles, opened as Hitt's Siding in 1914, renamed Henrickson's Siding in the late 1920's, closed in 1930.

Lovat 111 miles; 267 ft; opened with the railway as Loves River, renamed Lovat in 1905.

Gellibrand 112½ miles; 247 ft; opened with the line.

Ballast Siding 114¼ miles; in use 1903-4 (see page 19).

Banool 116¼ miles; 631 ft; opened with the railway as Moorbanool; renamed Banool in 1904.

Wimba 118¼ miles; 701 ft; opened with the line as Bunding, renamed Wimba in November 1902.

McDevitt 120 miles; 1014 ft; opened in 1904.

Dinmont 121½ miles; 1272 ft; opened with the line as Weeaproinah, renamed Dinmont in 1912.

Devitt Bros Siding 122½ miles, opened c. 1908, closed early 1930's.

Ditchley 124¼ miles; 1676 ft; opened about 1906.

Beech Forest 124¾ miles; 1747 ft; opened with the line.

Buchanan 125¾ miles; 1823 ft; opened 1913.

Ferguson 127½ miles; 1722 ft; opened with the line in 1911.

Weeaproinah 129½ miles; 1708 ft; opened with the line as McInnes, renamed Weeaproinah in 1912.

Pile Siding 130¼ miles; 1634 ft; opened 1915.

J.G.M. Knott Siding 130¾ miles; opened for a few years in the late 1920's according to E. A. Downs "Speed Limit 20".

Kincaid 131 miles; 1547 ft; opened with the line.

Wyelangta 132¾ miles; 1757 ft; opened with the line.

Pettit's Siding 134 miles; 1711 ft; opened 1912 as Kincaid Smith's Siding, renamed Smith's Siding in 1913; renamed Pettit's Siding c. 1917, closed 1941.

Stalker 134¾ miles; 1697 ft; opened with the line.

Macknott 135½ miles; opened 1916, closed about 1930.

Lavers Hill 137¼ miles; 1510 ft; opened with the railway.

Crowes 139 miles; 1358 ft; opened with the railway.

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COLAC AND THE FOOTHILLS

1 Information from Mr Frank Alford, former repairer on the line.
2 Argus, 1 February 1926
3 Information from Mr "Snow" Tibbits.
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5 PSCR Report on Proposed Upper Acheron Valley Railway, Parliamentary Papers, 1918, Vol. 1, p. 681.
6 Mr Frank Alford
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10 See VR annual loading figures published with their Annual Reports. All references to passenger and goods loadings in the text have been obtained from these reports.
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15 Mr Roy Kellam.
16 Information from Messrs Ralph Gillam and Frank Alford.
17 Information from Mr Frank Alford.
18 Information from Mr Frank Alford and Mrs Knox.
19 Information from Mr Frank Alford.
20 Information from Messrs Bill Brady and "Snow" Tibbits.
21 Information from Messrs Frank Alford and Albert Denning. Note that the 1927 VR Gradients and Curves Book shows Birnam at 106 miles, obviously a mistake, since all VR maps seen by the writer show Birnam at 106¼ miles, the twenty chain difference.
22 Information from Mr Jack Condon.
23 Argus 21 December 1925.
24 Information from Messrs Ted Cashin, Albert Denning and Frank Alford.
25 Government Gazette, 18 March 1903, p. 876 and 15 April 1903, p. 1203.
26 Mr Frank Alford
27 Information from Messrs Jack Condon, Hugh Wilson, Jim McNaughton and Frank Alford, the last three all being former employees.
28 Information from Mr Frank Alford - a goldmine on the local gossip of 50 years ago.
29 Information from Messrs Albert Denning and Frank Alford.

THE CLIMB FROM GELLIBRAND

1 VR Regulation No. 76, 1923.
2 PSCR Report on Colac-Crowes Non Paying Line, previously referred to.
3 Information on Gellibrand from Messrs Albert Denning, Arthur and Mac Armistead.
4 Information from Messrs Arthur and Mac Armistead.
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6 Information from Mr Frank Alford who recalls seeing it when a lad.
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10 Same source as Note 15 above.
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13 Information from Messrs Jack Condon and Harry Thomas
14 Mr Frank Alford.
15 Information from Mr Ted Cashin.
16 Information from Mr Collin Tucker.
17 Information from Messrs Roy Kellam and Jim Moloney.
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20 See VR General Appendix 1928, p.774
21 Information from Messrs Frank Alford and Albert Jenning.
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23 Information from Mr Frank Alford.
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25 Information from Messrs Joe Butler and Frank Alford.
26 Colac Herald 28 July 1903.

THE RIDGE

1 Unless otherwise stated all information on tram routes and mills along the ridge has been obtained from Mr Harry Thomas.
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4 Information on Beech Forest from Mr Albert Denning, former engine cleaner there.
5 Information from Mr Bill Brady.
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9 Information from Mr Joe Butler.
10 Mr Jack Condon supplied most of the details on this tramline.
11 Information from Mr Bill Tann, potato grower at Weeaproinah.
12 Information on the Geelong works from Mr Bill Tann.
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14 Information from Mr Frank Alford.
15 Colac Herald, 31 August 1928.
16 Mr Jack Haigh, a former employee, supplied most of the details on Marchbank.
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18 cf. Argus 20 February 1919. It is possible that Jack Kincaid was trading as the "Western Timber Company" at Kincaid and his son took over the name at Stalker.
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21 Information from Mr Bill Brady.
22 Information from Mr Norm Beasley, Special Ganger.
23 PSCR Report on Colac-Crowes Non Paying Line; and VR General Appendix 1928.
24 Information from Mr Harry Thomas.
25 Information from Mr Bill Brady, chastened bettor.
26 The bestowal of personal names on items of machinery was popular in the Barramunga area but the custom did not gain much of a footing in the Beech Forest area.
27 Information from Mr Ern Milnes, a former employee.
28 See Age 26 February 1923.
29 Information from Messrs Perc Hampshire and Stewart Webster.
30 Argus 17-20 February 1919, 25 February 1919.
31 Information from Mr Frank Alford.
32 Information from Mr Perc Hampshire.
33 PSCR Report on Financial Results of Beech Forest-Crowes Railway; and VR Regulation No.76, 1923.
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35 Argus 10 February 1934.
36 Mr Perc Hampshire told the author he paced it out at one time.
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38 Information from Mr Bill Brady.
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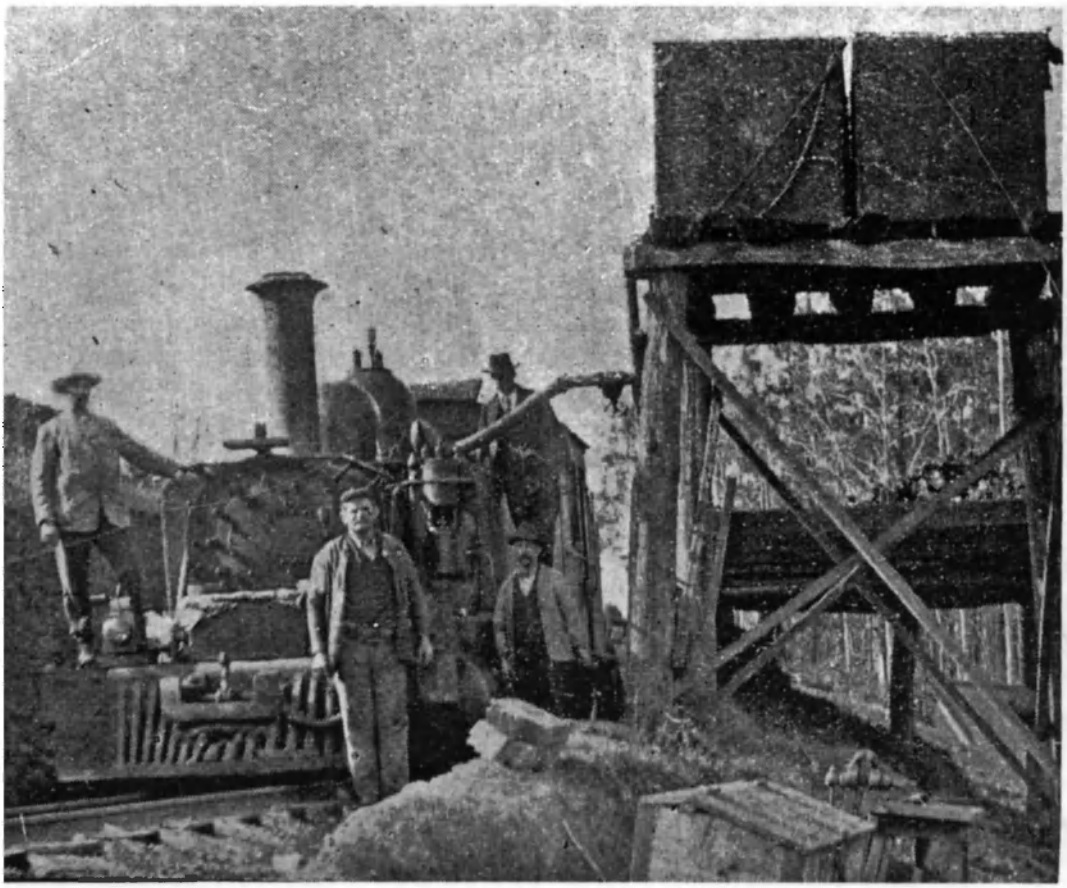
CLOSURE

1 Most of the material for this section was obtained from discussions with VR employees who were at Colac between 1940-62, in particular Ted McGregor and Bill Brady.
2 VR Annual Report, 1963, p.5.

Two bush beauties ride side-saddle on Marchbank's tramline, north of Pile Siding, in the 1930's. Rough track, unsprung bogies, and a far from steady log ensured that rides like these were memorable.

Photograph - courtesy Bob Knox

Driver Bill Brady in the cab of garratt G 41, holds the staff for the Beech Forest - Crowes section in the early 1950's.



An NA class 2-6-2 tank locomotive takes water on the Beech Forest railway in 1902 - the year the line opened. The location is not known, but the coal stage behind the water tank would indicate that it might be Beech Forest. Photographer - A. Lukey.

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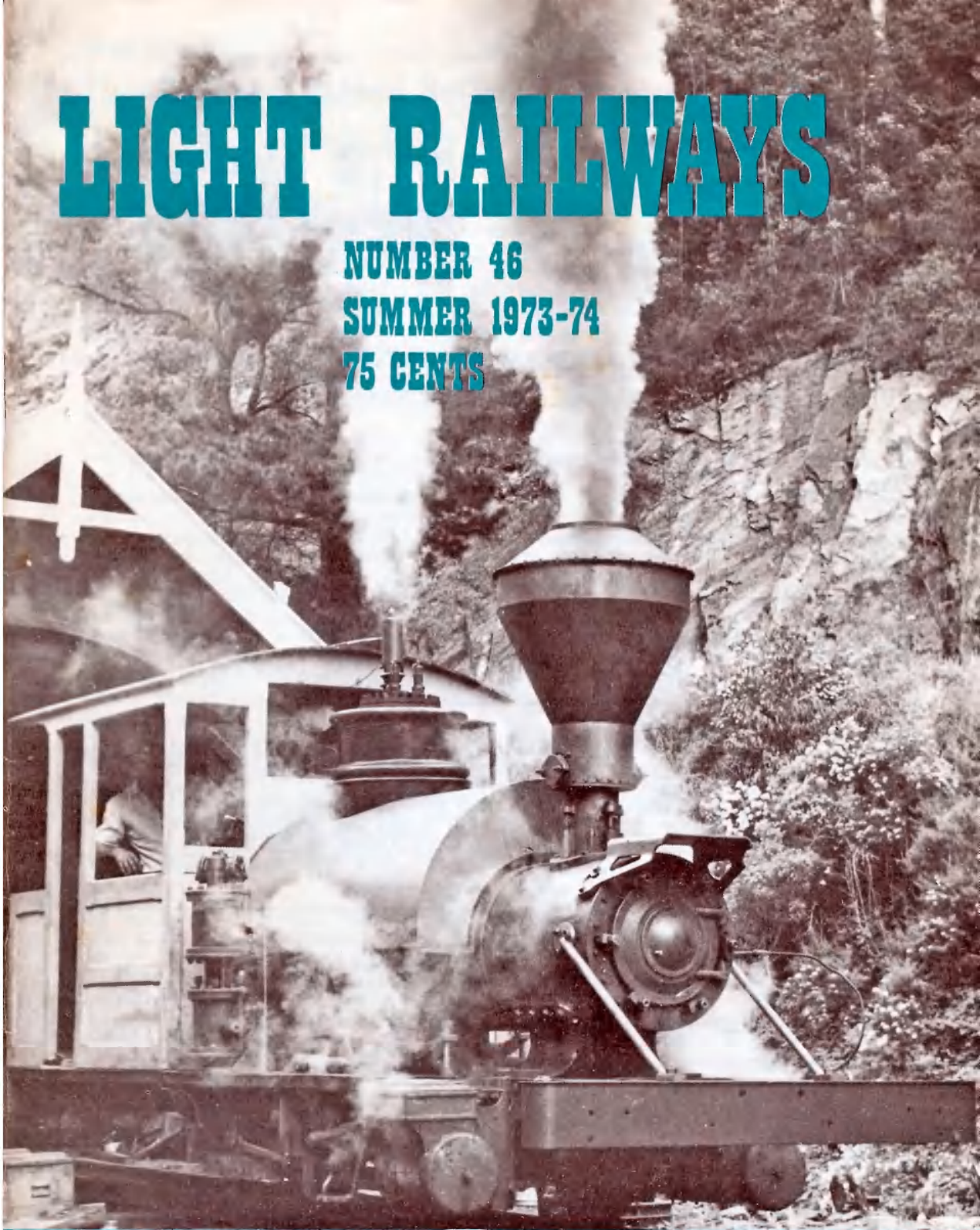

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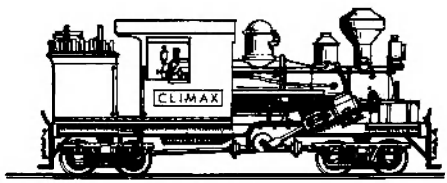

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Whilst every effort is made to ensure the accuracy of articles published in "Light Railways", errors may creep in. Additional information is being discovered all the time, and this sometimes contradicts previous information.

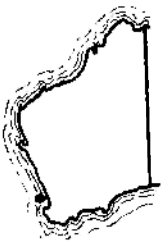
If you see any errors, or can add information, please contact the Editor, and so help us to record the full history of Australia's light railways.

Articles and News Notes & Comments items are always welcome.

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

FRONT COVER The Walhalla & Thomson River Steam Tramway's 2 ft 6 in gauge locomotive in steam for the first time at Walhalla, Victoria, on 3 February 1974. Although designed as a 2-4-2ST, the leading and trailing trucks had not been fitted when this picture was taken. See further report on page 24.

The Rottnest Island Defence Tramway



by Ian R. Crellin

Rottnest Island today is a booming tourist resort some eleven miles west of Fremantle. Its craggy limestone ridges, sandhills and tough scrub - today the haunt of tourists bent on enjoyment - once housed the guns defending the port of Fremantle from naval attack. Supplies and ammunition for these scattered batteries were transported by a light railway from wharf and depot areas.

THE EARLY HISTORY OF ROTTNEST ISLAND

This island is only seven miles long by two-and-a-half miles at its widest point. Dutch navigators visited it in the seventeenth century as did later English sailors. The early settlement in the Perth and Fremantle districts lacked good ports as the mouth of the Swan River was unsafe. The main port development occurred at the south of Cockburn Sound at Rockingham where the Jarrahdale to Rockingham railway terminated (see LR 42, p. 21) and on the ocean beach at Fremantle. Albany on the south coast became the main port for all but coastal shipping.

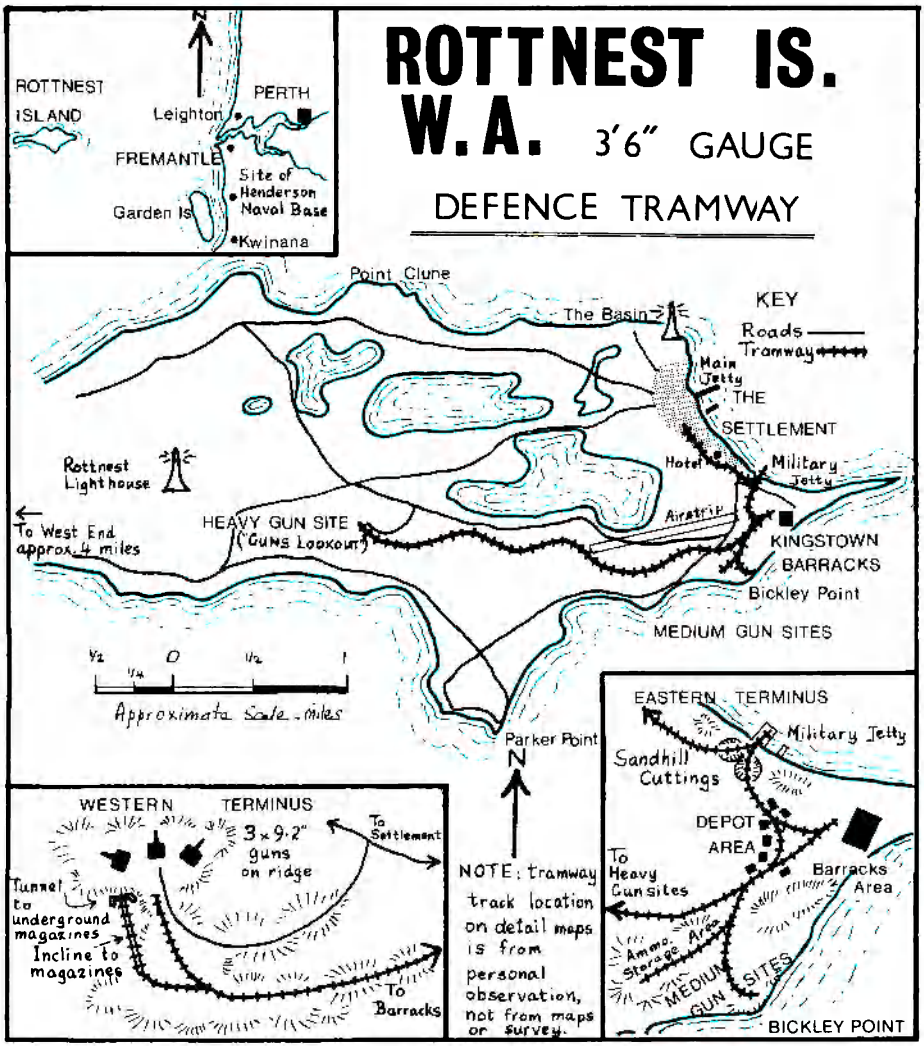
The brilliant Western Australian engineer Mr C. Y. O'Connor who is remembered for projects such as the goldfields water supply from Mundaring Weir to Kalgoorlie, conceived a plan to deepen the bar of the Swan River and to create at its mouth the port of Fremantle. Work commenced in 1897 and was completed in 1903. Rottnest Island acquired a stone lighthouse and signal station and became the pilot station for the port. Up to this time the island had served as a prison camp, and as an exclusive resort for the Governor of Western Australia and his guests. The prison buildings today are in use as a hostel and Government House is now the island's hotel.

Prior to World War II, the island was fortified to protect the port of Fremantle and during the war the whole island was taken over as a defence establishment. Since the war the island has returned to its civilian role as a tourist resort, as the age of the jet plane and the "smart-bomb" have made coastal artillery defences obsolete.

The Fortifications

The ports of Western Australia have great strategic value as they are the last bunkering ports before ships cross the Indian Ocean towards Suez or South Africa. Even in pre-federation days, we are told that the British Government plus all the colonies except Tasmania combined to contribute to the cost of fortifications at Albany, then an important coaling station on the route to Britain, and to smaller fortifications on Thursday Island in Torres Strait.[1] The Albany defences were improved and in use until the 1950's.

Fremantle supplanted Albany as the chief port and in the period prior to 1920 the government commenced building the large Henderson Naval Base on Cockburn Sound near Fremantle. Although this project was abandoned in the early 1920's, it is of interest to railway historians as the government used a number of Vulcan 0-6-0ST locomotives which later found their way to a private railway at Fyansford, Victoria; and to the Commonwealth Railways at Quorn, South Australia.[2] Two Kitson 0-6-0T locomotives ex-WAGR, found their way to the Canberra construction lines and later to NSW Associated Blue Metal Quarries Limited for use at Prospect Quarry and Bass Point Quarry (Shellharbour NSW).[3] The 1930's saw the rise of the Axis powers and of Japan, and interest in the defence of Australia increased.



Mr J. A. Lyons, then Prime Minister announced to the nation on 27 April 1938 that a three year plan was underway to strengthen our defences. This involved heavy gun defences at major ports, an increase in the strength of coastal defence units by 500 men, increases in anti-aircraft forces and an increase in the size of the Militia.[4] It is from this initiative that the Rottnest Island tramway had its beginnings.

The army commenced acquiring land on the island in 1936.[5] The Kingston Barracks were built at the eastern end of the island and the nearby heights of Bickley Point became the site of several medium gun positions (believed to be six inch guns). The main weapons however were three 9.2 inch heavy guns situated about two miles away on a high limestone ridge in the centre of the island. From here they had a clear 360 degree view over the ocean approaches to the port of Fremantle. Magazines for ammunition were dug into the ridge, underground beneath the gun site. Various other locations on hills and cliffs were taken over and concrete observation bunkers built for fire control of the gunnery. The previous source gives 1938 as the date for construction of

fortifications and 1939 for the construction of the tramway built to service the gun sites.

All materials were shipped to the island and landed at the military jetty near the main settlement. This jetty was constructed in 1905 (although I cannot find who by), and extended in 1935 and again in World War II[6] for use in construction of the fortifications and barracks.

Garden Island nearby, was also to be fortified but when war broke out little work had been done. An officer told me that a hasty defence was improvised using any available guns. This included a four-inch naval gun and some US 155 mm field guns, amongst others.

It is appropriate here to mention the difficulty under which any historian works when he researches a topic of defence significance; that is of course the problem of security classification. It is fortunate that the Rottnest Island defences are defunct and much of the land has been returned to public use. Indeed the 9.2 inch battery is now called "Guns Lookout" and is open to the public. On my first visit to the island in 1964, the tramway was behind formidable barbed wire fences, but on a later visit in 1967 when the accompanying photographs were taken, much of the barbed wire was gone and public access was obtainable to the derelict facilities.

THE TRAMWAY

The tramway was built primarily for the transport of ammunition from magazine areas to the gun sites and from the jetty to the magazines. Other equipment and supplies were also moved as required. It is of 3 ft 6 in gauge and the track appears to be laid with 40 lb rail on hardwood sleepers.[7] Light ballast of sand and rubble is used.

The following routes are known but others may have existed:

(1) Jetty to Depot area behind barracks

This line commences with rail set flush into the surface of the jetty. From the jetty it proceeds westward through a deep cutting in sandhills and curves to the south into the depot area. This is a short branch of less than half a mile. It meets the line to the gunsites in a Y junction in the depot area. This branch was still intact in 1967.

(2) Jetty to the Settlement

This short line branched off the line described above at the land end of the jetty. It swung northwards through a sandhill cutting and followed the coastline past the present hotel into the settlement. It is probable that it was built when the army took over the whole of the island as a defence base during the war. It was removed some time after the war and its formation was made into a bitumen road.

(3) Barracks to Heavy Gun Site

This is the main line of the system. It proceded westward from the barracks area through the depot area swinging slightly to the north. Its route was fairly direct with few earthworks. Two rises are traversed by curving the track further to the north to avoid the higher ground. After about one-and-a-half miles the tramway commences to climb a long ridge to the gunsites. I estimate that the grade on this climb would reach up to 1 in 40 near the top of the climb. Terminal arrangements at the gunsite were obliterated by a bitumen carpark in 1967 when the site was opened to the public. Despite this the incline on the western side of the ridge down to the underground magazine entrance tunnel could clearly be seen. The total length of the line is over two miles. In 1967 most of the line was still in position but derelict.

(4) Depot Area to Medium Gun Sites

This short branch of less than half-a-mile in length climbs steeply away

Above - Derelict rolling stock in the depot area, 1967.

Left, and below - Two views of the 'Crab' at Kingston Beach in 1967.

All photographs - courtesy Ian Crellin.

from the other line from the Depot area towards Bickley Point. The branch splits after a short distance. One line proceeds to the south-west for several hundred yards and passes several small concrete structures with loading decks. These presumably were for ammunition storage for the medium guns. The other branch swings to the southeast towards Bickley Point. This branch serves the medium gun positions. By 1967 only concrete pits and bunkers remained to indicate their positions, however most of the line was intact, if in poor condition.

The system served the needs of the fortress well but has fallen into disrepair and is believed not to have been used since the late 1950's.

LOCOMOTIVES

To my knowledge, only two locomotives (or powered trolleys) have been used on the line. Both were internal-combustion powered. A lack of fresh water and the tactical problem of smoke and steam favoured the use of internal-combustion power. Domestic water supplies are collected from a bitumen artificial catchment near Mount Herschell, west of the settlement.

The best known locomotive is "The Crab". It is a four-wheeled cableless locomotive powered by a Fordson tractor engine mounted transversely on the loco. Transmission is by chain drive to one axle, after passing through a right-angle drive from the gearbox.

Although the locomotive carries Malcolm Moore builder's plates on its side frames, it is my opinion that it has been built up from a more conventional design. The army has operated 2 ft gauge Malcolm Moore at various locations in Australia. The endplates, deck plate and engine bearers appear to have been improvised and bolted to Malcolm Moore side frames. I must stress however that I have no firm evidence to back this claim and the loco may have been built in its entirety by Malcolm Moore.

In 1967 "The Crab" was still at Kingston Barracks painted army green with white trim. It did not appear to have worked for some time previously and could be classed as derelict.

The other unit could more correctly be called a powered trolley than a locomotive. Frank Blackwell writing in an earlier LR[8] described it as "a four-wheeled trolley, which had a one-cylinder stationary engine as power..." It is unlikely that this vehicle could have performed haulage duties except on the flat sections of track near the settlement, jetty and depots. This trolley was not in evidence when I visited the island in 1967.

ROLLING STOCK

Rolling stock appears to be compatible with WAGR stock and may have been from that source originally. Couplings are of WAGR chopper type with side chains and the rolling stock is bufferless. In 1967 about ten four-wheeled wagons were abandoned at various sites in the depot area. These included low sided open wagons and flat wagons with very low hinged sides (see photograph p.6). Frank Blackwell[9] states that during a visit in 1944 to the site, the rolling stock comprised "a couple of flat top trucks... [and] a lot of WAGR bogies..." The bogies were probably used to support construction equipment and supplies. Blackwell suggests that they were used to carry gun barrels to the gunsites in a manner similar to carrying a log on bogies. These bogies were not at the site in 1967.

Top - The Rottnest Island tramway, looking east, in the depot area.
Bottom - Looking west from the depot area.

Both photographs - Ian Crellin

CLOSURE OF THE LINE

After World War II it became increasingly clear that aircraft would take over from coastal artillery fortresses the role of sinking enemy ships. In the post-war period coastal artillery units became CMF units operated by part time soldiers at weekends. The Rottnest Island guns came under the HQ 3 Fixed Defence Brigade, with headquarters at Fremantle. This HQ controlled the 11 Coastal Artillery Battery with detachments at Rottnest Island, Garden Island, Leighton, South Fremantle and Albany. This unit was disbanded in the

1950's and the last coastal fortress in Australia was abandoned in 1958.[10] With the abandonment of the fortress came the gradual disuse of the tramway. It would have been used for salvage of equipment and for movement of materials to and from the jetty but is believed to have been derelict since the late 1950's.

In the financial year 1967-68, 121 acres of land was declared for disposal as surplus to army requirements.[11] The Western Australian Government acquired the land which included the heavy gun site and tramway easement and many of the observation bunker sites all over the island. This land is now open to the public under the control of the Rottnest Island Board. The army has retained a large parcel of land in the barracks and depot area, which is used for training army units from the Perth area. The future of the site is in doubt as there is growing pressure for the Australian Government to surrender this area of prime tourist land for public use.

I have no knowledge of the disposal of the locomotive, rolling stock and track in the period after 1967. It appears to be army policy to favourably consider donating surplus railway materials and rolling stock to museums rather than to sell for scrap. The locomotive should find a home in the ARHS Museum in Perth, however I have a gut-feeling that it will end its days painted pink rusting away in a children's playground on the island. Further information on the final disposal of the locomotive from any Western Australian correspondent would be appreciated.

ACKNOWLEDGMENTS

My thanks to those members of the army, both past and still serving who kindly consented to be interviewed and to the library staff and others at Army Headquarters, Canberra who assisted, within the limitations of the security classification of the subject.

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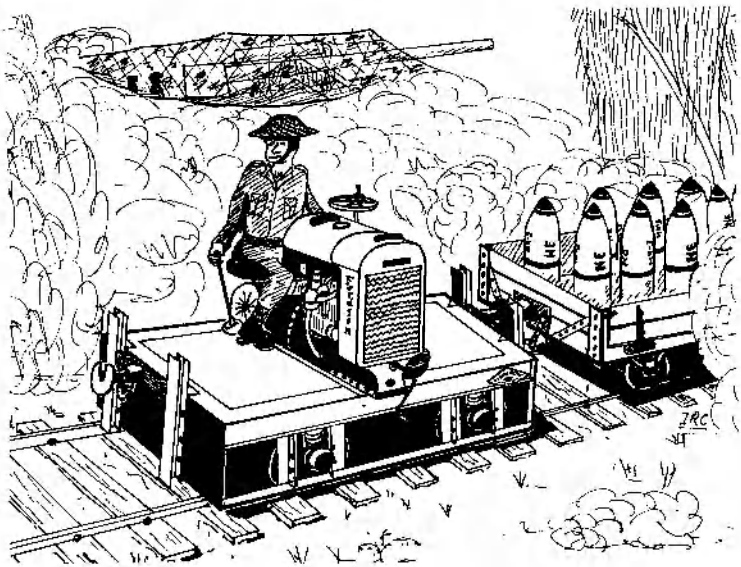
8,9. F. G. Blackwell,"Rottnest Island Tramway", Light Railways No.37, Spring 1971.
10. Information provided by an artillery officer who served in this final unit, which was located at Cowan on Moreton Island, off Brisbane, Qld.
11. This information from Army Headquarters, Canberra.



Above - Artist's impression of ammunition train on the Rottnest Island tramway.
Drawn - Ian Crellin

Left - Looking west from the jetty, 1967. The branch to the jetty goes through the cutting to the left, the previous branch to the settlement went through the sandhill cutting to the right where the road now is.
Photograph - Ian Crellin

The Tasmanian 'G' class 2ft gauge locomotive

In 'Light Railways' 43 we published a drawing by Geoff Murdoch of the Tasmanian Government Railway's 2 ft gauge 'J' class Hagan's Patent 2-6-4-0T locomotive. Before the arrival of this locomotive the work-horses on the gruelling eighteen-mile long North East Dundas Tramway - with its 1 in 25 grades and numerous 1½-chain and two-chain radius curves - were the 'G' class 0-4-2T's.

The first G class was built by Sharp, Stewart & Company of Glasgow, Scotland in 1896 and was their builder's number 4189. Logically, it was numbered G1. G2 was built two years later, having Sharp, Stewart's builder's number 4432.

On 17 May 1899 G1 met its premature end in a spectacular way. Whilst preparing the morning train for departure in Zeehan yard its boiler exploded, killing the unfortunate engine crew in the process. Newspapers of the time reported that the boiler rose at least 100 ft in the air, and landed over 200 yards away. The locomotive was totally wrecked in this unexplained accident, and a replacement was built by Sharp, Stewart in 1900, (B/No. 4619). This was also numbered G1.

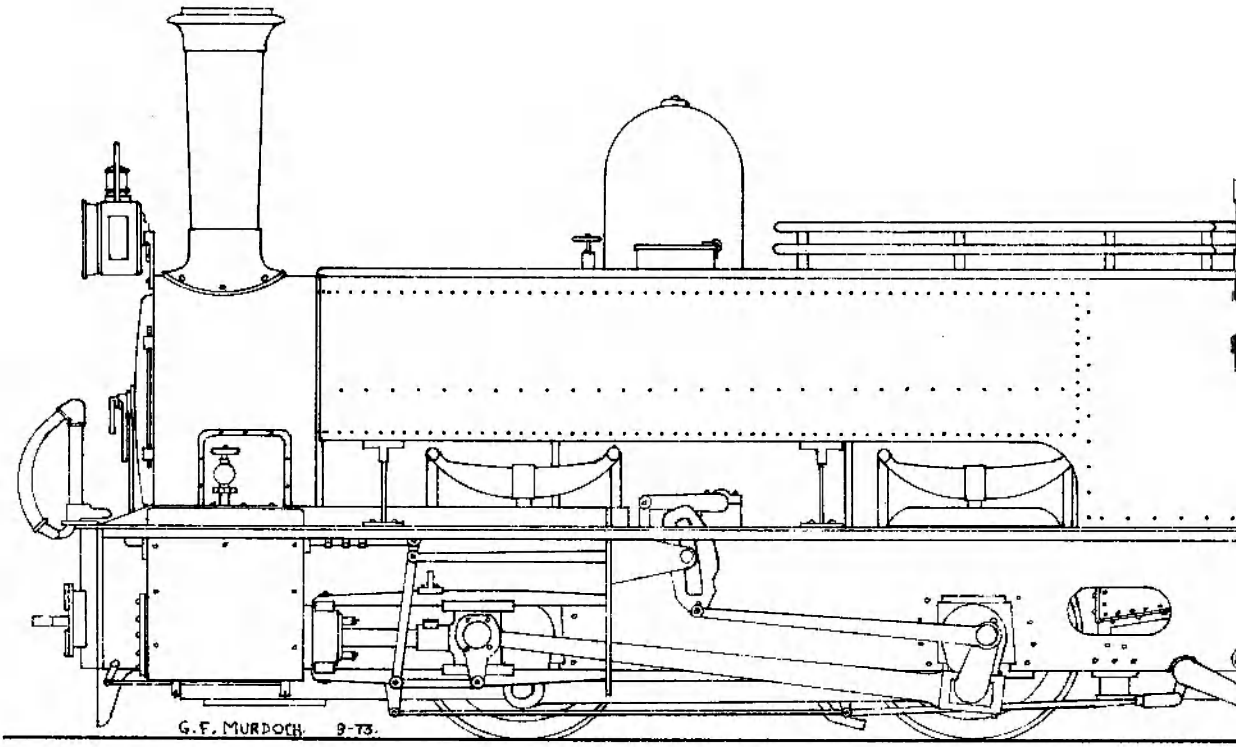
Although the North East Dundas Tramway closed in 1932, G2 and the second G1 found a new home in Queensland, working on the sugar tramways of the Isis Central Mill. After running in their original condition for many years (but with diamond spark-arrester chimneys), Isis Central Mill rebuilt them as tender engines, with much larger boilers. They were numbered 9 (G1) and 10 (G2) on the Isis roster, and remained in service until the early 1960's.

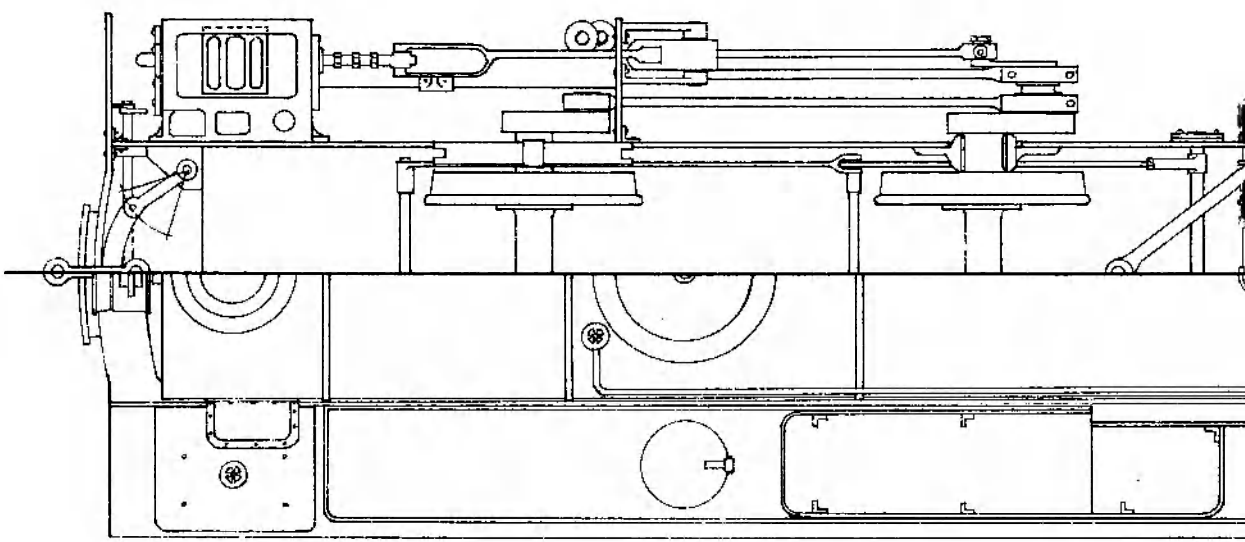
Leading dimensions

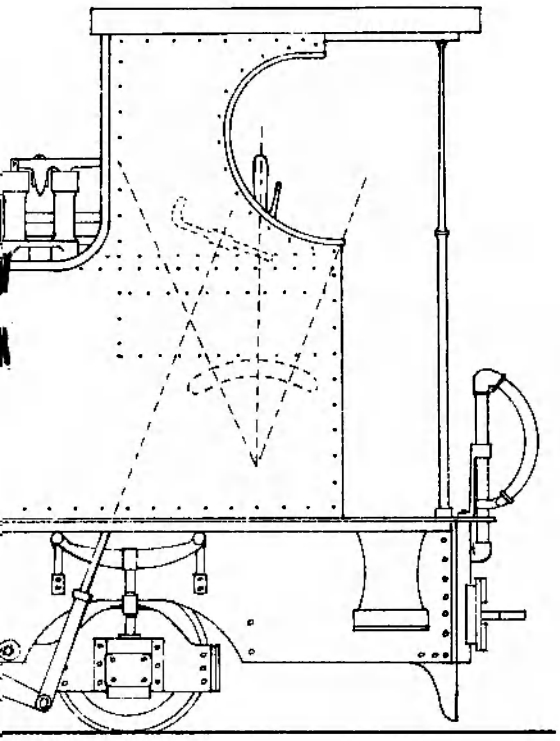
Coupled wheel diameter	2 ft 6 in
Trailing wheel diameter	1 ft 9 in
Fixed wheelbase	5 ft 6 in
Total wheelbase	10 ft 3 in
Cylinders (2)	12 in x 16 in
Approx total weight, in steam	19¾ tons
Tractive effort, at 70% boiler pressure	7,680 lbs
Boiler pressure	140 lbs p.s.i.
Water capacity - side tanks	320 gallons
" " bottom tanks	230 "
" " total	550 "
Coal space	60 cubic feet
Heating surface, firebox	34 square feet
" " tubes	341 " "
" " total	375 " "
Grate area	9½ square feet

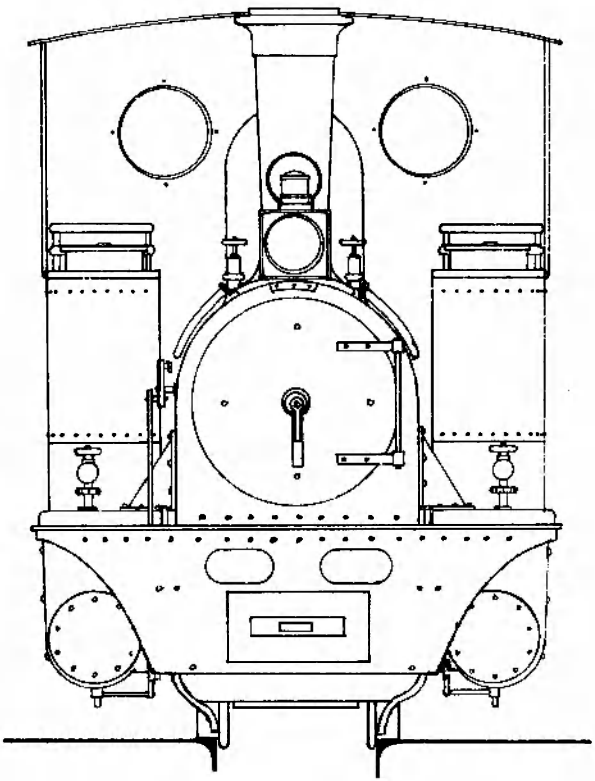
On the TGR drawing (No.969, dated 13/3/00) the haulage power up a grade of 1 in 25 is given as 40 tons, whilst down grades the locomotive was permitted 80 tons. The boiler barrel was 9 ft 7-7/8 in long between tube plates, and the boiler contained eighty-three tubes of 1-5/8 in outside diameter.

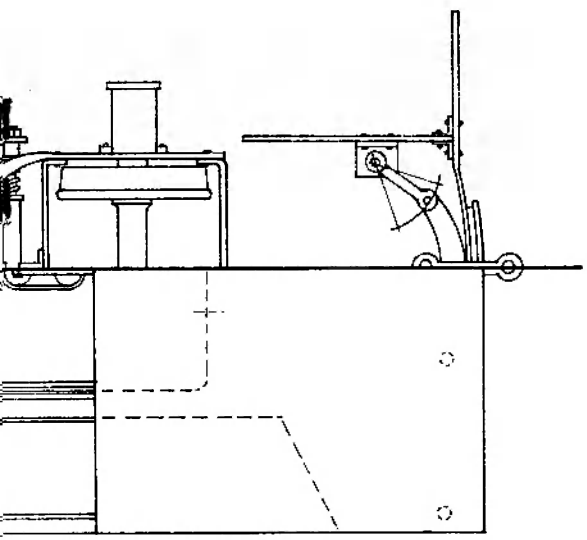
The scale drawings were prepared by Geoff Murdoch using General Arrangement drawings of the Tasmanian Government Railways as a base. The front view was derived from the top and side views, using photographs to fill in details. The air hose on the front buffer beam has been left off the front elevation due to lack of information on its location.





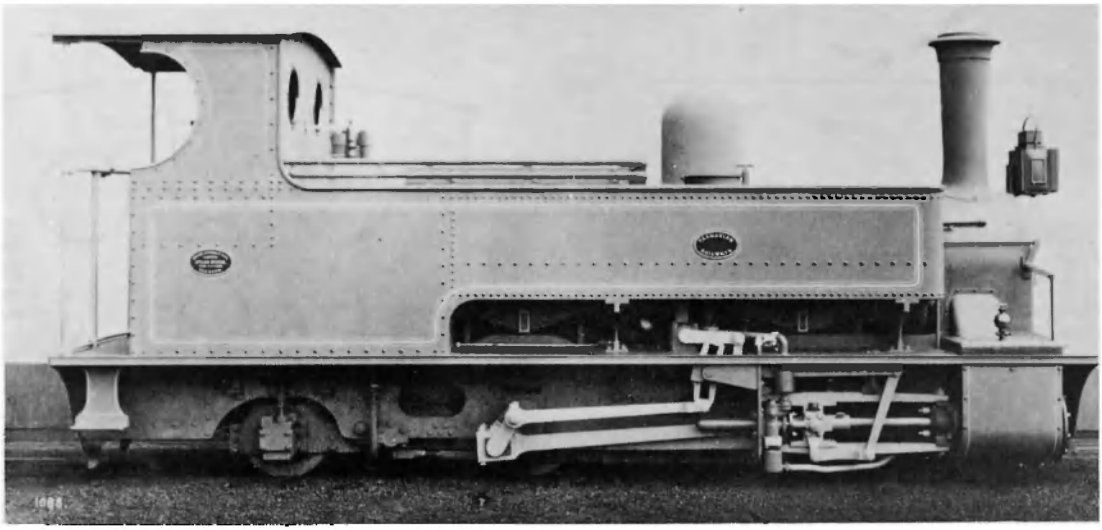






TASMANIAN GOVERNMENT
RAILWAYS
'G' CLASS 2 ft. gauge
0-4-2T LOCOMOTIVE

0 1 2 3 4 5

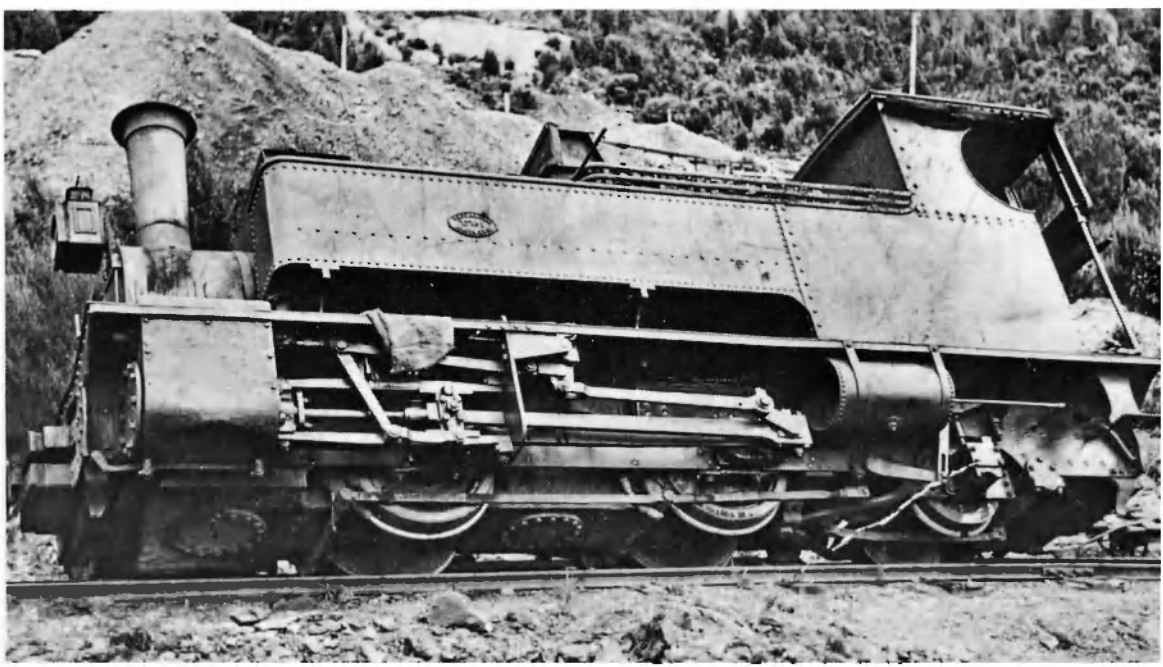


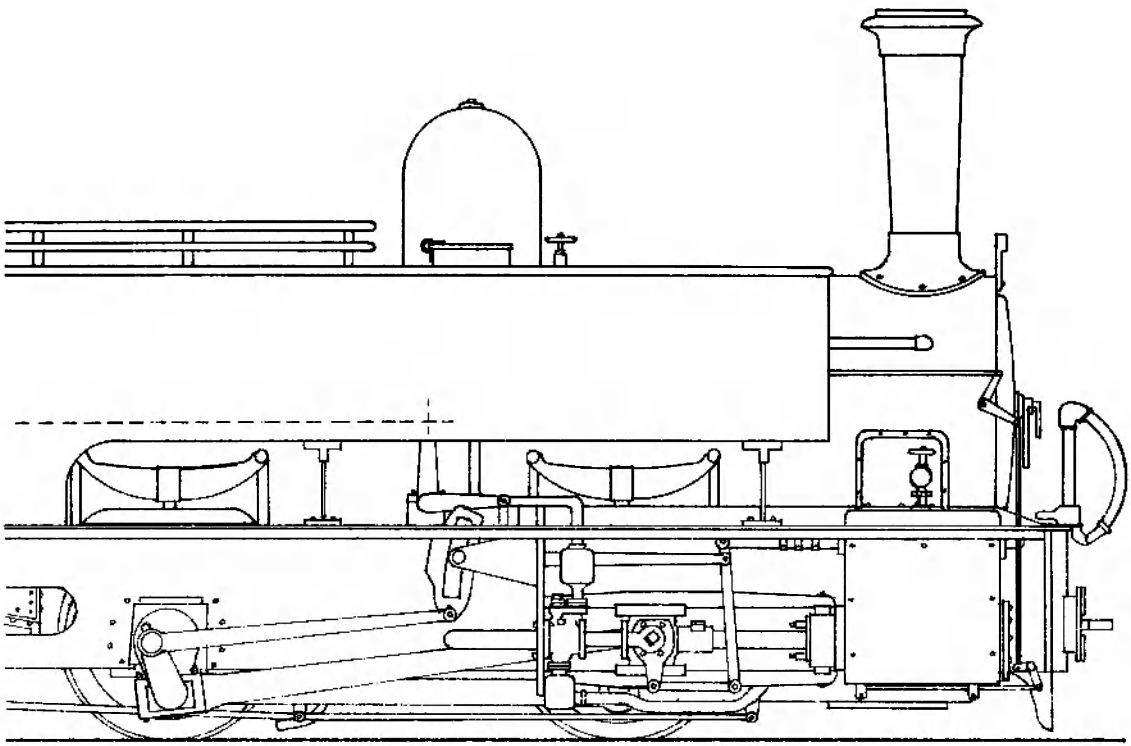
Above - Official photograph of one of the Tasmanian Government Railways' 2 ft gauge 'G' class 0-4-2T Sharp, Stewart locomotives.

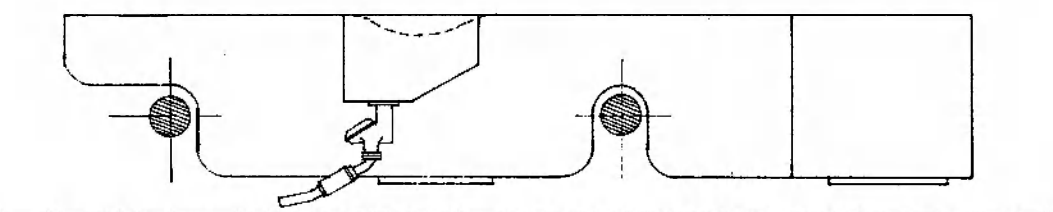
Photograph - Tasmanian Government Railways.

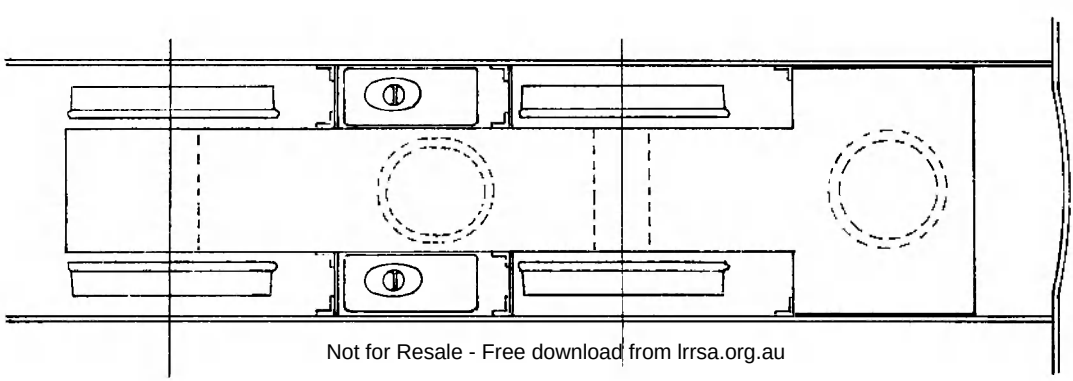
Below - 'G' class No.1 derailed on the North East Dundas Tramway. Note the water tanks between the frames.

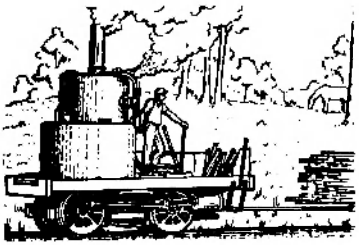
Photograph - Winter's Studio, Burnie, Tasmania.











News, Notes & Comments

NEW SOUTH WALES

CLARENCE HARBOUR WORKS RAILWAY, Public Works Department, Yamba

The recent decision by the New South Wales government not to proceed further with the development of a deep-water port at Iluka has resulted in the abandonment of those most interesting harbour works railways at the mouth of the Clarence River near Grafton. Two railways were in existance until the early 1970's but a recent visit to the site in November 1973 has revealed the complete demolition and removal of the northern breakwater line at Iluka and partial removal of the southern breakwater line at Yamba. There was about 300 metres of track, including a crossing loop, remaining between the Yamba fishing-boat wharfs and the landward end of the southern breakwater. An earlier visit to the site in February 1972 revealed the southern line in situ but little used. The northern line was not visited at that time.

Material reclaimed from the demolition of these lines and their associated facilities (such as cranes) is stored in the PWD depot at Maclean, some miles up river. Considerable amounts of rail, sleepers, points and rolling stock (mainly stone-wagons of both side-tipping and end-tipping varieties) are stacked here awaiting disposal. There appears to be no sign of the small internal-combustion locos which worked on the lines in their latter years, but they may have been under cover in one of several sheds on the site.

(Ian Crellin)

CONDONG MILL, AND CRABBES CREEK SUGAR TRAMWAYS, 2 ft (610 mm) gauge.

A visit to the Condong Mill at the end of the 1973 season has revealed declining levels of railway activity. The standard-gauge line from Murwillumbah appears to be no longer in use as cane from Crabbes Creek is coming to the mill by road. The interchange sidings at Crabbes Creek are overgrown and it is difficult to find the remains of the 2 ft gauge track which was abandoned before the 1973 season. The two small Simplex locos (Nos. 3 and 4) that worked there are now abandoned in the Condong Mill yard along with an assortment of other locos and equipment.

Two Ruston 0-4-0 locos, Nos 5 and 6 were in the yard, not in regular use along with Nos 3 and 4 ex-Crabbes Creek. Two locomotives were in use - No. 9, a modern E.M. Baldwin 0-4-0, is handling much of the cartage of cane on the 2 ft gauge with limited assistance from No.7, an old Fowler (sister locomotive to No.8 which was sent north to a CSR mill near Ingham in recent years). One of the drivers told me that the regular haul which took three hours with No.9 would take nearly five if No.7 were used. No.7's main use appears to be in the yard clearing the previous day's trucks in the early morning, while No.9 brings in more trucks from the farms. The system is far reduced from its earlier days. Cudgen sub-depot no longer exists and only a limited number of farms in the Cudgen district are using the tram for their cane. The line west towards the town of Murwillumbah is no longer in use but the main line which

headed south-east from Condong towards the Cudgen district is receiving limited use. The main line to the Cudgen sub-depot which goes eastwards along the river is still in regular use.

1974 will probably be the last year of the 2 ft tramways at Condong Mill. In November 1973 contracts were called for the road haulage of chopped sugar cane by multi-lift equipment. The amount specified was 152,000 tonnes of cane in 1974, increasing in later years. An additional 52,000 tonnes of cane was to be hauled from the isolated area of canefields at Crabbes Creek, served previously by its own 2 ft gauge system which transferred cane to the standard gauge NSWGR for the haul to Condong Mill, along the Murwillumbah branch. Tenders closed on 3 December 1973.

Any enthusiast who wishes to see this system in action had better visit the area in the 1974 season as its days are numbered.

(Ian Crellin)

HARWOOD MILL, near Grafton, 2 ft (610 mm) gauge

I paid a short visit to this mill near Grafton. Only a small proportion of the cane for this mill comes by tramway, most comes by river barge. Two locomotives work the small system. Both are small four-wheel internal-combustion locomotives, which I think are Simplex locomotives similar to those used at Crabbes Creek. One has a canopy built over it in the manner of a tramway motor. This loco is used for mill yard shunting and plies between the holding sidings and the weighbridge and tipper. From what I can gather, the system is faced with closure in the future but should outlive the Condong system.

(Ian Crellin)

NEBO COLLIERY, Wollongong, 3 ft 6 in (1067 mm) gauge

This colliery is owned by Australian Iron & Steel Limited. Motive power includes eight man-riding cars by Fox numbered AIS 44 to AIS 51; fifteen battery-electric locomotives, numbered 15, 33, 35, and 39 to 50 inclusive; and three 25 ton flame-proof diesel locomotives:

Malcolm	Moore	0-6-0D	Model	25DDL	47	B/No.	3
"	"	0-6-0D	"	"	"	"	6
"	"	0-6-0D	"	"	"	"	12

There is also a set of bogie passenger cars for personnel transport.

(ANGRMS "Stack Talk")

STOCKRINGTON COLLIERY, 3 ft 6 in (1067 mm) gauge

This mine is served by J. & A. Brown's railway, and is one of the few coal mines in New South Wales that still brings out its coal by tramway. The tramway is of 3 ft 6 in gauge using electric locomotives. The main-line locos are five 20-ton 0-4-0's built by Jeffrey of the U.S.A. They are fitted with 150 h.p. traction motors, air brakes, dynamic brakes, and two-way radio, and operate on 250 volts D.C. The run from the working face to the surface is about four kilometres. Trains consist of nine mine cars with a locomotive at each end. The mine also owns four 8-10 ton battery-electric locomotives having a drawbar pull of 10,000 lbs. Personnel transport is provided by four E. M. Baldwin man-riding cars.

The current collectors on the loco trolley poles consist of a set of shoes which slide along the top of the overhead wire which is suspended in such a way that it is supported from underneath.

(ANGRMS "Stack Talk")

SOUTH MAITLAND RAILWAYS PTY LTD, 4 ft 8½ in (1435 mm) gauge

This Company's three 4-6-4T locomotives of the No.15 class have been sold for scrap and were cut up on site by Simsmetal Ltd during the week ending 10 October 1973. These engines were Beyer Peacock duplicates of the NSWGR S.636 (C30) class

suburban tank locomotives and were the last type of passenger engine introduced on the SMR.

No.15 (B/No.5603 of 1912) was used on the West Maitland - Cessnock passenger trains until March 1930 when the Company's carriage shed and most of the passenger rolling stock were destroyed by fire. Passenger train operations then passed into the hands of the NSWGR and No.15 was relegated to short haul coal road working. In the 1950's No.15 found a niche on the Cessnock goods service and was confined exclusively to this working until the early 1960's when it again briefly reverted to the local coal haulage, never working further afield than Neath. Throughout the post-1930 era, No.15 was also loaned to Hebburn Ltd on numerous occasions, standing-in for one or other of that Company's locomotives on the coal haulage from the Hebburn No.2 and Elrington collieries to the exchange sidings at Weston. Its boiler was beyond economical repair when it was withdrawn on 11 September 1965, having recorded 551,067 miles in 52 years of service.

No.16 (B/No.5638 of 1912) was placed in service in April 1913 and was similarly used on the Cessnock passenger trains until 1930. During the subsequent depression years No.16 saw limited service on the local coal traffic until a cracked boiler brought about its rather premature withdrawal in June 1938. Although extensive boiler repairs were carried out, it was subsequently decided that traffic requirements did not warrant the engine's return to service and the loco was never reassembled. Various bits and pieces were then cannibalised to provide a pool of spares for Nos.15 and 29 and the wheels and frame were stored in the open near the loco shed, where for the past 30 years or so, they laid virtually undisturbed, save for the removal of a cylinder in 1968, this being required as a replacement part for a Hebburn locomotive (ex-NSWGR No.3013). The side tanks and boiler also survived the passage of time and these too were sold for scrap. No.16 had logged 304,406 miles at the time of its withdrawal.

No.29 (B/No.6139 of 1923) was the late comer of the trio, being the third-last engine purchased by the South Maitland Railways. Placed in service in November 1923, No.29 was a welcome addition to the passenger-engine fleet which was becoming hard pressed to handle the ever-increasing Cessnock traffic. After 1930 No.29 performed the same pattern of work as No.15 and during the 1950's these two engines shared the working of the Cessnock goods train, an arrangement that required only one of the pair being in service at any particular time. No.29 was also loaned to Hebburn Ltd on numerous occasions. The engine last saw service on the SMR main line on 28 November 1961, but not long after this it was again loaned to Hebburn where it subsequently sustained a burnt boiler. This marked the end of the road for No.29, for although the engine was shopped in January 1963, the necessary repairs were never completed and the loco was condemned in July of the same year. No.29 was credited with 289,704 miles.

No.27, the only 2-8-2T at present out of service is to be overhauled in 1974, thus bringing the 10 class fleet to full operational strength for the first time in 17 years. Two of the locomotives are currently on loan to the Richmond Vale Railway, No.23 having been transferred to Hexham on 21 March 1973 and No.17 on 18 May 1973.

(R. Driver)

WAUCHOPE LOGGING MUSEUM

It was announced by the New South Wales Government in October 1973 that a grant had been approved for the establishment of an outdoor museum at Wauchope in northern New South Wales (415 km north of Sydney) to show the equipment and lifestyle of the early timber days on the North Coast. Cedar getters opened up the district and in later years large quantities of white beech and blackbutt were taken from the district forests.

The museum will have a working sawmill, steam-powered log-snigging system, an "authentic logging railway with trucks and loading jib"(sic) (no mention made of locomotives!), a bullock team and chain saw events. It is also hoped to construct on the site a logging village and build an artificial

lake complete with dock and log-loading facilities. A paddlewheel steam drogher (e.g. powered lighter or scow) will operate on the lake. This type of vessel provided much of the transport in the district before road and rail communications were established.

The project was initiated by the Hastings Shire and the Port Macquarrie - Hastings Tourist Authority who approached the NSW Department of Decentralization & Development in February 1972 with the proposal. Since then the NSW Forestry Commission has granted approval for the use of a 12 hectare site, 1.6 km west of Wauchope on the perimeter of the Broken Bogo State Forest. Work on the site is expected to commence in mid 1974.

Although several logging tramways existed in the Hastings District and in the adjacent Coffs Harbour - Dorrigo area to the north and the Buledelah area to the south, few exhibitable relics of locomotives exist and it is unlikely that an authentic loco (workable or not) can be found for display at the museum. As this group has money, local support and access to transport it is reasonable to assume that they may attempt to obtain a loco from interstate. The Hampton shays and some areas of Tasmania come to mind. Local groups hoping to preserve locos lying in the bush should keep an eye out for people enquiring about such locomotives and not suffer the fate of a Queensland group who had part of a locomotive they were working on pirated by a rival preservation group from a southern state.

(Ian Crellin)

(The editor acknowledges with thanks Paul Nicholson and David Burke who also sent information on the above project).

WONGAWILLI COLLIERY, Wongawilli

This colliery, owned by AIS Ltd is connected to the NSWGR by private branch. The coal mine itself is situated about three-quarters of a mile up the side of a mountain range. There are two incline-railways which transport the men up the very steep grade to the mine. The older of the two has a rake of open toastrack wagons with no safety device should the rope break. The new incline has a rake of enclosed wagons complete with a cowcatcher and headlight on the wagon at each end. There is also a built-in safety brake system should the wagons break away from the winch.

(ANGRMS Stack Talk)

QUEENSLAND

GIN GIN MILL, Wallaville, 2 ft (610 mm) gauge

Radical changes have occurred in the structure of the sugar industry in the Bundaberg area. On 11 September 1972 the merger was announced between the Fairymead Sugar Company and Gibson & Howes. Gibson & Howes had acquired the Gin Gin Mill from the previous co-operative ownership some time prior to this. On 16 November 1972 the Bundaberg Sugar Company was formed as a result of the merger.

In December 1973, after a record year when a profit of over $2.5 million was achieved, the B.S.Co. announced that the Gin Gin Mill would close at the end of the 1974 crushing season. This comes as little surprise to anyone who has seen the Gin Gin Mill which is one of the most ancient and decrepit of the Queensland mills. It seems probable that the cane previously crushed at Gin Gin will be crushed at Bingera Mill, also owned by the B.S.Co. This will mean the transportation of cane either by road or by the construction of a section of 2 ft gauge tramway to link the Gin Gin system with the Bingera system. Since the closure of the QGR branch to Wallaville in the 1960's the Gin Gin 2 ft gauge tramway system has been extended along the abandoned QGR

formation towards the Bingera system. The gap between the two tramways is relatively short and the old QGR formation could be used for much of the distance.

(Ian Crellin)

KALAMIA MILL, 2 ft (610 mm) gauge

A number of major installations are planned for 1974, including resiting the tramlines from the east to the west of the mill, a new locomotive, and a new bridge to replace the old wooden tramway bridge to Rita Island at the mouth of the Burdekin River. (The Estates Magazine, December 1973)

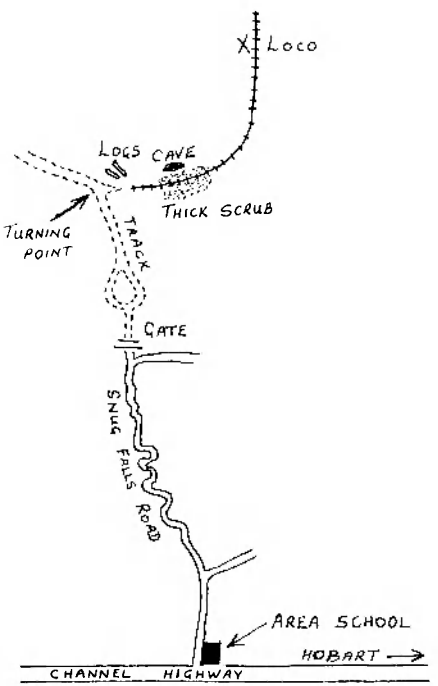
TASMANIA

CHESTERMAN'S TRAMWAY, Snug, approx. 3 ft 6 in (1067 mm) gauge

This tramway, of approximately 3 ft 6 in gauge, ran from the Snug Tiers to a loading point for road vehicles, and had log rails. It was last used about 1938, and had a geared locomotive converted from a Sentinel steam road lorry. This locomotive still lies abandoned along the route of the tramway.

(David Beck)

The boiler unit and front power bogie of a locally made geared locomotive abandoned at Snug, Tasmania.
Photo - David Beck.



SNUG

Above - Two views of the log rails on Chesterman's tramway, at Snug.

Right - Another view of the geared locomotive converted from a Sentinel steam road lorry.

All photographs - David Beck.

VICTORIA

ALEXANDRA & DISTRICT HISTORICAL SOCIETY

The Alexandra Shire Council has approved plans for development of the Alexandra & District Historical Society's proposed timber mill and bush settlement on land leased by the Society at Alexandra railway station. The Council has applied to the Ministry of Tourism for a subsidy.

(Alexandra & Eildon Standard, 28 March 1974)

CARDINIA CREEK TUNNEL CONSTRUCTION, Emerald, 3 ft (914 mm) gauge

I visited Emerald Tunnel in November or December 1971 and also recently. On the first visit I noticed that the tunnel-workshops leg of the triangle had been removed (see map), but there was a second track into the tunnel

connecting-on either before or after the remaining point. There was also a siding to, I think, a concrete plant on top of the spoil bank.

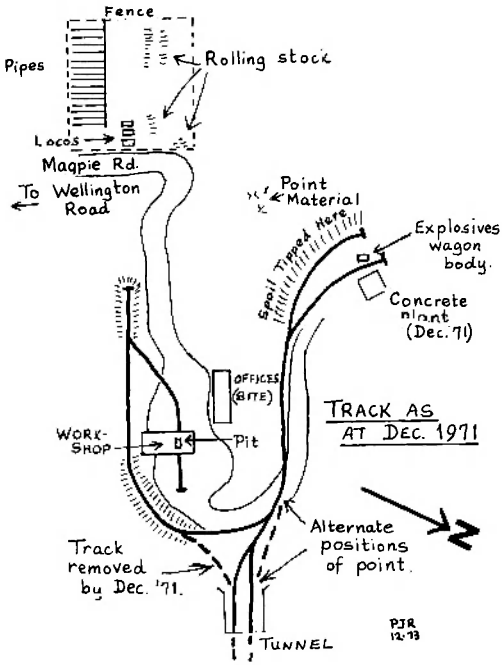
Suspended above the tunnel entrance was a signal to show when a train was in the tunnel, and on which track. (This can be seen in the top photo in LR 35, p.24).

Since then the tunnel has been completed and the railway pulled up. Locomotives, rolling stock, and a small amount of track is stored on a vacant block nearby.

There are three locomotives (the two in LR 35 and one other); eight side-tipping wagons; two wagon bodies; thirteen chassis, many of which have been modified in some way; one passenger vehicle (wooden sides and seats); one low-sided open wagon; one explosives wagon body (on spoil bank); and three other contraptions. One is a double-decker vehicle and has a fair amount of concrete on it. The second appears to be some sort of front end loader, and the third is a funny-shape flat with brackets on it.

The only buildings left are the workshops, with tracks and pit.

(Philip Rayment)



CHEETHAM SALT WORKS, Geelong, 2 ft (610 mm) gauge

On a visit to Cheetham Salt Works, Geelong on 26 January 1974 I found that some of the yard track at the buildings area had been tar-sealed over. About half-a-mile south beyond the end of the fenced section and opposite the end of the divided road I walked onto the main line and found that it does not exist beyond this point, and quite a lot of 40 lb rail has been stacked here, as well as portable track (maybe 15 lb rail, on small steel sleepers). One bogie flat truck and one small loco were parked near the works area.

(Keith Kings)

GIPPSLAND FOLK MUSEUM, Moe, 2 ft (610 mm) gauge

Further to the item in LR 43, p.27, the Gippsland Folk Museum has already taken delivery of one Malcolm Moore locomotive and eight trucks from the SEC. These are at present stored on wooden blocks beside the caretaker's house just inside the museum's entrance. The locomotive appears to be in quite good condition.

(Andrew Howlett)

FEIGLIN'S TRAMWAY, (near Narbethong) 3 ft (914 mm) gauge

In LR 42 p.4 Norm Houghton described the incline at Feiglin's Mill and noted that from the top of the incline the tramway continued on into the bush. I inspected this during October 1973 and the following notes were made.

From the top of the incline the tramway has been converted to a bush track, it continues like this for about half-a-mile until the site of a timber mill is reached (perhaps Feiglin's No.2 ?). Many remains of the mill may be seen, large logs mark the site of the saw benches, the concrete foundation blocks for the saw driving machinery are in place, as well as the roof supports although a little warped, the remains of huts are clearly evident, as well as two water tanks. Ten yards downhill from the mill there is a large steel building to which sawdust from the saws appears to have gone.

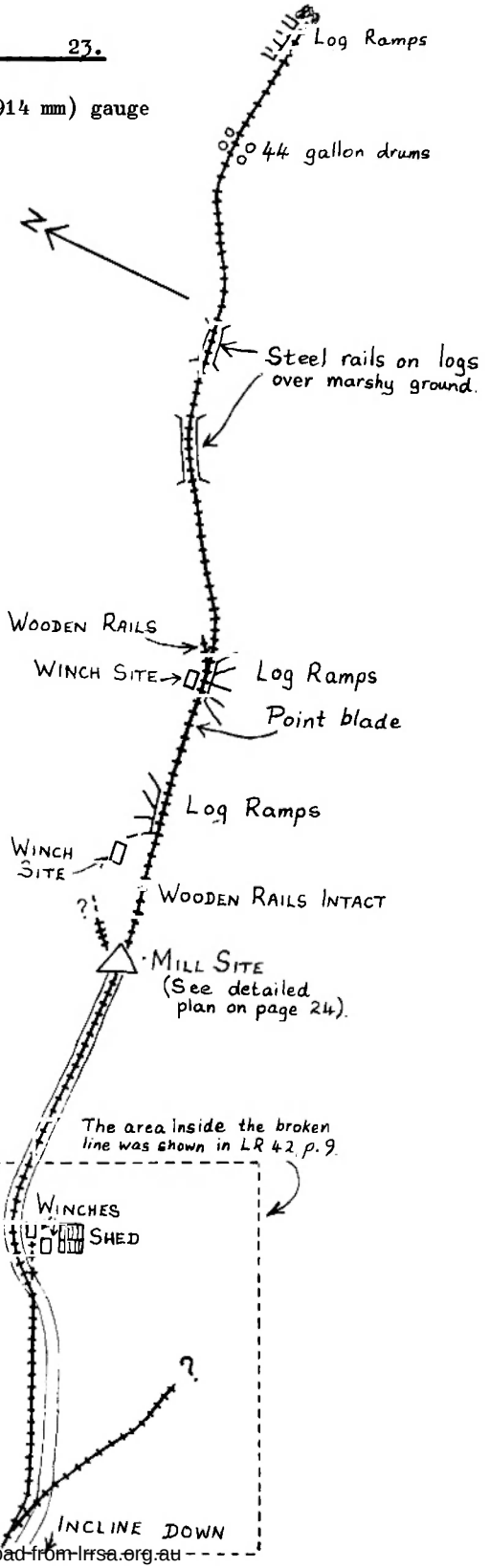
Just before the mill is reached the tramway branches off to the right at two places, passing through cuttings 6-7 ft deep, before joining together and continuing to the mill, (see sketch, p.24). From the mill the main-tramway branches again, one line entering a cutting 7-8 ft deep, being well preserved; the other goes into the bush - I followed this for a short way with many sleepers and dog spikes remaining, but the undergrowth became so thick that I had to retreat. On the other tramway just past the cutting, two bogies were found complete with wooden brake blocks. Both were well rotted.

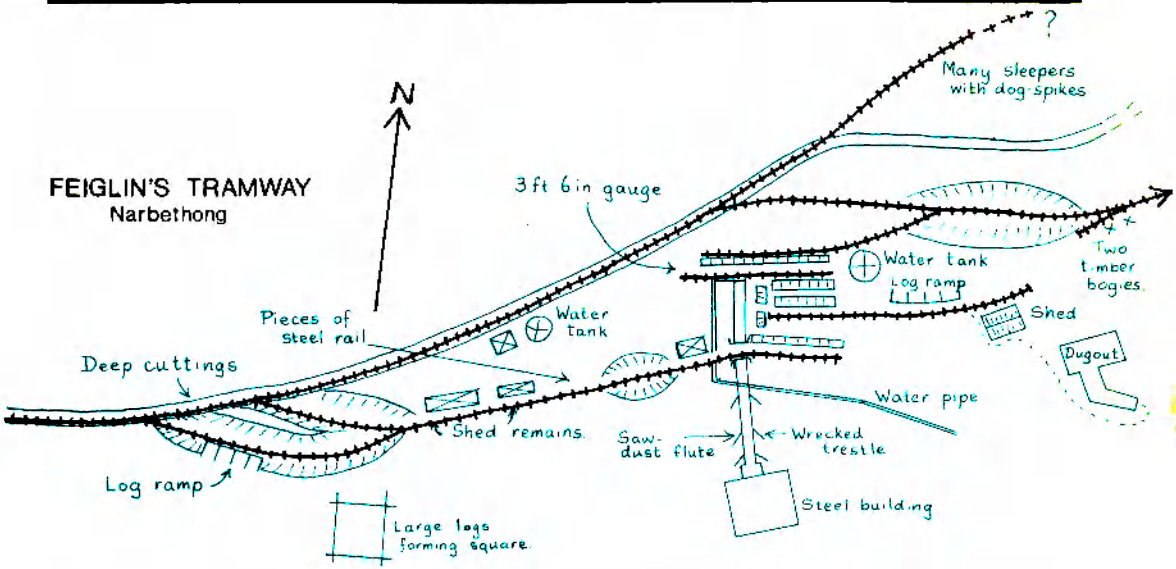
Upon leaving the mill area a log loading ramp was soon passed, the remains of a steam winch being scattered about. One hundred yards further along another log ramp was reached, this being a large structure with the logs overhanging the valley, the concrete winch foundations being quite evident.

It appears as though the line was steel railed with wooden braces, many instances of this can be seen, although much is covered by undergrowth and forest debris. The formation was very overgrown and it was only with a sharp machete and a good sense of humour that the terminus was reached, a log ramp and a huge pile of rocks marking the end.

(Anthony Sedawie)

(This item earns the $2 Field Report award for this issue - Ed.)





TRAMWAY MUSEUM SOCIETY OF VICTORIA LTD, Bylands, 4 ft 8⅝ in (1435 mm) gauge

Light Railways readers will probably be interested to know that the TMSV now opens its museum site to the public every Sunday. The museum, which is quickly taking shape, is located in Union Lane, Bylands, 32½ miles from Melbourne along the Hume Highway. Three further trams were moved from Melbourne recently and are now sheltered with four other tramcars in the depot. One of these trams was Ballarat bogie No.36 which was donated to the Society by the Hawthorn City Council. Some 220 visitors attended a special opening on 30 September 1973 to view the trams and historic displays in conjunction with the Royal Historical Society's biennial conference.

(Andrew Howlett)

WALHALLA & THOMSON RIVER STEAM TRAMWAY, 2 ft 6 in (762 mm) gauge.

On 3 February 1974 the reconstructed locomotive (see LR 38, p.26) made its first run up and down the Walhalla yard. It was steamed for the benefit of visitors who had travelled on the Vintage Train to Moe, and ran without piston rings or even cylinder cocks (5/8 in.holes open to the atmosphere at each end of the cylinders). The leading and trailing pony trucks also were not fitted. The axle-boxes were chocked up due to excessive weight, and being out of balance it rode like a dray, necessitating very low speed. The fuel was green wood. Every ounce of effort went into getting the loco moving for that day, as we knew the Vintage Train passengers wanted to see it. Grass on the track made it like driving over a block of ice.

By the following weekend we had attached our one finished vehicle with a special coupling to take the weight of the unbalanced rear end of the loco. The loco was then let down onto its springs, all grass was removed from the track, piston rings and temporary cylinder cocks were fitted. It could then take three trucks and a louvre van up the 1 in 30 on a curve. It steamed very freely and has a bark not unlike that of the NA's, not as loud of course, but impressive. The amount of steam from safety valves and Maitland coal smoke from such a small engine is surprising.

We need more volunteers as enginemen, willing to light-up, and clean the engine as well as fire it.

(Ron Kain)

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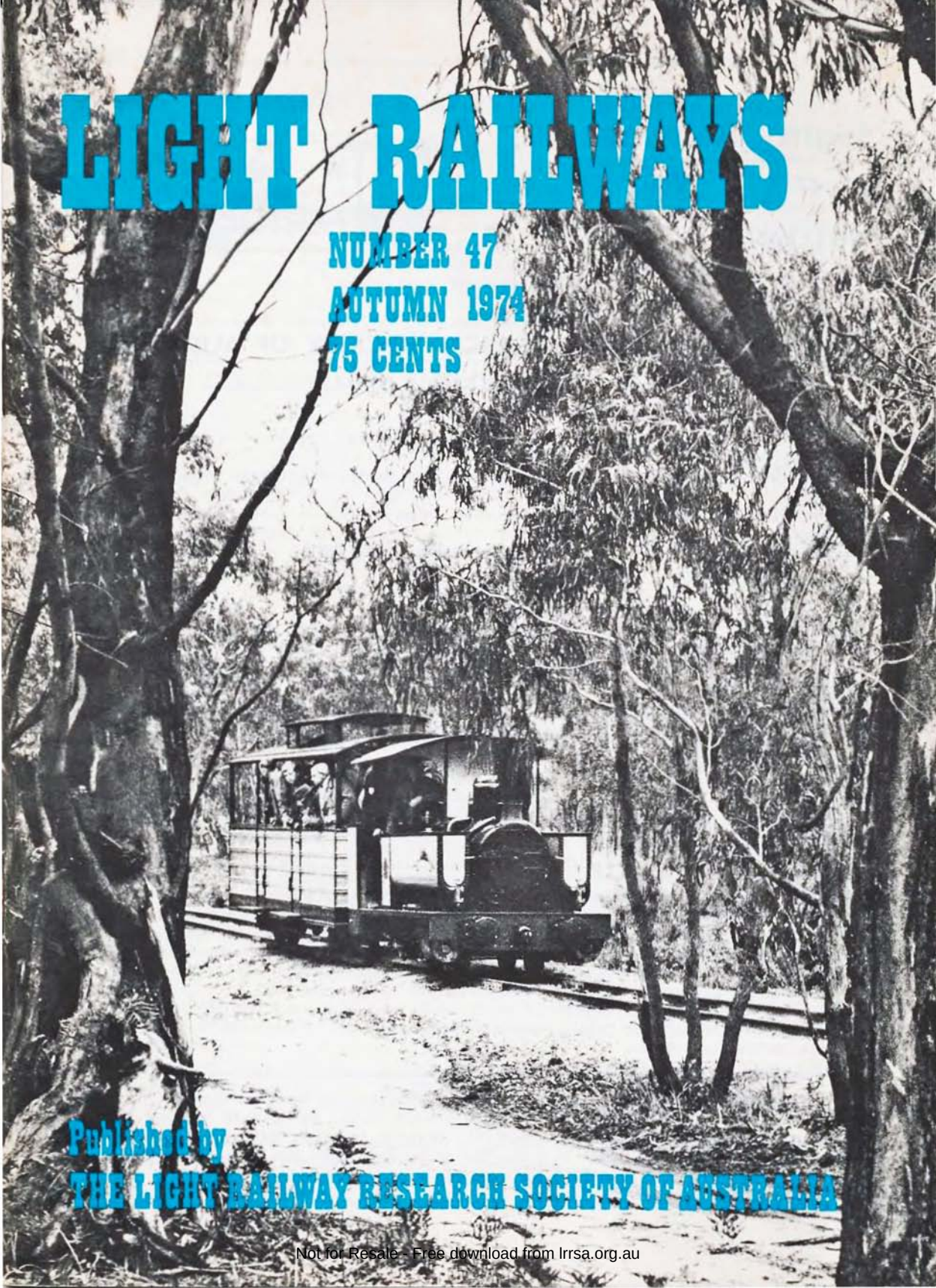

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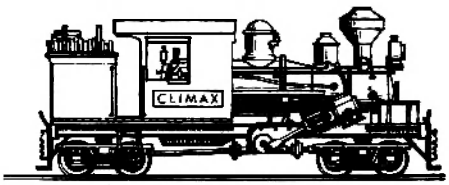

LIGHT RAILWAY RESEARCH SOCIETY OF AUSTRALIA

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

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

Articles and News Notes & Comments items are always welcome.

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

FRONT COVER The 2 ft 6 in gauge 'Whistle Stop' railway on the occasion of the LRRSA visit on 25 May 1968. The locomotive is an 0-4-0T, built by Societe Anonyme des Usines Metallurgiques du Hainaut, Couillet, Belgium in 1886, having their builder's number 861. The 'Whistle Stop' railway was recently closed due to a change in the municipal rating structure, which made it uneconomic.

Photograph: Stephen Martin

Papua New Guinea's Bootless Bay Railway

By R. McKillop

Papua New Guinea is commonly thought of as a country without railways. However, a number of railway ventures of varying scales of grandeur have been attempted at different times. To date all have had a short history.

By far the largest and most important of these railways was the line built by the New Guinea Copper Company from their Dubuna Mine to the jetty on Bootless Bay near Port Moresby. The 3 ft 6 in gauge line was six-and-a-half miles in length. Construction commenced in 1918 and it was completed in 1921.

SHORT HISTORY OF NEW GUINEA COPPER MINES LIMITED

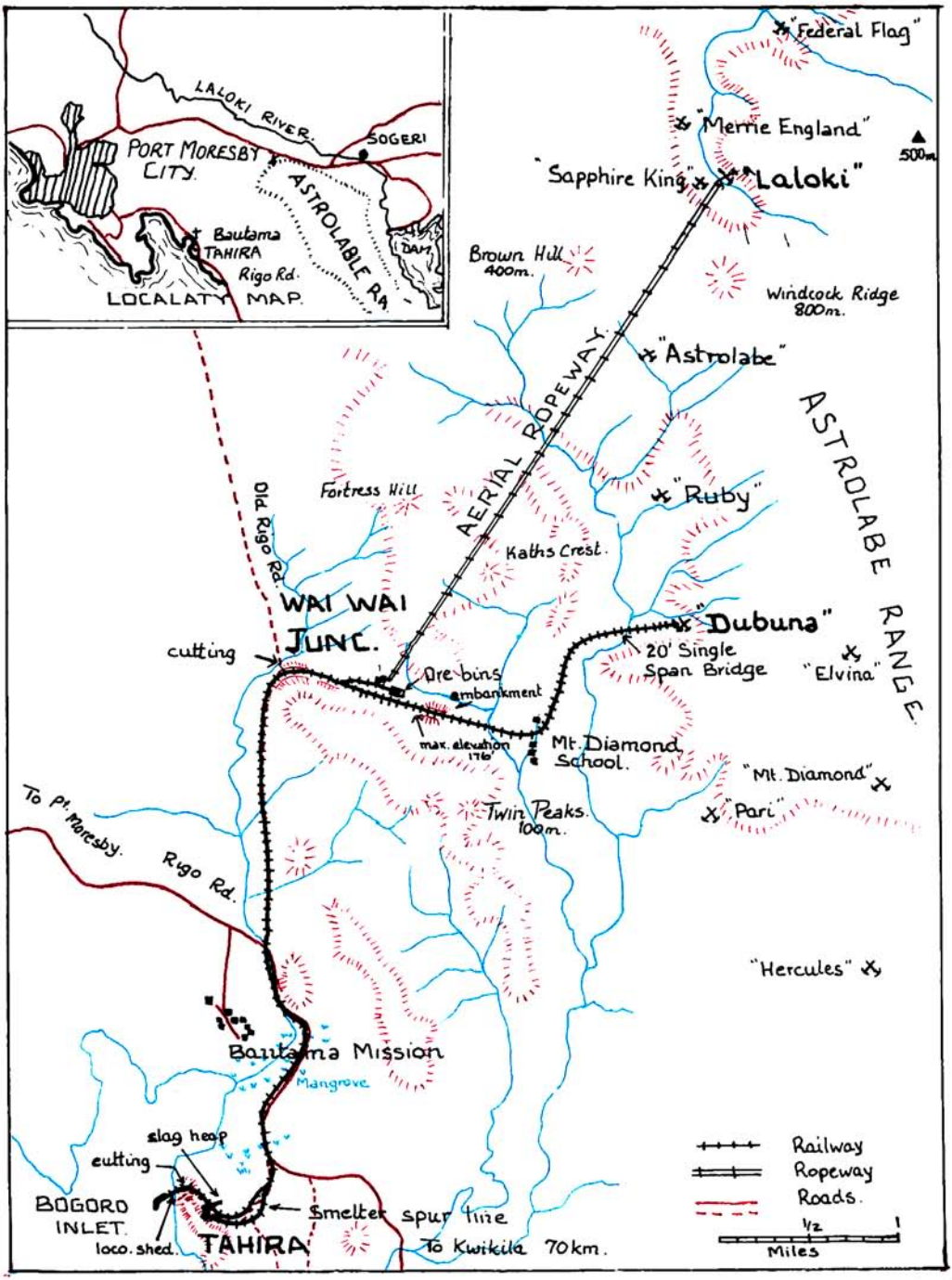
The Astrolabe Mineral Field of Papua was declared in December 1906. The field was considered a promising copper prospect and a rush by individual miners and prospectors ensued. The first mine, "Dubuna", owned by Messrs Osborne and Charley, was operational by 1910. However, development was hindred by transport problems. At this time copper ore was brought out by pack mules at a cost of £3 per ton so only very rich ores could be exploited.[1] In 1912 the Great Fitzroy Copper Mine of Queensland took up an option over the Laloki Mine further to the north. The following year Mr J. E. Carne, the New South Wales Government Geologist, was called in to report on the field.[2] His report indicated that the field contained mostly low grade pyritic ore, but its composition was suited for semi-pyritic smelting.

Rising prices for copper stimulated interest in the new field, but transport was still the limiting factor. The construction of a railway was first proposed in 1912 and the Australian Government soon made a loan of £50,000 available for the construction of a light railway from Port Moresby to a new town to be called Migagi near the mines at Sapphire Creek.[3] The railway was to be 2 ft 6 in gauge and would be $19\frac{1}{4}$ miles in length. Work on the line commenced in 1913-14 when fifty labourers began clearing operations along what is now Port Moresby's Ela Beach Road. But the advent of war a few months later brought a sudden end to construction which was never resumed. Thus Papua's first railway project was a very brief affair indeed.

Once the war ended development of the Astrolabe Mineral Field resumed. In 1918 the Government upgraded the road to the Laloki Mine to take traction engines capable of hauling twenty tons. In the same year construction of a 3 ft 6 in gauge railway to the Dubuna Mine was begun.[4] Progress was slow until 1920 when additional financial backing was obtained and a new company, New Guinea Copper Mines, was floated to develop the Laloki and Dubuna Mines, complete the railway and jetty, and build a smelter. The Company's headquarters were at Collins House in Melbourne. Mr A. T. Brown was the Chairman of Directors and Mr Osborne, the original owner of the Dubuna Mine was also a Director.

The history of New Guinea Copper Mines is a short and stormy one marked by regular requests to the Australian Government for financial assistance. The first of these was in April 1921 when they proposed that the Commonwealth Government should advance £90,000 in cash or bonds to cover expenditure to date on the railway and jetty and the estimated cost to complete these works.[5] The Company claimed that the state of the base metal market and general financial stringency would force them to suspend work and disband staff if aid was not forthcoming.

Lieutenant-Governor Murray strongly supported the Company's request for assistance as the project was the major undertaking in the colony's infant economy. At this time it was reported that the railway had been completed for six-and-a-half miles to Dubuna, but was not yet operational. Some £10,000 had



been spent on the jetty and £50,000 on the railway. The Company proposed to build a branch to the Laloki Mine and one to their sawmill at Migagi. Claims that the railway would open up large timber reserves were made at this time, but these were never substantiated. However by this time it was known that the Laloki Mine had reserves of 240,000 tons and the Dubuna Mine 45,000 tons of 5-6% copper ore.

These modest figures apparently looked impressive to the officials of the day in Port Moresby for they quoted them frequently in support of the Company's loan request. They were not sufficient to impress the Board of Trade, to whom the Australian Government had referred the application. In August 1921 the Company was advised that from a business point of view the Board was unable to recommend the request.

Published material[6] suggests that the subject of financial assistance from the Australian Government for the Papuan copper industry ended on this unfavourable note. Further research shows that this was not the case. On 28 October 1921 New Guinea Copper Mines renewed their application for financial assistance. This time they proposed that the Commonwealth Government take over the jetty and railway for £45,000. The Company would continue to manage the railway and guaranteed a repayment of 6% over a period of 10-12 years. The Commonwealth was initially unfavourably disposed toward the request on the grounds that that such assistance would set a precedent. Once more Murray mustered his forces to support the Company, including the Planters' Association and Returned Soldiers who both sent telegrams to the Prime Minister. The usefulness of this latter support is questionable as the Planters' Association added the demand that the Government should also give immediate relief to the plantation community. The Company's case was also made more difficult by an unfavourable report on the condition of the railway by the Director of Public Works. In Australia the Company's powerful backers were busy organising a political lobby for their cause. Mr A. Hay MHR became spokesman for the Company's case and the Prime Minister was reported to be sympathetic. Finally the Australian Government agreed to take over the jetty and railway for £45,000 and following the transfer of all land through which the line ran the Dubuna railway was acquired by the Commonwealth on 15 June 1922.[7]

Development of the project continued steadily for the next eighteen months. The railway had commenced operating in 1921. The Company's huge smelters were gradually taking shape near Bootless Bay and a large township, Tahira, was being

View of the jetty at Bootless Bay. A marina has now been built on the site and utilises the built up approach to the jetty.
Photograph: R. F. McKillop collection

built there. By 1924 the project employed 1,000 Papuans and 100 Europeans. This represented 10% of the total European population of Papua and 10% of the working Papuan population. It was commonly claimed at this time that the town of Tahira would soon outstrip Port Moresby as the major settlement in the country.

By this time plans to build a branch line to the Laloki Mine had been shelved. Instead the Company constructed a 3½ mile aerial ropeway in 1923 from the Laloki Mine to a point four miles from the jetty on the railway which became known as Wai Wai Junction.

The Tahira smelters were blown-in during 1923, but technical problems were immediately encountered. Later the Manager, Mr Erle Huntley, claimed that these difficulties had been "entirely due to relying on catalogue figures and installing inadequate blowing machinery".[8] Additional equipment for the smelters was ordered and this arrived on the "Morinda" in September 1924. By this time, however, the Company was in a delicate financial situation. By June 1924 the Company had found it necessary to issue what the Sydney Bulletin described as "its third or fourth reconstruction" in the form of 75,000 £1 preference shares? The Bulletin further commented that "as it has cost £500,000 to get this far and there are only 285,000 tons of ore in reserve averaging approximately 5% copper and 2½ dwt gold, no lightning calculator is needed to explain why the latest lot of preferences had to be sugar coated". This appears to have been a critical point in the history of New Guinea Copper Mines. From this time on all activity was directed toward obtaining a return on investment as quickly as possible. The subsequent ill-fortunes of the mining project might well be traced to management decisions resulting from this financial insecurity.

The ill-fortunes of the project were many. Firstly, the smelting process failed to work 'according to the book'. Next the Laloki Mine caved in at 130 ft. In November 1924 a serious fire broke out in the Laloki Mine and it had to be sealed up. The Company began mining by open-cut but the resultant ore was too friable for the smelter and convertor.[10] The smelters continued to use the ore, but it resulted in a low grade matte and poor efficiency. Then in October 1925 a fire broke out in the Dubuna Mine.[11] This mine had to be sealed and open-cut operations were begun. This caused further havoc with the smelters and finally the Company was forced to ship low grade matte copper rather than blister copper.

By the end of 1925 the Company appeared to be settled down to a production phase, but by now finances had been exhausted. In August 1925 the Company requested permission from the Commonwealth Government for remitting of interest due under the lease agreement for the March and June quarters.[12] After due consideration the Australian Treasury advised that they were unable to remit payment. The Company continued, despite falling copper prices, until 13 September 1926, when the first debenture holders decided to realise their securities and appoint a receiver. On 8 October 1926 the 'Papuan Courier' reported that the receiver[13] had authorised the Company to continue mining operations for one month.[14] The expected public outcry resulted and last minute requests were made to the Commonwealth Government for financial assistance to save the mines. In a statement to the Joint Committee on Public Accounts, Mr Huntley requested a bonus of £10 a ton on all copper produced and disclosed that the Company had spent £635,000 in capital and a total of £800,000 to develop the industry to its present stage.[15] These pleas were not successful and mining operations ceased at the end of 1926 until such time as the price of copper improved.

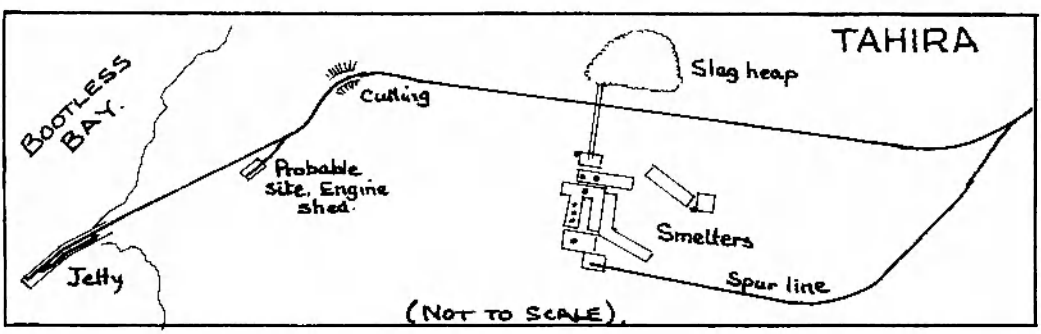
DESCRIPTION OF RAILWAY

Although the railway was short lived, a fair description of the line is still possible. The National Archives have an inventory of the railway as at 3 April 1922 which was prepared by the Public Works Engineer prior to the Commonwealth takeover. In addition the site of the railway is readily accessible from Port Moresby. In fact most of the railway now serves as a road-bed for various roads in the area.

The smelters at Tahira. The mainline is clearly visible in the foreground. The effect of the smelting process on surrounding vegetation was already obvious when this photograph was taken circa 1925.

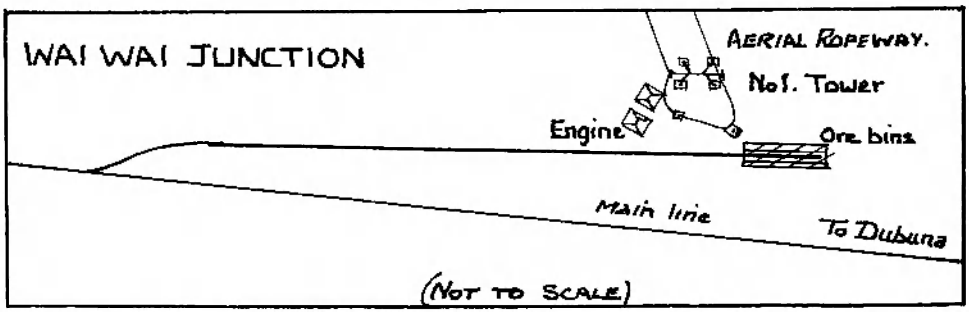
Photograph: R. McKillop collection

The jetty was built on Bogoro Inlet off Bootless Bay. It was of dog-leg construction 430 ft long and 20 ft wide. It extended into water 22 ft deep at low tide and could accommodate the largest overseas vessels then calling in Papua. The railway extended the full length of the jetty and a siding extended for most of the length. Today a marina has been constructed on the site, but the jetty remains and some tracks are still visible at low tide.



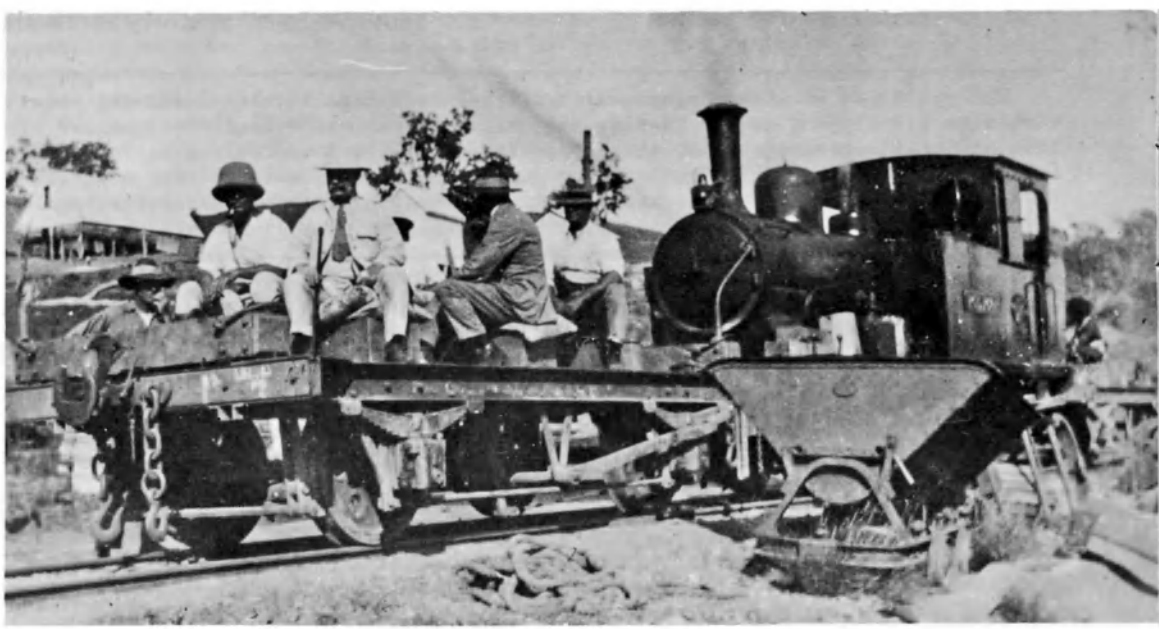
Leaving the jetty the railway ran in a north-easterly direction. A small timber locomotive shelter and ash pit were located at the quarter mile post. Shortly after the line passed through a short, but deep cutting and then passed the extensive smelting works. A viaduct from the works to the slag heaps passed over the main line at the half mile post (see photograph, p.12). Today these slag heaps are the most obvious relic of the copper industry in the Tahira area. The smelters were served by a spur line which left the main line at least half-a-mile further on. This was constructed in 1924 from materials remaining on hand from the original construction. As can be seen from the photograph (p.12) this spur gains considerable height over the main line.

For the first $3\frac{1}{2}$ miles the railway was constructed with 60 lb rails, 40 ft in length. Most sleepers were bush saplings of four to six inches in diameter, but approximately 500 sawn timber sleepers were noted by the engineer in 1922. About half (to Wai Wai Junction ?) was ballasted and the remainder was laid directly onto a hard roadbed. This latter section was laid with only 30 lb rails.



The special train conveying the Minister for Territories, Mr Poynton, and official party on an inspection tour of the railway in 1921/23 (see text, p.14).

Photograph: Papua New Guinea Office of Information



The railway followed a comparitively easy route to the Dubuna Mine. The ruling grade was 1 in 40 against the loading on three chain curves uncompensated. In the reverse direction there was a ruling grade of 1 in 22. For the first two miles the line passed through low-lying country frequently skirting mangrove swamps. The first mile now serves as an access road to the marina which has been constructed on the old jetty site. The next one-and-a-quarter miles is now the location of the main road to Rigo. Road construction activity on this section has largely obliterated the original earthworks.

At $2\frac{2}{3}$ miles the Rigo Road swings away to the west while the railway formation continues due north for $1\frac{1}{2}$ miles. Here the old railway road-bed has become a well used access road to the Mount Diamond school and for the first section it follows the old Rigo Road constructed about 1924. At $3\frac{1}{4}$ miles the railway formation swings east through a long curve and a deep cutting which is the major earthwork on the whole line.

At the four mile old mining machinery can be seen to the left of the road. This is the site of Wai Wai Junction from where the aerial ropeway ran to the Laloki Mine. The formation of the spur line to the ore bins and the foundations of various buildings are clearly visible. A few sleepers are still in evidence here nearly fifty years after the closure of the line.

After Wai Wai Junction the line was of light construction with 30 lb unballasted track. Steep grades were encountered for the next half-mile where a maximum elevation of 176 ft was reached. The railway then descended with some light earthworks into an attractive valley. The only substantial bridge, of wooden construction with a 20 ft span, was located some five miles from the terminus, shortly after passing the present Mount Diamond School. The railway then continued along the side of a small valley to the Dubuna Mine. Short lengths of rail are still in position near the terminus.

THE AERIAL ROPEWAY

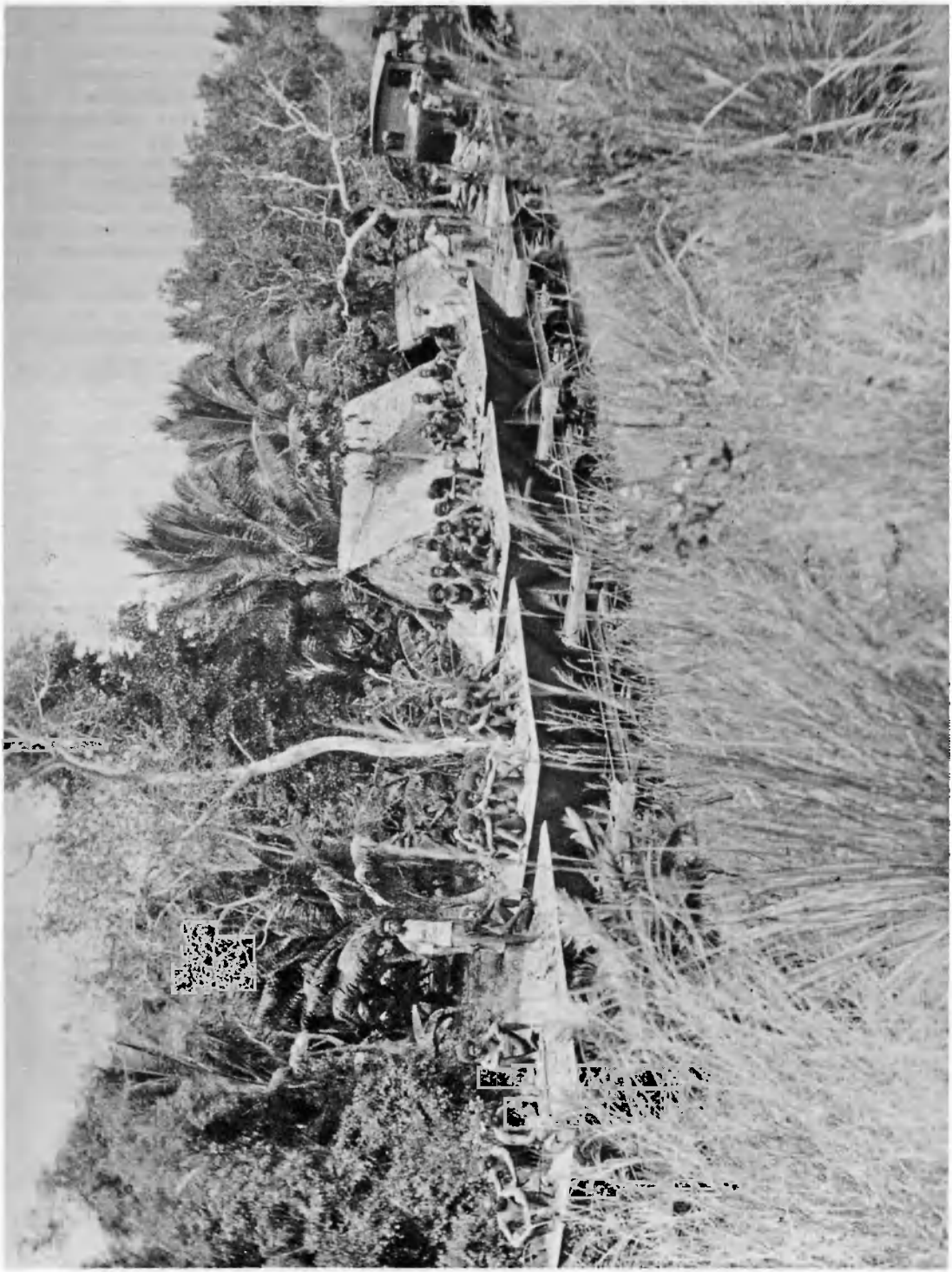
Construction of a $3\frac{1}{2}$ mile aerial ropeway from Laloki Mine to Wai Wai Junction was commenced in 1922. The ropeway was 6,167 yards in length and was supported by thirty-one trestles. It crossed a range 1,599 ft above sea level before reaching the Laloki Mine which was 834 ft above sea level. At one point the ropeway was 251 ft above the ground. The $1\frac{3}{4}$ in diameter steel cable was driven by a 30 h.p. stationary engine and moved skips capable of hauling 7 cwt of ore at 5 mph. The capacity was 25 tons per hour.

The No.1 tower has been cut up for scrap, but the remaining thirty towers still stand as originally built.

RAILWAY ROLLING STOCK

The Company's rolling stock formed a modest inventory in 1922. There was one locomotive described as '1 $18\frac{3}{4}$ tons locomotive - roadworthy'. This was an 0-6-0T locomotive built by Andrew Barclay (B/No.1544) in 1918 for Broken Hill Associated Smelters at Port Pirie.[16] She and three sister locomotives were built as part of the post-war modernisation of the Port Pirie smelters. Each of the locomotives was named after a famous battle of World War I, No.1544 being 'Polygon'. Its time at Port Pirie was short and it was shipped to Bootless Bay in 1920 or 1921. The locomotive retained the name 'Polygon' while working in Papua.

At this time the remainder of the rolling stock consisted of ten $8\frac{1}{2}$ cubic yard hopper trucks, two flat-top timber trucks, twenty small (one cubic yard) hopper trucks, two plate-layer trolleys and two fettler trolleys. The large hopper wagons were built by Kelly & Lewis in Victoria.[17] The small hopper trucks are a mystery. The official inventory states that they were used on the jetty, but a photograph suggests that they were 2 ft gauge trucks. In this case they would have been used for mine working and possibly at the smelters.



In 1924 a second locomotive arrived. This was a small A class Shay locomotive of 14 tons weight. It appears that this locomotive came from the Mount Elliot smelters in Queensland and it prohably arrived on the 'Morinda' in September 1924. The purchase of this locomotive could hardly be justified on traffic demand, but it was undoubtedly for operations on the light unballasted track beyond Wai Wai Junction. Presumably this track was proving too unstable for Polygon and the Company purchased the Shay rather than undertake the expense of upgrading this section. Certainly the presence of a Shay locomotive in Papua has been of considerable interest to both the railway enthusiast and to the local people.

Some reports have suggested that there was a third locomotive.[19] This was definitely not so. Confusion may have arisen as some official records list Polygon as being built by B.H.A.S. while others, correctly, refer to it as an Andrew Barclay product.

RAILWAY OPERATION

Although early reports suggest that the railway would be used to tap nearby forest reserves these proposals were never fulfilled. The primary purpose of the line was for the transport of copper ore to the smelters throughout its short life. Given the Company's technical and managerial difficulties this traffic never reached expected levels. The levels of annual traffic are given below:

QUANTITIES OF COPPER ORE, COAL AND COKE HAULED ON DUBUNA - BOOTLESS BAY RAILWAY, 1921 - 1926

Year	Copper Ore Tons	Value Copper Exports, £	Coal & Coke Tons
1921-22	2,700	13,514	-
1922-23	5	14	-
1923-24	40	120	-
1924-25	23,000 (E)	41,674	10,800
1925-26	34,170	124,262	4,800
1926-27	2,706 (E)	35,900	500

This table has been compiled from figures in 'Papua Annual Reports' for copper exports, and the 'Papuan Courier' for ship loadings at Tahira.

(E) Estimated.

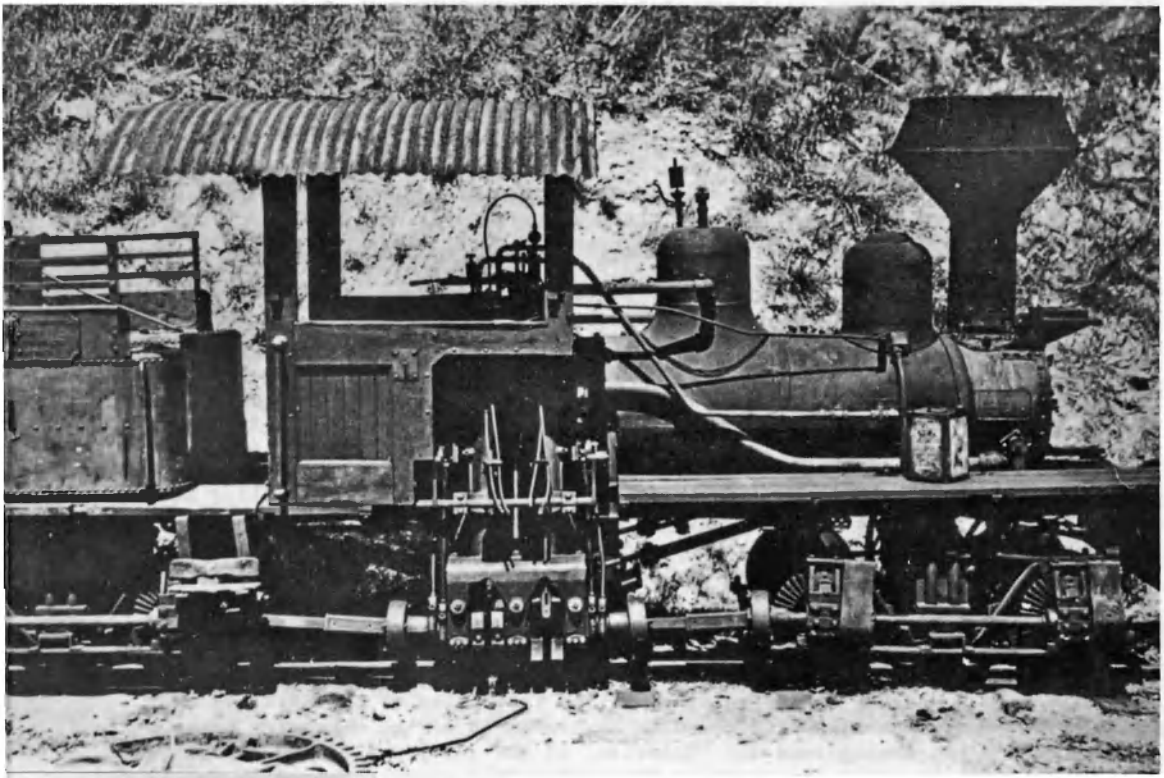
The figures for ore production are modest due to long non-producing periods for each mine. When it was operating to capacity the Laloki Mine produced 120 tons of ore daily. Polygon appears to have normally hauled five of the larger hopper wagons so two trips daily would have been required to move the Laloki ore. The Dubuna Mine produced forty tons daily and following the Laloki fire this was increased to ninety tons in early 1925. By the time the Laloki Mine resumed production in July 1925 a fire had broken out in the Dubuna Mine so ill-

Photograph opposite: 'Polygon' with a typical train on the 3 ft 6 in gauge Bootless Bay railway. It is not clear if the hopper trucks are loaded with ore, or ballast during construction of the line. The large number of labourers and the European overseer suggest the latter. The locomotive was apparently fired with wood at this time.

Photograph: P.N.G. Collection, University of Papua New Guinea

Below: An overall view of the Tahira smelters of the New Guinea Copper Mines Ltd. The spur line serving the smelters is clearly visible in the left foreground. The main line passed under the viaduct to the right of the smelters, thence through a cutting to the jetty. A small one cubic-yard hopper truck is just visible to the right of the boiler house in the foreground.

Photograph: R. F. McKillop collection



Above: The Shay locomotive on the 3 ft 6 in gauge Bootless Bay railway in 1925. This was a 14 ton "A" class Shay, and appears to have been previously used at the Mount Elliott smelters in Queensland.

Photograph: R. F. McKillop collection

fortune prevented maximum production for any period. During the Dubuna fire it is reported that a locomotive, probably the Shay, was used to pipe steam through the seals to as near as possible the seat of the fire.[19]

Photographs of Tahira suggest that the railway provided the only access to the jetty. Cargo arrived by sea, and probably passengers as well, had to be transported to the smelters and township by the railway so the arrival of a ship heralded a busy time for the railway. The Burns Philp ship 'Morinda' provided a regular monthly service for passengers and general cargo which averaged 100 tons. This service was inadequate for the Company's needs and they had to specially charter ships to bring in coal and coke for their smelters and, after mid-1925, to back-load processed copper. This traffic was substantial. The 'Papuan Courier' records the arrival of at least 16,000 tons on various ships of the Adelaide Steamship Company (see table above). These ships were the 'Dilkara' (three trips), 'Tarcoola' (two trips), 'Junee', 'Tung Foong', and the 'Marigola'. The arrival of these ships at Bootless Bay must have resulted in a busy week or so for the railway as up to 3,300 tons of coal and coke had to be moved to the smelters and frequently finished copper had to be moved to the ship.

The movement of passengers on the flat trucks and, for the local people, ore trucks was obviously a regular occurence. A number of interesting workings have been recorded. In 1923*Mr Poynton, the Minister for Territories travelled on a special train to inspect the railway and mine workings. For such an important occasion one of the flat top wagons was equipped with empty boxes and cushions for seats and the locomotive was coupled behind in order that the passengers would not be troubled by smoke. It is recorded that the Minister produced his gold railway pass for the journey.[20]

In September 1924 the Governor General of Australia, Lord Forster, accompanied by Lady Forster made a visit to Tahira. It is not recorded whether or not they made a journey on the railway, but an inspection of the smelters was made before the official part lunched on the verandah of the Manager's house at Tahira. The party then joined the 'Matarian' at the jetty and sailed for Cairns.[21] One of the more exciting incidents in the railway's history occurred in May 1925 when a Mr J. Brown was wounded by a revolver at Wai Wai.[22] Constable Sutton was sent to Bootless Bay to investigate. On arrival a special train was waiting to take him to Wai Wai where he subsequently arrested a man for attempting to unlawfully kill. This incident and newspaper reports of social events at Tahira suggest that social life in the town had all the pioneering characteristics that one might expect in such an isolated mining settlement.

The Company had a telephone service installed from Tahira to the outlying centres, but it is not known if any safe working procedures were in operation. Most probably only one locomotive was ever in steam. Everday operations were very simple. There were no turn-round facilities, in fact there were only six sets of points for the whole railway. Polygon ran on the line facing in the up direction. Thus it would have pushed the empty hopper wagons up to the mines and hauled them back bunker first. Photographs suggest that both locomotives were fired on wood, although coal was readily available after July 1924. There were water reservoirs at Wai Wai Junction (1,200 gallons) and at Dubuna (300 gallons). The small tank at Dubuna was filled from a small lake some distance away. Pumping equipment is reported to be still in existence there.

* There seems to be some confusion as to the date of this visit. I. Stewart in his book Port Moresby Yesterday and Today (Pacific Publications, Sydney, Revised Edition 1973) quotes both 1921 and 1923. However, a new book - Readings in Papua New Guinea History edited by Jinks, Bishop and Nelson, states that Mr Poynton definitely visited the Territory in 1921 at which time he received a deputation claiming to represent the planters and miners (p.144). Therefore it would seem that references to this visit should read 1921.

CLOSURE OF THE RAILWAY

On 1 October 1926 New Guinea Copper Mines Limited took out a Public Notice in the 'Papuan Courier' to announce that a receiver had been appointed for the Company. A news item in the same issue advised that employees would be given notice and the mines closed. This announcment apparently caught the Papuan community by surprise. They had been led to believe that the many difficulties of the Company had now been overcome and operations had finally become successful. The following week the receiver advised that the mines would be kept operating for another month. During this period a number of meetings were held throughout Papua to gain a reprieve for the industry. The General Manager proposed to a visiting Commonwealth Parliamentary Joint Committee on Public Accounts that the Australian Government should provide a bonus of £10 per ton on all copper produced until such time as the world price for copper recovered to £75 per ton. The Samarai Chamber of Commerce and a special meeting of the principal commercial firms in Papua telegrammed their support for the Company's request to the Minister for Home and Territories. The Minister replied that he was not prepared to recommend a bounty.[23] With this final word from the Minister the mines closed to await an improvement in the world copper market.

In December 1926 the 'Marigola' arrived to ship out the remaining copper stocks. 2,420 tons of copper matte were loaded by 12 December. With the 'Mariogla's' departure the smelters were closed and the railway ceased operations. The railway and rolling stock were maintained in operating condition by the Company for a number of years pending possible renewal of operations.

The remains of a railway. A few sleepers and the foundations of the ore bins are still in evidence at Wai Wai Junction. Photograph· R. McKillop

Eventually the line fell into disuse and rust took its toll of the rolling stock. During the war a number of Australian servicemen reported locating a railway near Port Moresby and many photographed the decaying locomotives.[24] In the 1950's a lively scrap metal market developed for war surplus equipment and the old New Guinea Copper Mines railway and plant provided a tempting target for scrap merchants. Rails, buildings and rolling stock were all sold off for scrap and shipped to Japan. A few rails remain at the Dubuna terminus and most of the aerial ropeway towers remain. Otherwise all removeable items have gone and few signs of Papua New Guinea's most important railway project are visible today. The last locomotive (Polygon from sketchy reports) was cut up and shipped to Japan in 1961. The railway's most interesting item, the Shay, had been disposed of and forgotten by this time.

ACKNOWLEDGMENTS

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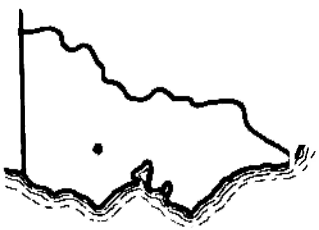
Ballarat Tramways, 1855-60

By Norm Houghton



Gold was discovered in Ballarat in 1851 and within a short time the field swarmed with diggers turning over the rich alluvium, and sinking shafts. The diggers needed timber for shaft lining, props, laths, shanties over the shafts, tent supports and firewood, and such were there needs that within a year or so every tree with any pretensions to height or straightness had been cut down within a two mile radius of the diggings[1] and timber had to be carted in from further afield. One writer[2] commented scathingly that 'the extreme baldness of the ranges about Ballarat is to be accounted for, first, by the quantity of timber required for slabbing and, again, from the disgraceful waste in open air fires. 'In its earlier days, before chymneys were attached to the tents, whole trees were felled and ignited, if only to fry some chops or boil a pot of tea, and as a consequence, the adjacent country became completely denuded'.

One feature of Ballarat, apart from reckless tree felling, was the early miners' opposition to the use of steam machinery on the diggings, and it was possible to see shafts up to 160 ft deep being worked by manual windlass.[3] It was not until late 1853 that Ballarat's first permanent attempt at steam engine working was introduced on the Eureka lead[4] and after this time the steam engine gradually came into its own and Ballarat's consumption of wood, already high, rose higher as more engines were put into operation. The wood was obtained from the forest areas around Ballarat via a network of drays and wagons and at least two timber tramways.

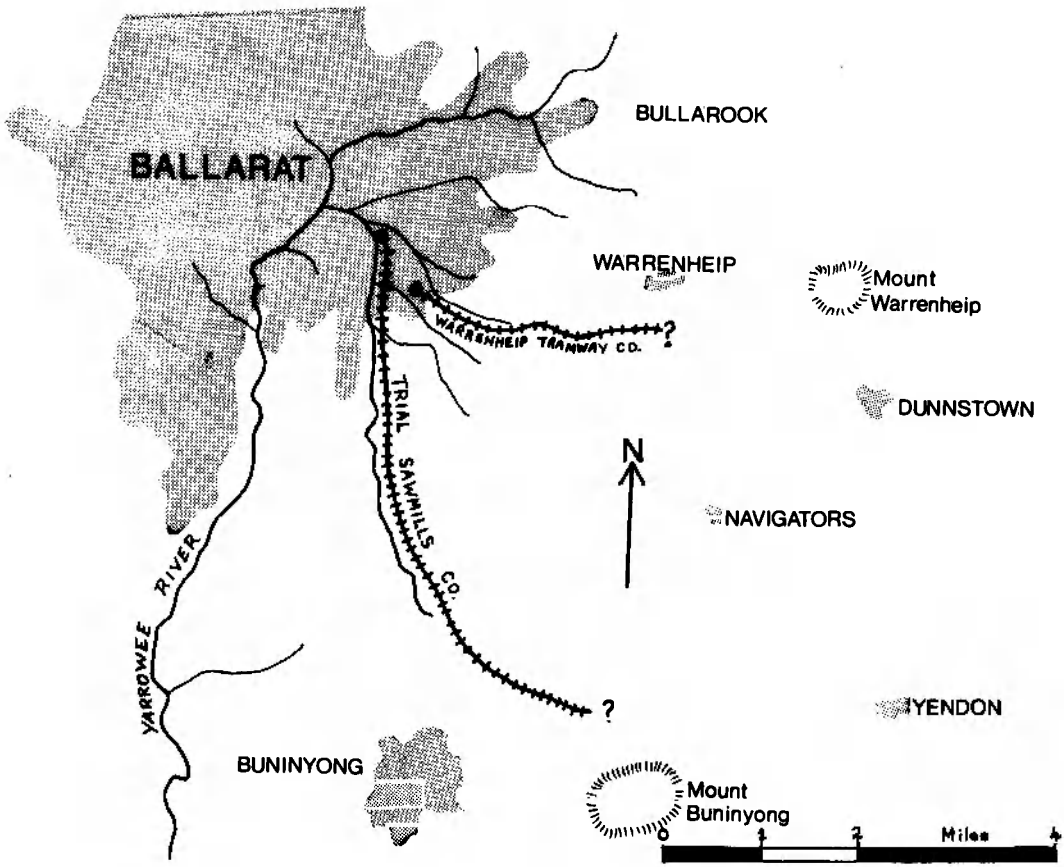
TIMBER TRAMWAYS

The Trial Sawmills Company was established in about 1855-56 and erected a sawmill on the slopes of Mount Buninyong, five miles south of Ballarat. A depot was built in Ballarat in Main Road near the corner of Eureka Street but later the company was compelled to move further along Main Road to the York Street corner because their original depot was sited on a surveyed road[5]- a typical result of the early Ballarat tendency to build anywhere regardless of government surveys. A horse-hauled wooden tramway was constructed 'in a most substantial manner' at a cost of £4,000 to connect the depot to the sawmill. Timber for general purposes and wood for steam engines was carted over the tramway and by 1862 the company's business was booming. This is not surprising since it was estimated that in 1862 the aggregate horsepower of all steam engines in Ballarat was 3,007 with an annual consumption of 250,000 tons of engine wood.[6]

A second horse-hauled timber tramway was built in 1857 by the Warrenheip Tramway Company to carry timber from the forest around Mount Warrenheip. The company built their depot on Clayton Hill, a low rise in south-east Ballarat (now covering the region from the Clayton and Joseph Streets intersection and north-west to Main Road) and ran their tramway in an easterly direction to Warrenheip. Although the company advertised the tramway for sale in September 1858[7] it appears that the tramway, then described as being in good working order, remained in use for at least a few further months, if not longer.

A third tramway belonging to the Bullarook Tramway Company was contemplated in 1858. A public company was formed with the intention of building a nine mile

tramway from Ballarat to the Bullarook forest and although a route was surveyed it seems that the tramline was not built. The surveyor was not paid for his services and had to take legal action in 1860 to obtain his fee.[8]



MINING TRAMWAYS

Timber tramways in the Ballarat area were not numerous, unlike some other goldfields such as Woods Point or Walhalla, because the country is not very rugged and even in winter when the roads of the day turned into quagmires freight charges on timber rose by only 30% in the 1850's.[9] But if Ballarat lacked timber tramways it more than compensated for it by its hundreds of miles of mining tramways both on the surface and underground.

The surface tramways were used to transport the gold-bearing wash-dirt to puddling machines, quartz to batteries and mullock to dumps. The tramways were either horse or man powered and were laid with wooden or iron rails. Some of the wooden rails were overlaid with strips of iron, hence the term 'iron shod tramway',[10] and this iron was readily available at Ballarat ironmongers and hardware dealers along with iron rails, wheels, flat iron etc. Local blacksmiths and engineering works usually made the skip bodies.

It would be a difficult task to trace all the surface tramways that snaked in all directions over Ballarat between 1855 and 1860 but a few representative examples will suffice to illustrate their function. A significant portion of surface tramways were actually elevated tramways that ran from a mine's poppet head brace to the mullock heap or from the chutes to the battery or puddler. These tramways, although numerous, were not very long.

The tramways laid on the surface usually performed the function of carting the wash-dirt from the mine shaft or tunnel to the puddler situated perhaps a little distance away and so sited as to be near a water source such as a creek or a man made sluice. These tramways were anything up to about 1,000 ft long and the following advertisement[11] typically indicates one such system:

'FOR SALE - One third share in three puddling machines, 250 feet of iron tram and wagon, horse, box dam; all in working order, situated upper end Canadian Gully. Apply to Mr. Robinson's on the spot.'

A more sophisticated tramway arrangement was sited in the township itself and was owned by the Old Gravel Pits Company. Late in 1856 the company sank a shaft to the north of Dana Street, between Lydiard and Armstrong Streets, and another shaft some distance away to the south-east with the intention of driving out a lengthy portion of the gravel pits lead. The Manager, Mr A. Dewar, introduced various improvements to make it easier to work the large claim and one improvement was in the methods of washing the alluvium. Dewar built a cylindrical puddling machine with a sluice attached and sited it on the north side of Dana Street at the foot of the hill 1½ blocks east of the shaft. The wash-dirt was conveyed from the shaft over a tramway that was laid on the north side of Dana Street and when the trucks arrived at the top of the steep hill they were lowered down by 'means of a pulley wheel with a brake attached'. The tramway was level with the street at the top of the hill but as it progressed down the hill it was gradually raised above the street level (on trestlework ?) to enable the trucks to dump the wash-dirt down into the puddling machine. The tramway worked for 95 weeks and over it travelled a daily average of 300 loaded trucks before it closed in February 1859.[12]

Under the present city of Ballarat lies more than 1,000 miles[13] of abandoned, water filled drives belonging to the several hundred gold mines that operated between 1851 - 1918. In these tombs are interred many miles of underground tramways that owe their introduction to trial and error methods evolved as mining progressed between 1851 - 1860.

When a shaft was sunk a drive was made along the course of the alluvial lead or the quartz lode and four stages of transporting the gold bearing ore along the drive are distinguishable. In the early days of Ballarat mining the wash-dirt (nearly all the mining then being alluvial mining) was carried to the shaft by shovel, then buckets were introduced, followed by wheelbarrows that ran over a line of single planks laid end to end. The final stage was the use of four-wheel trucks running on rails. Initially the trucks remained in the drive and the wash-dirt was shovelled into buckets in the shaft but later cages were designed so that the loaded trucks could be hauled to the surface and run over another tramway to the puddler. Originally the trucks were propelled by the miners but this was superseded in 1858 by the introduction of horses underground with the space between the rails being metalled to provide a stable path for the horses.[14]

By 1859, after many of the early problems of underground transport had been solved, local mining journals felt confident enough to dispense advice and the following idealised specification for trams and waggons to equip an alluvial mine appeared in 'Dickers Mining Record': 'For the underground and surface works 1000 yards of contractor's rails (25 lbs to the yard) will be required; these must be made to fasten to the sleepers with spikes, a sufficient quantity of which, and 25 per cent additional to spare, must also be sent. 'Four sets of points and switches to correspond with these rails, which points and switches must have the

necessary chairs, must accompany the shipment, and holts will be required instead of spikes for the chairs of the points and switches. 'Twelve side tip waggons either fixed to the bodies or not, as they may, or may not, be used for hoisting the spoil and ore, must accompany the rails; their axles and wheels must be of wrought iron, and set to 30 inch gauge; each of these wagons must be made to contain 12 cwt to one ton of dirt, and three of them must be fitted with brakes to the wheels.'

It is not likely that the mining companies took this gratuitous advice to the letter and to document details of all the underground tramways would be a formidable task and one marked by constant repetition, and it is not proposed to attempt this. Instead a few details of the pioneering tramways of the 1855-60 period will be sufficient to show what was to be found underground.

In 1856 the Waterloo Company sank a shaft 225 ft east of Lydiard Street and 15 ft south of Dana Street and encountered problems with the gutter dipping too fast, so an inclined shaft 130 ft long on a gradient of 1 in 10 was sunk from the bottom of the 200 ft shaft deep shaft to reach a more favourable position to mine the gutter. A tramway was laid along this inclined shaft with the optimistic intention of pushing the loaded trucks up the grade by man power! Needless to say the overwrought truck pushers soon gave up their attempts and substituted a crab winch to raise the trucks.

The New Constitution Company (formed 1857) had one shaft near the corner of Eyre and Errard Streets and another shaft at the north-east corner of Errard and Urquhart Streets. This company had 1400 ft of gutter drives and was the first company both to use horses to draw the trucks along the drive and to use flat sheets of iron to turn the trucks on, instead of the more usual turntable.

The Koh-I-Noor Company (formed 1858) was the first Ballarat mine to metal the space between the rails for the benefit of their six horses. This company had over 1,500 ft of drives.

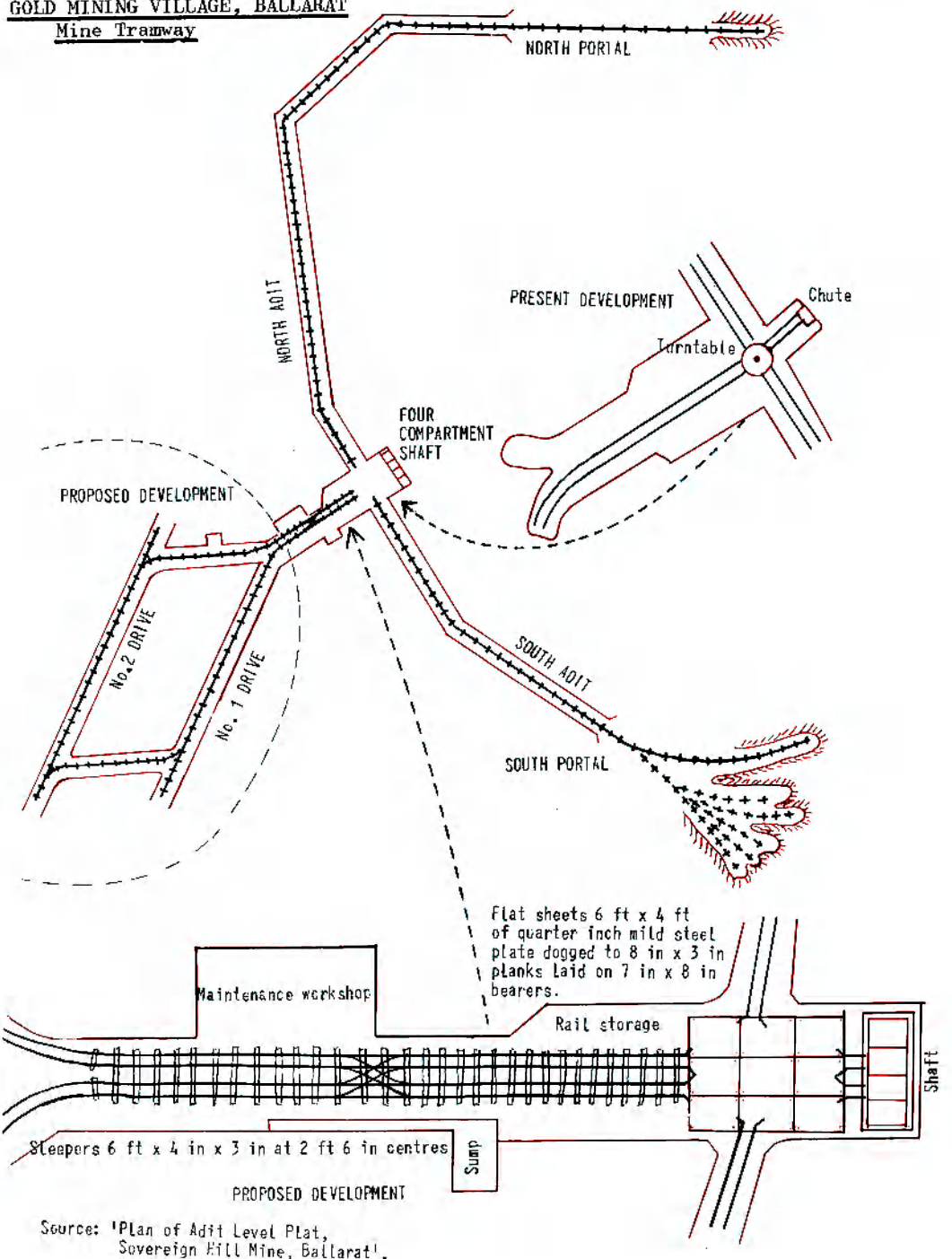
In 1857 the Great Eastern Company, situated on the south side of Dana Street midway between Armstrong and Doveton Streets, was the first Ballarat mine to lay down double lines of tramway underground. The Band of Hope Mining Association was another early mine with a double tramway. Its main drive was 2900 ft long and twelve horses were used to haul a daily average of 1,800 truckloads containing a total of 700 tons of wash-dirt.[16]

SOVEREIGN HILL HISTORICAL GOLD MINING VILLAGE

Although the mines described above closed in the region of 110 years ago their memory lives on at the Sovereign Hill Historical Gold Mining Village at Ballarat where a typical Ballarat quartz mine of the 1880's has been reconstructed. The Sovereign Gold Mining Company[17] possesses an underground mining tramway both as a working tramway and as part of the underground mining museum at Sovereign Hill. The poppet head for the mine was erected in 1969 and in late 1970 a start was made on the underground drives. Excavation began to the north of the poppet head and extended into the side of the hill in an arc to the centre of the proposed shaft under the head. The spoil was removed over an 18 in gauge tramway and was conveyed in man powered mining skips. When the north tunnel was completed a beginning was made to the south and another arc curved towards the centre to breakthrough on 4 March 1972. After this the main shaft was excavated. A small pilot shaft was sunk in the centre compartments of the four compartment shaft to connect with the tunnel below and an ore chute with a lever operated door installed at the bottom of the pilot shaft. When this had been completed the shaft was widened to its correct dimensions and as the mullock was extracted it was thrown down the shaft, drawn from the chute into skips and wheeled over the tramway to the mullock heap outside.

The underground length of the mine tramway is 800 ft plus the extensions at both ends to the mullock heaps. The tramway is laid with a mixture of steel and wooden rails and some round metal conduit, the latter testifying to the Ballarat

SOVEREIGN HILL HISTORICAL
GOLD MINING VILLAGE, BALLARAT
Mine Tramway



Source: 'Plan of Adit Level Plat, Sovereign Hill Mine, Ballarat'. Department of Mines, May 1973.

Historical Park Association's extreme difficulty in obtaining suitable light steel rail. Where the tramways of the north and south adits meet is a small turntable to enable the skips to be routed either to the ore chute or to the new excavations currently being undertaken. This development envisages two 160 ft drives joined by cross cuts in which will be displayed examples of mining methods of the past. The tramway will be laid around the entire length of this area and some interesting trackwork will be laid on the plat at the bottom of the shaft (see diagram).

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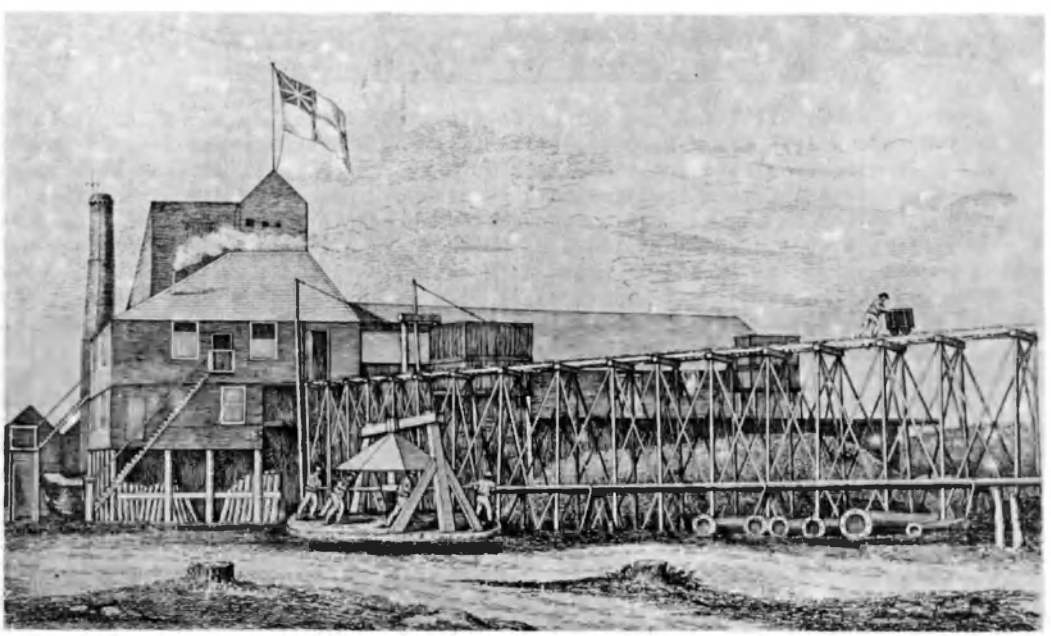
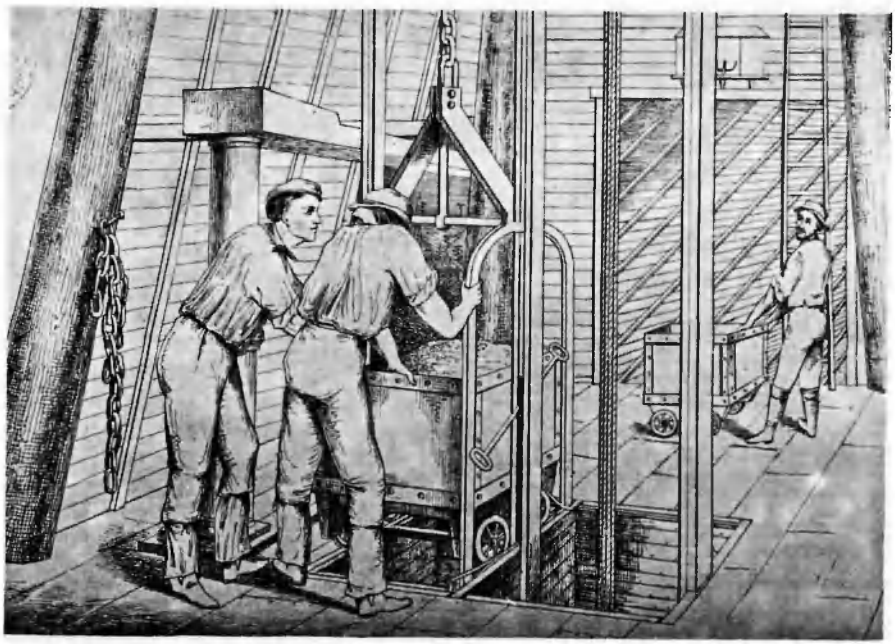
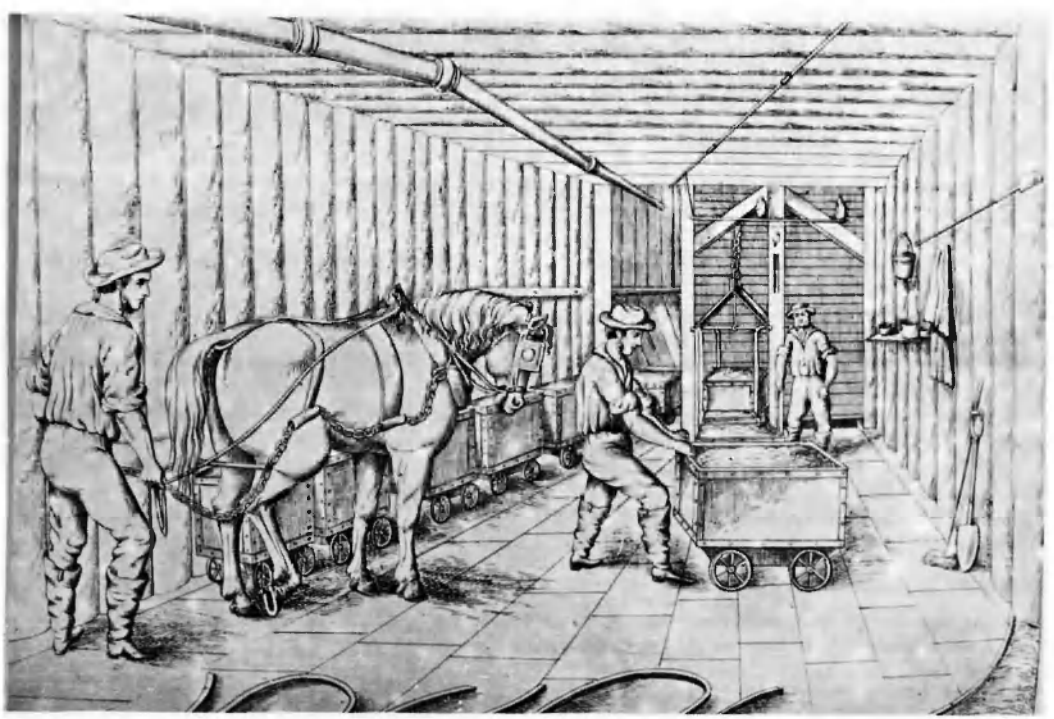




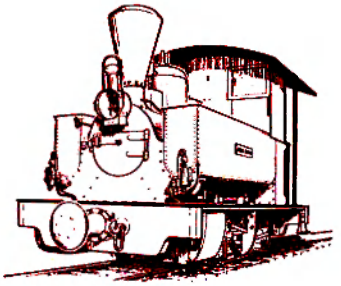
Right: Western Freehold Mine, Ballarat. Landing truck loads of mullock or wash-dirt from the cage. 1867.

Below: The plat, or chamber, deep in the mine where trucks of mullock are loaded into the cage for despatch to the surface. United Extended Band of Hope Mine, Ballarat. 1867.

Both lithographs from 'Dicker's Mining Record', 1867; reproduced courtesy of Ballarat Mechanics' Institute Library.



Left: St.Georges United Gold Mining Company, Ballarat in 1867, showing a truck being pushed from the brace to the dump. Lithograph from Dicker's Mining Record 1867. Reproduced courtesy Ballarat Mechanics' Institute Library.



LETTERS

QUEENSFERRY TIMBER TRAMWAY, Tall Timber and Tramlines, p.6

I was pleased to receive my copy of Tall Timber and Tramlines and wish to offer some information about the photograph which appears on page 6 of that publication.

It was taken by Fred Kruger, my great-great-grandfather. He was a professional photographer who specialised in rural landscapes and died at Surrey Hills in February 1888.

A print of that photograph appears in an album presented in March 1879 to my great-grandfather. The album is in the possession of my father and the photograph in question is labelled 'Near Queensferry, South Gippsland'. Another photograph of the same location viewed from a different angle also appears in that album.

So I suggest it may be possible that the photograph was taken perhaps a decade earlier than the caption on page 5 suggests. I hope this helps solve some riddles.

Stawell, Vic. 3380 D. Kruger

'TALL TIMBER AND TRAMLINES'

Please allow me to congratulate those responsible for the publication of Tall Timber and Tramlines. I found it most enjoyable to read, and the photographs of great interest.

But what I did find tantalising was that I wish there had been a little more said of the history of the locomotives illustrated. Had the builder's numbers (if known) been included, this would (for me, anyway) have answered some questions. In particular, can you tell me the builder's number of the Baldwin 0-4-0ST locomotive used on the Australian Seasoned Timber Company's line at Wandong? And, if possible, from whom they acquired it.

I picked one error - page 32, 'Tom Cue' was built by Hudswell Clarke, builder's number 378 [not Hunslet, as claimed in TT & T] .

I thought the reproduction of the photographs was first class, considering the age of some of the prints. Can we have another one? I am sure the photographs from which the cover drawings for 'Light Railways' are taken are worth putting in a book.

Toowoomba, Qld. 4350 Robert K. Morgan

[Thank you for the comments, and the correction. Can any reader help with the builder's number of the Wandong locomotive? - Ed.]

TRAWALLA AND WATERLOO TRAMWAY, LR 43, p.31

I think there is a typographical or a transcription error here. The builder's number of ex-Victorian Railways H150 was 42, not 32 as claimed in the article.

Mount Waverley, Vic. 3149 Peter Charrett

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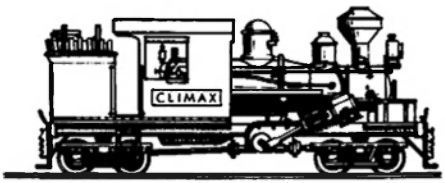

LIGHT RAILWAY RESEARCH SOCIETY OF AUSTRALIA

COUNCIL

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MEETINGS - Second Thursday every second month at 8.00 pm, room 11, Victorian Railways Institute, Flinders Street station building, Melbourne. Next meetings 13 February 1975, 10 April 1975, 12 June 1975.

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

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

Articles and News Notes & Comments items are always welcome.

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

FRONT COVER Victorian Railways 2 ft 6 in gauge 2-6-2T locomotive at the level crossing on the east side of Selby station, October 1974.
Photograph: Arthur Straffen

The South Gippsland Tramway

by C. W. Jessup

At about 10.00 am on 1 March 1878 the thick Gippsland forests around the Little Moe vibrated to the sounds of the first through passenger train from Oakleigh to Sale. Shortly after crossing the Little Moe the train slowed to a halt at the site of what was a contractor's construction camp. The Hon. J. Wood, the Minister for Railways, stepped from his carriage to be met by a deputation of recently arrived selectors who requested that a stopping place be constructed at this spot. There were no stations for 10½ miles between Warragul and Moe and the selectors were unable to cart out their produce to Warragul except for a few months in summer on account of the bad conditions of the tracks. The Minister indicated that he considered a stopping place warranted.[1]

Consequently Waterloo (later renamed Yarragon) station near the Little Moe was opened for traffic on 1 August 1878. Away from the railway line transport facilities remained wretched, for the greater part of the year the tracks leading back into the rain drenched wilderness behind Waterloo were impassable. Local Government authorities could do little to improve conditions, they were newly constituted, having only been formed with the recent arrivals of selectors. Along the middle portion of the Gippsland railway their administrative areas were vast allotments of forest. The potential ratepayers, the selectors, were struggling to establish their farms. Little finance was available from the very limited rates for the maintenance and construction of good tracks.

Under these circumstances, it was no surprise that Waterloo residents were being canvassed to support an application to the Victorian Government for aid in constructing a five mile tramway south from Waterloo to McDonald's Track in the Strzelecki Ranges. (McDonald's Track was an early cattle route from the Sale district towards Westernport).

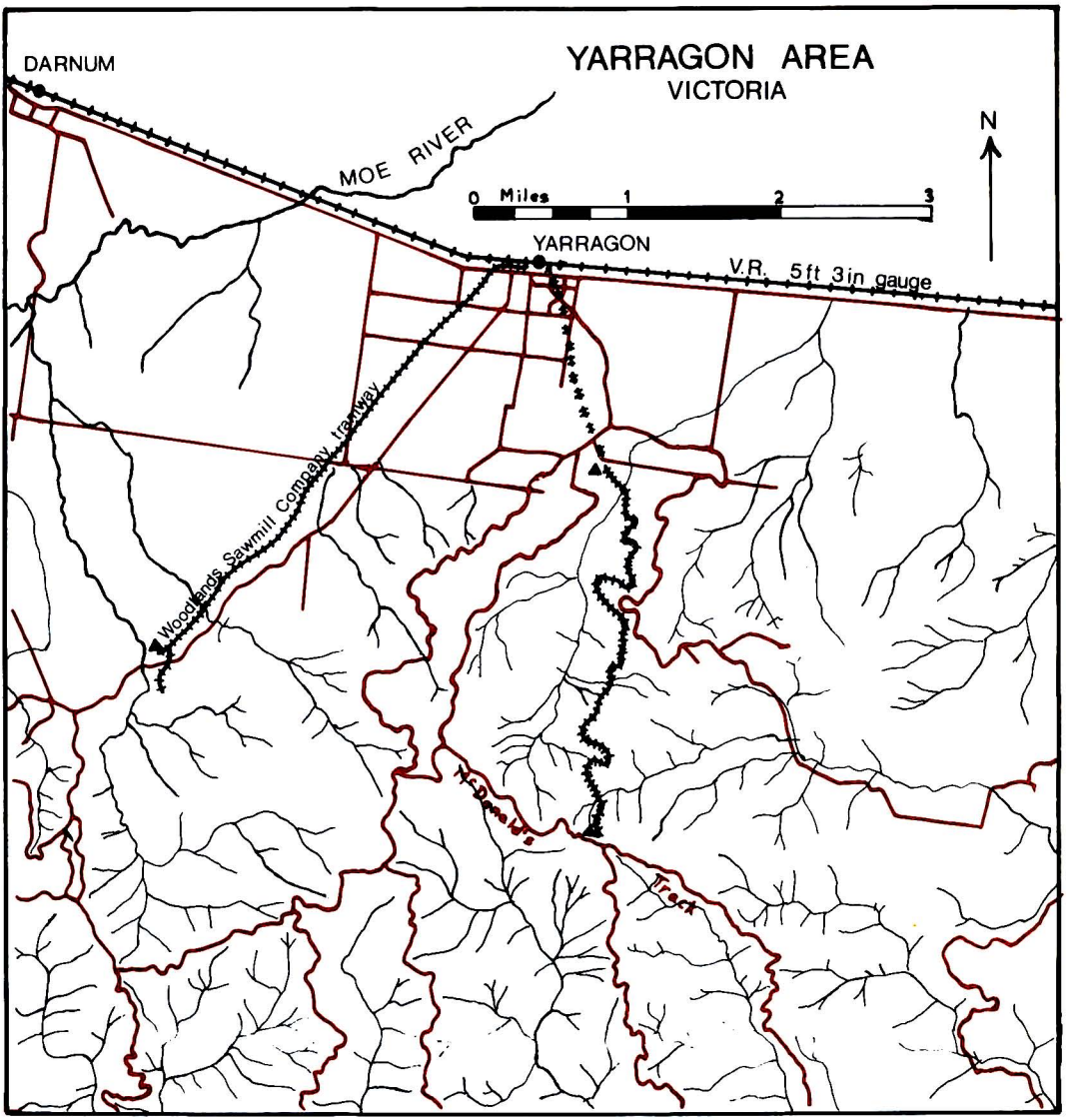
There is no doubt that the instigator of moves for a tramway was a Mr J. Rollo J.P. a builder, of Brandy Creek, who had taken up selection at Waterloo.[2] He was a versatile capitalist, later being involved in sawmilling, coal mining, and road making. He also found time to be Shire President of Narracan and in later years was credited with being a prime force in the passing of the 1890 Tramways Act. On account of his publicised stand on tramway construction in Gippsland he became known as a "tramway fanatic" (perhaps the first?).

By 24 August 1878 a meeting of selectors at Waterloo formed a committee to gather information on the proposal and issued an invitation to the Government to carry out the work.[3] The actions of this committee did not influence the Government to make a decision and the committee was disbanded shortly after, perhaps because Rollo had gone into partnership with a Mr Skinner and they had commenced to build their own tramway to the south of Waterloo, to carry timber from their mill to the railway station.

At the end of October 1879 Rollo's tramway is first mentioned in the one month old 'Warragul Guardian': Rollo and Skinner were 'raising their tramway at the approach to the platform ... as a means of saving a great deal of labour in loading the trucks on the railway line'.[4]

THE 'WATERLOO SAWMILL & TRAMWAY COMPANY' PROPOSAL

Rollo was ambitious, more money was required to further extend his tramway and perhaps it was at this time he also parted company with Skinner. On 17 March 1880



Notes to the map

Base details came from the Moe and Mirboo North sheets of the one inch: one mile series maps prepared by the Australian Section Imperial General Staff, dated 1940 and 1941 respectively. The Woodlands Sawmill Company tramway running south-westerly from Yarragon existed about the same time as the South Gippsland Tramway, but is not described in this issue. The subject of this article is the tramway running in a generally southerly direction from Yarragon. The first section, shown broken, could not be found in site investigations, as it ran through flat paddocks which have probably been ploughed many times in the past eighty years. This section was originally narrow gauge, and subsequently relaid in 5 ft 3 in gauge. The rest of the tramway was of narrow gauge, and the formation is still clearly visible. A third tramway, which ran south-easterly from Yarragon, is not shown due to lack of information on its route.

he chaired a public meeting at Waterloo to discuss the formation of a tramway company. Rollo proposed that his tramway and mill be taken over by the proposed company. The line was to be extended 2½ miles at £300 per mile to a point on McDonald's Track 4 miles from and 1,000 ft above Waterloo. The Company's prosperity was assured, he claimed, by the improbability of good roads through the district for many years. Farm produce would travel down the tramway. Branches were to be built later to the east and west. Three gentlemen at the meeting (Messrs Rollo, James, and Faram) were appointed to draw up a proposed prospectus for the new Company.[5] A later meeting at Waterloo resolved to call the proposed company 'Waterloo Sawmill & Tramway Company'[6] and a copy of the prospectus appeared in the Warragul Guardian. The ambitions of the promoters had developed since the previous public meeting. Readers of the Guardian were informed of plans for five distinct routes. Immediately after publication of the prospectus,[7] a claim was made to the paper that the Company should pay a dividend of between 40 - 50%. Such projected profits sounded as if the selectors who could not get their produce out were to be held to ransom in the matter of freight rates. The tramway would certainly have been able to charge at a high rate if the story of a selector called Wright was typical. He had paid £4 per ton for some goods to be carted from the Waterloo station six miles along a track to his selection. The goods took three days to haul through the glue pot mires that covered the track to his home.[8]

Rollo was a skillful manipulator of publicity. Tommy Bent, the Minister of Public Works (later to become infamous for his role in the Land Boom of the 1880's) and a Mr Gaurson M.L.A. accepted invitations to inspect the proposed works, ensuring publicity.

Following much toasting in champagne at the Waterloo Hotel, the inspection party boarded a truck with 'impromptu seats' and clattered one-and-a-half miles or so over the tramway to Rollo's Mill. From this point the inspection party viewed the potential timber supplies on horseback. During the meal back at the mill Mr Gaurson M.L.A. announced that 'trams' should be built out of public funds as feeders to the main-line. Such a policy would have been very attractive to those present at the inspection.[9]

The Warragul Guardian agreed with Gaurson, commenting that tramways costing £250 a mile could extensively cover the countryside at less cost than only a few railway branch lines. The proposed Mirboo line was estimated to cost £5,000 per mile at this time.[10]

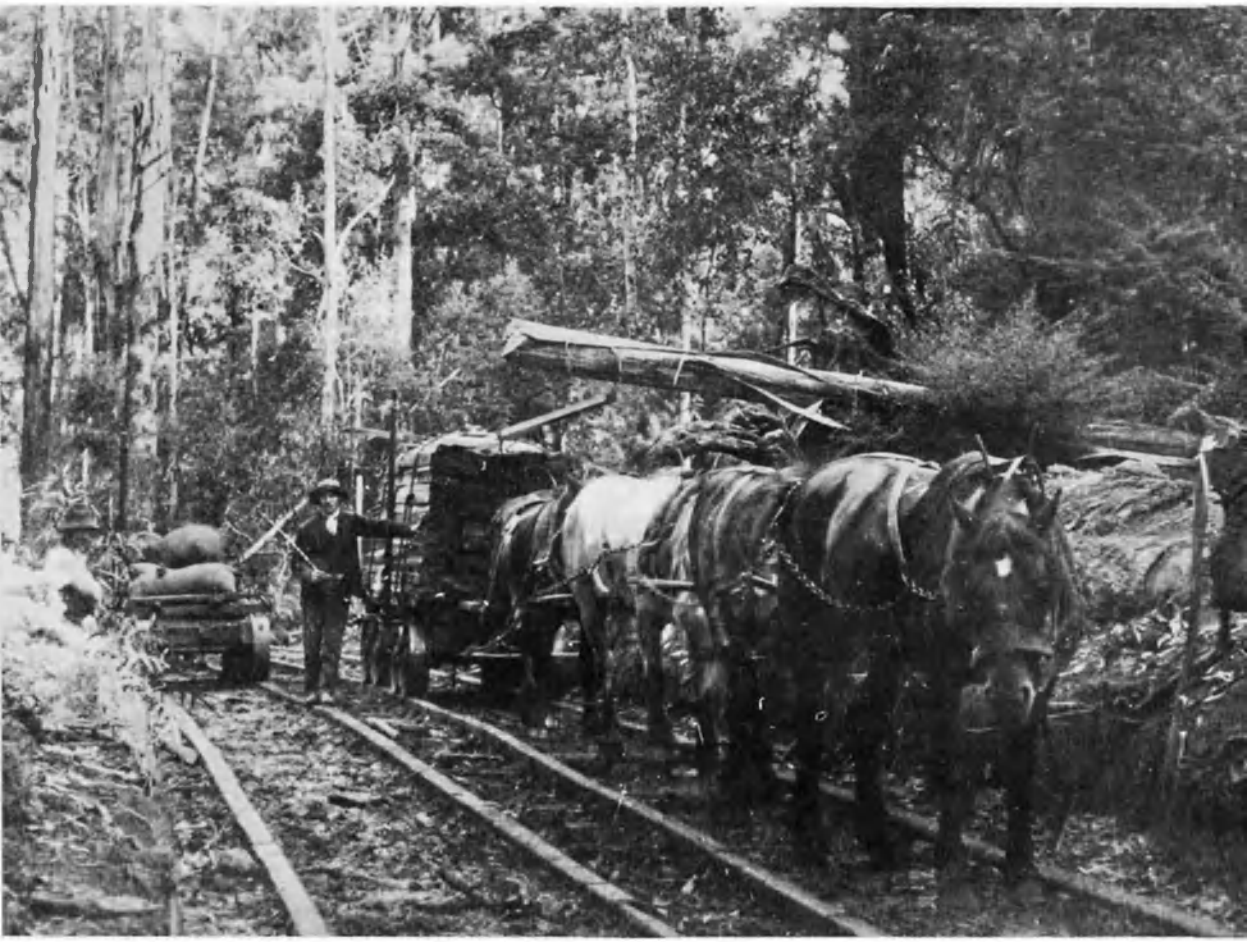
There were doubters of the viability and motives of the proposed Company, a selector claimed that it would be found impossible to find a route for a tramway south into the hills. Some considerable time later a writer to the Warragul Guardian stated that 'the Waterloo Tramway as projected will not benefit anyone outside of a select few interested'.[11]

A letter from the Secretary of the proposed Company was published requesting the public to invest in the Company, and claiming that the gradient and route problems of the tramway could be overcome.

But the criticism and doubt the venture had been subjected to in the local press was not as serious as the practical problem of obtaining a right-of-way for the tramway. The selectors through whose land the tramway was to run were refusing to accept the terms of the promoters. Rollo was out to obtain a twenty-one year lease over a strip of land one chain wide, and a licence to cut timber for an undefined period paying royalties to the selectors for the privilege.[12]

Rollo argued that if sufficient timber traffic could not be guaranteed then there was no point in laying the tramway. Rollo's argument shows just where he really considered the profit to be - not in the carting of produce from selections![13]

When negotiations between the promoters of the W.S. & T. Co. Ltd and the selectors remained deadlocked the formation of the Company was deferred. In the meantime Rollo sold his steam sawmill elsewhere.[14]



This photograph, taken by N. J. Caire in the 1880's is in the Latrobe Library Collection, Melbourne. It is only identified as being in Gippsland, but references have been found to Caire having visited Rollo's mill in the early 1880's. Whether this depicts Rollo's South Gippsland Tramway is not known, but it certainly illustrates the atmosphere of the tramway - rugged terrain, well laid tramway, and horse haulage. It is probable that steel or iron rails were used on most of the South Gippsland Tramway, considering that it was surveyed with steam traction in mind, but most such tramways had sections of wooden rails, sometimes later replaced with iron or steel.

THE SOUTH GIPPSLAND TRAMWAY & TIMBER COMPANY LIMITED

Rollo worked behind the scenes during 1882 and overcame the problems of negotiating a right-of-way. He also successfully obtained timber milling rights over 3,400 acres south of Yarragon (as Waterloo had now become known). During October 1882 a prospectus for the 'South Gippsland Tramway & Timber Company' was released.[15] The prospectus noted the current high price for timber, and concluded that because Bills authorising construction of sixty railway lines had been passed by Parliament, an increase in demand was inevitable. Also cited as excellent reasons for the Company being a profitable investment were the rapid depletion of forests and the consequent closing of mills in central Victoria. The Company had avoided coming under the increasingly stringent rules for operating in state forests which were being applied during this period, and openly promoted that fact as further evidence of potential profitability.[16] The prospectus sounded convincing! The promoters provided Baron von Müller - the famous landscaper of the Melbourne Botanical Gardens - with seeds and foliage from the trees to be milled. The Baron concurred with the promoters' opinion that the timber would be excellent.

The prospectus proposed the extension of Rollo's tramway from Cleaks Creek into the Strzelecki Ranges. Several mills were to be built and general goods as well as timber were to be carried. 100,000 shares of ten shillings each were to provide the capital for the enterprise.

The Company was floated successfully during the Summer of 1882-3. By June 1883 a local newspaper correspondent was able to report that 'some very heavy cuttings and bridges had been made'. Four miles of tramway had been completed and it had reached the top of the range. A powerful sawmill was being erected and an even larger one was being imported.[17]

By July 1883 the first mill was ready to operate, to fill a contract with the Melbourne City Council for the supply of one million cubic feet of blue gum blocks to pave the city streets.[18] J. Rollo was the manager of the works.

Operation under the South Gippsland Tramway & Timber Company Ltd

According to Parliamentary debates the line was of 3 ft gauge and about five miles long.[19] The S.G.T. & T. Co. let tenders for the haulage of timber and goods on its tramway. A local man would receive the contract for a period of one year and be responsible for providing, caring for and working a horse team to haul the traffic. The letting of tenders for haulage of traffic over timber tramways was normal practice in South Gippsland at this time.

Diminutive timber bogies weighing only three hundredweight each were used to run logs 10-12 tons in weight down from the hills. The gradient on the tramway was in favour of the load precluding the necessity for steam power, though the line was constructed with steam traction in mind.[20]

After all the early fuss about the ability of tramways to provide selectors with a reliable year round service very little produce was actually carried by the S.G.T. & T.Coy. Some of the original selections in the area were abandoned or never opened up due to the hilly nature of the country. Other selections were taken up by capitalists who were speculating and did nothing to open up the land.[21]

Mr Cleak of Cleaks Creek used the tramway to supply people in Yarragon with potatoes and later when the tramway was closed he was unable to send them out.[22]

The most important reason for the lack of produce traffic was simply that under contemporary Victorian law the S.G.T. & T.Coy was not permitted to charge for the haulage of goods. A sufficient reason for the Company not to encourage a general traffic.[23] The tramway was used to trundle loads of timber to Yarragon station for the following twelve months and received little attention until June 1884.

It was reported in the Warragul Guardian of 5 June 1884 that the S.G.T. & T.Coy 'started with a flourish of trumpets some time since (and was) not turning out a paying concern ... they have been doing a lot of dead work up till the present'.

Memorandum of Association

OF

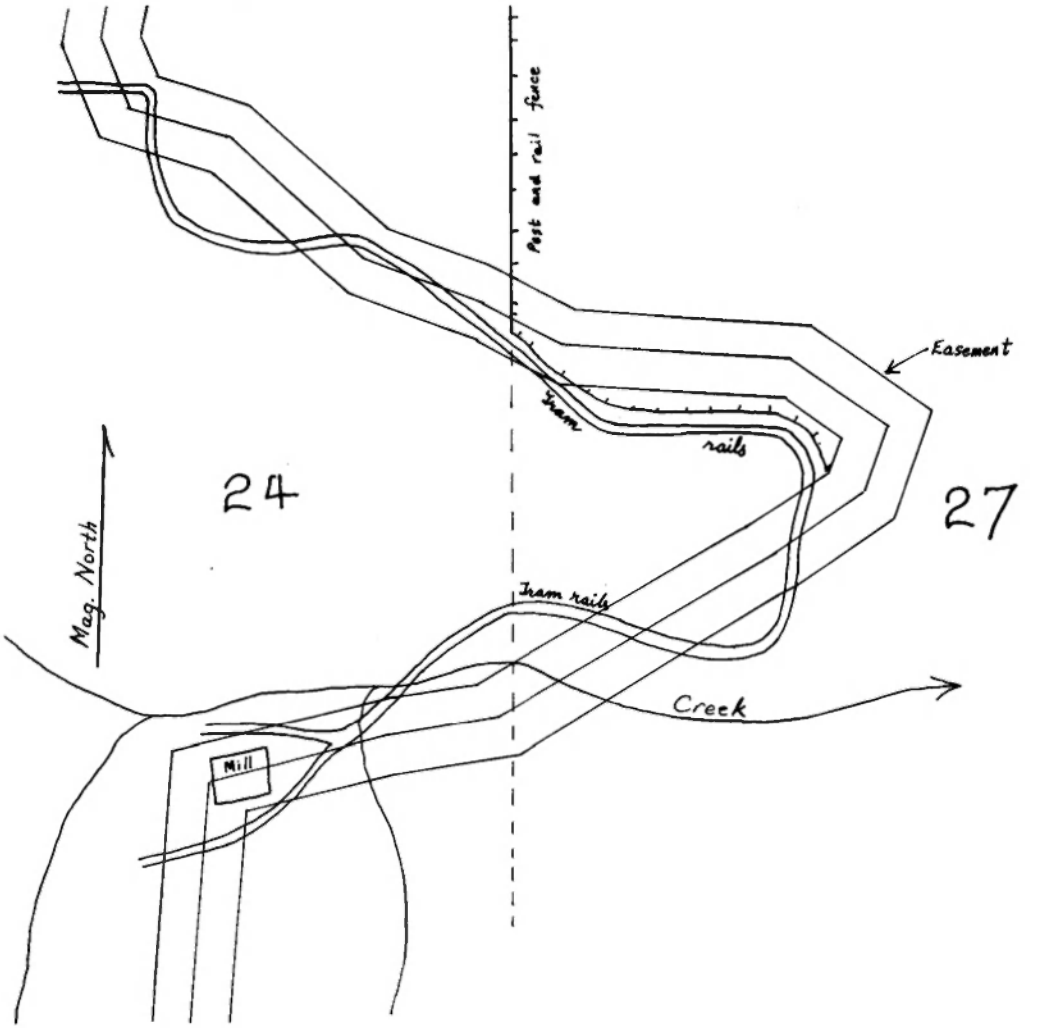
"THE SOUTH GIPPSLAND TRAMWAY & TIMBER COMPANY, LIMITED."

1. The Name of the Company is "THE SOUTH GIPPSLAND TRAMWAY & TIMBER COMPANY LIMITED."
2. The objects for which the Company is established are:—
   - A. To purchase or otherwise acquire and from the present proprietor the Tramway known as "Rolfe's Tramway" running or leading from the Waterloo Station on the Gippsland Railway to Cleak's Creek and all waggons carriages trucks and other plant or appliances belonging to or connected with such Tramway and also the lands or the right and interest of the said proprietor in and to the same upon or over which the said Tramway is constructed or runs or held or used in connection therewith and also the lands or track surveyed and cleared or partly cleared for the continuation or extension of the said Tramway from Cleak's Creek to the Strzelecki Ranges and also the right and interest of the said proprietor in to and under all or any licenses rights concessions permissions and privileges whatsoever now held by the said proprietor for or in connection with or relation to the construction making using or maintaining of the said Tramway or any part thereof or for the continuation or extension thereof or for the cutting and removing of timber thereon or therefrom and any lands and also to extend alter repair maintain use and work the said Tramway or any part thereof or any lands and also to extend alter repair maintain use and work the said [illegible]
   - B. To purchase take on lease or otherwise acquire any other lands (freehold or leasehold) or any estate or interest therein for or in connection with any of the objects or purposes in this Memorandum of Association mentioned.
   - C. To purchase or otherwise acquire any licenses right concession permission or privilege to construct make use and maintain roads tramways railways watercourses sluices or other works on through or over any lands or to fell cut and remove timber trees or wood or to dig sink bore mine search for obtain take and remove gold and other metals ores minerals stone coal products or substances on in or from any lands.
   - D. To construct make lay down extend alter repair maintain use work erect build purchase rent hire or charter or make or enter into agreements or arrangements for the use of any other tramways railways roads watercourses sluices dams reservoirs saw mills works buildings machinery gear plant engines carriages waggons trucks rolling stock horses drays vessels appliances shaftals and other things whatsoever for or in connection with any of the objects or purposes in this Memorandum of Association mentioned.
   - E. To fell cut saw and otherwise prepare for sale trees timber and wood.
   - F. To carry on generally the trades or businesses of sawyers timber and wood merchants produce dealers and carriers of goods produce and passengers or any or either of such trades or businesses.
   - G. To fence clear improve crop or cultivate any lands or to dig sink bore mine search for obtain take and remove gold and other metals ores minerals stone coal products or substances on in or from any lands and to crush extract smelt reduce or refine gold metals ores minerals products or substances.
   - H. To sell lease let exchange mortgage or otherwise deal with or dispose of all or any part of the property (real or personal) of or belonging to the Company.
   - I. To purchase or acquire the lands works mills buildings plant business property or effects (real or personal) or other the assets of or to unite or amalgamate with or absorb any other Company or any partnership or person carrying on any trade or business which the Company may under this Memorandum lawfully carry on.
   - K. To borrow money for or in connection with any of the objects or purposes aforesaid and to give security for any money so borrowed on or over any of the property (real or personal) of the Company.
   - L. To make accept draw endorse and negotiate promissory notes bills of exchange and other negotiable instruments and securities for or in connection with any of the objects or purposes aforesaid.
   - M. To do all such other things as are incidental or conducive to the attainment of the aforesaid objects or any of them.
3. The liability of the members is limited.
4. The Capital of the Company is £50,000 divided into 100,000 Shares of Ten Shillings each.

We the several persons whose names and addresses are subscribed are desirous of being formed into a Company in pursuance of this Memorandum of Association and we respectively agree to take the number of shares in the Capital of the Company set opposite to our respective names.

DATED this First day of December One thousand eight hundred and eighty-two.

NAME, ADDRESS, AND DESCRIPTION OF SUBSCRIBERS.	NUMBER OF SHARES TAKEN BY EACH SUBSCRIBER.
George William Smith Glenmire Cremorne St Kilda Timber Merchant	Five hundred
William Lord 111 Sandridge Road Emerald Hill Carpenter	one hundred
Frank Peck 113 Albert Road Albert Park Merchants Manager	fifty
[illegible] Merry 81 Richmond Terrace Richmond Painter	Fifty
Torrens Thorpe Hiley Heatherleigh Toorak Gentleman	
[illegible] Yarra Yarra Gentleman	Two hundred
Rebecca [illegible] 127 King Street West Melbourne Widow	one hundred
Thomas Reuben Rolfe Joint Clerk Melbourne gentleman	One hundred



Above Following complaints that the South Gippsland Tramway did not correctly follow its tramway easement, Mr G. Struthers, Licensed Surveyor, surveyed the line in December 1890. Above is a simplified tracing of his survey of the last section of the line, in Sections 24 and 27 of the Parish of Moe, just north of McDonalds Track. As can be seen, the complaints were justified. In recent on-site investigations, the mill site could not be found, as a small dam has been constructed in this area, the earthworks for which have destroyed any evidence of the tramway terminus.

Left The original Memorandum of Association of the South Gippsland Tramway & Timber Company Limited, dated 1 December 1882, showing the signatures of the original subscribers.

Eighty years after abandonment, the South Gippsland

After over eighty years of abandonment, it might be expected that the formation of a light railway would be difficult to find. The panoramic photograph above shows that this is not so for the South Gippsland Tramway.

It was taken from a vantage point on the road running south from Yarragon, to the west of the tramway. This road connects with McDonald's Track, and is shown on the map on page 4. The photograph clearly shows how the tramway had to gain elevation on its route to McDonald's Track, and how well surveyed the tramway was.

On the right hand section of the panorama the tramway is hidden in one part where it runs up to the head of a creek to maintain a reasonable grade. The lower photograph at right shows part of this section, which included some of the steepest grades and heaviest earthworks, and a bridge site (not visible in either photograph).

Tramway remains a scar across the landscape.

On-site investigations revealed no remains at all of any of the bridges or sleepers. Nor was any recognisable trace found of the route of the 5 ft 3 in gauge line which ran for the first 1⅓ miles from Yarragon over very flat country.

A 5 ft 3 in gauge tramway

At a general meeting of the Company, shareholders (there were about 140) were informed of the unprofitable nature of business. The directors reported that the tramline was being extended further into the forest, and that a railway line of 5 ft 3 in gauge and about 1¼ miles in length was to be laid from Yarragon station to the Company mill at the foot of the ranges. The land for the proposed line had been purchased to within twenty chains of Yarragon. Negotiations to lease the remaining portion were being delayed. This land was owned by Rollo himself![24]

The reduction in handling charges brought about by a direct connection with the Victorian Railways was calculated to add 15% to the profits of the Company.

During the year Rollo had resigned as Company Secretary and Manager and had sailed for England. Back at the Yarragon works the Company's directors were embarrassed for 'want of capital'. This crisis was curtailed by conducting a call on the partly paid up shares - one of five such calls in the history of the company.[25]

With Rollo gone the new management curtailed wage payments to employees to once a month. Such action resulted in a strike and a reversion to fortnightly payments occurred immediately.[26] In order to reduce the large overdraft which the S.G.T. & T.Coy had developed, 150 acres of the Company's land was subdivided to be sold. After brown coal had been discovered on part of the Company's land a tribute right to prospect for coal was issued.

During the winter of 1884 the tramway proved its worth. For a considerable period no goods traffic reached Yarragon from its surrounding district other than along tramways.[27]

On 30 August 1884 tenders closed for 'the construction of a tramway of railway gauge from the S.G.T. & T. Coy sawmill to the railway, about 1¼ miles, labour only'.[28]

By May 1885 sawn timber was being despatched directly from the mill platform in VR trucks over the 1¼ mile connection.[29] Motive power on the line was provided by horses. Evidence that the line was ever worked by VR locomotives has not been found.

The new tramway between the bottom mill and Yarragon railway station may have reduced the expenses of the S.G.T. & T.Coy but financially the Company was becoming less sound. Profits were still not being produced from the timber milling, most of the Company's capital had by now been absorbed by the tramway and sawmills. When a slump occurred in the timber trade the S.G.T. & T.Coy would be in no fit state to ride it out. Such a slump occurred during September 1885 when there was a 'collapse of orders' on the Melbourne market.[30] The importation of large quantities of cheap Tasmanian hardwood and oregon into the colony contributed to the downturn in trade.

COMPANY LIQUIDATED

During July 1886 after some months of depression an extraordinary meeting of the S.G.T. & T.Coy was held. A motion calling for the winding up of the Company was placed before the meeting and passed. When the liquidator was appointed to distribute assets to the creditors 4s 8d in the pound was all that could be recovered. A timber tramway permanent way may be an asset but at the winding up of a company there is little that can be retrieved from it to pay creditors. The liquidators were so shocked at the appalling state of the Company that they waived ½ of their commission. A number of shareholders, including Rollo, owed the Company money from calls on their shares.[31]

The accounts at the winding up refer to a 'carriage' purchased from the VR. Unfortunately no further details have been found about it.[32]

For all the money which had been invested into development of the mills and tramway only £1,165 was realised, while the land that was owned by the Company was sold for £7,385 - a sign of the land boom which was developing in Victoria.[33]

Sometime after July 1886 the milling assets of the defunct Company appear to have been purchased by a firm trading as Miller Bros., though no evidence of any connection with the Western Australian firm of the same name has been found. A search of the Latrobe Library company records has failed to turn up any records of Miller Bros, though the firm was probably incorporated. At that time any new sawmiller in the Yarragon area attracted little attention. Developments that followed are not entirely clear, but it seems that Miller Bros were operating in the same area as that previously worked by the S.G.T. & T.Coy.

By spring 1886 most Victorian mills were affected by the slump in trade. Two-thirds were closed by autumn 1887 according to a Warragul sawmill owner.[34] The over-supply of timber on the Melbourne market worsened through 1887-90. Victorian timber millers pressed without success for a higher duty on imported timber. Between 1885 and 1889 imports of Tasmanian timber rose by approximately 180%.[35] Miller Bros no doubt struggled through this period attempting to make a financial success of their mills and tramline, but the slump was too much for them.

During February 1889 Millers advertised the sale of bullocks, horses and drays at Yarragon. Three days later the Warragul Guardian reported that Yarragon was going through a period of depression following the partial collapse of the timber boom. 'Yarragon had been mainly supported by mills whose music is no longer heard'.[36] The South Gippsland Tramway had apparently closed.

MILLER BROS' SCHEME

The country south of Yarragon was described as the roughest, richest and most roadless in Victoria when the possiblity of running a light railway into that area was discussed. Around the period of Millers' demise agitation for the construction of light lines into the backblocks of Gippsland was considerable. Millers were perhaps anticipating Government support for such a scheme when they proposed in September 1889 to spend £10,000 in building an iron railed steam worked line ten miles to the south of Yarragon with the intention of providing a daily service for passengers and goods, as well as serving their own mill.[37]

With this scheme Millers ran into the same problems which Rollo had encountered. In November 1889 along with other ratepayers, Millers petitioned the Shire of Narracan to allow them to construct a tramway to the Allambee timber reserve, through selections where selectors were forbidding construction. £5 per acre for a strip half a chain wide was not considered adequate payment by a number of selectors.[39]

The Shire Councillors wanted the tramway constructed and took steps to persuade the dissatisfied selectors to accept the offer.[39] Nothing came of this scheme, and Millers ceased business interests in the Yarragon area probably because they were in financial difficulties. A huge financial collapse was just commencing within Victoria at that time. In November 1894 the title to the route of the 'South Gippsland Tramway' as it was called was transferred to the Mercantile Bank of Australia Ltd. This would almost certainly mean that Miller Bros went bankrupt and were unable to pay off an overdraft or loan.[40] The Bank later went into liquidation.

Records in the Lands Department dated 1901 stated that the tramway was disused and abandoned for its whole length. The right-of-way was later incorporated into the selections of land through which it passed.[41]

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33 As for 31
34 Warragul Guardian, 30 May 1887
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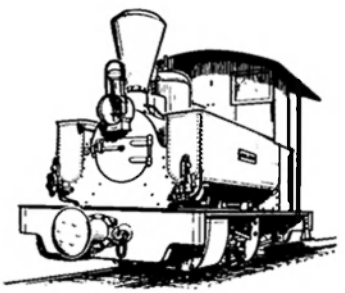
37 Warragul Guardian, 17 September 1889
38 Warragul Guardian, 5 November 1889
39 Warragul Guardian, 17 December 1889
40 Lands Department Selection files
41 Lands Department Selection files



LETTERS

TASMA HARDWOOD COMPANY (HOBBS), LR 27, p.19

The article by Charles W. Goodwin on page 19 of LR 27 regarding the Tasma Hardwood Company (Hobbs) prompted me to visit the Hobbs Sawmill at Ulverstone while on vacation in May 1974. The original Mr Hobbs and his brother who founded the mill are now deceased, but their names are perpetuated in the very large and modern mill on the west bank of the Leven River at Ulverstone.

One of the older employees, Lindsay Foster, very kindly gave me further interesting information about the mill's operations. The railway started at Lobster Creek which runs into the Leven River a few miles upstream from Ulverstone and it was Hedley Foster, Lindsay's uncle, who drove the loco. The locomotive originally came from Queensland and was purchased with rails etc. by a Mr Hungerford, also of Ulverstone. The rails were laid on red gum sleepers and when operations ceased about 1946, the sleepers and rails were disposed of. The loco was to have been brought from Lobster Creek to Ulverstone and a contractor was in fact engaged to move it. For some reason it did not eventuate and is still in the bush near its old scene of operations but I did not have the time to go and find it.

Lindsay Foster recalls very well all the activities. In addition to the railway, the Company also built a steam paddle-wheel barge named "Annie" which Lindsay himself drove and used to carry logs down the Leven. The river is beautiful as it winds its way through the myrtles and blackwoods of typical Tasmanian bushland; the reflections of the trees in the water are perfect. But it is not always so as Lindsay told me. During winter time and heavy run-off from the hills, it took poor old "Annie" all her time to make any headway against the current and the debris, but on her return downstream loaded with logs, Lindsay was mostly occupied in

keeping "Annie" from snagging herself. When she did, frequently, the steam winch on deck was used to clear the snags and haul the old girl back into the current. She was eventually pensioned off, her machinery removed and what was left of the barge was bought by a local ship-builder.

I understand a movie of the sawmill and railway in actual operation was made at one time and is now in the keeping of the Ulverstone Town Council who show it occasionally to genuinely interested groups.

Frenchs Forest, NSW. 2086 Richard C. Hope

THE ROTTNEST ISLAND DEFENCE TRAMWAY, LR 46, p.3

With reference to the article on the Rottnest Island Defence Tramway, the trolley referred to (p.7) was an ex WAGR 'Groper' gang trolley - a type which were for many years the mainstay of the transport for per-way gangs in this state. They were capable of transporting up to eight men and towing a work trolley. About twenty-five years ago they were gradually phased out, or the Groper engine was replaced with a Petters diesel engine. Now there are hardly any rail trolleys of this nature in general daily use by the per-way gangs. Most gangs have a stand-by unit, but all are now equipped with motor trucks or Holden one-tonne table-tops depending on the size of the gang. Kulin gang has a ninety mile length.

Some years ago the Rottnest Tramway was used by the 44 Railway Squadron RAE as a training ground during Annual Camp. I think also the 43rd squadron from South Australia attended. A number of trollies (on loan from the WAGR) were transported to Rottnest Island for this camp.

Kulin. W.A. 6365 T. O. James

PAPUA NEW GUINEA'S BOOTLESS BAY RAILWAY, LR 47, p.3

Reading with great enjoyment R. McKillop's history of the Bootless Bay Railway in LR 47, I would like to give some information regarding the previous ownership of the Shay locomotive. This locomotive did not come from the Mount Elliott smelters, but from the smelting plant of the Hampden Cloncurry Mines Ltd. These were two rival concerns. The Hampden company had their smelters at the township of Friezland (changed during World War I to Kuridala), 53 miles south of Cloncurry, and the Mount Elliott smelters were twenty miles further south at a settlement that became known as Selwyn. These two companies combined to form the Cloncurry Railway & Smelting Company to construct a railway line from Cloncurry south to link their respective smelters. This line was ultimately taken over by the QGR.

At the Hampden smelters a three-quarter mile branch line linked the works with the main line at Friezland (Kuridala). It was to work this branch that the Shay locomotive was obtained in 1912. Traffic consisted of ores, coke, fluxing materials, firewood and charcoal. The branch line passed over a weighbridge and the Shay would have been used for the shunting operations in connection therewith. A 2 ft gauge line connected the various buildings associated with the smelters. Blister copper, the product of the smelters was loaded on to QGR trucks and conveyed over the branch for transport through Cloncurry to Townsville.

An ex-employee of the Hampden company says the loco was known there as the 'Flying Pig'. In 1924 when it left Kuridala for Townsville it was conveyed at the rear of a mixed train coupled to the guard's van, complete!

I have in my notes some cuttings from the Brisbane Courier, one dated 30 July 1921 shows the Barclay loco virtually being manhandled on to the rails. Another cutting from the Courier in January 1929 shows this loco with No.2 painted on the front buffer beam, indicates that the Shay may have been No.1?

The following extracts from the North Queensland Register in connection with the railway proposal of 1914 may also be of interest to readers:

'Railways for Papua

'Arrangements have been completed by the Department of External Affairs and Home Affairs for the immediate construction of a railway from Port

Moresby to the Astrolabe mining field in Papua, a distance of about seventeen miles.

'The department construction was decided upon by Mr Glynn after a full enquiry into the question of time and other considerations.

'It is expected that the line will be completed within about six months. A special engineer is to be sent to Papua early to take charge of the work.

'The railway will chiefly be used for the conveyance of ore from the mines at Astrolabe. It is expected that it will be a paying concern from the start. There are also agricultural districts along the route.

'The gauge will be only two feet.' (from the North Queensland Register, 13 July 1914).

'A sign of progress in the Papuan Territory is a demand for a 2 ft gauge locomotive for Port Moresby, "delivery being required immediately".

'It is stipulated that the engine must be in good order and capable of negotiating three chain curves.

'It may be new or second hand.

'A new engine of eight-coupled tank type equal to an axle load of about five tons with copper firebox and tubes, combining bunker and tank capacity for a twenty mile run on wood or coal fuel is desirable.

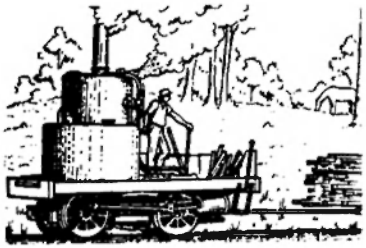
'In the case of a second-hand locomotive being offered, full particulars as to type, power, age, date of retubing, general construction and draw gear should be given; but the axle load should not exceed six tons.

'Quotations are being invited by the Hon. Minister in Charge of the Home Affairs Department (Mr Kelly) and are due on Wednesday 28 July.' (North Queensland Register, 20 July 1914).

Jambouree Heights, Qld 4074 George Bond

Shay geared locomotive at Hampden Smelters, Qld in 1912. This locomotive later worked on the Bootless Bay Railway in Papua. Photo from souvenir album for Commissioner of Railways' tour of inspection of the northern railway (Mitchell Library, Sydney).

Courtesy: George Bond



News, Notes & Comments

NEW SOUTH WALES

CLARENCE HARBOUR WORKS RAILWAY, Public Works Department, Yamba, 4 ft 8½ in gauge

Further to the comments that appeared in LR 46, p.16 regarding this railway, the two small internal-combustion locos that worked on this now defunct project were of standard gauge and built by Ruston Hornsby of England. They were designated Class DS, Size 165, B/No. 310085 of 1952 and B/No. 313393 of 1952, they were allocated P.W.D. Plant No. x45082 and x45083 respectively, the road Nos were 82 and 83.

The engine used was a Ruston six cylinder 6VPHL rated 165 brake horse power at 1250 rpm and had a maximum speed of 20 mph. The locos weigh in at 28 tons each and measure 22 ft 1 in long, 8 ft 8 in wide and 11 ft 10 in high, and were painted a light grey.

The locos are of the 0-4-0 diesel-mechanical type with an unusual jackshaft drive that connects to the furthest coupled wheelset (similar to 0-4-0 steam loco practice) and not to the nearest wheelset which is now the most common arrangement.

The P.W.D. disposed of the two locos by auction when the line was dismantled and they were purchased by B & H Disposals of Silverwater, NSW in February 1973, and it was only recently that they were sold to Simsmetal Pty Ltd, Mascot. Although Simsmetal have cut up many steam locos in the past, these diesels were not to suffer the same fate, as the locos are for revenue service on their private sidings at Mascot.

The locos were delivered by road on a lowloader on 8 July and 10 July 1974; and on 13 July No.82 was seen on shunting duties. The buffers had yet to be repositioned and the drawhooks replaced by auto-couplers to suit PTCNSW wagons - a wire rope was used to couple the loco to the wagons. These locomotives are similar to the Commonwealth Railways DR1 shunting loco.

Simsmetal also operate two other diesel locos at Mascot, a Tulloch 0-4-0 built in 1958, sold to Simsmetal in September 1963 and a B.T.H./Yorkshire 0-6-0 B/No. 2617 of 1957. This loco was originally built for the British Coal Board and eventually sold to Simsmetal in May 1969. At present both these locomotives are out of service pending repairs. Technical details of both these locos appear in 'An Australian Diesel Locomotive Pocketbook' recently published by the Australian Railway Historical Society NSW Division.

(Paul Simpson)

MEGALONG VALLEY SCENIC RAILWAY, Blackheath, 2 ft (610 mm) gauge

This railway is being constructed privately by Keith Duncan, sawmiller and proprietor of the Megalong Valley Tea-room. [See LR 40, p.26 for previous report]. Some preliminary work has been carried out, but was halted pending approval by the Blue Mountains Council.

After facing a drawn out battle with this Council for over two years, it seems as if this railway may come to fruition in the forseeable future as approval, with certain conditions attached, has been granted by the Council.

The railway is to be approximately 1¼ miles long in an oval design, with some earthworks such as cuttings to be excavated. Already some embankments have been

completed. The track is to be laid using 60 lb rail on standard gauge sleepers (second hand) cut to size. A 20,000 gallon water storage tank has been erected and is to supply by gravity the loco depot, which is some distance away near the road that runs through the Megalong Valley. The locos purchased over two years ago were from the North Eton Mill, Qld, and are 0-6-2 Perry B/Nos 2382 of 1942 and 6634 of 1952, the latter being the last 2 ft gauge loco built by the Perry Engineering Co. of South Australia. Both are at present under shelter and after an overhaul are being repainted, in eager anticipation of steam operation again.

Members wishing to inspect the Megalong locos should telephone Megalong 27 (STD 047) and make suitable arrangements with Keith Duncan. Hopefully within the next few years, an announcement of the official opening will appear in 'Light Railways'.

(Paul Simpson)

HARWOOD MILL, GRAFTON 2 ft (610 mm) gauge

During August 1974 I visited Harwood Mill, near Grafton, hoping to photograph its fascinating 2 ft gauge tramway again before its closure. The scene which greeted me dismayed me immensely as the system was no longer operating. Much track had been lifted although the holding yard outside the mill was still intact, if overgrown. Some rolling stock remains but I did not see either of the two locos in evidence. The old permanent way north of the mill has been bulldozed to make an access road for the trucks that now cart the cane to the mill. The rail weighbridge area has also been drastically changed to provide access for motor trucks. Alas, another sugar mill tramway has passed into history.

(Ian Crellin)

QUEENSLAND

CANEFIELD MEET ON MILLAQUIN IRONS!

During July 1974 a spectacular head-on collision occurred on the Millaquin Mill's tramway. A train of about 100 empties collided on a curve with a diesel loco hauling a smaller number of loaded bins to the mill. The result was spectacular! Fortunately the crews of both diesels escaped without injury but the piles of bent bins took some time to clear. One of the locos involved - No.2 - has since been placed on blocks at the fitters' shops behind the loco shed and has had a bent front axle dropped for attention. The other loco was apparently returned to service after being rerailed and checked out.

The site of the accident was only a relatively short distance south-east of the mill, at Kalkie. It occurred on a curve where visibility was impeded by tall sugar cane. No doubt safe working procedures will be looked at closely after this unfortunate happening.

(Ian Crellin)

Millaquin No.2 with its front axle dropped after the head-on collision described above.
Photo Ian Crellin

MOURILYAN SUGAR MUSEUM

During July the Johnstone Shire was host to tourism officials investigating a proposal to establish a sugar museum at Mourilyan. A grant of $20,000 for the project was later announced by the Australian Government. The Museum is being developed jointly by the Far North Queensland Development Bureau and the Board for Tourism and Travel. They have purchased the old 'Sugarama' picture theatre and adjacent grounds in Mourilyan to house their exhibits. It is not known at this stage if they propose to incorporate any railway exhibits into the project but it is a fair bet that they will join the fight for the remaining steam locomotives left in Queensland.

(Ian Crellin)

MARIAN MILL, MACKAY 2 ft (610 mm) gauge

The Perry 0-6-2T at Marian Mill was still going strong in August 1974, working around the mill and in the QGR transfer yard across the Eungula road. It is handling the bulk sugar bins, three at a time, from the QGR yard to the sugar loading point at the mill. This is a most interesting working with a 2 ft gauge locomotive shunting 3 ft 6 in gauge wagons over dual gauge trackwork.

(Ian Crellin)

TASMANIA

VAN DIEMEN LIGHT RAILWAY SOCIETY INC., P.O. Box 887, Launceston Tas. 7250

The VDLRS has made great progress since the last report in LR 42. It has leased 3.5 km of the defunct Melrose branch of the TGR from Don Junction to Don Crossing together with the site of a large headquarters and museum. The formation winds along the picturesque Don River and provides excellent access to a major highway, access to the TGR, attractive scenery, and allowance for expansion to Melrose in the future.

Regular working bees have been held, clearing the site at Don Junction, as well as sleeper recovery trips along the north-west coast. The main line will be dual guage, 1067 mm and 610 mm (3 ft 6 in and 2 ft). Some trackwork in both gauges has already been laid, indeed much of the original TGR track was still on the site.

Locomotives and rolling stock

Locomotives donated to, purchased by, or loaned to the Society include:

M class 4-6-2 No.6 ex TGR (owned by Bob Butrims) 3 ft 6 in gauge
MA class 4-6-2 No.2 ex TGR 3 ft 6 in gauge
MA class 4-6-2 No.3 ex TGR 3 ft 6 in gauge
Fowler 0-6-0T B/No. 5265 of 1886 3 ft 6 in gauge
"Kaurie" (internal combustion tractor from Leesville) 3 ft 6 in gauge
Krauss 0-4-0T, B/No. 5988 2 ft gauge
Hunslet 0-4-0T, ex Lune River Railway, 2 ft gauge
Internal-combustion locomotive, 2 ft gauge, ex Wright Stephenson & Co's tramway at Irishtown, which served lime deposits.
Two "Day's" tractors ex Cheetham salt works, Victoria, 2 ft gauge

Other rolling stock includes:

TGR carriages BBA2, BBL1, BBL5, ABL9, SP2, also an ex TMLR end loading saloon carriage (the latter is privately owned by two VDLRS members)
Some ex-Marrawah tramway trucks, together with two ex-Hobart tram bodies, and ex-Launceston tram No.5.
Two old TGR camp cars, Nos 115 and 134 - both originally end platform saloon cars on the North Mount Lyell Railway.
2 ft gauge mining skips (wooden) ex Cornwall Mine (see LR 34 p.33 and LR 36 p.21).
2 ft gauge side-tipping mine skips ex Wright Stephenson & Co's tramway at Irishtown.

Various items of workshop equipment have been purchased, including two lathes, a vertical drill press, a forge, an angle grinder, a power drill and a sawbench. Most of this equipment came from Hobart roundhouse.

Sufficient rails and sleepers have been obtained to complete the 3.5 km of track. Other equipment includes a turntable from Antill Ponds.

The Society has received assistance from the local Council, State Government, the TGR and numerous private firms. At the end of June 1974 it had 74 members. It has also received much co-operation from kindred bodies, particularly the Geelong Steam Preservation Society, with whom rolling stock has been exchanged.

VICTORIA

'WHISTLE STOP' AMUSEMENT PARK, Frankston 2 ft 6 in (762 mm) gauge

The auction of equipment at this park was held on 16 October 1974. The Peckett 0-4-0ST locomotive (B/No.1711 of 1926) which had not been restored to working condition, was purchased by the Puffing Billy Preservation Society, and was reassembled at the Menzies Creek museum on 5 November 1974, where it is now on display. The Belgian built Couillet locomotive (generally, but wrongly, referred to as a Decauville) was withdrawn from the auction, and at the time of writing, private negotiations were still continuing for its sale.

Book Reviews

The Morwell and Mirboo Railway by R. K. Whitehead, published by the Australian Railway Historical Society, Victorian Division. 66 pages plus card cover, 165 mm x 230mm, 48 photographs, track layouts, maps, gradient diagrams, and reproductions of old timetables. Price $2.25 plus 33¢ postage from the LRRSA Sales Department.

Whilst this book is essential reading for all interested in the history of the Victorian Railways, light railway enthusiasts will also find much to interest them in its well printed pages. It gives full background and construction details of the VR's recently closed 5 ft 3 in gauge Mirboo North branch. Full details of safe-working systems, goods and passenger traffic, timetables, engineering features and locomotives are included. The line was fed by at least six timber tramways in its early years, and also had two long sidings, one leading to a ballast pit, the other to a coal mine. Brief details of all these are given.

The photographs are excellent, both in quality of reproduction, and interest. The author has obviously spent a great deal of time and effort in collecting these, many of which show very early scenes on the branch. Others show roads, tracks and timber mills.

Whilst a short list of historical sources is given, it is very much to be regretted that a detailed list of references is not provided. Apart from this criticism, this publication sets a very good example for others to follow, and it is by far the best history of a Victorian branchline produced to date.

FES

The Shale Railways of New South Wales by Gifford H. Eardley and Eric M. Stephens, published by the Australian Railway Historical Society, New South Wales Division. 241 pages plus insert plans of Newnes works and Shay locomotive. 180mm x 248mm. Almost 200 photographs, track layouts, maps, rolling stock and locomotive drawings, gradient profiles, but no references. Price $7.00 soft cover, $9.20 hard cover incl. postage from the LRRSA Sales Department.

It seems almost beyond belief that an historical work of this magnitude could be published without any details whatsoever of the authors' sources of information. This immediately throws the credibility of the whole text into doubt, and sets future historians the mammoth task of starting from scratch in verifying any part

of the extensive and well written text. This serious omission is all the more regretable because this publication is in every other respect exemplary.

The book describes the railways and tramways which served the shale oil industry in its heyday. Railways described include those at Mount Kembla, Hartley Vale, Joadja, West Katoomba, Airley, Torbane, Newnes and Murrurundi. The text is very readable, and gives a good insight into the shale oil industry itself, and the living and working conditions of those associated with the industry. The photographs and early woodcuts are an excellent selection, many being of full page size, with one triple page panorama. Light railway enthusiasts will find these photographs fascinating, as the shale oil lines had many interesting features, like inclines - both single and double track, peculiar pointwork, and unconventional locomotives and rolling stock. Most of the railways were of narrow gauge.

The country in which these railways operated was extremely rough, giving photographers a real opportunity to produce spectacular pictures. This they certainly did - see photographs of Shay locomotives working the standard gauge Wolgan Valley Railway amidst overhanging rocky cliffs - pages 137, 140, 141 and 142. Good details, photographs and drawings of the three-truck Shay locomotives that battled their way up the 1 in 25 grades of that railway are given.

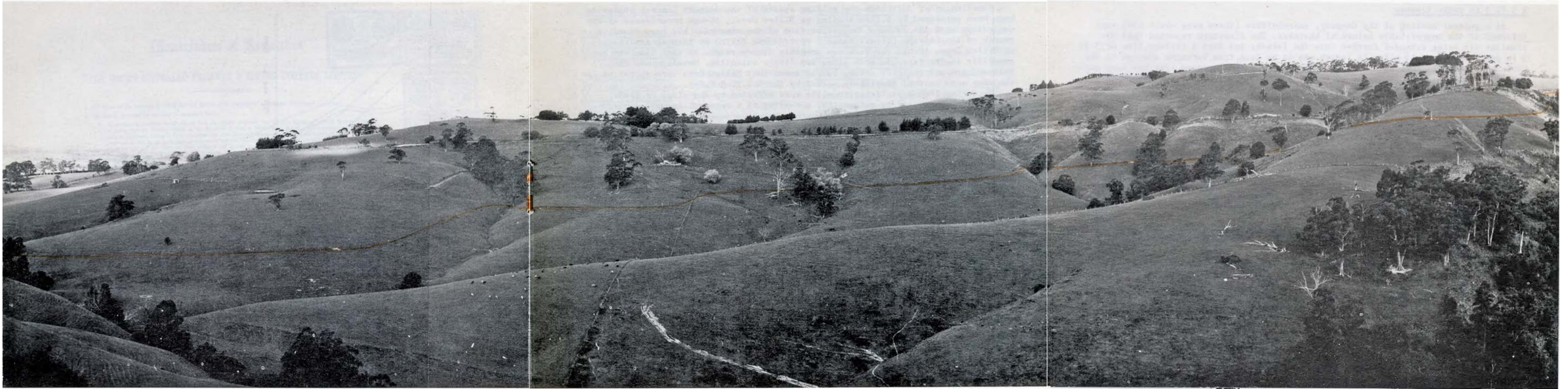
This book can be recommended with the reservation already made regarding the lack of authentication of the text. The apparently high price is fully justified in view of the size and quality of the publication.

FES

LRRSA exhibition layout

As part of the Society's publicity effort, a small 3.5 mm/foot scale model of a typical Victorian timber mill settlement has been built. The track is 10.5 mm gauge and represents a mixture of wooden and steel rails. It is hoped to expand the layout for next year's model railway exhibition at the Camberwell (Melbourne) Civic Centre. Members wishing to help in this work, or who could help man the stand at the exhibition (during Labour Day weekend, March 1975) are invited to contact the Secretary, whose address is listed on page 2.

Registered for posting as a periodical: category B



Eighty years after abandonment, the South Gippsland Tramway remains a scar across the landscape.

After over eighty years of abandonment, it might be expected that the formation of a light railway would be difficult to find. The panoramic photograph above shows that this is not so for the South Gippsland Tramway.

It was taken from a vantage point on the road running south from Yarragon, to the west of the tramway. This road connects with McDonald's Track, and is shown on the map on page 4. The photograph clearly shows how the tramway had to gain elevation on its route to McDonald's Track, and how well surveyed the tramway was.

On the right hand section of the panorama the tramway is hidden in one part where it runs up to the head of a creek to maintain a reasonable grade. The lower photograph at right shows part of this section, which included some of the steepest grades and heaviest earthworks, and a bridge site (not visible in either photograph).

On-site investigations revealed no remains at all of any of the bridges or sleepers. Nor was any recognisable trace found of the route of the 5 ft 3 in gauge line which ran for the first 1½ miles from Yarragon over very flat country.