LIGHT RAILWAYS

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Kirchhubel's West Tanjil Sawmill and Tramway, Victoria
The Kitson Tram Engine List

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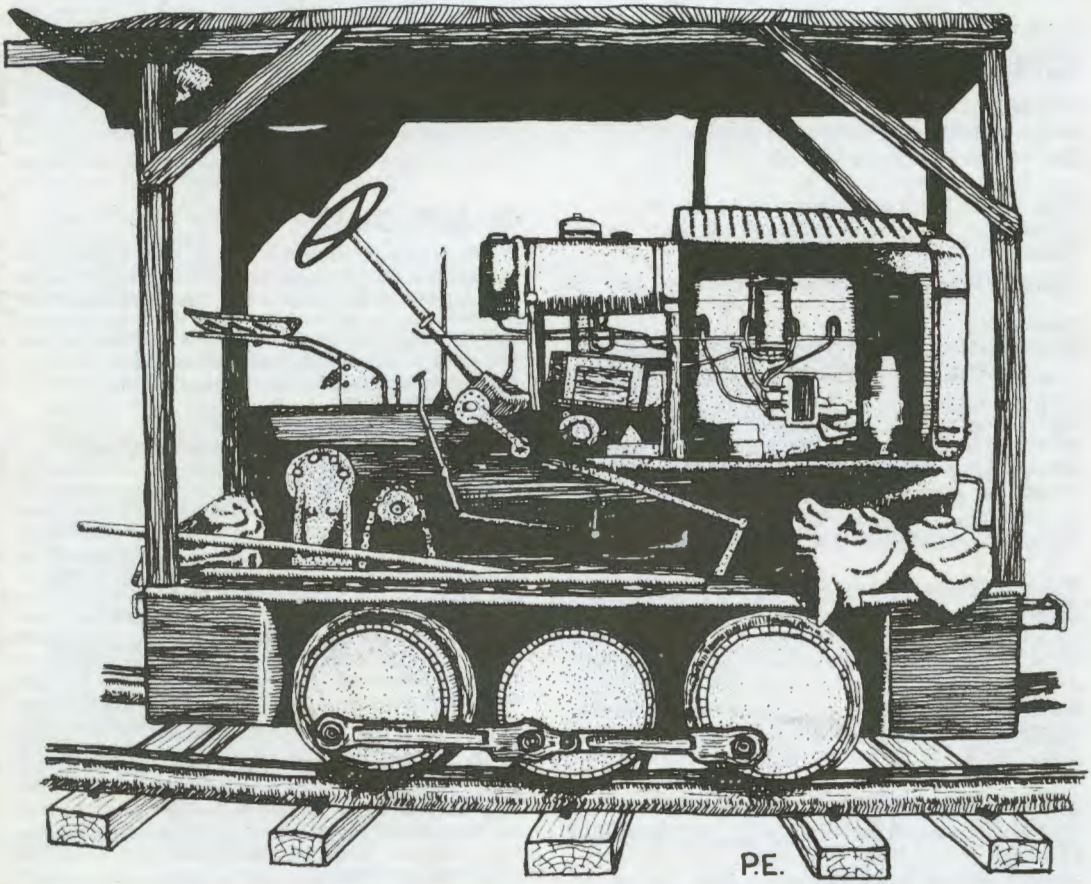

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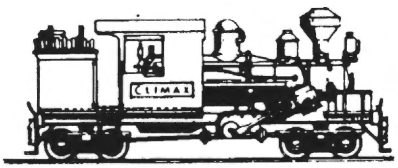

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Light Railways Editor: Norm Houghton, Geelong Historical Records Centre, PO Box 104, Geelong 3220. Phone (052) 217 7007. Articles, photographs and letters welcome.

Cover Photo: *Peter Evans' fine drawing of a Day's rail tractor from the West Tanjil steel tramway in Victoria's Gippsland sets the scene for his article commencing on page 3.*

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CONTENTS

48 AND OUT!

In 1980, I took up the task of editing Light Railways for "a maximum of five years." Now, 48 issues and 12 years later, it's time to step aside. LRRSA Life Member Norm Houghton has agreed to take up the reins, commencing with LR.117. I am confident that Norm will both maintain the standards which *Light Railways* has achieved over the years and bring about the changes necessary to keep abreast of the times.

Since *LR.69*, I believe the journal has steadily evolved into a high quality research journal recording the heritage of Australian industries and the railways which served them, thanks to the high standards set by our contributors. I have been able to present a balance of articles, covering all states and overseas spheres of Australian interest, together with an interesting range of industrial applications. Our letters columns continue to bring a range of new information and comment which most readers find interesting. Regular book reviews have also been published, while a research column was introduced in *LR.109*. But articles presenting the results of research work by LRRSA members are our main staple. The past 12 years has brought a remarkable range of material documenting Australia's forest history, construction railways, the sugar industry (including a special issue on Fiji), various mining operations, industrial railways, quarry operations and many other applications of light railway technology. This issue brings a further innovation: our first article describing the approach and results of a study to assess the heritage values of former sawmilling and tramway sites at West Tanjil in Victoria.

My period as editor has been a rewarding experience. It has brought a network of contacts and friends across Australia and overseas and there has been the satisfaction creating a product of an improving standard. May *Light Railways* continue to grow.

Bob McKillop

RECORDING AUSTRALIA'S FOREST HERITAGE:
KIRCHHUBEL'S WEST TANJIL SAWMILL AND TRAMWAY, VICTORIA

by Peter Evans

1. INTRODUCTION

The following article is based on a study of Kirchhubel's West Tanjil Sawmill commissioned and funded by the Historic Places Section of the Department of Conservation, Forests and Lands (CF&L; now Conservation and Environment). It offers a case study of the approach and results of a project to assess the heritage values of former sawmilling and tramway sites of Herman Kirchhubel at West Tanjil and Edward Alstergren at Bell's Creek in Victoria. The brief required the researcher to:

* review the available documentary material;
* interview and record people who worked at the mills in order to determine how the mill operated and what life was like at the mill;
* record and document all the features remaining on-site at the mill;
* catalogue all the artefacts at the mills using accepted museum/archaeological techniques;
* if required selectively excavate and record the bottle and rubbish dumps at the mills in order to record this important evidence of the domestic activity at the mill;
* photographically record all the features of the mills;
* prepare accurate site plans of the mills at a scale of 1:500;
* prepare a detailed plan at a scale of 1:100 of the important structures at the mill (e.g. the saw mill, quarters, dug out etc);
* recommend which artefacts should be removed from the site for safe storage.

This article presents the findings of the Kirchhubel portion of the overall project as a case study of the recording of Australia's sawmilling industry heritage.

Assessment Criteria

An important aspect of the project was the development of criteria for assessing the significance of sawmilling sites. The Department required these criteria to be used in judging the heritage values of the sites, in conjunction with the values set out in the Burra Charter. Ten criteria were developed by Ray Supple and Tom Griffiths of the Historic Places Section, CF&L following discussion with members of the Light Railways Research Society of Australia, as follows:

1. Was the sawmill early in its region? Pre-World War I sawmilling features could be regarded as early. Mills which opened up areas that were developed in later period could also be regarded as "early".
2. Did it operate for a long period? This criteria is difficult to apply, but generally ten or more years could be considered as a long period for a sawmill to be in operation.
3. Did the sawmill have a high timber output? Was it economically significant in the region? The mill's efficiency in use of timber resources would also be taken into account.
4. Was the mill technologically innovative?
5. Did the sawmill generate substantial employment and foster a local community?
6. Was the sawmill associated with a significant or family company, or with an important event?
7. Does evidence now remain of most elements of the original sawmilling operation?
8. Does the site possess features which were rare at the time or have since become so?
9. Is the site suited for contemporary education and recreational use?
10. Does the site possess any other special features or characteristics, either historically or archaeologically? (eg, early in State, a unique form of industry, etc).

Sites rating 0 to 2 out of 10 are considered of local significance; between 3 and 6 of regional significance; and sites rating 6 or more are considered to be of state significance.

Acknowledgements

The author wishes to thank Mike McCarthy and Murray Ferguson of the LRSSA for access to their research material relating to this site, Tom Cornwall for sharing his memories and photographs of the mill during 1940, and Graham Perham (CF&L) for his contribution to the field work.

2. KIRCHHUBEL'S SAWMILL

Moondarra Mill

Herman Kirchhubel owned and operated the Burnley Timber Yard with offices situated at 339-341 Swan St, Burnley. He was primarily a supplier of timber to the building trade, and for many years this was delivered by horse drawn carts. Stables for the horses still stand behind the old office buildings on the north side of Swan St. Kirchhubel was a short, stooped and rather rotund figure who was reportedly a good man to work for providing the employee put sufficient effort into the job at hand [1].

In 1935 Kirchhubel took over the assets of Munro and Sons, Sawmillers, and in 1936 moved their sawmill from Erica to a position close by the Tyers River at Moondarra. Frank "Tubby" Raynor who had managed the mill for Munro continued to do so under Kirchhubel's ownership. A log tramway operated by horses and a *Days* rail tractor was laid in a north westerly direction, and a partly winch-worked and partly horse-worked outlet tramway was laid in a north easterly direction to take the sawn timber to Moondarra Station on the Victorian Railways narrow gauge line from Moe to Walhalla.

Fire-damaged timber in the West Tanjil Valley after the 1939 bushfires.
Forests Commission of Victoria

The mill was operating at its new location by February 1937. However, the surrounding timber was scattered and of poor quality.

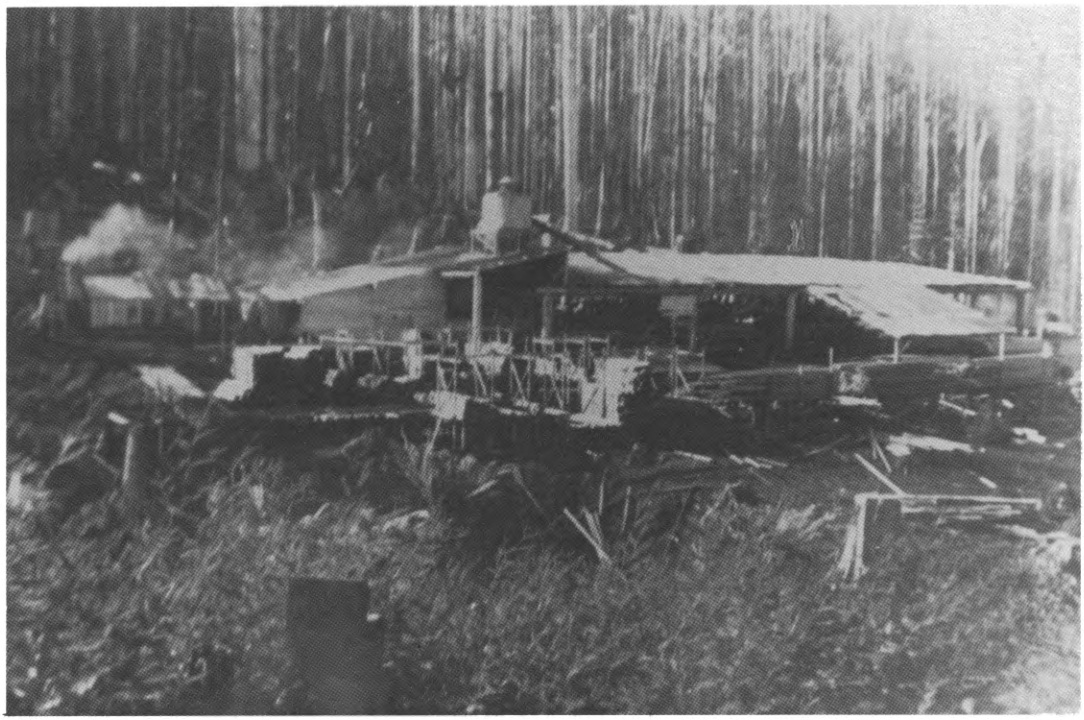
West Tanjil Mill

The mill crew managed to save the mill during the fires of January 1939, but the tramway and much of the timber still standing was destroyed. Further operation at the current site, which was already a marginal proposition, was no longer considered to be economic, and Kirchhubel applied for a new site in the West Tanjil area as part of the Forests Commission plans to salvage fire-killed mountain ash before the timber decayed [2].

The application was successful, and the Moondarra mill was dismantled by May of 1939. By November of the same year, a mill site had been cleared above the West Tanjil River and an outlet tramway was under construction to link the mill with the Forests Commission's West Tanjil Steel Tramway (see following section). Frank Raynor had moved the mill overland from Moondarra, and the machinery was at Rowley's Saddle awaiting final transport to the mill site to be set up.

The mill began cutting in 1940. It was powered by a 30 hp engine built by Thompsons of Castlemaine, steam being provided at 150 lbs/sq. inch by an underfired multi-tubular boiler burning sawdust and edgings which were waste from the milling process[3]. The mill was capable of cutting up to 10,000 super feet per day, and had a twin blade breaking-down saw, two rip benches and a docking bench. Sawdust not required for the boiler was barrowed out by the *sawdusty* and dumped in the gully just south of the mill. Edging and heartwood not needed as fuel were loaded into a truck on a short tramway running parallel to the mill and pushed to where a small turntable took the waste out over the gully for burning. When the truck hit the stop at the end of the track the waste flew off causing a great shower of sparks to rise as it hit the fire. The fire burnt continuously except for those occasions in wet weather when it would go out on a Sunday[4].

Logs were supplied to the mill from the vast quantities of Mountain Ash killed by the 1939 bushfires. To bring the logs to the mill, a logging tramway was extended by stages into the bush in a north westerly direction, attaining a final length of about 1.5 km. This line also contained some impressive crib log bridges, the longest of which has been measured at 73 metres[5]. Logs were brought into the tramway using a steam winch having 10 inch diameter cylinders[6], and loaded onto log bogies at the landing at the terminus. The grade to the mill was in favour of the load, and a horse was used to return the empty bogies to the bush end of the line.



View of Kirchhubel's West Tanjil sawmill in 1940 from West Ridge. *Photo: Tom Cornwall*

Logging using a winch and tramway usually employed 10 men and three horses. The following costs, applicable in 1937 to Saxton Bros. who operated a mill nearby at Tanjil Bren, give some idea of the scale of operations:

1 Winch driver @ £4-19-0 per week plus holiday pay
1 Wood cutter @ £3-15-0 per week plus holiday pay
1 Ropey @ £4-13-0 per week plus holiday pay
1 Ropey's assistant @ £4-1-0 per week plus holiday pay
1 Head Faller @ £4-18-0 per week plus holiday pay
2 Fallers @ £4-13-0 per week plus holiday pay each
1 Bush boss @ £6-0-0 per week plus holiday pay each
1 Log Truckie @ £4-10-0 per week plus holiday pay
1 Log loader @ £4-2-6 per week plus holiday pay
1 Rope Horse @ £58-10-0 for 52 weeks
2 Truck Horses @ £58-10-0 for 52 weeks each

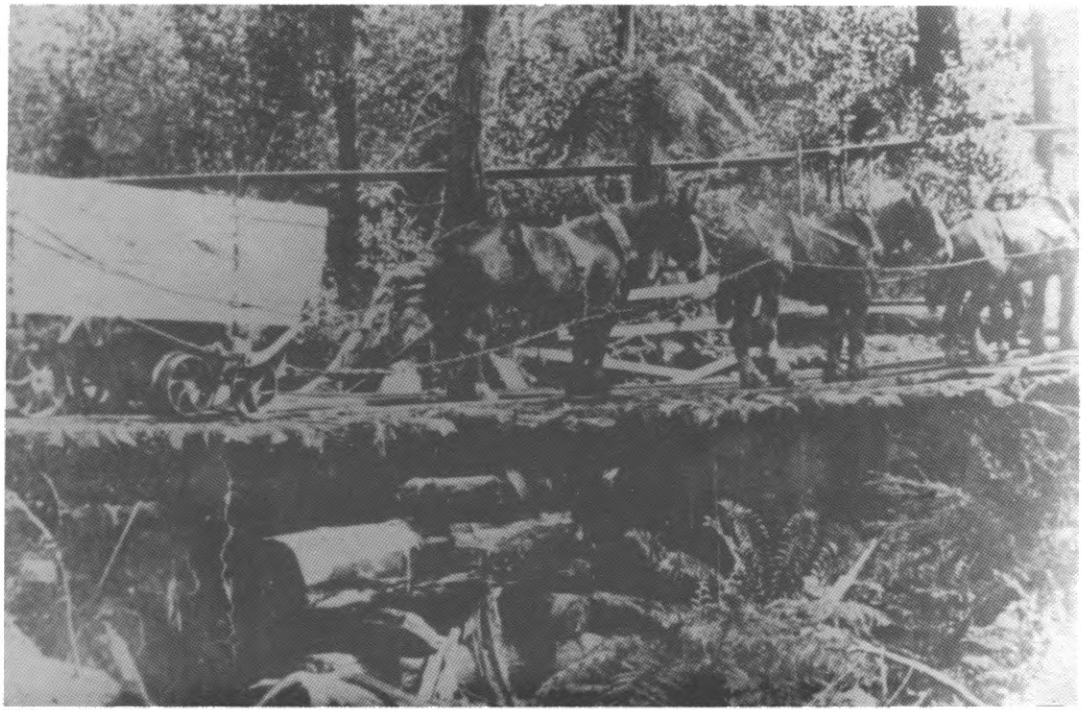
Wooden-railed tramway cost £5-0-0 per chain to construct and was considered to have a useful life of 10 years. A winch with 10 inch cylinders cost around £1000 new, and had an estimated life of 25 years. Running costs included £100 per year for oil, repairs, tools etc. and an amortisation cost of £40 per year. An allowance of £134 per year was made for depreciation of the ropes. In addition, bull wheels, snatch blocks, fishing line, strops and chokers had to be provided, maintained, and replaced[7].

The output of the mill was tallied and loaded from storage racks onto pairs of timber bogies on the outlet tramway. When sufficient trucks were loaded, they were taken down by a horse team or rail tractor over the mill's outlet tramway to the connection with the Forests Commission's line on the south bank of the West Tanjil River.

Outlet Tramway

The mill's outlet tramway had been built by Ed Cornwall and his son Tom with a mixture of steel and wooden rails. The steel rail, laid on the inside, provided wear resistance from the wheel flanges; and the wooden rails, laid on the outside, provided traction and braking ability on the wide wheel treads. The outlet tramway featured six bridges of crib log construction, the last of which crossed the West Tanjil River on a sharp curve over the lip of a waterfall. From here to Tanjil Bren the loads were transported by the Tanjil Haulage Company (see West Tanjil Steel Tramway below).

In mills of this era maintenance of all logging, tramway and mill equipment was carried out by the mill blacksmith. At Kirchhubel's mill, the blacksmith was Dick Armstrong, who had his shop next to the mill. The mill's circular saws were sharpened



A horse team on Strahan and Davies outlet tramway, Tanjil Bren. The bridge was built by Tom and Ed Cornwall *Photo: MJ McCarthy Collection*

by the engine driver who also fed the boiler to maintain steam. When the saws lost tension and buckled, they were re-tensioned by a *saw doctor* who travelled from mill to mill plying his very skilled trade with the aid of a hammer and the blacksmith's anvil[8].

Between 1944 and 1948 the mill cut an average of 770,000 super feet per year[9]. However, reports by the local Forests Officer indicate that it was far from the most efficient mill in the area, even though it had one of the best areas of timber available to it[10].

Closure

The mill apparently closed around 1949, by which time the machinery (which had been second-hand in 1935) was almost worn out. Kirchhubel sold the mill to the Kauri Timber Company[11], who proposed re-opening the mill under the management of Mr LA Mace in 1951 or 52[12]. By this time the best of the timber had been cut out. The mill worked on until 1957, when it was closed and dismantled. All the machinery requiring transport on the tramway was removed by the 31st May of that year[13].

Herman Kirchhubel died in 1956, and the Burnley Timber Yard has since changed hands several times. However, both the company's old offices and stables still stand[14]. The mill site has remained relatively isolated since its closure, the only method of access being to walk up the old tramway formation, which requires some determined effort. Because of this isolation, most of the larger relics left behind after the mill was removed have remained undisturbed.

References

1. Interview with Mr Geoff Schache, former timber yard employee.
2. FCV File 58/1144.
3. FCV File 58/1144.
4. Details of mill operation: interview with Tom Cornwall, employee.
5. Site investigation by author and G. Perham (CFL).
6. Cylinder head found at winch site.
7. Costs and crew details from FCV File 37/1646
8. Interview with Tom Cornwall.
9. FCV sawmill output record 1-7-44 to 30-6-48
10. FCV file 58/1144.
11. Interview with Mr Geoff Schache.
12. Letter from M Fennell, Sec. Aust. Timber Workers Union re mill closures - M. Ferguson notes.
13. FCV File 58/1144.
14. Interview with manager of Burnley Timber Yard, January 1990

3. WEST TANJIL STEEL TRAMWAY

The valley of the West Tanjil River is located on the southern fall of the Baw Baw plateau near the small township of Tanjil Bren in Gippsland, Victoria. The valley is notable for its steep, rugged terrain, and for the fine stands of Mountain Ash which grow there. After the 1939 bushfires, which killed most of the valuable timber growing in the region, the Forests Commission of Victoria (FCV) set about co-ordinating a massive salvage program to fell the timber and preserve that which could not immediately be sawn in large "dumps" where it was kept as wet as possible and the ends of the logs treated with preservative in order to retard decay and to prevent the timber from splitting.

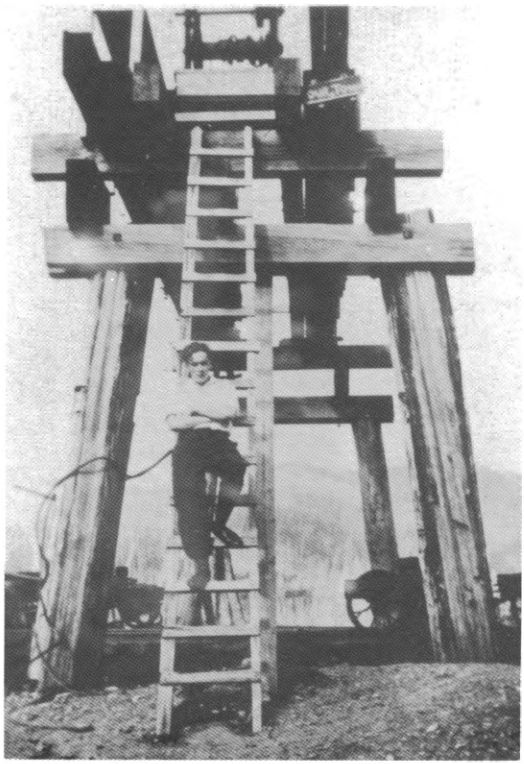
A number of sawmills were also established in the area and many miles of new road were built along the southern slopes of the Baw Baw plateau. As a result of this activity a small township known as Tanjil Bren grew up on a sharp bend of the road where it rounded Rowleys Spur.

Tramway Construction

Sawmillers who were granted cutting rights over the slopes of the West Tanjil valley petitioned the FCV to construct an outlet tramway so that they could transport their timber out to the road at Tanjil Bren. The Commission agreed to this proposal, and the line was completed in late 1939. The tramway was 5.63 km (3.5 miles) long and was built to a gauge of 0.91m (three feet), had a maximum grade of 1 in 20 and a limiting curvature of 100 feet radius. The formation was well constructed and was over 4.6m (15 feet) wide on the curved sections. It was steel railed throughout, and sleepered for locomotive haulage rather than close packed for horse haulage.

Three sidings were provided at the terminus which was located beside the main road in Tanjil Bren. Here a stiff-leg derrick was built. It served two of the tracks so that the loads of sawn timber could be transferred to motor trucks for transport to Noojee railway station or direct to Melbourne. The third track was a long slip siding protecting the yard in Tanjil Bren, although this seems to have seldom been set in the correct manner and a scotch block was added later for further protection. This siding extended across the present alignment of the main road and up behind the Lodge where a large buffer was provided. A fire later destroyed the derrick and it was replaced by a gantry topped with a crab winch.

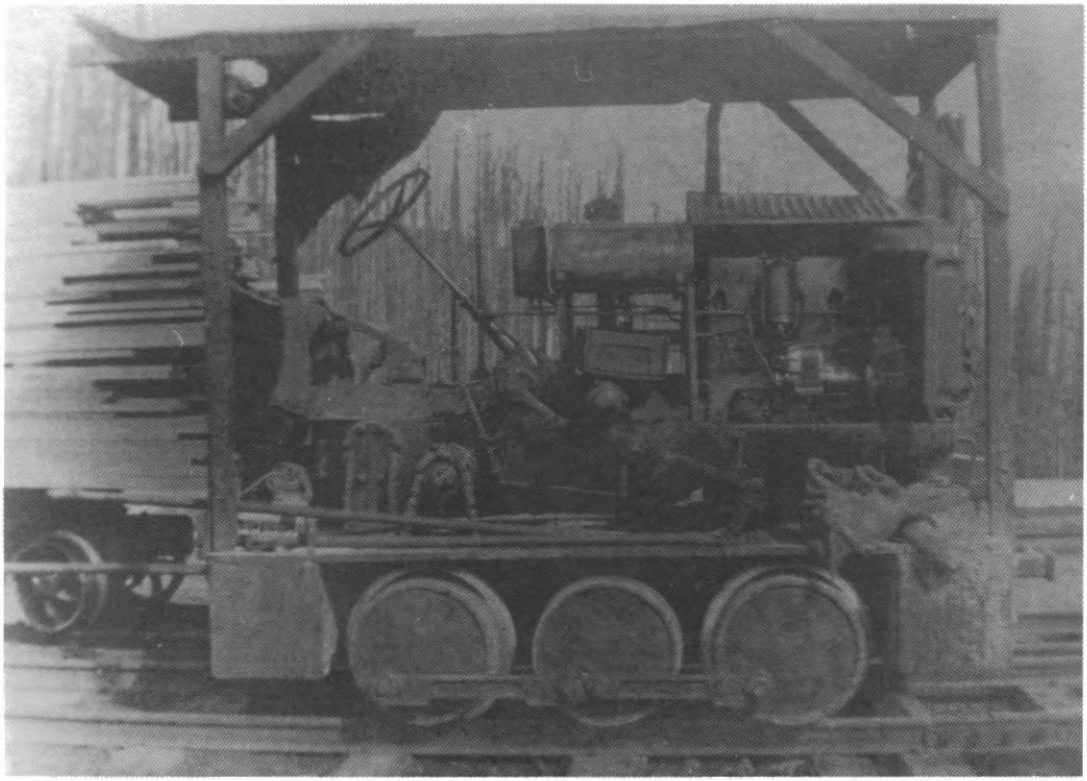
The upper terminus of the line was adjacent to a waterfall on the West Tanjil River. This was also triple tracked. Above this point two branch tramways with a mixture of steel and wooden rails were constructed by the millers to serve the sawmills of H Kirchhubel, J W Porta & Sons, and W Downey. Sawn timber was brought down to the upper terminus of the steel line by horse teams where it was changed over to locomotive haulage. A scotch block was provided to protect the main line from runaway trucks, but this too seems to have been seldom used.



The late Scottie Rennie on the ladder of the gantry in Tanjil Bren.
Photo: FCV, courtesy Ted Stuckey

Tanjil Haulage Company

In early 1940 the three millers concerned formed a company to work the line and to own the locomotives. Under an agreement drawn up with the FCV, the Tanjil Haulage Company was responsible for the operation and maintenance of the tramway. The Company operated two 0-6-OKM rail tractors built by Day's Engineering of South Melbourne. One of these was powered by a Fordson tractor unit and was brought by Kirchhubel from his Moondarra mill; the other was newer and was powered by an International tractor. The latter unit seems to have been preferred as it was more reliable[1].



Days tractor at Tanjil Bren. *Photo: Tom Cornwall*

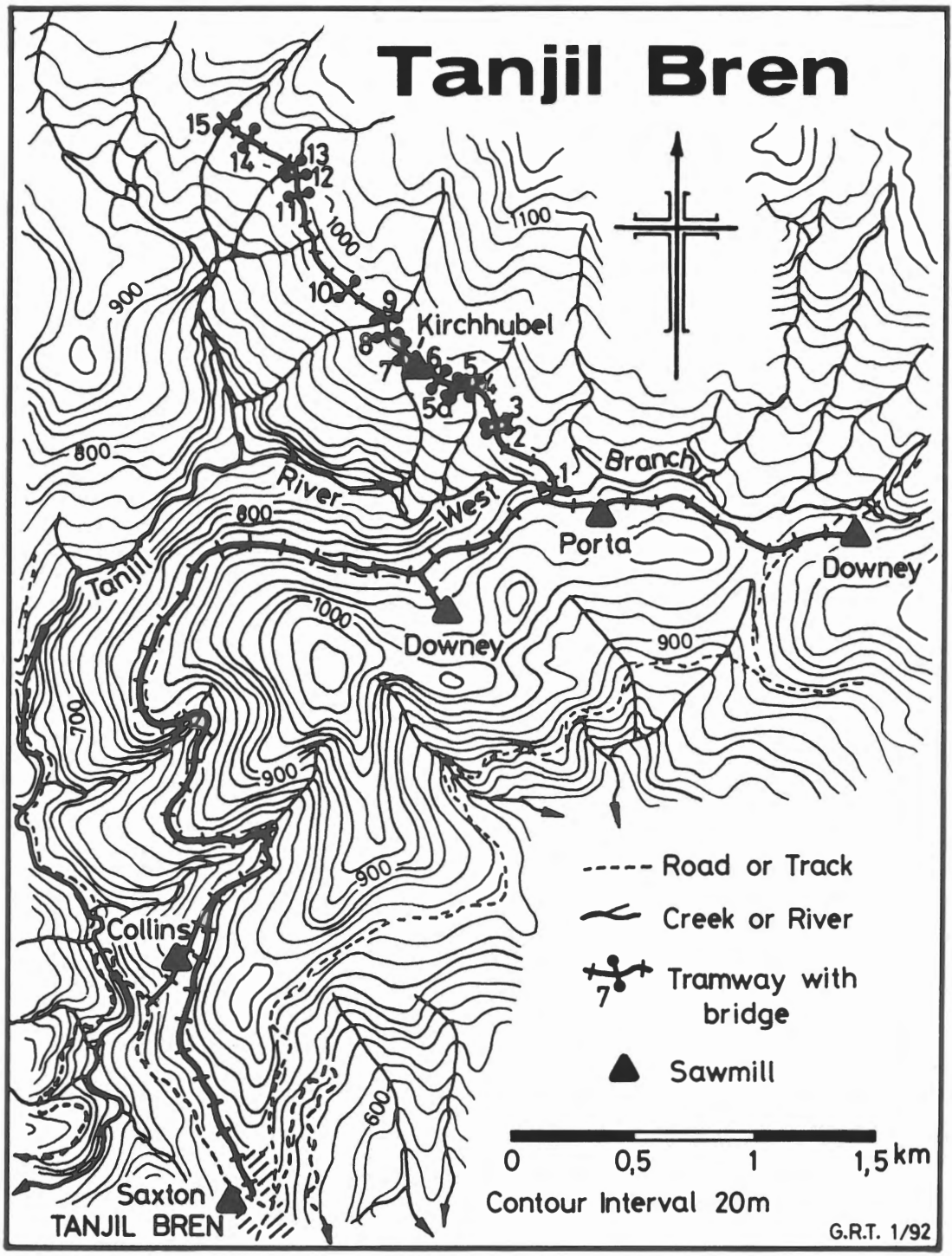
Similar rail tractors purchased new at this time by the FCV for the Thomson Valley tramway cost £1400 and weighed 8 tons [2].

For the use of the line, the company had to pay the FCV a rate of 2d per ton per mile on all the loading on the line effective from the 1st November 1940. [1 Ton = 360 super feet of timber]. This was to repay the Commission for their investment in building the line. The Company was also responsible for the cost of transferring the timber to motor trucks at the terminus, and had to indemnify the Commission against any liability in connection with the operation of the line and the loading facilities.

By May 1941 it was reported that the condition of the line had deteriorated badly, with numerous small slips, blocked drains, loose joints, and in one case, a three-inch gap between adjoining rails due to rail creep. In addition, the "trigger" or "bar-hook" behind the trailing truck on the uphill journey (preventing a run away in the event of a truck becoming uncoupled) was cutting a gutter in the earth ballast between the rails. This prevented proper drainage and was causing the sleepers to deteriorate. This bar had also broken a tie rod on a set of points at the upper terminus of the line. Traffic on the line had now increased as Collins Bros were using a portion of the line (37 chains) to transport logs from their winch to the mill. This section of the line had been close packed with split timber as they were using horses to haul the log bogies. [For this they were charged 4d per ton per mile based on the sawn timber output of their mill as it took approximately 2 tons of logs to produce one ton of sawn timber].

As the Haulage Company seemed reluctant to put the line in order, the FCV took over all maintenance on the tramway as of the 1st of August, 1941. The freight rate of 2d per ton per mile remained in force, but the Tanjil Haulage Company was required to pay the Commission for all maintenance at cost plus 10%.

Horner & Monett took over Downey's interest in the Tanjil Haulage Company when they purchased Downey's mill in 1941. Downey shifted to a new site near the upper terminus of the steel line, where he re-connected his new mill to the Commission's tramway with a short haulage incline. The Tanjil Haulage Company now carried Downey's timber at contract rates.

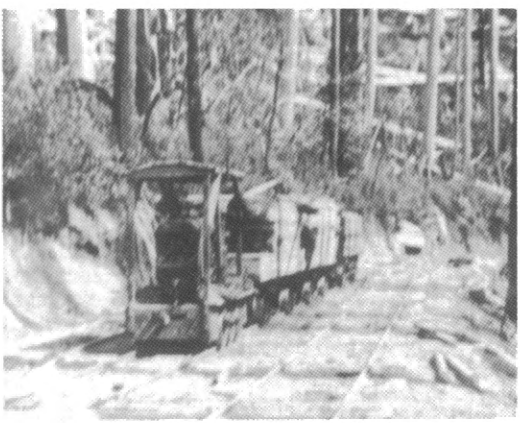


In December 1942, Horner & Monett built a short road from their mill to link up with the outlet road of the Saxton Timber & Trading Company, and henceforth despatched their timber by road. Although they now left the Tanjil Haulage Company, Horner & Monett were required to make compensatory payments to the FCV as they had agreed to use the tramway when they purchased Downey's mill.

Safety Issues

Early in 1943 the local forest officer, Mr Beetham, became concerned with the method of operation of the line, as well as the condition of the rollingstock due to worn brake blocks, broken bogie frames and bent axles. After two truck loads of timber "bolted" and finished up in the West Tanjil River in March, a conference was called between the FCV and Mr Kirchhubel of the Tanjil Haulage Company. Mr Kirchhubel reported that one of the tractors was "definitely out of commission", while the other had been at Day's Engineering awaiting repairs for 14 months. The Commission frowned on the practice of allowing loads of timber to coast down the line under the control of a brakeman as the horses used to return the empty trucks to the upper terminus churned up the earth ballast. The Commission's officers had no objection to the use of horses so long as the Haulage Company close-packed the line.

The coasting trucks also posed a danger to the mill children who used the line to walk to school in Tanjil Bren; as did the unauthorised use of trucks on the line during the weekends to other pedestrians using the line. Mr Kirchhubel stated that the timber unions objected to the trucks being locked up as they represented the only emergency transport to Tanjil Bren.



A load of timber about to depart the upper terminus of the West Tanjil steel tramway. The tractor trailed behind the load all the way to Tanjil Bren.
Photo: Roy Weatherhead, Murray Ferguson Colln.

Following the meeting with the FCV, it would appear that the safety of operation of the line was improved, and the faulty bogies were repaired. The Commission arranged to have notices erected at dangerous points warning pedestrians of the danger of oncoming trucks of timber.

Tramway Operations

Known drivers of the Day's tractors at Tanjil Bren include Mr R Weatherhead, Mr N Robinson and Mr T Cornwall. The normal method of operation was to allow the tractor to roll down behind the loaded bogies with its engine off and out of gear, while the driver controlled the bogie brakes with ropes from the top of one of the loads of timber. The more loads of timber on the train, the more secure the driver felt as he had extra braking power at his disposal in the event of one set of brakes failing.

The tractor was powered for the uphill journey when the bogies were often loaded with food for the mill workers and chaff for the horses. In later years, the tractor was also often used to return the workers to the mill of a Sunday evening, and was usually kept under the shelter of the timber loading area at Kirchhubel's mill. Most of the repairs and running maintenance were also carried out here by the blacksmith, Dick Armstrong [3].

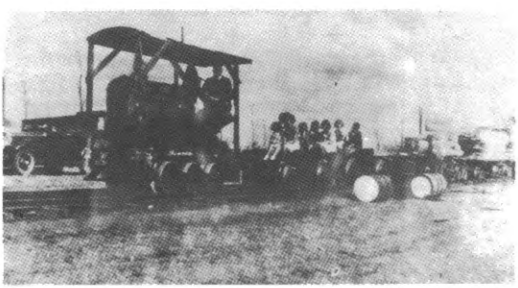
Demise

Late in 1943 JW Porta & Sons began preparatory work to transfer their mill to the eastern end of their area, from which point they planned to use Horner & Monett's outlet road. Believing that Downey also planned to link up with this road, the FCV considered converting the outlet tramway to a road, as this would allow the extraction of lower grades of timber as pulpwood. A report by Inspector Torbet recommended that conversion be deferred until such time as machines and labour became available for the task as there were more urgent projects to be considered.

The tramway was thus reprieved, and in February 1944 Downey applied to install three loops on the line in order to load logs for his mill without interrupting the sawn timber on the line. Two of these loops were to become the main line to bypass his planned log landings, and the third was to be a passing loop for sawn timber bogies to enable him to transfer the loaded log bogies to his haulage incline. Downey proposed using a Fordson powered rail tractor for log haulage on the line, and stated that he already had one on hand. He anticipated that, once this work was carried out, the cutting life of the mill would be extended by 18 months.

Driver's-eye view of the West Tanjil steel tramway.
Photo: Roy Weatherhead, M Ferguson collection

The question of converting the tramway to a "B" class road was again investigated in March 1944, when the cost of the work was estimated to be £2910 after allowing for the salvage value of the rails. However, the project was once again deferred.



A party of women and children set off towards the Mills behind a days tractor
Photograph Courtesy: Ted Stuckey

By 1953 only one miller was still using the line, and he was responsible for all maintenance of the tramway. The line was still intact in 1959, and was converted into a road sometime between 1959 and 1964, when the reclaimed rails were noted stacked near the site of the gantry in Tanjil Bren [4].

Today, Tanjil Bren is a quiet hamlet on the road to the snowfields on Mount Baw Baw. The old tramway formation is now a narrow road showing little evidence of its former use - only the odd sleeper or length of rail beside the formation remain to remind us of the "little train" of Tanjil Bren.

References

Except where otherwise noted, all information in this section was taken from FCV file No. 43/492. The maps were drawn by Geoff Thorpe from those included in the file and from site investigation by members of the LRRSA.

1. Interview with Mr Tom Cornwall.
2. FCV file No. 40/3757.
3. Interview with Mr Tom Cornwall.
4. M Ferguson and D Steinhauser notes.

4. LIFE AT THE MILL

[Unless indicated otherwise, all information in this section is based on an interview with Tom Cornwall, recorded at his home at Phillip Island on 24 January 1990.)]

Tramway Construction

After the 1939 bushfires, Tom Cornwall and his father Ed were employed to build the outlet tramway from Strahan and Davies Mill along the West Tanjil River to the main road near Tanjil Bren. This took three or four months, after which they moved on to Downey's mill (also on the West Tanjil River) where they again constructed an outlet tramway.

On completion of Downey's tramway, the Cornwall's began work on Kirchhubel's tramway. This was started by blowing two logs across the West Tanjil River to form the foundations for the first bridge. The formation for the tramway was commenced next, with each bridge being built in sequence. After the equipment was sledged into the mill, the rails were laid along the tramway formation.

Sawmilling

The owner, Herman Kirchhubel, only visited the sawmill on rare occasions. The mill manager was a large man whose name was Frank "Tubby" Raynor. The mill was reasonably efficient, but the layout of the rip benches caused a lot of double handling, and this made the job of docker difficult if for any reason he fell behind the cutting rate of the other benches. Tom Cornwall performed the job of docker for a time, and not only had to cut the sawn timber to the correct length and take out bad sections, but had to also supply the boiler wood stack with edgings cut to suitable length, and dispose of waste heartwood and edgings via a short tramway to a gully where they would be burnt.

The mill was cutting Mountain Ash, quite a lot of which was cut into boards, but no seasoning was carried out at the mill. The timber was generally loaded from the skids to the waiting trucks by Alec Munro, the mill tallyman.

The Daily Schedule

A blast on the mill's steam whistle at 6.30 am signalled the men to start their day. The next whistle blew at 6.55 am at which time the men went to the boarding house for breakfast, served promptly at 7.00 am. Breakfast consisted of a choice of porridge, *Weeties*, eggs, bacon and sausages - "nothing, flash, but a good wholesome meal".

At 7.20 am a third whistle blew and the men made their way across the gully to the mill. A fourth whistle at 7.25 am was the signal for the men to don their aprons, oil the machinery, and load the first flitch onto the truck. The engine driver had been up for several hours attending to his boiler and engine, and the mill was now turning over. The final whistle at 7.30 am was the signal for the flitch to hit the saw as the mill commenced operations for the day.

Both lunch and an evening meal were also eaten at the boarding house (except for the loggers who took their lunch out into the bush with them). All this activity wore a well defined foot track into the hillside between the mill and the boarding house which is visible in contemporary photographs and can still be located beneath the blackberries today.

Food was brought in from Tanjil Bren on the tramway behind the rail tractor to be prepared by the cook who lived in quarters within the boarding house. Meals were served on two long tables at which the men sat on long, wooden forms. The job of cook was a vital one, playing as it did an important part in keeping the workers happy. A bad cook was soon replaced.

After the evening meal the men had to make their own entertainment - reading a book or perhaps playing cards or yarning. However in most cases it was early to bed after a hard days work with the prospect of another just like it to come.

Of a weekend the men would leave the mill on Saturday afternoon to visit their families, play football, and in some cases, get drunk! They would return to the mill on Sunday night - riding behind the rail tractor if they were lucky, or facing a walk of nearly five miles along the tramway and over bridges in the dark if they were not.

Dangers

The timber worker of the period was a physically strong and resilient man because the conditions under which he worked demanded it. Although snow occasionally fell in winter, it was never considered as a reason for work to stop. The local fauna contributed its nuisance value in the form of leeches and snakes. The latter were not considered a real problem except in January or February when they "become a bit territorial - they'll chase you then!". As well as this, there was the ever present threat of accident.

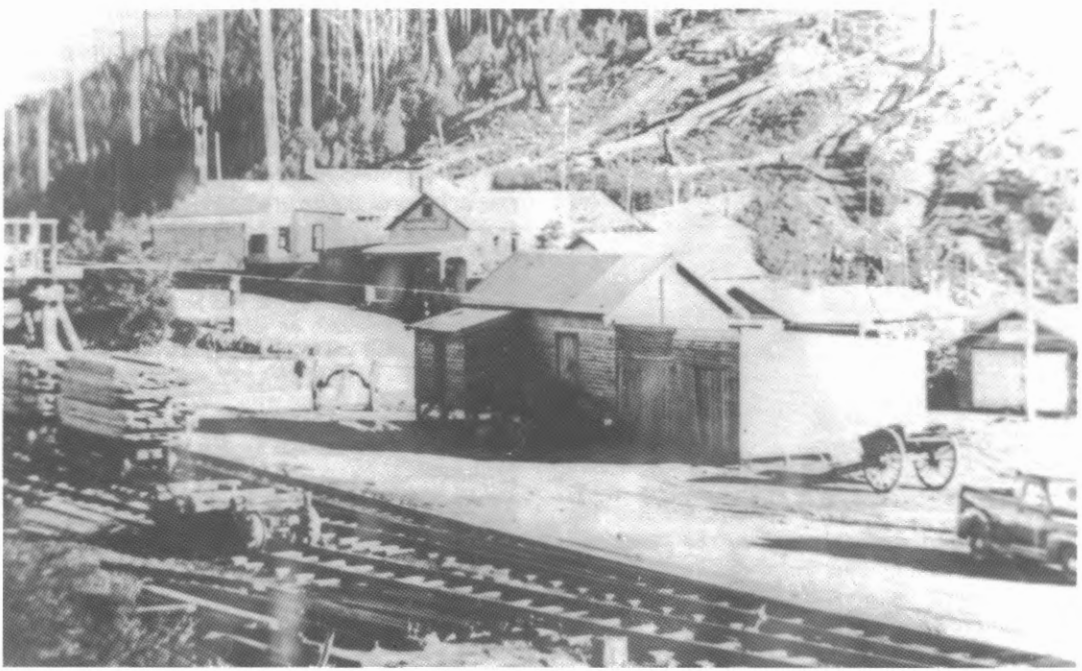
For the logging crew, this included falling branches (*sailors* or *widow-makers*), trees which split or *slabbed* and flew back toward the faller, trees containing rot or faults which fell in an unexpected manner and rolling logs.

A newspaper report of a fatal accident on the log tramway appearred in the *Narracan Shire Advocate* 23 February 1951.

> Albert Victor Turner, of Fowler Street Moe, died in the West Gippsland Hospital, on Wednesday (21/2) as a result of injuries sustained while engaged in logging operations at Tanjil Bren last Monday.
>
> Reports received reveal that the deceased, who was 57 years old, was engaged in driving a horse-drawn trolley, loaded with logs along the tramline to Kirchhubel's Mill.

Above: *View of Kirchhubel's sawmill in 1940. The blacksmith's shop is in the foreground, with workers huts on West Ridge behind. Photo: Tom Cornwall.*

Below: *View of Tanjil Bren. The West Tanjil steel tramway is in the foreground and Tanjil Lodge in the background. Photo: FCV, courtesy Ted Stuckey*



> The first indication that something was amiss was when other employees at the mill found that the horse he had been driving had returned home to the mill alone. A search was made at once and the deceased was found some distance along the track lying severely injured where he had apparently been for some hours.
>
> The injured man was brought out with some difficulty and taken to West Gippsland Hospital. An inquest was opened at Warragul by Mr McPherson and adjourned, Neerim South Police were investigating. Deceased leaves a wife and large family to whom sincere sympathy is extended.

Accidents in the mill itself were not infrequent, with the saws and winch ropes ever ready to lop off a finger or two should their owner relax his concentration for a moment.

Rolling logs in the log yard were a constant danger, as were pieces of timber ripped out and thrown with force by the breaking down saw. Jack O'Toole's brother was hit one day on the back of the neck by "a little piece of stick about 6 inches long". It struck with just enough force to break his neck, killing him instantly. Accidents like this one were "just bad luck - one of those things which just happen".

Sometimes the big hemp rope belts on the large wooden main drive at the mill would come off. When this happened, the engine had to be stopped and one of the men would get down between the two big bearers supporting the wheel to refit the rope. On one occasion when this was being done at Porta's mill (not far from Kirchhubel's), the cylinder drain cocks on the engine had not been opened and steam leaking past the closed throttle valve built up pressure in the cylinder, turning the engine over and taking the man around with the wheel and up to the mill roof "breaking nearly every bone in his body". The victim had to be taken all the way to Warragul for treatment, and was not expected to live. He did survive the ordeal, although his recovery took four years and he never returned to the bush.

The only known photograph of the Fordson-powered tractor. This snow-scene at Tanjil Bren suggests the driver's job must have been a miserable one at times.
Photo: Albie Hanson, Murray Ferguson colln.

The only emergency transport away from the mills was by tramway. The injured man was loaded onto a bogie and was taken down the tramway to the road at Tanjil Bren. The day Jimmy Dale lost his hand at Porta's mill, Tom Cornwall was returning from Tanjil Bren driving one of the rail tractors hauling a number of empty bogies. Suddenly a bogie came around the corner in front of him with the men on it yelling for him to get back quickly as they had an accident case on board. Tom was driving the old Fordson and he recalls that it never went faster in its life than on that day. He only thought about the danger of a derailment after the incident was over.

A Bush Community

About 20 people lived at the mill during the week. Many of these had come from the Moondarra area when the mill was shifted to Tanjil Bren. The bulk of the accommodation was supplied by a row of eight huts on the ridge opposite the mill. Each of these huts slept two people, and had one window and a fireplace. Although of spartan construction, they were warm and dry. Several boasted verandahs and woodsheds added by the occupants. Tom Cornwall shared one of these huts with Dick Armstrong, a competent blacksmith from Longwarry who was responsible for all maintenance at the mill. Most of the workers were married, but their wives and families did not live in at the mill, with the exception of the mill manager and his brother-in-law.

Mateship between the mill workers was strong, and they relied heavily on each other should an emergency arise. However, despite the dangers and the arduous nature of the work, they were not averse to having a "bit of fun". There were plenty of characters at the mill, including a few alcoholics.

One of these would go to Melbourne several times a year and spend his savings at Parer's, the "bushie's" hotel in those days, and on coming back to the mill he would be flat broke. His job included stacking sawn timber on the bogies, and he would be alright until he had to climb on top of the load to chain it down, at which point "the height would kill him", and he would have to go away and in Tom's words "have a bit more metho with his boot polish". After about three weeks he would be alright again and would soon save enough money for another trip to Melbourne.

Wartime

Part of the mill labour force was itinerant, and some would be men who had either deserted from the armed forces or were avoiding enlistment. The army conducted regular raids on the mills in the area in an effort to flush these people out.

Other workers would be directed to work at particular mills under the prevailing wartime conditions. Max Weatherhead remembers working at Kirchhubel's mill in the early 1940's with his brothers Roy and Cyril. The following account is taken from his book *Branches From Weatherhead Road.*

> There was a man-power shortage. We were sent to a mill 4 miles out in the bush past Tanjil Bren. Roy was driving an engine (the little train) Cyril was the benchman in front of the saw...
>
> Another man and I were taking the timber off the back of the saw as fast as it was cut. Many other men worked in the mill and bush and stacked it into trucks. It takes a good mill to cut 5,000 superfeet of timber each day. We were cutting between 25,000 and 30,000 superfeet each day [sic]. A big steam winch was so strong that it could pull a log 100 feet long into the top of the log yard above the mill. The men in the bush often cut 2 or 3 of these 100 feet logs out of one tree (these logs were 4', 5' & 6' in diameter). There were no chain saws in those days, so a man called Jack who had a 6' 6" long Peg and Raker crosscut saw, cut them into lengths. These lengths were rolled down in the sawmill by a small steam winch, then cut into timber. One of the reasons why there was so much timber cut in the mill in one day could be because we were cutting big timber for ammunition factories at Maribynong. We also cut rafters for aircraft hangers, to be built near Melbourne, Laverton and Geelong. These beams were 32 feet long and contained plenty of superfeet. The man with the crosscut saw was known as Jack the Flasher, some people said it was because when he was cutting the big logs into lengths his saw flashed backwards and forwards very fast - like a flash of lightning! Others said it was because he had a habit of flashing his money around. He carried his thick stack of five pound notes in a *Lucky Hit* tobacco tin in his hip pocket. When he had an audience, he would open the lid of the tin quickly and the notes were packed so tightly, that they would jump into the air. He loved to watch the men's eyes pop out!

The Weatherhead brothers were subsequently moved back to Melbourne to work in factories there. Tom Cornwall left Kirchhubel's mill at the end of 1941 to enlist as a fitter in the Air Force. He looks back on his time at the mill as an enjoyable period in his life.

Passing of an Era

Kirchhubel's mill was undoubtably a typical mill of its period, and the experiences of the men working there could be extrapolated to cover other mills operating at this time. Despite the difficult and dangerous work, most mills developed a closely-knit community in which individuals relied on their mates to help them through bad times.

However, these isolated mills deep in the bush became a thing of the past once the salvage period was over, and along with the timber tramway, have passed into history. There is a very real danger that, if the memories of the surviving timber workers are not recorded very soon, much of the detailed histories of sawmills such as Kirchhubel's will be lost to future generations.

FOOTNOTE: For a description of the jobs involved in a sawmill of this period, Appendix I of *Bellbrakes, Bullocks and Bushmen* (M McCarthy, published by LRRSA) is recommended reading.

4. SITE DESCRIPTION

Kirchhubel's West Tanjil Sawmill Site

The mill site has been drawn on two A1 sized sheets at a scale of 1:200. The mill settlement is located on two ridges divided by a gully with a perennial creek. The separation of the different functional parts of the mill into two halves was determined by the topography of the site.

The Western Ridge contains most of the dwellings, the boarding house, mill manager's house, stables and the dugout. The Eastern Ridge has three dwellings located on it, as well as the sawmill and blacksmith's shop. This was the "working" area of the mill settlement.

The survey of the mill site was complicated by the thick growth of blackberries averaging a metre in depth, and it is doubtful if the resulting plans would have been as complete as they are without the assistance of Tom Cornwall's photographs taken in 1940. These proved to be extremely valuable, especially as the exact location of the photographs could be determined by using *landmark* stumps. Stumps, being the only recognizable items which had not been changed during the intervening years, also provided valuable empirical data. A base line of 35 metres measured between two stumps on the West Ridge provided a scaling factor to measure and locate the eight huts along the ridge, numbered 1-8 on the site plan. As all that remain of these are a few pieces of sawn timber and rusted corrugated iron, they could not have been positioned accurately without this information.

Once certain datum stumps had been decided on, the rest of the site was measured using tape and compass. The only distance not accurately determined was the distance between the ridges, which has been estimated.

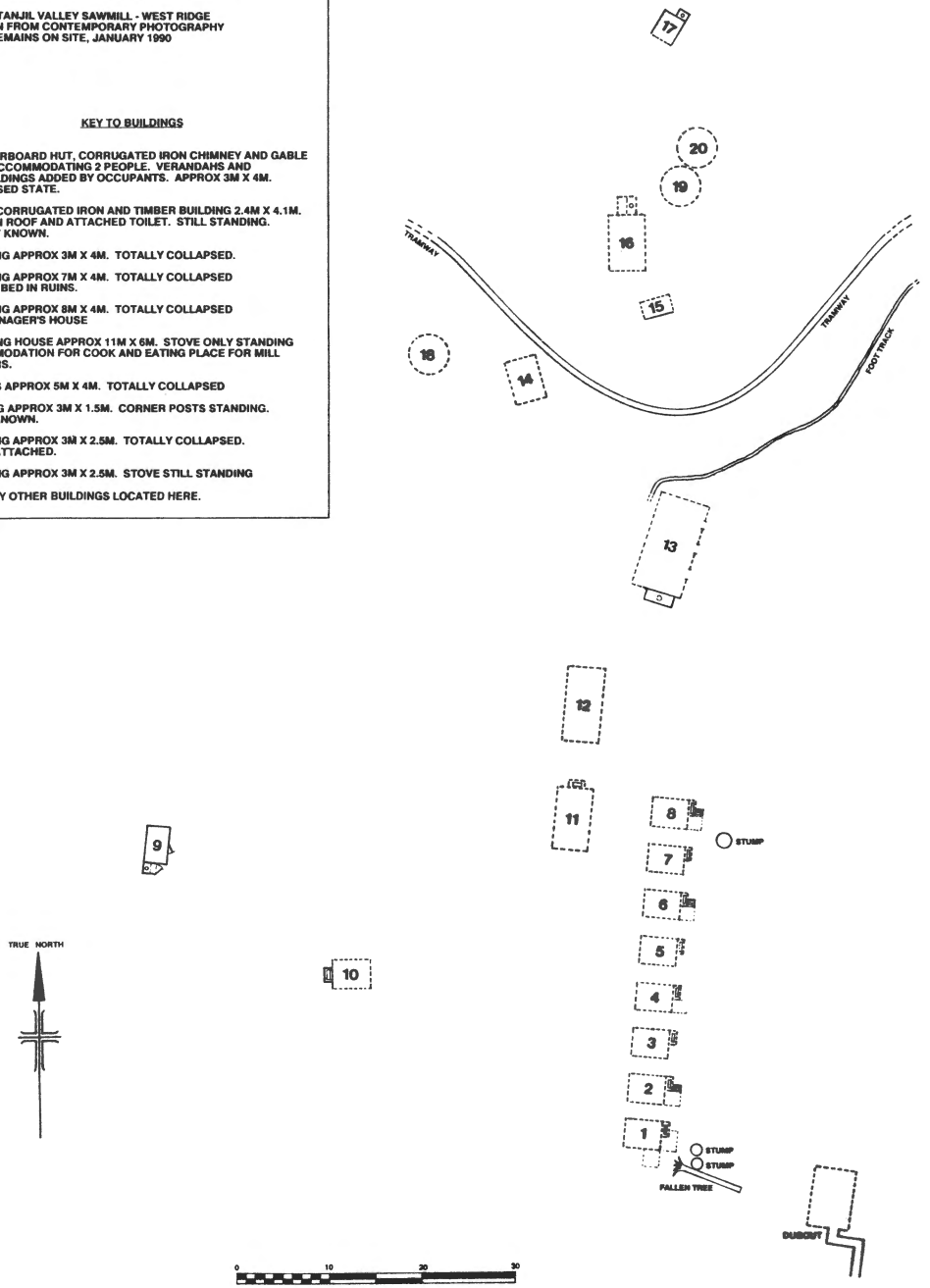
The use of all buildings shown in the photographs was was determined during an interview with Tom Cornwall. The use of those not shown was determined where possible by building remnants (stove enclosures etc) and by such artefacts as broken china, old boots etc).

H. KIRCHHUBEL

WEST TANJIL VALLEY SAWMILL - WEST RIDGE
DRAWN FROM CONTEMPORARY PHOTOGRAPHY
AND REMAINS ON SITE, JANUARY 1990

KEY TO BUILDINGS

1 - 8	WEATHERBOARD HUT, CORRUGATED IRON CHIMNEY AND GABLE ROOF, ACCOMMODATING 2 PEOPLE. VERANDAHS AND OUTBUILDINGS ADDED BY OCCUPANTS. APPROX 3M X 4M. COLLAPSED STATE.
9 -	ROUGH CORRUGATED IRON AND TIMBER BUILDING 2.4M X 4.1M. SKILLION ROOF AND ATTACHED TOILET. STILL STANDING. USE NOT KNOWN.
10 -	DWELLING APPROX 3M X 4M. TOTALLY COLLAPSED.
11 -	DWELLING APPROX 7M X 4M. TOTALLY COLLAPSED DOUBLE BED IN RUINS.
12 -	DWELLING APPROX 8M X 4M. TOTALLY COLLAPSED MILL MANAGER'S HOUSE
13 -	BOARDING HOUSE APPROX 11M X 6M. STOVE ONLY STANDING ACCOMMODATION FOR COOK AND EATING PLACE FOR MILL WORKERS.
14 -	STABLES APPROX 5M X 4M. TOTALLY COLLAPSED
15 -	BUILDING APPROX 3M X 1.5M. CORNER POSTS STANDING. USE UNKNOWN.
16 -	DWELLING APPROX 3M X 2.5M. TOTALLY COLLAPSED. TOILET ATTACHED.
17 -	DWELLING APPROX 3M X 2.5M. STOVE STILL STANDING
18 - 20	POSSIBLY OTHER BUILDINGS LOCATED HERE.



DRAWN - PETER EVANS

Conservation Forests & Lands

H. KIRCHHUBEL

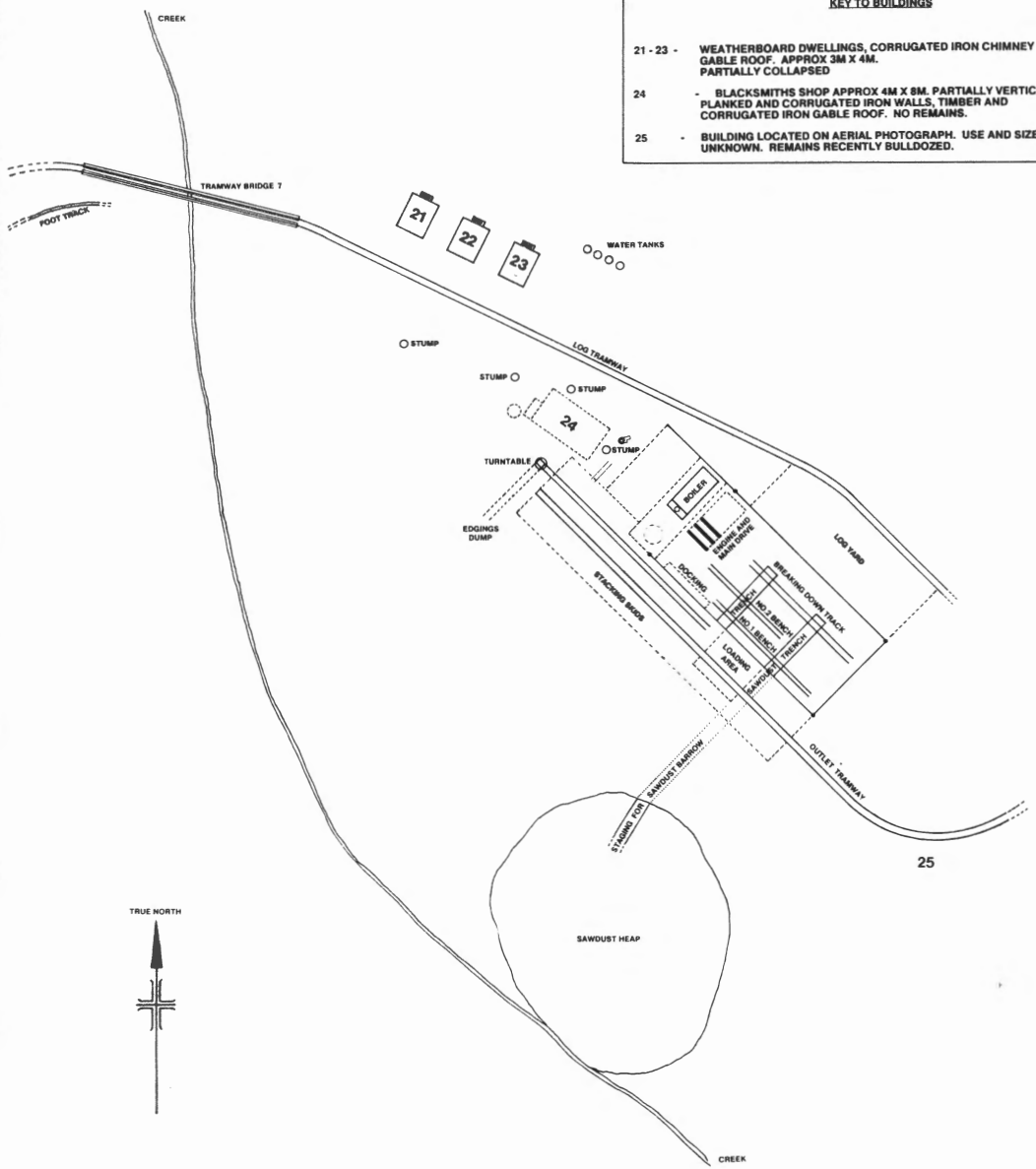
WEST TANJIL VALLEY SAWMILL - EAST RIDGE
DRAWN FROM CONTEMPORARY PHOTOGRAPHY
AND REMAINS ON SITE, JANUARY 1990

KEY TO BUILDINGS

21 - 23 - WEATHERBOARD DWELLINGS, CORRUGATED IRON CHIMNEY AND GABLE ROOF. APPROX 3M X 4M. PARTIALLY COLLAPSED

24 - BLACKSMITHS SHOP APPROX 4M X 8M. PARTIALLY VERTICALLY PLANKED AND CORRUGATED IRON WALLS, TIMBER AND CORRUGATED IRON GABLE ROOF. NO REMAINS.

25 - BUILDING LOCATED ON AERIAL PHOTOGRAPH. USE AND SIZE UNKNOWN. REMAINS RECENTLY BULLDOZED.



Conservation Forests & Lands

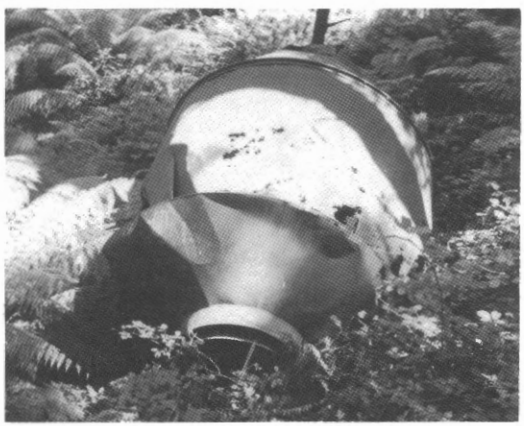
DRAWN - PETER EVANS

The only building posing any real question in this regard is building 9 on the east ridge. This could have been a tool store or fowl enclosure, but the attached toilet indicates the possibility that it was used as living quarters, as does a corset stay and broken china ornament found inside. However any occupant would have been extremely uncomfortable, with only a dirt floor and the wind whistling through the large gaps in the walls. Tom Cornwall was unable to shed any light on its former use. This is the only building still standing at the mill. None of the other structures were in a good enough condition to be drawn reliably in any other than plan view.

No substantial artefacts were found at any of the dwelling sites, only the usual broken remains of beds, china, old boots etc. However from the number of bottles it would appear that the products of the Richmond Brewing Company and Thomas Hardy Wines were extremely popular with at least some of the inhabitants.

The most substantial remains at the mill itself are of the outer casing of the boiler. This outer casing, of a type used with an underfired multi-tubular boiler, is still in position and lined with a substantial number of firebricks. Several uprights of the mill were located, as well as the engine bearers, sawdust trench, and the framing for the breaking down saw. The location of other features within the mill which are plotted on the site plan were obtained from Tom Cornwall.

The sawdust cyclone is now at the bottom of the gully just on the northwest perimeter of the substantial sawdust heap, which is 30m by 25m by 20m high. Measuring the cyclone and using it to scale the 1940 photograph of the mill provided a check against the measurements of the foundations taken on site.



Sawdust cyclone at Kirchhubel's sawmill.
Photo: P Evans

Other substantial metallic artefacts included a section of 760mm diameter boiler stack, parts of the sawdust ducting, and the casing of a centrifugal blower. Several bogie axleboxes were also seen. These had a renewable cast iron bearing surface which could be replaced without discarding the whole axlebox. Four cylindrical iron water tanks 1.2 metres in diameter and 2 metres tall are still standing on the hillside behind the mill.

This site was first visited by the author in 1986, and it would appear to have since suffered at the hands of souvenir hunters who have removed many of the portable metal objects. Despite the removal of these artefacts, the site is considered to be a relatively complete historic sawmill because there has not been substantial disturbance to the major features at the site.

Photography

All structures and major artefacts were photographed both in black and white (without scale) and colour slide (with scale) as a permanent record of the site in February 1990. The negatives and slides are held by the Historic Places Section, 240 Victoria Parade, Melbourne.

The Tramway

This tramway was walked by a party of LRRSA site researchers in 1988 and a map prepared by Geoff Thorpe.

During this current survey that map was checked and the opportunity was taken to measure the 15 bridges and to draw them in some detail. These were prepared on four A1 sized sheets drawn at a scale of 1:100 in plan and elevation.

In order to draw the four largest bridges (12, 13, 14, and 15) in a way that their construction can be clearly seen, the lower logs have been shown displaced outwards from the centre line of the bridge by a slightly greater amount than occurs on the actual bridge. The bridge decking has also been omitted on the plan view for the sake of clarity.

The current condition of the bridges is:

1 Partially demolished during conversion to a road bridge.
2 Fair condition, collapsed by a tree at one end.
3 Good condition apart from decking.
4 Good condition apart from decking.
5 Good condition.
5A Good condition, however one bearer has slipped sideways.
6 Fair condition, one bearer broken, decking missing.
7 Collapsed, but recognisable.
8 Good condition.
9 Good condition.
10 Poor condition, covered by fallen wattles
11 Good condition
12 Fair condition, partially collapsed.
13 Collapsed but recognisable.

The remains of bridge 12 on Kirchhubel's tramway. *Photo: P Evans*

14 Fair condition
15 Collapsed but recognisable

These bridges were also recorded using black and white print and colour slide film.

The bridges are interesting for their number, range of sizes, and for demonstrating the possibilities of crib log construction. All of the bridges in the tramway were constructed using this same basic pattern.

Two longitudinal bearers are first thrown over the gap to be bridged and securely anchored. If the height is suitable, the bearers are decked with split slabs and the rails laid. If the height is insufficient, short cross logs are placed in depressions cut in the bearers and another layer of bearers added. This is continued until the bridge has reached the required height.

The bridges on this line showed evidence of both steel and wooden rails. The heaviest rail found on the line was around 50 lb/yd section, and the lightest around 25 lb/yd section. In all cases the steel rail was on the inside with the wooden rail laid outside it to increase the braking power of the log bogie wheels.

At the terminus of the line a steam cylinder head was found, indicating that the logging winch had 10 inch diameter cylinders. Also located at this location were the foundation logs for the winch, the boiler stack, firebars, a corrugated iron water tank, and the remains of what was probably the winch driver's hut.

Most of the tramway required some earthworks, and a side cutting is evident along most of its length. Cuttings below the natural surface on both sides were seen, the deepest of these being located just on the mill side of bridge 11.

The large granite boulders dotting the country through which the tramway passes have proved to be both a potential obstacle and a blessing to the tramway builders. In two cases these boulders have been incorporated into bridges (5/5A and 11), and between bridges 10 and 11 the tramway passes close by several boulders. Tree stumps were also used as bridge supports in bridge 12.

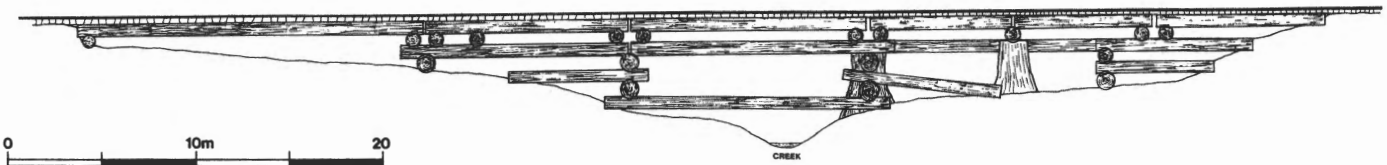
Evidence of an earlier site for the logging winch was found between bridges 10 and 11 in the form of a log landing with a large flat excavation on the uphill side of the tramway.

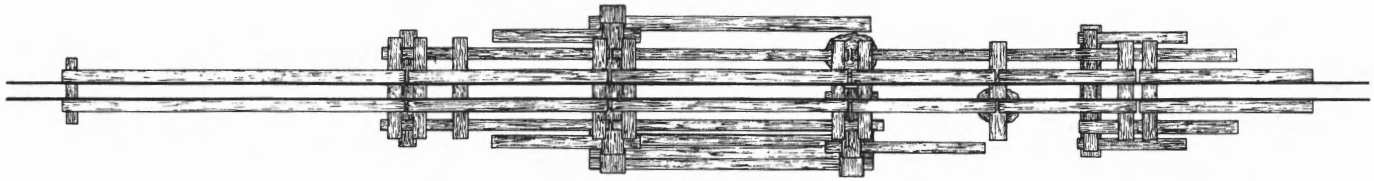
This tramway is significant in that it clearly demonstrates from the remains still *in situ* almost every feature common to a Victorian timber tramway, and contains fifteen excellent examples of the bridge builder's art.

12

KIRCHHUBEL'S TRAMWAY - BRIDGE 12 SCALE 1: 100

← MILL WINCH →





BRIDGE DECKING OMITTED ON PLAN VIEW FOR CLARITY

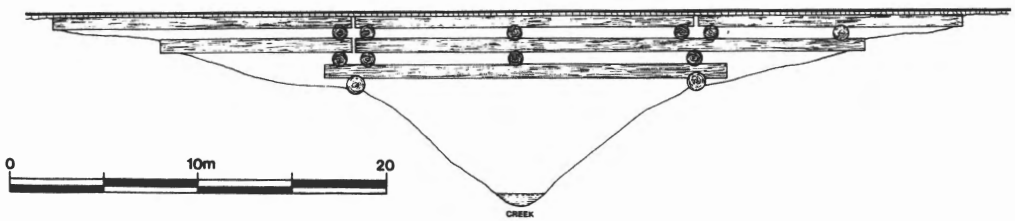
DRAWN - PETER EVANS

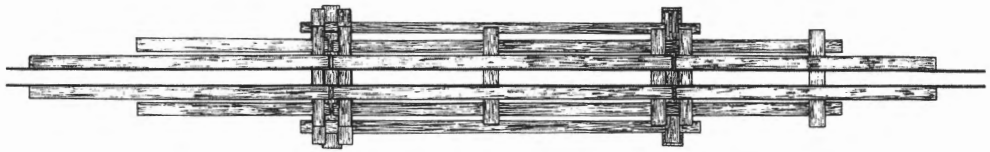
Conservation Forests & Lands

13

KIRCHHUBEL'S TRAMWAY - BRIDGE 13 SCALE 1: 100

← MILL WINCH →



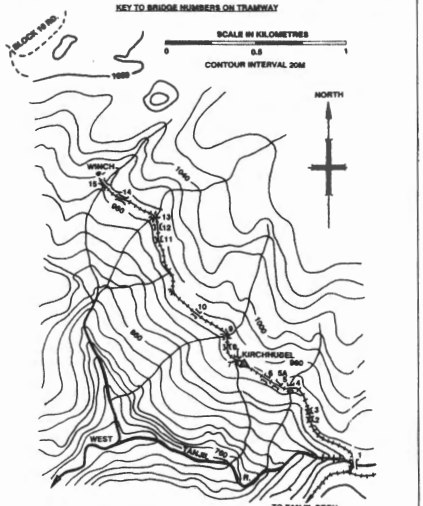


BRIDGE DECKING OMITTED ON PLAN VIEW FOR CLARITY

DRAWN - PETER EVANS

Conservation Forests & Lands

KEY TO BRIDGE NUMBERS ON TRAMWAY



DRAWN - GEOFF THORPE TRACED - PETER EVANS.

14

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15

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6. ASSESSMENT

Assessment Criteria

Criteria for assessing the cultural significance of historic saw mills and tramways were developed in association with LRRSA members [Section 1]. However, the initial approach was found to have a few serious limitations. A scoring system such as this does not cater for a place which may be the only one in the State which satisfies a particular criteria and hence may warrant a ranking of State Significance.

Ray Supple of the Department of Conservation and Environment has also arranged the criteria under the values as defined in the guidelines of the Burra Charter of Australia ICOMOS. This charter sets out an approach for the assessment of the cultural significance and the development of a conservation policy (management prescriptions) for historic and cultural sites and areas.

Kirchhubel's West Tanjil Saw Mill and Tramway were considered in terms of the following criteria:

Historic Value

1. Early sawmill in region.
2. Long period of operation (greater than 10 years).
3. Did the mill have a high timber output?
4. Substantial employer, district community centre.
5. Associated with significant sawmilling family, person, ethnic group or event.
6. Part of a group of network of sites the totality of which is considered to be important. (Does the site have a feature which although common in the area is now poorly represented? Is the site on a major tramway?).

Scientific Value

7. Represent a particular type of process or a special process developed to deal with the local conditions such as use of a turbine for power generation, or skyline logging.
8. Represent an important timber industry technology that is rare, early, seminal (start of a technique) climactic (culmination of development of technique).
9. Able to answer timely and specific archaeological research questions (sites which have not been too disturbed).

Aesthetic Value

10. Degree of unity in the scale form and materials at the site.
11. Degree to which the relationship between the features and the site reinforces the quality of each.

Social Value

12. Importance of the site to the community.

Findings

Historic Value: Kirchhubel's sawmill and tramway is significant as a substantially intact historic place which operated for a considerable period (17 years) providing substantial employment and playing an important part in the continued survival of the town of Tanjil Bren during that time.

Scientific Value: The tramway is probably the best remaining example in the State of the use of crib log construction for timber tramway bridges in terms of the number of bridges, the range of sizes and their condition. The mill site being substantially intact has some archaeological potential.

Aesthetic Value: The form of the mill and tramway, which was determined by the nature of the terrain, is enhanced by its setting (and vice versa).

Social Value: The site is close to Tanjil Bren and is considered to be important by the local community. It is proposed as a walking track and has high educational and recreational potential.

On the basis of these findings, Kirchhubel's sawmill and tramway was considered to be of State Significance.

Conclusions

The mill site is entirely covered in thick blackberries, which makes its interpretation difficult by those not familiar with sawmill sites of this period. However, this is by far outweighed by the tramway remains associated with the mill.

The tramway contains 15 substantial bridges. While not all are still standing, enough remains so that an observer may easily work out their method of construction, and in the case of the larger bridges, wonder at the difficulties and work incurred in their erection. The bridges form a comprehensive catalogue of the variations available using crib log construction, and as such are a valuable record of this facet of tramway construction. While the bridges are not immune to the natural decay of the timber used to build them, no action should be initiated which would hasten their destruction.

Furthermore, while they still exist they should be made accessible to the public for educational and recreational use. The forest in the area is highly scenic, and the gentle grade of the tramway encourages its use as a walking track. Minimal clearing along the tramway and around the bridges would be required, as would suitable signposting, and the possible construction of a short track to link the winch site with the Block 10 Road, which is only 500 metres from the terminus of the tramway.

This is the best preserved timber tramway known by the author to still exist in Victoria, and as such there is a strong case for its conservation.

THE KITSON TRAM ENGINE

by RON GRANT

INTRODUCTION

This short article updates information provided in the LRRSA *Australasian Locomotive Builders Lists No. 3*. As noted in this booklet (p.3), Kitson & Company, Airdale Foundry, Leeds, operated a completely separate builder's list for tramway and light railway vehicles - their *T list* - from 1878 to 1900.

The information used to compile the Kitson *T list* for Australasian locomotives (pp. 18-20) was based on the company's illustrated register book, *Tramway and Light Railways Engines*, which is presently held in the library of the Stephenson Locomotive Society, England. This register tabulates the engines built by type on each page and quotes works number, leading dimensions and owner, with the type photograph facing the dimension page. Evidently this register was compiled from earlier records about 1893, as it was up to that time (from 1876) perfectly uniform in its hand lettering. This register book has been taken literally all these years and has been the basis of most, if not all, published Kitson lists. Most of the company's records were systematically destroyed after the firm ceased building locomotives in 1938.

Recently the National Tramway Museum, Crich, acquired a Kitson tram engine list apparently of greater antiquity than the illustrated register book. While this list is not itself complete, it looks much more authentic. The entries are in a spidery copperplate hand and include details of customers' requirements where these differ from the standard models offered, the actual date of delivery ex-works and sometimes the order number. It is not the order book.

Some of the information given is written in a different hand with a thicker nib and this particular writer appears to have taken over maintenance of the list himself from 1883. Other hands too have added details. Some of these additions appear modern and possibly were added after the company's records were dispersed or destroyed. There are a small number of blank entries and some of these blanks differ from the blanks in the illustrated register. The final entry is that for engines 236 and 237 for Huddersfield Corporation on 8 and 27 November, 1888. The Kitson illustrated register continues to engine 302 of 1900, after which light railway engines constructed were numbered in the ordinary works list, the tramway engine list being discontinued.

Discrepancies

There are discrepancies between the two lists, while at least two engines known to have been built by Kitsons are not recorded on either list. One, a Rowan car identical to No. 1/678 of 1876 was built for St Petersburg in 1877 and recorded as Kitson built, by the Scandia Company, where the car body was constructed. The other, a No.1 type standard engine which came to Dunedin in 1882 could well be one of the blank entries 53, 54 or 55. The timing is correct.

The blank entries do not coincide in each list. The illustrated register leaves Nos 51, 52, 53, 55 and 103 blank, while the list now at Crich shows 53, 54, 55 and 103 as such. There may well be other discrepancies.

My view is that the newly discovered list now at the National Tramway Museum, Crich, is more likely to be correct than the illustrated register book, which probably suffers from carelessness in transcription.

AUSTRALASIAN TRAM ENGINES

If the Crich list is to be taken as correct, a few changes now need to be made to the information given in the LRRSA *Australasian Locomotive Builders List No 3* as far as the Kitson Tram Engine List is concerned. These are listed below.

I have also included the notes applying to Australasian locomotives given (verbatum) where these are of interest. Dimensions have not been included as these are as in the previously published list. The bracketed information has been added for understanding.

B/No. Notes

5 Glenelg and South Coast demonstration Rowan steam car. "Combined (engine) with car, Horizontal Engine, Vertical boiler, (for) Adelaide, South Australia (ex works) January 20, 1879".

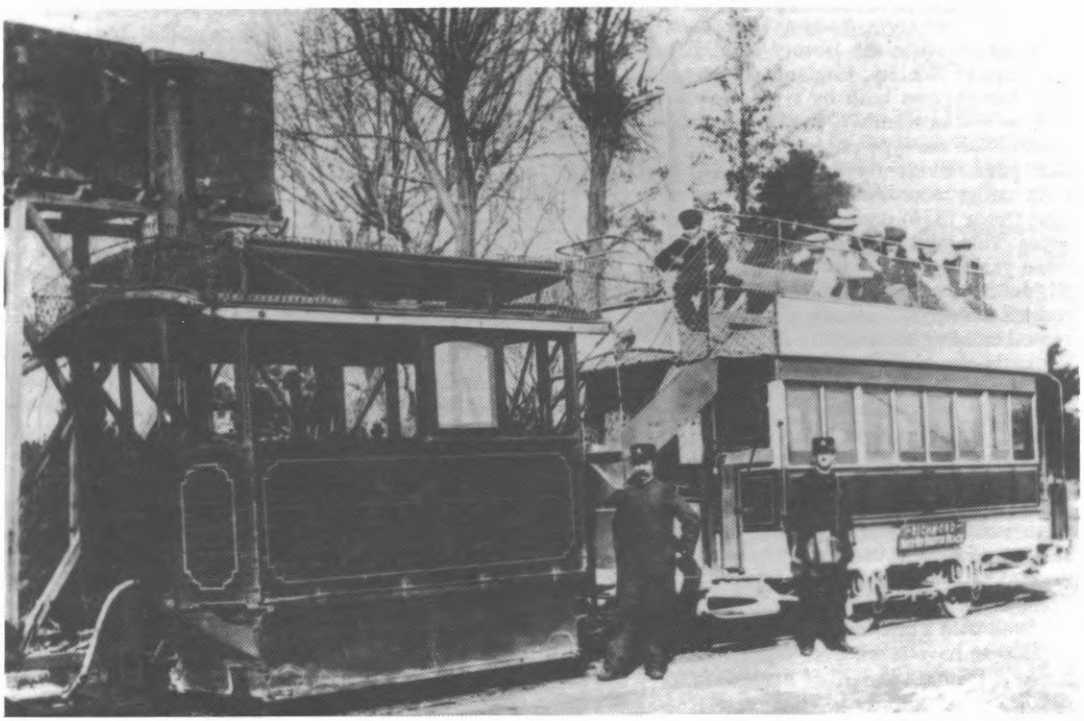
6 NSWGT Rowan Car; Class D No. 46 - later 1st No.50. "Combined with car, vertical engine and loco type boiler altered, Eames Vacuum Brake, Car from Brown, Marshalls but altered here, NSW Government Sydney, January 10, 1882".

7 The prototype Kitson standard tram engine. "Independent (engine), loco type boiler, Patent (Kitson) valve motion, Fan engine, Dunedin City and Suburban Tramways, August 13, 1879".

8-12 "Independent, Loco Type Boiler, Patent Valve motion. Canterbury Tramways (NZ) Nos 8 and 9, August 16, 1879. No 10, September 29, 1879; No 12, September 23, 1879 and No 11 - Batley - December 19, 1879".
Thus it was No. 11 and not No. 12 as we reported that was used as a demonstration engine at Batley and in Leeds, England. As the engines were numbered (or lettered) in order of arrival in New Zealand, No. 11 was "E" and 12 "D".

27-29 "Independent, loco type boiler, Patent Valve motion, Injector, Canterbury, NZ, No 27 - May 30, 1881; No 28, May 31, 1881 and No 29, June 11, 1881".

48, 50 "Altered to order No 672, Independent, loco type boiler, Sand box on boiler, slides to windows, 8" cylinders and condensers and tanks added to" (then in a different hand) "Davey Jones Locker", "Sydney, September 14, 1882". These then must be the two Parramatta River Steamers & Tramway engines lost at sea rather than Nos. 53 and 55 as given in out list. The



Christchurch Tramways No.1 Kitson T8/1879) taking water at Burwood tanks on the last regular steam-worked tram service in Christchurch, from Richmond to North Beach, which was electrified in 1912. *Ron Grant Collection*

illustrated list shows these engines as delivered to Sydney and 96 to Parramatta.

52 "Altered to order No 778, Independent, Sandbox on boiler, slides to windows, 8" cylinders and condensers and Tanks, C.I. Rood Brackets". "Tried on Headingley Tramway with two cars", "Sydney, April 23, 1883".
This must be the replacement engine for Parramatta. Judging fromgthe serial number, it would have been built about the same time as 48 and 52 and kept as works shunter as tradition says. The Headingley tramway was in Leeds and was physicallly connected to Kitsons works. Ex works 23 April 1883, allows ample time to arrive in Parramatta to open the line in October, 1883.

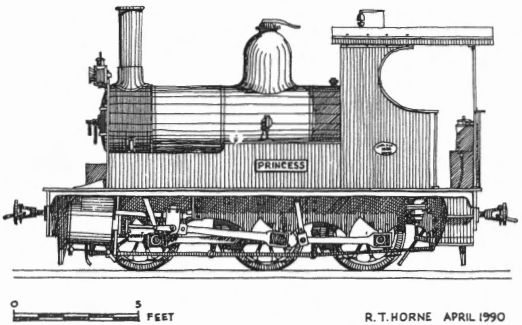
96 "As 672 and 778, New Style of door, trailing tank, Australia, December 6, 1883".
This is stated in the illustrated list to have been delivered to Parramatta and the coincidence of order numbers detail would suggest this. Was No. 96 ordered as a second replacement but when delivered was already superseded at Parramatta by Baldwin 4343/1878, ex Adelaide, Unley & Mitcham and went elsewhere? 96 could not possibly have opened the Parramatta tramway in October 1883. It left Kitsons works in December. We have a mystery here.

? 1882 Dunedin City & Suburban Kitson standard engine not mentioned in either Kitson document, but there is plenty of photographic and boiler inspection evidence of its 43 years of existence. This could well fill one of the blank entries, Nos. 53, 54 or 55, which are correct for timing. It is not T51 or 52 as given in the LRRSA book.

53, 55 All reference, as shown in LRRSA List No.3, should be deleted, as these numbers are shown as blank in the Crich list.

59-60 "Independent, Loco Type Boiler, six wheels coupled, outside Cranks, Eames Vacuum Brake, Cylinders 11′" x 15", Wheels 2'-6", Base 6'-0", NSW Government, Sydney, June 21, 1882".
Kitsons answer to the Baldwins, NSWGT Nos. 42 and 43, It was not a successful answer.

69-70 "Combined with car, vertical boiler, ordinary link motion with eccentrics, injector, cowcatcher, Mr Rowan. February 1, 1883



GREAT SOUTHERN RAILWAY, W.A.
"PRINCESS", BUILT BY KITSON, T.231 OF 1888

and February 20, 1883".
This was the Victorian Railways Rowan Car and spare engine imported by Captain FC Rowan, the Melbourne consulting engineer who was a brother of WR Rowan, the Patentee of the Rowan steam railcars.

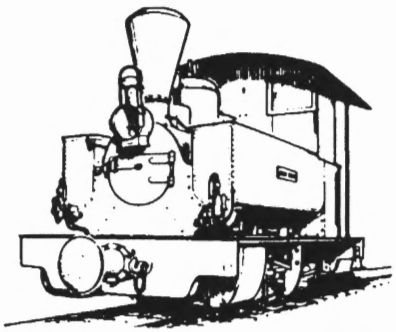
71-73 "Independent, six wheels coupled, outside cranks, Eames Vacuum and Automatic Brakes, Cylinders 11½" x 13", wheels 2'-6". Brisbane, Queensland, January 9, 1883".
The Ann Street Tramway motors, QGR class 6D11½.

97 "Light Railway engine, Cylinders 8" x 12", Gauge 3'-6", Central Buffer and coupling, small size boiler but with longer barrel, Loco frame and awning, loco smoke box door and plain taper chimney. One glass water gauge and two gauge cocks, Brass Funnel to safety valves, South Australia, May 8, 1884".
South Australian Harbors Board, Port Germain jetty shunter.

142-3 "Light Railway Engine, six wheels coupled, Boiler longer, wrought iron dome, six cast steel spoked wheels coupled, regulator as Loco in dome, special steam brake, Cylinders 11½ x 15, brass chimney top, TVR type, Loco buffers, Gauge 5'-3", no outside cranks as crankpins are in wheels, Strathalbyn, December 5, 1884".
South Australian Railways Goods Motors Nos. 97 and 98 for Strathalbyn-Victor Harbor service.

231 "Light Railway Engine, six wheels coupled, outside cranks, Cylinders 11½ x 15, Dome and safety valve altered, Western Australian Land Co *Princess*, May 10, 1888".

Briefly then, the changes relate to the engines for Parramatta. The rest of the list is basically correct as published.



LETTERS

LAKE MARGARET TRAMWAY, TAS: LR.110

The confusion about a "1929 Dorman Ricardo" on the Lake Margaret tramway might not stem from the Tulloch diesel, with which it has been incorrectly identified as pointed out by Paul Simpson. Possibly the line's other locomotive could be implicated. This was the unusual Nicola-Romeo unit which is now to be seen in the West Coast Pioneers Memorial Museum at Zeehan. It was apparently built in Italy in 1925 with a petrol engine, and it is claimed it was later fitted with a Holden engine. However, if it did end up with a diesel engine, as I believe to be the case, I wonder if this was a Dorman?

I believe that the 1959 Tulloch locomotive used on the tramway was allocated the builder's number 002. I is my understanding that the locomotive had its engine removed on disposal and was acquired by a Tasmanian Transport Museum Society member, Ted Lister.

The origin of the design of the locomotive is an intriguing one. In November 1961, Transport & Industrial Index (brokers) of Wahroonga, Sydney, advertised for sale a *Bulldog* locomotive. The photograph accompanying the advertisement showed a machine resembling very closely the Tulloch locomotive, but without cab. Like the Tulloch, the *Bulldog* was fitted with a Fordson Major 40 hp engine. Index stated that they were now in a position to have these units built in Australia by their own sub-contractors on a 8-10 weeks delivery.

Index stated that this type had been developed by "one of our own Overseas affiliate Companies": United Locomotive Wagon Company of Johannesburg, South Africa, and that the unit illustrated had been built for the Anglo American Corporation of Johannesburg.

In 1962, South Johnstone Sugar Mill in Queensland took delivery of a *Bulldog* locomotive which, apart from the name over the radiator grille, a redesigned exhaust arrangement and a double cab roof, appeared identical to the Tulloch unit. Numbered 18 by the mill, it is stated to have weighed 5 tons and is thought to have been scrapped in 1975. The unit is believed to have been constructed by EM Baldwin & Sons of Castle Hill, Sydney, and was quite possibly Baldwin's first complete locomotive. The next year, Baldwin built a similar but slightly smaller diesel-mechanical unit under their own name for North Eton Mill. The body design had been changed cosmetically, including an altered cab, the provision of bonnet side covers, and a curved bonnet top, but many basic features appeared the same. It was fitted with a 3-cylinder diesel. Ford 4-cylinder engines were fitted to two similar diesel-hydraulics built for Farleigh and Mulgrave Mills in 1963-4. Baldwins then went into larger and larger designs.

I am at a loss to interpret this particular sequence of events, except to say that clearly the design could not have originated in Johannesburg and at Tulloch's in Rhodes. No doubt there is an interesting story in it somewhere.

John Browning
Mackay, Qld

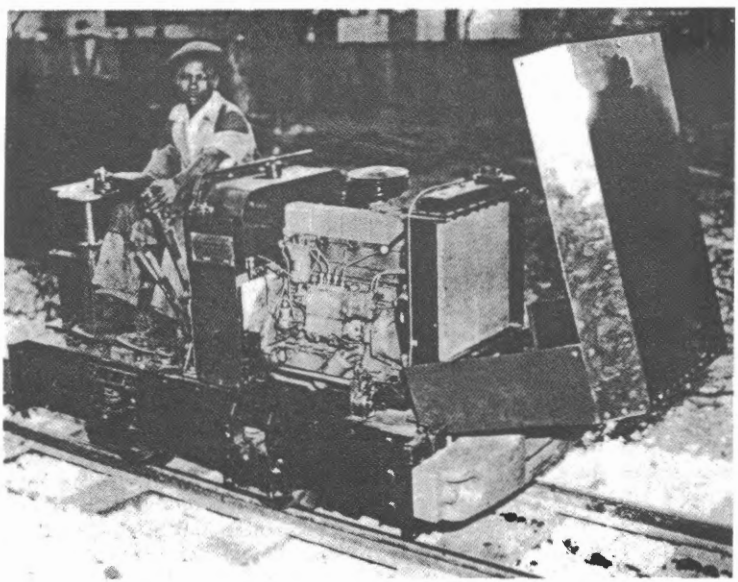
Right: *Advertisement for* BULLDOG *diesel industrial locomotives from* Index *Vol. 2 No. 10 of November 1961.*

EARLY INDUSTRIAL ROLLING STOCK

Details of British-built rolling stock on Australian industrial railways (particularly those of long defunct railways) are frequently elusive, so it is always pleasing when some information comes to light.

The records of RY Pikering & Company Ltd, railway carriage and wagon builders of Wilshaw, near

"BULLDOG" DIESEL INDUSTRIAL LOCOMOTIVES are available in all gauges from 2 ft. to 5 ft. 3 inches, and are manufactured in Australia by our own sub-contractors. The range was designed by one of our own Overseas affiliate Companies: United Locomotive Wagon Co. Pty. Ltd., of Johannesburg, South Africa, for use under the most arduous service conditions where they were driven and serviced by African natives. The illustration shows the standard 4 ton Model, powered by the FORDSON Major 40 h.p. Diesel Engine. This model was adopted as standard by the Anglo American Corporation for use in the underground Gold Mining Industry. The automobile type 'flip-over' engine cowling provides maximum ease for maintenance.



" 'BULLDOG' 4 TON DIESEL LOCOMOTIVE AS SUPPLIED TO THE ANGLO AMERICAN CORPORATION LIMITED, JOHANNESBURG, FOR USE IN THE GOLD MINING INDUSTRY. FOR SURFACE WORKING THIS MODEL CAN BE SUPPLIED WITH DRIVER'S CAB. NOTE EASE OF ACCESS TO THE ENGINE WITH BONNET HINGED FORWARD."

NOW COMPLETELY MANUFACTURED IN AUSTRALIA — with no reliance on the supply of spares from Overseas!

Standard features include:—

FORDSON Diesel Engine.
Roller Bearing Dust Sealed axle boxes.
Replaceable horncheek liners.
Electric Starting.
Flip-over Engine cowling for maximum ease of maintenance.
Four wheel equalised Braking.
'Hydro-Cone' constant mesh transmission.

Manufactured and Distributed by: TRANSPORT AND INDUSTRIAL INDEX (BROKERS) PTY. LTD.

Glasgow are held by Glasgow University for the Scottish Records Office. These how that they built 25 bogie wagons in 5 batches for the 2ft gauge Zeehan Tramway Company, in Tasmania, from 1904 to 1908. All were 10 tons capacity with 1ft 6in diameter chilled spoked cast iron wheels by Miller & Co of Edinburgh. They were ordered per William Jacks & Company, 5 East India Avenue, London as follows:

> Card Order 7323 of 7 May 1904. Four open goods wagons, shipped to Strahan via Melbourne.
>
> Card Order 9437 of 24 November 1905. Five bogie ore wagons, shipped to Strahan via Melbourne on SS *Melenaus*. Same as previous order but doors 6ft 6in wide instead of 2ft 6in.
>
> Card Order 10803 of 12 October 1906. Seven bogie mineral wagons, shipped to Hobart via Melbourne on SS *Telemon*. Same as previous order but sides 2ft 6in deep for coals. Name plates "William Jacks & Co., 5 East India Ave., London" fixed to each wagon.
>
> Card Order 10923 of 2 November 1906. Five bogie mineral wagons, shipped to Strahan via Hobart on SS *Saltees*. Same in every respect to those being built to CO 10803, but with sides 18in. deep.
>
> Card Order 12975 of 17 January 1908. Four bogie mineral wagons, shipped to Strahan via Hobart on SS *Paparoa*. Same as wagons built to CO 10923.

These were followed by an order for 6 pairs of wheels and axles, Card Order 16154 of 9 September 1909.

More curious was a series of orders through Geo. Wills & Co., London EC, for second-hand wheel sets (each comprising 2 axles) from the Midland Railway Company at Derby. They were shipped to Sydney, the final customer possibly being a NSW coal-mining company with an eye for a bargain. The Scottish Australian Mining Company springs to mind! Details were:

> Card Order 9282 of 11 October 1905 for one set, shipped on SS *Prometheus*.
>
> Card Order 9392 of 7 November 1905 for 40 sets, shipped in SS *Nairnshire*.
>
> Card Order 9773 of 1 February for 15 sets, shipped on SS *Armadale*.
>
> Card Order 10004 of 28 March 1906 for 15 sets, shipped on SS *California*.
>
> Card Order 10768 of 24 September 1906 for 30 sets.
>
> Card Order 10931 of 31 October 1906 for 10 sets.
>
> Card Order 11341 of 22 January 1907 for 50 sets.

Mention of the Scottish Australian Mining Company Ltd (whose operations were, I believe, based on Lambton B Colliery at Readhead, south of Newcastle) leads to the vast collection of microfilmed drawings and photographs in the Metro-Cammell collection in the Birmingham Central Library. This covers over a century of drawings of railway and tramway rolling stock built by Metro-Cammell and its many constituent companies. The Australian state and major private railways are represented from 1853, but of more interest to *Light Railway* readers are the relatively few surviving drawings of rolling stock for Australian industrial railways.

The Scottish Australian Mining Co ordered early examples of what were to become the "standard" NSW 4-wheeled coal hopper wagon (see the excellent article on these wagons by JF Webber and BR Andrews in *ARHS Bulletin* Nos 465-6, July-August 1976) as follows:

> Metropolitan Rly. Carriage & Wagon Co, Saltey. 24 November 1864; 6-ton iron hopper wagons.
>
> MRC&W, Saltey. 22 June 1892; 6-ton hopper bodies only.
>
> Brown Marshalls & Co, Birmingham. Order 2438 of 13 March 1869; 6-ton iron hopper wagons.
>
> Ditto. Order 4517 of 1 February 1879; 6-ton iron hopper wagons. wheels and axles not included.
>
> Ditto. Order 6242 of December 1885; 6-ton iron hopper wagons, same as 1879 Order but with additional of side chains.

Lancaster Railway Carriage & Wagon Co, drawing 11148 (undated) shows The *Robertson* Hopper Coal Wagon, a standard timber-bodied dumb buffer wagon for NSW (customer not shown), while drawing 11292 (also undated) shows a similar 8-ton wagon, but with spring buffers, for the NSWGR itself.

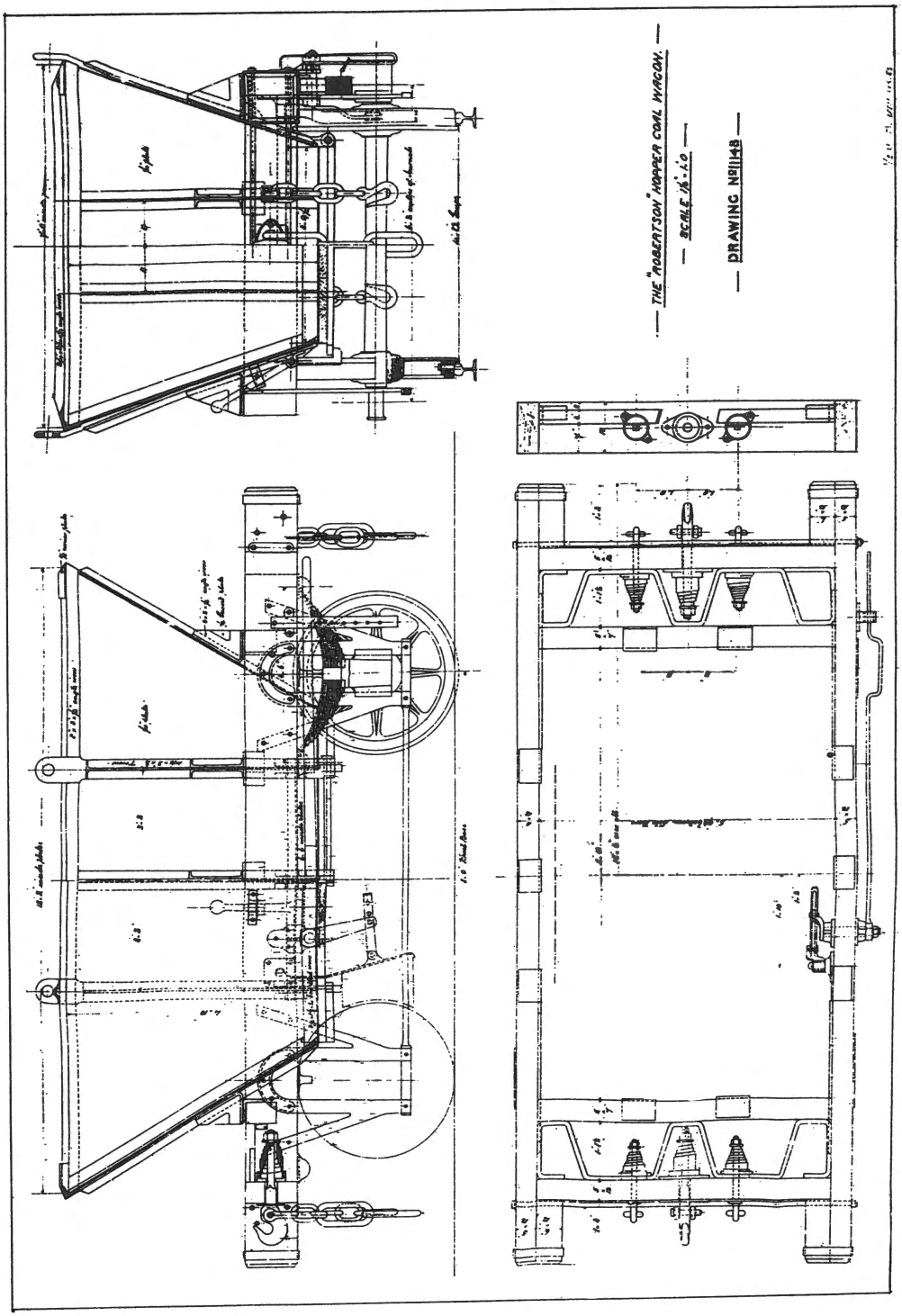
Brown Marshalls produced a narrow gauge version of the NSW hopper wagon, Order 4649 of 26 May 1879, being for 3ft gauge 3-ton wagons for the Mount Bischoff Tin Mining Co in Tasmania. They also produced for Maclean Bros & Rigg (presumably in Western Australia) 3ft 6in gauge 4-wheel "spring trucks" to order 6856 of 18 May 1892.

Richard Horne
South Croydon, Surrey, UK

Ed: The Lancaster Railway Carriage & Wagon Company drawing 11148 of the *Robertson* Hopper Coal Wagon for New South Wales is reproduced on page 29.

PROMOTING LIGHT RAILWAY RESEARCH

In response to your recently introduced "Research Column", I note that the "Bibliography of Historical Archaeology", published in the *Australian Journal of Historical Archaeology*, contains not one reference to any article published in *Light Railways* or similar specialist railway journal. This horrifies me, and further points to the need for us to broaden our reading audience if we are to achieve the second aim expressed in your initial editorial [*LR.69*, July 1980].



The Australian Society for Historical Archaeology's Newsletter has contained at least two articles specifically on light railways and timber tramways. There are a number of societies and journals concerned with Australian heritage, which includes the place of light railways in Australian history. Local history groups abound and many would be interested in talks or articles on light railway operations within their geographical area of interest. Several professional groups such as mining or construction engineers are sharing an increased interest in their professional heritage.

These are all forums that LRRSA members might approach to publish articles and thereby promote the works of our society and its journal. Publication in such journals would help us gain professional respect, advertise out society and establish our place in the Australian heritage study industry.

Jim Longworth
Cheltenham, NSW

[Editors Note: These suggestions are a most welcome contribution to the debate on how the LRRSA should promote itself to a wider audience. Some progress has been made in recent years, particularly through the Australian Forest History Society. Norm Houghton contributed a paper to the First National Conference of Australian Forest History in 1988 and information on *Light Railways* articles is carried in the *Australian Forest History Newsletter*. The NSW Division of the LRRSA is an Associate member of the Royal Australian Historical Society and reviews of *Light Railways* articles are carried by their publications. Nevertheless, the Society needs to be more active in promoting its achievements. I would be pleased to receive further correspondence on this topic.]

SIMSVILLE TRAMWAYS, NSW: LR.113

The special LR issue, *Simsville and the Jarrah Mill: a History of the Timber Industry at Simsville, New South Wales*, has a wrongly captioned photo on page 9. The photo shows an A-type *Climax* hauling several bogies attached to logs and the print is attributed to Winter's Studio, Burnie.

I have been researching the Langley tramline in the Lansdowe State Forest for the past six years and have collected numerous photographs from the Langley family, ex-employees and my wife's relatives living in the area. One of the earliest I was allowed to copy came from the Langley family showing this view of the family locomotive. It was one of a series of photographs made into a book in the late 1920's and presented to members of a visiting party of Forest Commissioners in 1931.

The scene shows the driver Jack Graham on the footplate. He was the driver almost solely in charge from when the loco arrived at Langley Vale (formerly Hanging Rock) till the demise of the company in the late 1930's. Standing beside the circular water tank is Archie Masters, the locomotive and mill fitter. Cropped from the published photograph there is another gentleman who appears to be Mr William Langley. The final positive identification of the photograph is the name, in capitals, on the timber planks forming the loco cab-sides: LANGLEY & SONS, LANGLEY VALE, N.S.W.

The caption on the photo in my collection reads:

> A load of logs containing 36,000 ft being drawn by 20 tons "Climax" locomotive coming down a grade 1 in 12 on 3 chain curve. W. Langley & Sons Bush Saw Mill Tramway, Langley Vale, N.S.W

In the care of the Forestry Commission camp in the Lansdowe State Forest is a truck from the tramway and two sets of wheels from bogies are in a compound. The gauge was 4 ft.

Len King
Five Dock, NSW

JC BROWN & CO, ENGINEERS

In June 1991, a consignment of records from the Geelong engineering firm JC Brown & Company was deposited in the Geelong Historical Records Centre. Browns were one of Geelong's leading jobbing engineers in the pre-war period and carried out a lot of work of a light railway nature for Cheetham Salt, Stone and Siddley and the sawmillers in the Otway Ranges. The records deposited are very fragmentary, but amongst them is a client ledger for the period 1907 to 1913. From this ledger are details of the construction, alteration or maintenance of locomotives, winches, wheels and axles for Hayden Bros, Sanderson & Grant, WR Henry & Sons and Devitt Bros.

The entries for Hayden Bros confirm what the late Bill Hayden told me in 1971, namely that Haydens bought two Bendigo steam tram motors and from these put together on locomotive in good working order with the heavy engineering work being carried out by Browns [*LR.19*, p.13]. A ledger entry for 18 July 1908 shows that two motors were freighted from Bendigo to Geelong at a cost of 24 pounds 16 shillings. On 7 April 1909 there was booked out to Barwon Downs one loco (alterations and retubing) to the value of £313 material and labour, with £7 freight.

There is no mention of any other parts or the second loco being dispatched to Barwon Downs, so the possibility arises that the second tram motor remained at Brown's premises in Corio Street as a source of spare parts for future repair work if and as required. On 31 May 1912, the loco underwent major repairs to the boiler and to two axle boxes, and on 21 August 1913 one of the springs was repaired. The entries finish at 1 October 1910.

The services carried out for WR Henry & Sons [see *LR.18*] involved frequent work on wheels and axles (both repairs and supply of new ones), alterations to winches and repairs to boilers. One job, dated 10 December 1907, involved straightening four axles, so perhaps there had been a recent accident. The only specific reference to locomotive work was on 6 August 1913, when Browns supplied the hoops for loco covers as well as the duck covers themselves.

Sanderson & Grant did not make as much use of Brown's services, although they supplied winch barrels and parts and rebored some wheels. On 5 December 1911 four loco spring buckles were booked out and on 19 April 1913 a major repair was carried out on a locomotive boiler.

Devitt Brothers At Beech Forest were supplied with 14 tram wheel bearings in 1911, enough to make 3½ bogies. When Stone and Siddeley were operating their sewer construction tramway from 1912 to 1916 [*LR.80*], Browns were called on to supply numerous 16 inch wheels and axles (57 in 1913), one turntable and one truck transverser, as well as repair loco parts on 15 March 1913.

It is a great pity the remaining ledgers have not survived to provide us the opportunity to explore further the history of the Otway locomotives. One intriguing question is the fate of the cannibalised Bendigo motor at Browns. Did it remain intact in Geelong until 1917 when Haydens no longer required it and, if so, what happened to it?

Norman Houghton
Geelong, Vic

EARLY FOWLER LOCOMOTIVES: LR.114

There is little doubt that the locomotive pictured at the Libby McNeil & McNeil's Kahulu pineapple cannery, Oahu (p.20), is a John Fowler product. Moreover, it is not one of the products used at Cobar, which as pointed out, were Fowler 2-4-0T *Patent* locomotives. Greig & Beadon's patent utilised by Fowler was for an indirect drive arrangement, with the connecting rod driving a crankshaft, and a jackshaft linking crankshaft with the driving axle directly below it. As shown on p.26 of *LR.92*, the Cobar examples (built 1882-3) also had a distinctive design of cab and smokebox saddle not seen in the Hawaiian locomotive.

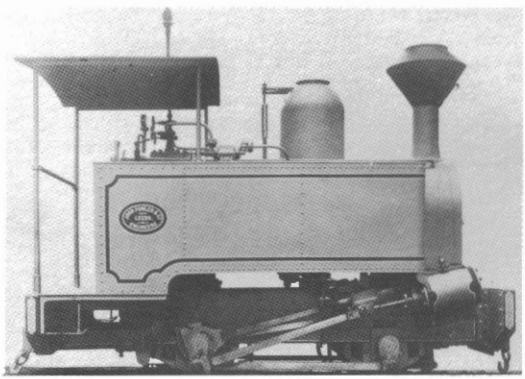
The Greig & Beardon indirect drive can be seen clearly not only in the Cobar locomotive, but also in the Queensland cane tramway locomotives illustrated on the cover of *LR.64* and on pages 22 and 24 of *LR.87*, which are thought to have been built around 1882-3.

It will be noted that this cane tramway design is generally similar to the locomotive pictured in Hawaii, but that in the Hawaiian example the cylinders are more steeply inclined and the connecting rods appear to drive the rear axle of the locomotive directly, rather than using the patent indirect drive design. To my eye there is a suggestion of bulk at the front end which could indicate that the Hawaiian locomotive might be of 2ft 6in gauge rather than the 2ft gauge of the Queensland cane tramway locomotives.

A direct drive with inclined (but not so steeply inclined) cylinders was utilised by Fowler in their 1885 design for the Colonial Sugar Refining Company's Victoria Mill in Queensland. This locomotive, builder's number 5020, became *MELBOURNE 4* at Victoria Mill and is shown on Fowler's builder's photograph W542.

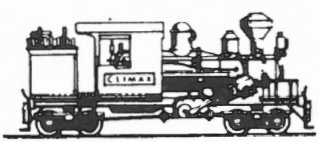
If the Hawaiian locomotive was built with direct drive (and an examination of the original photograph may be able to shed light on this), then it is tempting to think of it as an intermediate design. There are a number of Hawaiian possibilities in the Fowler list from the 1882-3 period.

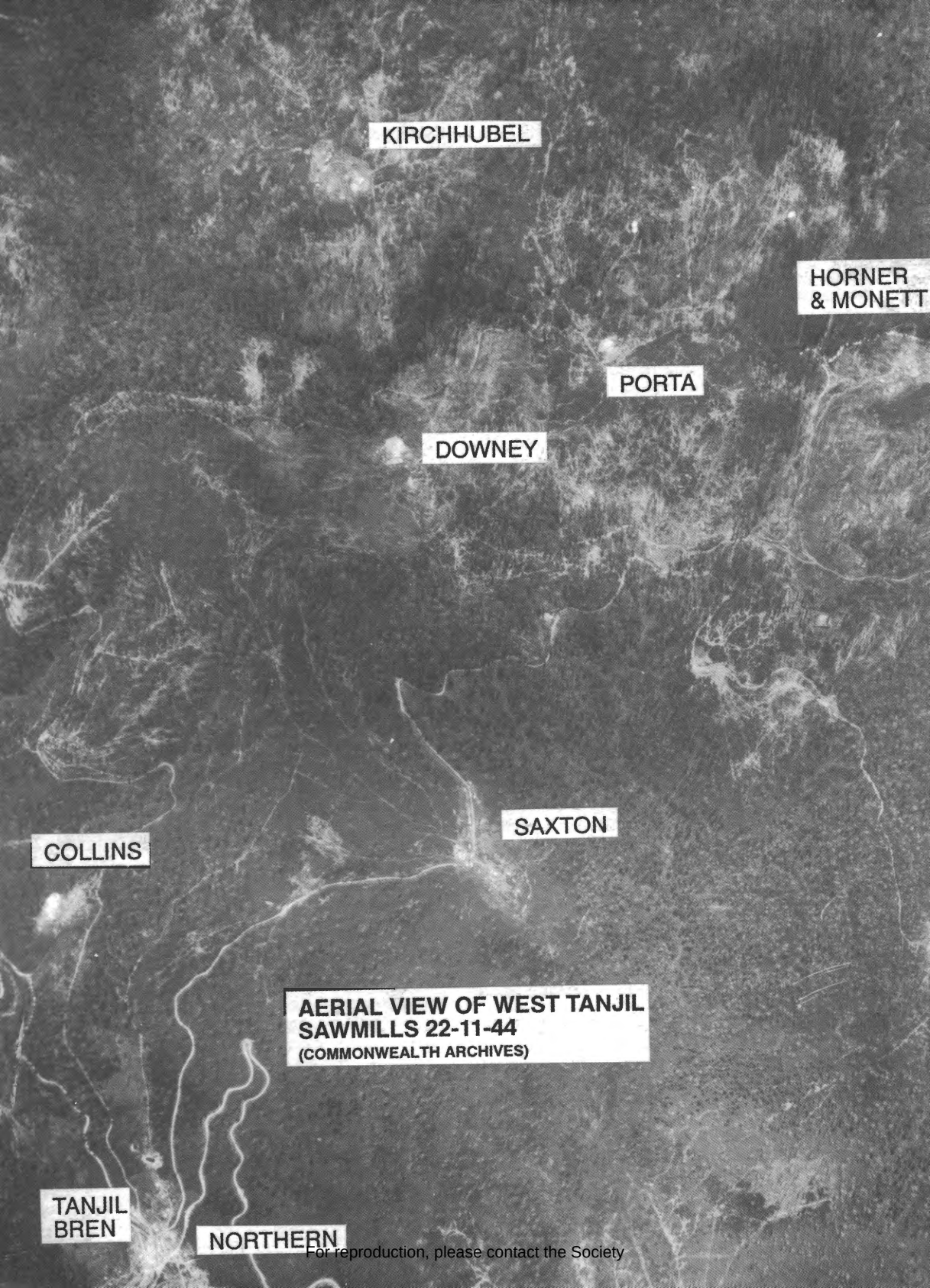
John Browning
Mackay, Qld.



Above: *John Fowler 2ft gauge 0-4-0T 5020 of 1885 for Colonial Sugar Refining Coy Ltd, Victoria Mill, Queensland.*
Reading University, Museum of English Rural Life, courtesy Richard Horne

Back Cover: *Aerial view of West Tanjil Sawmills, 22 November 1944.*
Commonwealth Archives.





AERIAL VIEW OF WEST TANJIL SAWMILLS 22-11-44
(COMMONWEALTH ARCHIVES)