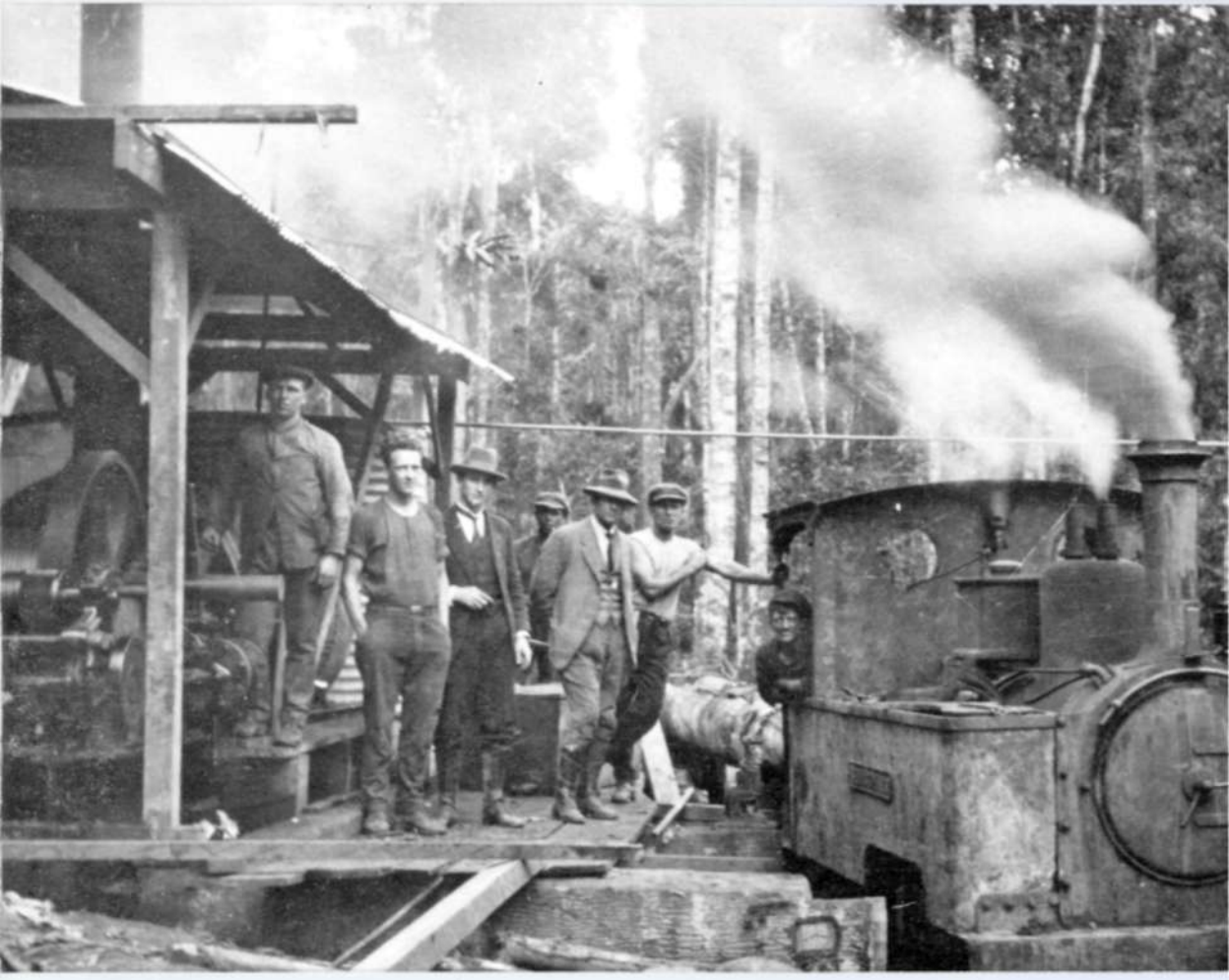
LOGGING TRAMWAYS OF THE DORRIGO PLATEAU, NEW SOUTH WALES

by Ian McNeil

LIGHT RAILWAYS No. 100



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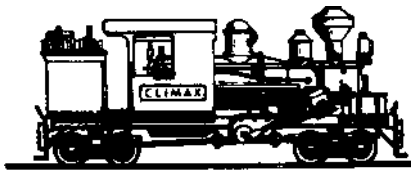

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EDITORIAL

Ian McNeil's history of the timber tramways of the Dorrigo Plateau in New South Wales has been chosen to commemorate the 100th issue of *Light Railways.* The LRRSA originated with a group of Victorian enthusiasts who were interested in researching the history of the timber industry and its tramways in that state. It has grown into a national association with active researchers into our industrial and light railway heritage in all states and we have followed the expansion of Australia's entrepreneurial pioneers into overseas operations. But, the timber industry remains at the centre of interest for many members.

The timber tramways of the Dorrigo Plateau are a fitting symbol for our 100th issue. The article demonstrates the depth and quality of research which LRRSA members are now investing in their pursuit of light railway history, while the focus on the Dorrigo district represents the shift which has occurred in our research activities from Victoria to the in depth study of light railways and their associated industries in other states. I trust you enjoy this offering.

RFM

Cover. GL Briggs& Sons locomotive *BEN BULLEN* (Hawthorn Leslie B/No 2840/1910) at a logging depot on the Briggsville tramway circa 1926. A steam logging winch is on the left. Standing are forester J Macskimmings and GL Briggs senior (with tie). John O'Lawrence is the locomotive driver. Photo: Forestry Commission of NSW

LOGGING TRAMWAYS OF THE DORRIGO PLATEAU

by Ian McNeil

1. EARLY HISTORY

Introduction

The Dorrigo Plateau is located on the North Coast of New South Wales, some 72 km (45 miles) inland from the coastal city of Coffs Harbour. It is characterised by rich soils, a high annual rainfall of over 1780 mm (70 inches) and a cool temperate climate due to its altitude — 600 metres east of Dorrigo, rising to over 950 metres in the west as it merges into the New England Tablelands. The topography is generally undulating, but with very steep falls into the valleys of the rivers and tributary creeks.

This combination of altitude, rainfall and fertile soils produced one of the richest and most extensive temperate rainforests in the state. Before white settlement the Plateau was covered with dense climax forest — the Dorrigo Scrub. Enormous quantities of softwoods, red cedar, hoop pine,

A log train on the Briggsvale tramway, September 1930. Note the light rails (approx 20 lbs/yard).
Photo: FM Bailey, per NSW Forestry Commission

coachwood and rosewood (to name a few) colonised the richer soils, while even larger stands of moist hardwood— turpentine, tallowood, brushbox, blue gum etc, predominated on the less fertile soils.

River Transport[1]

For many NSW settlements in the early years, the only link with the outside world was by ship. During the last century and up until the 1950s a large fleet of river boats and coastal vessels serviced the ports and river settlements. The story of the Bellinger River trade could take up a book on its own.

By the 1860s the cedar stands in the Bellinger valley were attracting regular visits by trading schooners and the like. The head of navigation for sea going vessels was at Fernmount, some three miles down stream from present-day Bellingen. As the lower reaches were cut out, the cedar cutters moved up river, rafting logs downstream to be picked up by sea-going vessels.

The timber cutting and clearing activities in the Bellinger Valley had the same effect as in other New South Wales rivers — erosion and silting. The river channel from the estuary port of Urunga upstream to Fernmount became increasingly more difficult for the larger coastal vessels, in spite of the full time efforts of a dredge. Steam powered droghers — shallow draft paddle wheelers — took up regular services between Bellingen (their head of navigation) and Urunga, and so Fernmount declined as a port and business centre to become a small village.

A far more serious problem for the river trade was the worsening state of the bar across the Bellinger River mouth. Attempts to build break-water walls failed in the face of winter storms and limited finance. By the 1930s conditions over the bar had deteriorated to such an extent that crossings by even shallow drafted vessels became very dangerous, and the shipping trade was finally strangled. Steam droghers continued to ply the Bellinger for several more years, delivering goods to the railway at Raleigh for delivery to the port of Coffs Harbour, until finally displaced by the internal combustion engine and all weather roads.

Roads and Road Transport

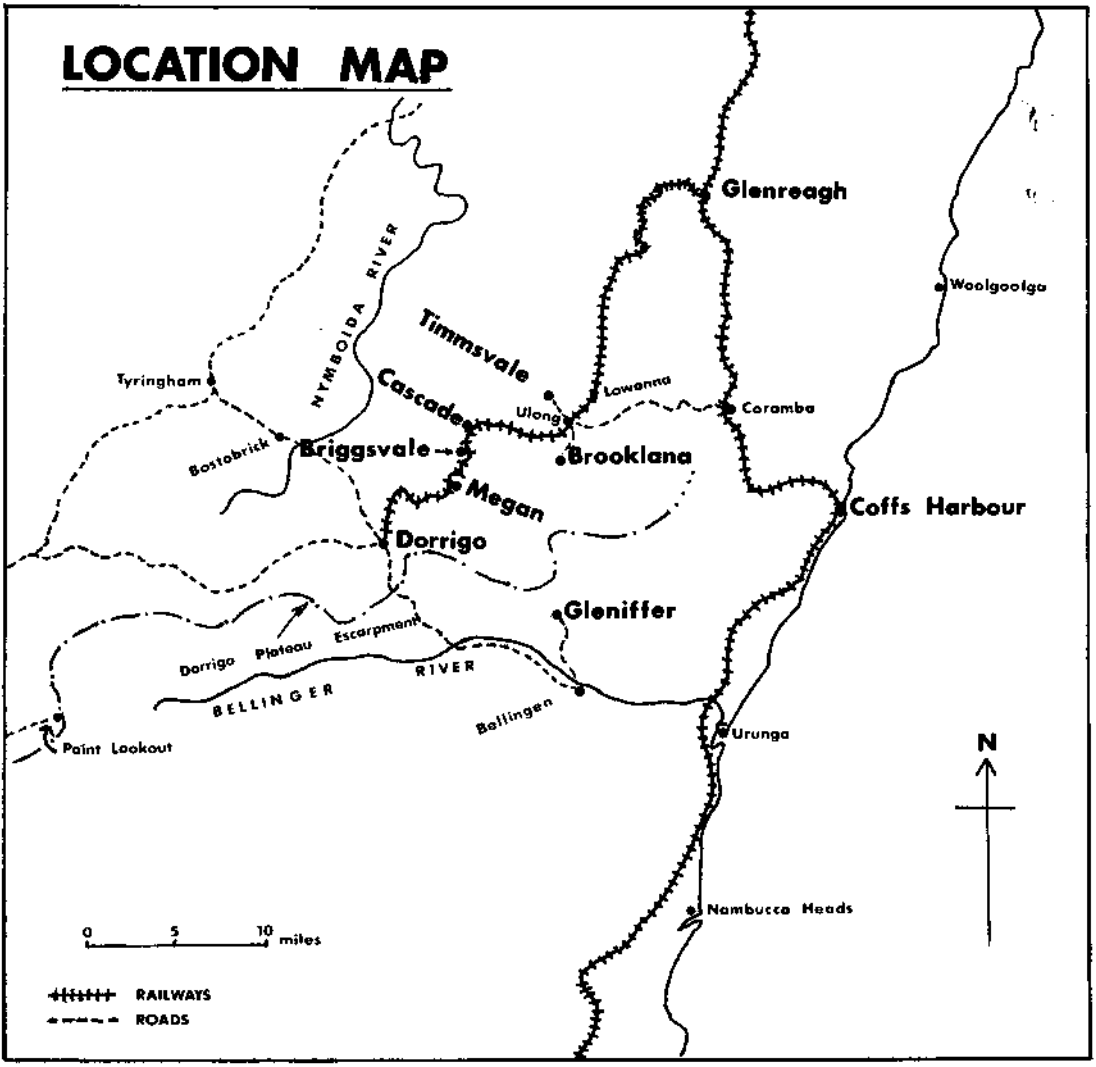
The settlement of the Dorrigo Plateau and the development of the timber industry was very much hindered by the rugged and inhospitable nature of the country surrounding the Plateau. The early roadmakers had to contend with steep and unstable mountainsides, high rainfall and dense forests. Once made, the early roads were nearly as much trouble to keep open, while wet weather and mud combined to make them impassable for days at a time.

Road links to the Dorrigo were slow to develop. The first road followed the earliest settlers moving east from Armidale and the drier New England Tableland, and connected Armidale with Dorrigo, via Tyringham in the 1870s. Next followed the steep Dorrigo Mountain Road down to the Bellinger River Valley, cut between 1882 and 1888, and continually upgraded ever since. The final link, between Dorrigo and Coramba to the east, on the Coffs Harbour Railway, was not finished until the 1930s. These three roads still provide the main access to the Dorrigo Plateau, though none could be called all-weather roads until the Mountain Road was tar-sealed in the 1950s.

The cedar cutters working the fringes of the Dorrigo Scrub provided the first impetus to road development. By the 1870s cedar logs, sawn to sizes called junk, or flitches, were hauled by horse drawn wagons to Armidale, a 75 mile journey taking up to two weeks over primitive tracks. This was an expensive form of transport, suitable only for valuable timber such as red cedar. Armidale was also a long way from coastal markets.

The innovative cedar getters developed a novel but wasteful method of getting cedar logs down to the Bellinger River, 2000 feet below the Plateau. Logs were dragged by bullock teams to the edge of the Plateau, and were slid, or "shot", over the edge of a precipitous descent called Ferny Face. They were retrieved at the bottom, hauled to the banks of the Bellinger River, and rafted downriver for pickup by coastal vessels sailing to Sydney or beyond. Due to high wastage a road was surveyed down Ferny Face along the route of the old bridle track by 1876. Construction commenced in 1882 and finished around 1888, an enormous task down the steep, unstable mountainside. This road, continually upgraded, today forms the highly scenic main road from Dorrigo down through Bellingen to the Coast.

The construction of this road marked the beginning of the development of Dorrigo, today the largest town and centre of the Plateau, and the Dorrigo Plateau timber industry. Initially small sawmills were established and the products were carried down the mountain in big timber wagons averaging in the vicinity of 6000 super feet of sawn timber per load. Teams of 11 to 12 horses were employed to haul the loads, although at times crack drivers would harness up 14. The trip from Dorrigo down the mountain to Bellingen was long and difficult. Two or three days were reckoned average in dry weather, a week or more in wet conditions.



The trip was not without its hazards either — loads often capsized and wagons became bogged up to the axles in mud Fatalities were recorded when horse teams and wagons toppled off the road into gullies a hundred feet or more below. All manner of supplies and saw-mill machinery were backloaded up to Dorrigo in the same manner. Heavy loads such as steam boilers needed up to 17 horses and three weeks to ascend the mountain, a feat made more dangerous when meeting a fully laden timber wagon coming down, on a track barely wide enough for one.

Rail Transport

Dorrigo sawmillers and merchants were not happy with their slow transport links with the outside world. Wet weather, a frequent occurrence, could delay goods for days or even weeks. The Bellinger is an unpredictable river, prone to rapid flooding, and apart from stopping river traffic, there were times when goods and timber stacks awaiting shipment at Bellingen's East End wharf were swept away by flash floods. Agitation for a railway to Dorrigo started early, with the first scheme being promoted in 1902.

Over the next few years many subsequent proposals were put forward, for narrow and standard gauge lines; lines for conventional and geared locomotives, from Glenreagh, Coramba and from

Bonville. In each case the rugged terrain between the Dorrigo Plateau and the North Coast railway dictated circuitous routes and expensive earthworks. Finally the Parliamentary Committee on Public Works approved a route from Glenreagh to Dorrigo on 17 June 1910. It was 43 miles long with 8 chain minimum radius curves and maximum 1:30 compensated gradients. The enabling Act was passed by Parliament on 28 December 1910. Dorrigo had to wait another 14 years before the line opened on 23 December 1924 as construction did not start until 1914 and took another 10 years to finish.[2]

The coming of the railway was the event that really opened up the Eastern Dorrigo. No other form of transport then existing could match the tonnages the railways were requested to move, and this in spite of the line's steep gradients which restricted the loads steam locomotives could haul.[3] In addition to scheduled services, innumerable special goods trains were run to pick up livestock, agricultural produce and timber consignments. Every station and siding between Glenreagh and Dorrigo had timber loading facilities, while private sidings served the on-line sawmills. In this way enormous quantities of logs and sawn timber products were funnelled via the railway to Australian and overseas markets.

Scheduled services initially comprised one daily mixed train, from Glenreagh to Dorrigo and return, five days a week. In 1932, in the midst of the depression, this was reduced to a tri-weekly service as an economy measure. The daily service was never re-instated. Instead as road transport steadily made inroads into the railways' traditional business, the service was reduced further in the 1950s to one mixed train a week. The line was always prone to landslips and washaways in wet weather, and following severe landslides below Timbertop in 1972 services were officially suspended, never to resume.

Logging Tramways

Seven timber tramways have been identified on the Dorrigo Plateau, built by sawmillers to bring logs from the forests to their mills. Compared with other timber districts, the tramway era was a late starter in the area, only two lines pre-dated the opening of the Dorrigo Railway in 1924.

The Dorrigo tramways were relatively small operations, with the exceptions of the Briggsvale Tramway with its steam traction, and the spectacular Gleniffer Incline.

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Cascade village and the NSWGR Dorrigo railway, taken from Eades mill, 1940. Photo: N Sly

2. THE GLENNIFER INCLINED TRAMWAY 1911-1928

The first logging tramway on the Dorrigo Plateau was not so much on the Plateau, as up on the side of it. To gain access to the rich hoop pine forests on the Plateau, the Bellingen Timber Company in 1911 began the construction of a two mile long inclined tramway near Gleniffer in the Bellinger River Valley. The incline was built up the face of the steep escarpment which forms the southern boundary of the Dorrigo Plateau. It ascended 2600 feet (790 metres) on an average gradient of 1 in 4, though the lower section was much steeper — up to 1 in 2.5.

The Bellinger Timber Company[1]

The Bellinger Timber Coy was a syndicate formed of local Bellingen businessmen, including WJ Hammond and AE Wheately of Hammond & Wheately's Emporium at Bellingen. This company was often referred to as the "Pine Syndicate", and their tramway as "The Pine Line". The existence of the Plateau pine forests had been known for many years, but the problems of access and transportation had prevented any significant logging. The Company determined to solve the problem of access by building an ambitious inclined tramway up the escarpment

Tramway Construction

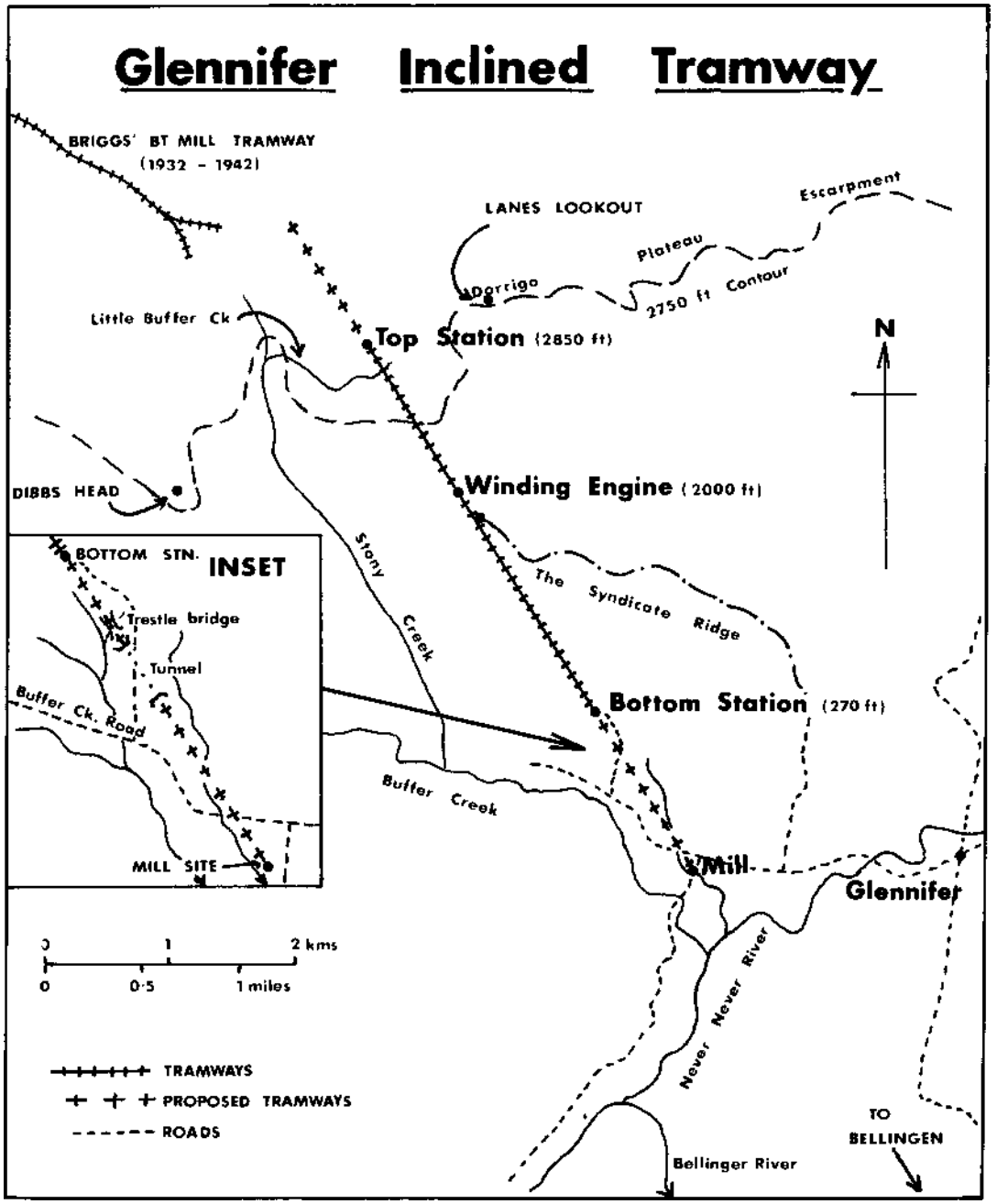
The initial survey was carried out in late 1910, and was a major exercise in itself. The requirements were for a straight route with civil engineering works minimised to contain costs, and the chosen route up the rugged and steep escarpment is still a credit to the surveyors' skill. For the 4 ft gauge[2] tramline, thousands of rough posts were sunk into the ground to anchor the line to the mountainside. 4 in x 3 in wooden rails cut from local brush box were spiked to wooden sleepers. Generally earthworks were restricted to a few shallow cuttings and sidlings, but a number of small trestle bridges and a large amount of timber support work was required to maintain a consistent fall. The incline took two years to construct and cost £10,000[3] with the first shipment of logs being brought down from the top in January 1913.[4]

To power the incline, a steam boiler and a double drum steam winch were sited half way up the incline. They were laboriously dragged up the escarpment over a circuitous but less steep route by two teams of bullocks yoked together — over 40 beasts in all. Even then the job took over four weeks. On the steepest sections the wire rope from the boiler and its wooden sled would be taken up the hill for a hundred yards or so, threaded through a pulley wheel attached to a stout tree, then back downhill to the waiting bullocks. The yoked teams would then heave downhill, lifting the load another few yards or so. The job was made even more difficult because the bullocks had to be taken down to the river flats every second day to pasture, as there was little feed on the slopes.

Description of the Incline

Starting at a point near Buffer Creek Road, at the bottom of the escarpment, the incline started the steepest part of the climb — 1.1 miles of 1:2.5 to 1:3.5 gradient up the ridge route. One of the larger trestle bridges was located on this section. At the 1.1 mile mark the grade eased to 1:6, and on one of the rare level areas met, the steam boiler and winch were located. A further 0.75 mile climb of 1:4

Bellingen Timber Company's inclined tramway at Glennifer, circa 1913, probably in the vicinity of Little Buffer Creek.
Photo: Courtesy Bellingen Historical Soc, original donated by Mrs Toms



brought the incline to the top of the escarpment at 2800 feet (850 metres) above sea level, crossing the boundary between the lower hardwood forests and the upper softwood forests on the way. The line continued for a further 0.35 miles, descending to cross Little Buffer Creek and another couple of small gullies on small trestle bridges, then climbing to the top station at 2850 feet (870 metres) asl.

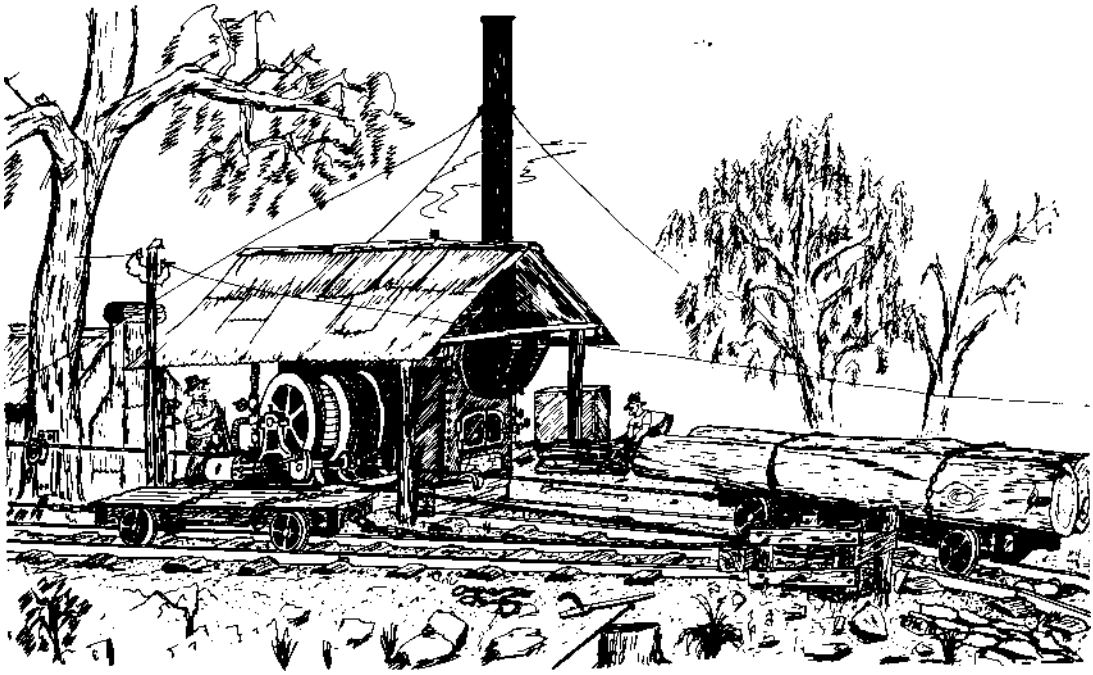
At the top station was a seven foot diameter bull-wheel mounted horizontally. The wire rope from the steam winch drum ran up alongside the tramline, suspended on pulleys hung from convenient trees, looped around the bull-wheel, then down the centre of the tramline on cable rollers to hitch onto the top end of the top truck. Another wire ran from the bottom end of the top truck back down to the steam winch drum. It is assumed this arrangement was necessary because of the up and down nature of the top section of the line — the laden top truck had to be hauled up from Little Buffer Creek to the edge of the escarpment before it could resume its downward journey under gravity.

There was a more conventional arrangement for the bottom section. A single wire rope from the winch's second drum ran down the centre of the track on cable rollers to attach to the bottom truck. The incline was a semi-balanced one; raising the empty bottom truck helped to brake the descent of the laden top truck.

Operations

Pine logs felled in the Plateau forests were dragged to the top station by bullock team and loaded onto the empty top truck. The "top conductor" telephoned the winch driver when all was ready; the winch driver then telephoned the "bottom conductor", and if he was ready, started the winch. One local source has it that the log(s) were off-loaded from the top truck to the bottom truck at the winch site. Another source says there was a passing loop, though this appears impractical because the cable arrangements on the top section would prevent the trucks passing each other as in a conventional passing loop. Both conductors were required to ride on the trucks, though it is not now clear what they could have done in the event of a mishap. It is also unclear what happened at the half way point, at the steam winch.

Initially bullock teams took the logs from the bottom station to the Bellinger River Wharf at Bellingen. There they were loaded onto a steam punt or drogher for the trip down river to the river mouth at Urunga, for trans-shipment to coastal steamers bound for Sydney and other points. In later years the Company purchased a steam traction engine to haul logs to the river. This traction engine is believed to be Fowler No. 13007, imported to Australia in 1912 by the Austral Engineering Supply Coy Ltd. It had a 6.75 in diameter high pressure cylinder, 11.5 in low pressure cylinder, and a 54 in x 6 in flywheel.[5]



The steam winding engine at the half-way point on the Glennifer inclined tramway.
Artist: Bob McLeod

A Fowler 10hp steam traction engine hauling pine logs from Glennifer in the early 1920s. The driver is Wal Wilkinson. Photo: Mrs Toms, per VA Lovell

Every Sunday the regular winch operator, Roy Humphris had to climb up the line (no Sunday stroll either) to the winch to have the fire lit and steam raised ready for operation first thing on Monday morning. He would stay overnight in the two roomed hut built there for that purpose. The first trip of the day was run to bring up the fireman, the two conductors and the timber workers from the bottom station.

Operation of the incline was not without its problems. The Dorrigo Plateau has a very high annual rainfall, and tree felling and log hauling operations were often stopped for weeks at a time. During the frequent thunderstorms that develop along the escarpment, lightning would seek out the long wire cables, sending out long blue sparks from any metal work in the vicinity. The water supply for the boiler was piped from a water seep under a nearby rock ledge, and when this failed in dry weather operations had to stop. According to local informants, riding the trucks was not for the faint hearted, as in the last years of operations some of the trestle bridges and timber supports would sway vigorously as the laden trucks passed over.

The incline was popular with tourists in the early years as this contemporary account illustrates:[6]

> The Bellingen Timber Company, Limited, was formed about four years ago to exploit the pine on the Bellingen side of the Dorrigo Range; and this involved the carrying out of a big engineering scheme for lowering the timber down the mountain sides. A tramline was constructed up one of the main spurs, a distance of about two miles from the foot of the mountain to the summit, which is at a height of 2,500 ft . . . This particular tramline is the objective of a large number of people on pleasure bent, many of whom have ridden to the top of the mountain on the trucks in a few minutes, obtaining therefrom magnificent views of the Bellingen Valley and the Pacific Ocean in the distance.

Expansion

Around 1922/24 the Bellingen Timber Company decided to extend the tramway in both directions. They planned to extend the line from the top station several miles further onto the Plateau, to tap new timber reserves. It is not known how they planned to operate this extension (horse team or cable extension) as it never eventuated.

Work did commence however on extending the line from the bottom station 1 mile to a small

sawmill that the Company either purchased or established on Buffer Creek Road. The mill site is in a direct line with the incline, suggesting it was established there by the Company. It was intended to operate this section by an extension of the bottom cable haulage. Considerable effort was expended to ensure an even grade from the bottom station to the mill. This involved a large trestle bridge, moderate earthworks and a short tunnel through a low hill. These engineering works were completed and a quantity of steel rail purchased for the extension, when the Bellingen Timber Company went into liquidation in 1928.

Closure

It appears that the operation was battling to make a profit most years, and there were many occasions when operations slowed down or stopped during the 12-14 years of the incline's life.

As timber was cut out on top, it became more expensive to haul it over longer distances to the top station. By the mid-1920's maintenance costs began to increase as large sections of the incline's woodwork came due for renewal. The opening of the Dorrigo Railway in December 1924 provided fierce competition by opening up a cheaper way of transporting Plateau timber to the coast, and large sawmills were soon established to take advantage of this. On top of this, the Bellinger River bar had become increasingly dangerous for even small coastal steamers to cross, making shipping schedules for the Company's timber uncertain, and shipping rates and insurance more expensive.

The company's assets, which included three miles of 1 in hauling rope, boiler, engine, tramway sleepers and wood rails, were offered for auction in March 1929.[7] Apparently no takers came forward, because in 1932 the assets were purchased by GL Briggs & Sons Ltd, of Briggsvale.[8] In 1932 this company rehabilitated the incline sufficiently to haul machinery and steel rails from the small Glennifer sawmill up to the Plateau to use in their own operations. The fate of the steam winch and traction engine is unknown. The steam boiler that powered the incline remained in place until 1938 before being sold by Briggs and shipped to Newcastle.

The Remains Today

The upper section of the incline, above the 750 metre contour, lies within the boundaries of the Dorrigo National Park. Most of the remains of the incline are preserved in this section — sleepers, wooden rails, cable pulleys and rollers, and the bull wheel at top station. Below this section are the hardwood forests, mostly in private hands. Logging operations, (especially by crawler tractors) and bushfires have destroyed nearly all traces of the line. A few old bricks remain at the site of the steam winch. Amidst the lantana thickets at bottom station can be found the remains of the aborted extension — a cutting, an embankment and traces of the tunnel. A few concrete foundations mark the site of the Company's small mill on Buffer Creek Road.

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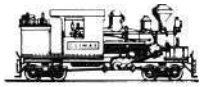


Messrs Frank Box and Jack Boulton on the Glennifer inclined tramway, c1913.
Photo: Courtesy Bellingen Historical Soc, original donated by Mrs Toms

3. THE BROOKLANA TIMBER COMPANY'S TRAMLINE, 1915-1928

Brooklana Sawmill

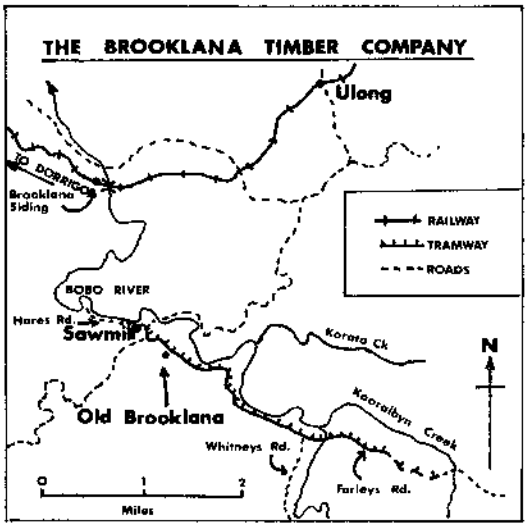
The first logging tramway to be built on the Plateau itself was the Brooklana Timber Company's line at Brooklana, some 18 miles east of Dorrigo. This Company built a well-equipped softwood mill among the native hoop pine forests covering this section of the eastern plateau. Equipped with two boilers and a 120 hp steam engine to drive the mill machinery, the mill had a capacity of 150,000 super feet per month.[1]

The Brooklana Mill started operations in May 1914, using horse and bullock teams to haul logs in from the forest In January 1915 they applied to the Dorrigo Shire Council for permission to construct a four-mile tramline from the mill to Koralbyn Creek.[2] Permission was apparently granted and the line was built under the supervision of the Shire Engineer.

Brooklana Tramway

The Brooklana Tramway was a wooden-railed, horse-drawn line, apparently 3 ft 6 in gauge. From the mill site on the Bobo River, near the present-day Hares Road, the tramway ran generally south east for about four miles, up the valley of the Bobo River to the Koralbyn Creek area. The tramway is believed to have followed the route of the present day Farleys Road,[3] as indicated on the accompanying map, but this has yet to be verified by site inspection. The Company was obliged to pay £1 rent per year for a Special Lease to run the tramway through part of Brooklana village from 1 January 1918.[4] No details of the tramway operations have been uncovered to date.

Sawn timber was taken to Coffs Harbour by bullock wagon, a two-day journey over very indifferent roads down the mountainside and across to the coast. The Glenreagh-Dorrigo railway reached Ulong in 1923, and from then on the Company's timber was consigned by rail to Coffs Harbour. The Dorrigo Railway passed about 1.5 miles north of the mill, which placed the Brooklana Timber Coy at a disadvantage compared to on-line mills.



Closure

The Brooklana Mill closed in February 1928[5], the land, buildings and machinery being auctioned on site on 29 September 1928.[6] No tramway rails, locos nor tractors were listed among the assets, only tramway trucks. Therefore, it seems apparent the tramway remained a wooden-railed, horse drawn operation. It is presumed the tramway operated for most of that time. Some of the plant, including the tramway trucks were acquired by the Timmsvale Timber Coy in 1929,[7] for their operations on the other side of Ulong. Today almost no traces remain of either the mill or the tramline.

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4. THE BRIGGSVALE TRAMWAY, 1925-1942

GL BRIGGS & SONS PTY LIMITED

Introduction

George Largie Briggs (sen) was the founder of the Briggs family timber company. His father was a captain in the Royal Navy, a fairly wealthy man by repute, but who lost a small fortune speculating in gold shares. He came to Australia in his own ship to recoup his losses and after trying his hand at various ventures, moved into the timber business.

GL Briggs thus grew up in a sawmilling environment He was one of the first people in Australia to promote the use of handsaws, as a result of taking a correspondence course from the USA. Briggs initially made a good living building sawmills on contract (he would never work for wages), many incorporating handsaws, for owners in eastern Australia. In later years his wife would say that she could never understand why he bothered to start his own sawmill, because they were so much better off when he was only building them.

The last mill he built on contract was Bell & Frazer's at Balmain — just north of where the present Iron Cove Bridge stands. He fell ill during this job and, while in hospital, met a Mr Bradley who was in the next bed. Bradley owned a Cyprus pine mill up in the Pillaga scrub, but couldn't make a go of it. It seems that though he was a good businessman he was not a very good sawmiller. GL Briggs, on the other hand, was an excellent sawmiller. They decided to pool talents. Briggs got the mill going on a contract basis, and Bradley was sufficiently impressed to offer him a half share in the business, which was accepted.

Dorrigo Sawmill

GL Briggs however did not like the Pilliga and the problems involved in milling Cyprus pine. Thus, when the partners heard of a sawmill up for sale in Dorrigo, they came across, inspected and bought it from a Mr Sharpe. This was in 1911 or 1912, after the construction of the Glenreagh-Dorrigo railway had been approved, which illustrated the business acumen of the partnership. The mill was on a site that is now occupied by the current Shire Depot in Dorrigo, and was engaged almost exclusively in milling hoop pine.

The Briggsvale mill and tramway in 1928. Logs were simply tipped off the tramway trucks and rolled to the mill. Photo: E Harney, per Mrs I Smith

This mill suffered from the perennial enemy of sawmills — fire. In October 1913 and again in September 1915 it was destroyed by fires. After the second fire Bradley retired from the milling business and Briggs bought out his share.

Megan Mill

The mill was re-established at Megan, some 8 miles east of Dorrigo, and was described in a 1917 publication as follows:[22]

> This mill, which only treats pine, is compact and has every appliance that is essential for turning out first class products. With a fine modern Canadian plant the mill is specially designed for cutting wide timber. All narrow sizes are machined into flooring and lining, large quantities of the latter being used in the construction of carriages by the Victorian Railway Department. The head of the firm is an experienced mechanical and milling engineer, and has installed a lathe in the fitting shop where all necessary repairs to the machinery are effected. The mill, which is capable of turning out 30,000 super feet of timber a week, is situated in the midst of one of the largest virgin pine forests on the plateau, which will eventually be thrown open for settlement. The whole product is consigned to Commonwealth and Victorian Governments, and Victorian and Tasmanian merchants. All export timber is sold by the firm's agent in Sydney, Mr Arthur H Hassall, 31 Hunter Street.

Dave Durie started work at the Megan mill when he was 15 years old and learned the joinery trade. He recalls the mill was a small affair. A steam boiler powered all the machinery: Canadian saw, backing saw, a planing mill and a lathe. Softwood logs were hauled from the forest by bullock wagon and were cut green — "the greener the better". Sawn timber was carted by horse wagon to Dorrigo, then down the mountain to Bellingen. There was a big market in those days for 4 in x 0.5 in lining boards and 4 in x 1 in flooring boards, specially for the Victorian Railways.

The Megan mill operated for about eight years, succumbing to fire in 1923.

The Move To Briggsvale

Briggs was keeping an informed eye on the slow progress of the Glenreagh-Dorrigo Railway construction, and in 1920 obtained a sawmill licence from the Forestry Commission for a mill at a location "from the 12 mile 30 chain peg on the surveyed Glenreagh-Dorrigo Railway, 5 chains west, 10 chains south, thence 5 chains east of the railway." This location was in the midst of the recently declared Wild Cattle Creek State Forest, SFNo. 488, which was dedicated in June 1917 and added considerably to over the ensuing years. This brought the Briggs' operations under the control of the Forestry Commission of NSW, a relationship not without its ups and downs over the years.

Following the Megan fire the sawmill was re-established by late 1923 at this location which became officially known as the village of Briggsvale. The mill was fully operational by the time the railhead reached Briggsvale in January 1924. Timber was almost immediately being consigned by rail,[1] as backloading on the contractor's construction trains, ending the horse wagon era and with a considerable saving in freight rates.

GL Briggs had five sons — Roy, Frederick, George Largie junior, John Lennard and Tom. All the boys worked with their father at the Briggsvale mill in the years prior to World War 2. George Largie junior in particular was a dynamic individual who learned both the practical and the commercial aspects of the industry. He worked for a while with the company's Sydney marketing agent, Arthur H Hassall — when the Briggs family was still operating the Megan mill. Largie was instrumental in setting up the family company for purposes of continuity and also to avoid the legal complications of partnerships. GL Briggs senior handed over the reins to Largie fairly early in the piece, by 1930, and worked on in active retirement until the mid-1950s.

THE BRIGGSVALE SAWMILL

Plant

The Briggsvale mill was erected in late-1923, in the middle of virgin forest, but on the surveyed route of the Glenreagh-Dorrigo Railway. The mill was a small affair at first; wood-fired, steam-powered and sawing exclusively softwoods. A steam winch was sited at the mill to draw in logs from the surrounding forests. The arrival of the Dorrigo Railway in January 1924 ushered in a new era of cheap transport of timber on a large scale, and the mill underwent the first of many expansions.

Old hands recall that the Briggs always had good plant, which was periodically added to in order to keep place with demand. In 1927 a large steam kiln capable of drying 40,000 super feet of one inch timber per charge was installed, as was the first electricity generator. By 1928, the mill was cutting over 2 million super feet of timber per year,[3] in 1936 this had grown to over 7 million super feet[4] and the Briggsvale mill had become one of the largest in NSW. The mill featured a large bandsaw for breaking logs down, a 12-bladed gang-saw, circular saws on the planing and docking benches, and a large steam log turner called "the nigger",

Brlggsvale sawmill in September 1936, showing the small rail mounted steam crane. A NSWGR S-truck is on the mill siding behind.
Photo: WAJ Maston

installed in 1929.[5] Mill firemen disliked the steam nigger as live steam had to be fed through the cylinders continuously to keep them hot and ready for action. This made it a lot harder keeping steam pressure up in the mill boiler. By 1936 a veneer lathe and a plywood mill were installed, and drying kilns for veneer and plywood completed the picture.

The Company laid in a private railway siding at Briggsvale adjacent to the mill, costing over a thousand pounds. Much to their chagrin it suffered major damage during heavy rain in April 1924,[2] and had to be rebuilt Apparently insufficient attention has been paid to the necessary drainage during the initial construction. The siding was officially opened as Briggs Siding with the rest of the Dorrigo Railway on 23 December 1924.

Operations

When first established in 1923 the mill cut softwoods exclusively, particularly hoop pine, sassafras and coachwood varieties. As the market for Australian hardwoods began to develop, the Company adapted its plant and its methods and began to cut and mill hardwood species such as tallowood, brushbox, and turpentine. A feature of the Briggsvale mill in the early years was the extensive open-air seasoning yard through which the tramway ran into the mill. By the 1950s the mill was cutting nearly all hardwoods.

A large market during the thirties was the supply of coachwood "junk" for the Holden car factory in South Australia, for motor bodywork. In this context, junk refers to a particular timber size; coachwood for the Holden contract had to be top quality. Ex-employees recall that times were tough during the Depression years. As a sawyer on the bench you were allowed 1 /16 in over or under when cutting timber to set widths. If you went over they were on to you for wasting timber, if you cut the under width they wouldn't dock your wages but they would replace you on the saw bench pretty darned quick — you'd be demoted at lower pay!

An early initiative at Briggsvale was the installation of one of the first veneer lathes in the state. The production of veneer and plywoods became an important part of the mills operations, and still is today. During the Second World War, production of veneer and plywood for the Mosquito fighter bombers was reckoned a high priority war industry. Scarce road trucks and even scarcer petrol were made available to bring in selected coachwood logs over long distances to peel into veneer, and a military guard was provided at the mill during the critical stage of the war. Dave Durie, an expert on the Briggs' veneer lathe, recalls that the logs had to be absolutely perfect, no knot holes or blemishes, to peel veneers as thin as one eightieth of an inch.

Briggsvale Village

Staff cottages and a barracks were built by the Company next to the mill in 1923. Not surprisingly the village was named Briggsvale. Before the arrival of the Dorrigo Railway platelayers in late 1923, it was an isolated spot surrounded by virgin forest A

rough bullock track was the only link to the nearest village, Megan, four miles west

The arrival of the railway brought prosperity. By 1928 electricity and piped water had been connected to most houses, a public telephone[6] was available at the Manager's house, and Briggsvale had been declared a polling place under the Electoral Act.[7] Nominal rents were charged, but occupancy was conditional upon employment — during the Depression workers were evicted if dismissed or laid off. There was no school at Briggsvale, children had to go to the next village, Cascade, 2 miles east.

At its maximum extent over 100 people lived at Briggsvale. Although about 40 people are still employed at the mill today, only a handful live at Briggsvale.

The Mill Today

The Briggsvale mill today is a thriving concern still operating under the ownership of the Briggs' family company, producing hardwoods, veneers and plywoods. Of the 40 odd sawmills that once operated on the Dorrigo plateau, it is the oldest among the handful left still operating.

Operations today are very different from those in the 1920s and 1930s. Electricity has replaced steam; crawler tractor and diesel road truck have replaced the steam winch, bullock team and tramway, and logs are brought to the mill from forests all over, instead of from exclusive-access local blocks of timber.

A horse team snigging a log, with a spar tree and loading jib in the background.

Source: John Briggs

TIMBER GETTING AND BUSH OPERATIONS

High Lead Logging

Timber getting operations at Briggsvale were many and varied over the years. When the mill was first established, logs were hauled from the forest by the simple expedient of a steam winch located at the mill itself. By 1925, most of the nearby timber had been cut out and construction of the tramway begun.[8]

GL Briggs Senior was an advocate of North American logging practices, particularly high-lead logging. This was a very efficient method of hauling logs out of rough country and deep valleys. The wire rope from a steam logging winch was looped over a pulley block suspended from a high tree known as a spar tree and taken up to half a mile out into the forest, around a terminal pulley then back to the winch in an endless loop. In this manner logs could be hauled in from up to half a mile away. Briggs had a double drum Harman winch with a mile of 1 inch steel rope. The last high lead depot was set up in 1940.[9]

The logging winch was supplemented by horse and bullock teams hauling logs to the tramline in easier country. To feed these teams, truckloads of fodder were railed in to the mill regularly from the coast, there being little natural feed in the forests. In 1935 the Company purchased its first kerosene powered crawler tractor. It was perched on a log bogie and hauled out to the forest by the Climax loco.

Bush Camps

As the tramway extended further out from the mill, it became more economical to house timber getters out in the bush rather than back at the mill. Tents, cooking and eating huts were supplied by the Company for a weekly rent and supplies were brought out by train. On occasions when the train did not run, the men would push a small 4-wheel trolley along the line to the mill to pick up their supplies.

These bush camps became a feature of the operations at Briggsvale. At the peak of operations in the mid 1930s, 30 to 40 men were stationed in the bush. Wives and families lived out there too. The bush foreman, or bush boss, for much of the time was Bill Blythe, a tough two-fisted character who "used to fight every man he had to sack, and

The Harman steam winch at a bush depot. Photo: M Bailey, per Forestry Commission of NSW

everyone else too." During the hard times in the Depression, it was reckoned there were three bush crews at Briggsvale — one being hired, one working and one being fired.

THE BRIGGSVALE TRAMWAY

Construction

Construction of the Briggsvale tramway commenced in March 1925.[8] Using second hand steel rails and locally cut sleepers, about one mile of 3 ft gauge line was laid down under the supervision of Dan Reagan. This first section took the line over the only real obstacle on the tramway, Skookum Gully, a deep creek valley which ran between the mill and the big timber belt to the northwest

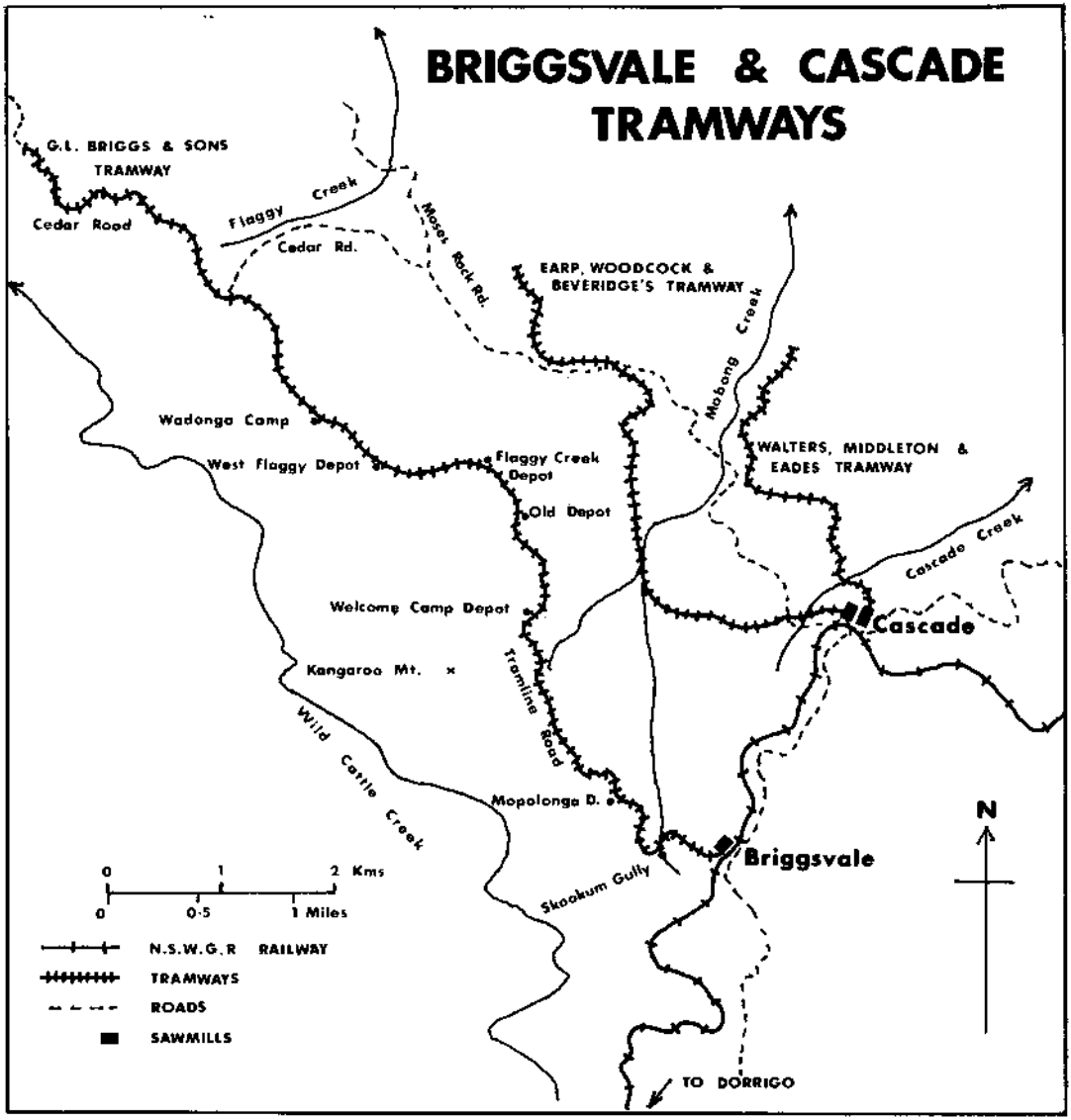
The line was built for steam traction right from the outset, and was also built to suit the requirements of the high-lead logging technique. The line therefore kept to high ground wherever possible, with easy gradients though many of the curves were quite sharp.

The tramway was continually relaid and expanded over a period of 15 years. Short sidings or branches were constructed out to blocks of good timber and the steam logging winch hauled out to the end. After the block was cut out, the branchline would either be extended further out to become the mainline, or be lifted up and laid down elsewhere, or be used to extend the old mainline. In this manner up to 26 route miles were laid down over the life of the tramway. However at its maximum extent, the Briggsvale tramway was only about seven miles long.

Second hand materials were used extensively, from locomotives to rails. Rails were purchased in 1928 from the Queensland Forestry Commission's operation on Fraser Island, and in 1932 as part of the assets of the Bellinger Timber Coy.

Description of the Line

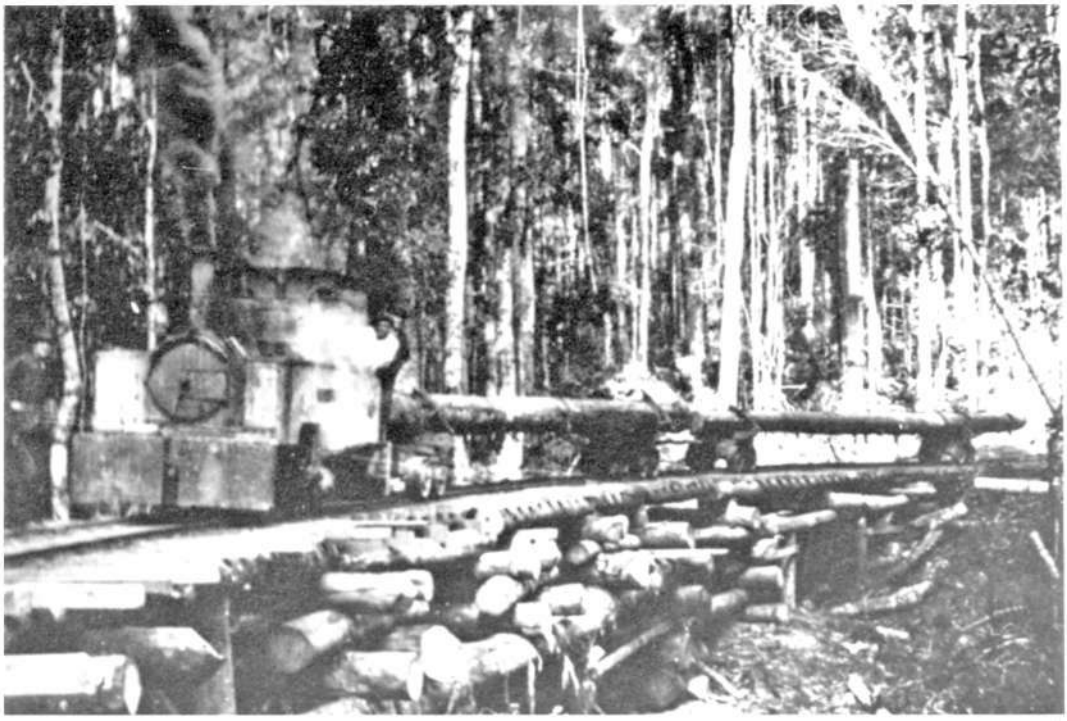
At the sawmill the tramway ran from the logyard, past the mill buildings, through the extensive stacks of sawn timber west out to the forest At most there were three sidings at the mill: the loco siding, a storage line for log bogies, and the old siding up to the NSWGR siding. Leaving the mill, the tramway headed due west on a gently descending grade to skirt a nearby hill, then dropped fairly steeply down to cross Skookum Gully at 0.75 miles on a modest trestle bridge. The climb out of Skookum Gully was



equally steep. For the next two miles the line headed northwest over gently undulating country, skirting to the east of Kangaroo Mountain and keeping to the divide between the watersheds of Wild Cattle Creek and Mobong Creek.

At the 3.5 mile mark, the line curved to the west to avoid Flaggy Creek valley, then continued in a northwesterly direction to the end of track at the seven mile mark. Earthworks were minor over most of the line, restricted mainly to shallow cuttings, sidlings and the occasional low embankment The last mile of line was getting close to the Nymboida River gorge and it was in this section that most of the civil engineering was required.

There were an estimated 12 bridges on the line, modest affairs built of logs laid pigsty fashion. The most notable was the bridge at Skookum Gully, not on account of its height or length, but because of its location. It was situated on a tight curve in a perpetually wet and gloomy creek gully with a steep



BEN BULLEN and a short logging train pose for the photographer on a small trestle bridge built "pig-sty" fashion on the Briggsvale tramway, circa 1927. Photo: NSW Forestry Commission

The A-class Climax hauls a log train through the forest, c1930. Photo: E Harney, per Mrs I Smith

grade on either side and, from all accounts, was a loco driver's headache.

The tramway was of light construction, using rail of around 201b/yd section spiked onto 8 in x 4 in hardwood sleepers. Ballast was used on many sections of the line. Mr John Briggs recalls that it was a perpetual job obtaining ballast, and that over the years two or three small ballast pits were used. Old log bogies were converted for use as ballast skips.

Logging camps, or depots were established at roughly half mile intervals on the line. It took about 12 months to cut out the timber at a depot, then the tramline would be extended and the whole depot — logging winches, boiler, huts, tents, etc. — would be moved out to the head of track to begin again. Sites identified include:

Mopolonga Depot	1	mile
Welcome Camp	2.6	"
Old Depot	3	
Flaggy Creek Depot	3.3	"
West Flaggy Depot	3.6	"
Wadonga	4	
X-Valley	6	

Other depots had odd names such as Ipana, Lone Pine and Q-Tree.

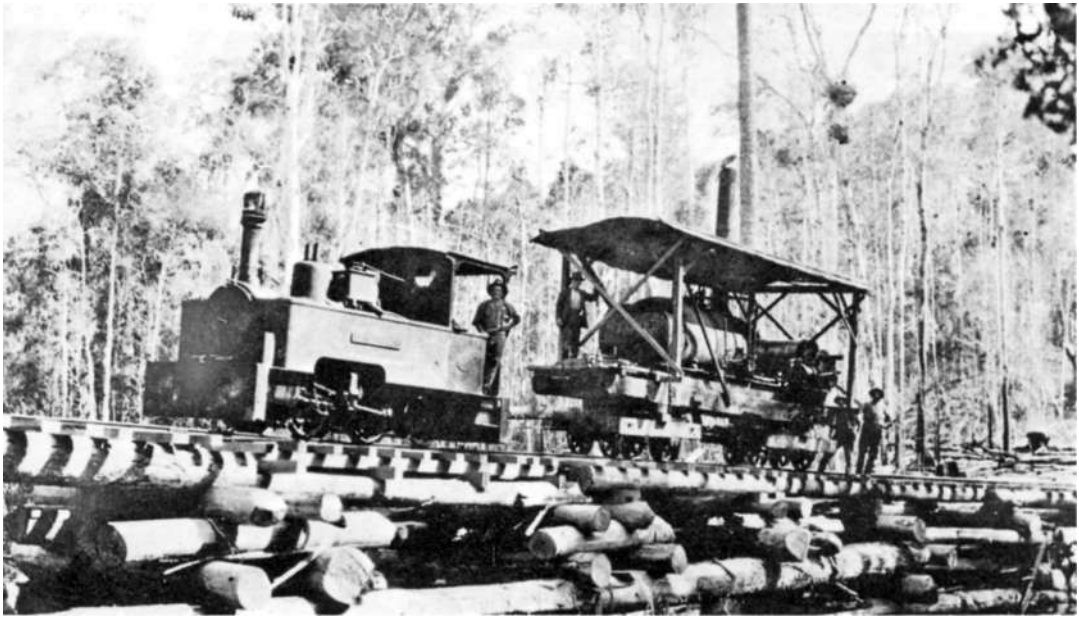
Locomotives

Two steam locomotives were used on the Briggsvale tramway, a Hawthorn Leslie and a Climax.

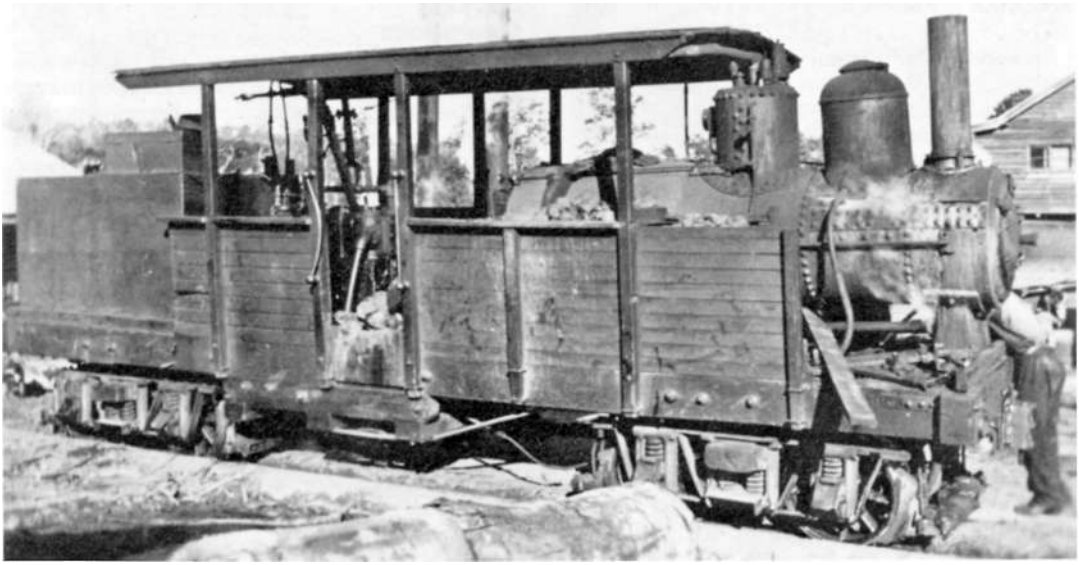
BEN BULLEN: On 8 March 1925 GL Briggs informed the *Don Dorrigo Gazette* that "an engine capable of developing 70 hp has been ordered from Lithgow and will arrive at the mill shortly."[8] This locomotive was Hawthorn Leslie & Coy, No. 2480 of 1910[11] named *BEN BULLEN* It was a 3 ft gauge 0-6-0T, with prominent cast nameplates fastened to each side tank. It was purchased second-hand from G & C Hoskins of Lithgow, who in turn had imported it in about 1916 for use on their lime tramway at Ben Bullen, NSW. This venture was wound up on 8 November 1922, and the loco was apparently stored until the sale to Briggs.[12] *BEN BULLEN* was railed to Briggsvale in a NSWGR open wagon. A stout timber gantry was built over the end of the siding at Briggsvale, and the little loco was hoisted up by means of wire slings. The K-truck was rolled out, and the engine lowered onto a 3 ft gauge siding laid inside the standard gauge specially for the exercise.

Unfortunately details such as cylinder and wheel dimensions, boiler pressure, etc, have not been unearthed, but surviving photographs show a compact little locomotive, modified for use on the Briggsvale tramway by fitting a crude spark arrestor to the chimney.

BEN BULLEN was the sole motive power on the Briggsvale tramway for almost four years, until



BEN BULLEN poses with the Harman steam logging winch on the Briggsvale tramway. John O'Lawrence is the loco driver. Photo: E Harney



A-class Climax geared steam locomotive on the Briggsvale tramway. The rectangular steel water tank at the rear replaced the earlier wooden one which had fallen to pieces when the loco arrived at Briggsvale c1928. Photo: NSW Forestry Commission

the arrival in 1928 of the Climax locomotive. As the tramway was extended further out into Wild Cattle Creek State Forest the limited water capacity of *BEN BULLEN* became a handicap. To ease this problem a square iron water tank was mounted on a 4-wheel log bogie as an auxilliary water supply. This tender was always propelled by the loco, which ran around it at the mill and the logging depots to maintain this arrangement

When the Climax locomotive arrived it quickly became apparent that it could haul twice the load of *BEN BULLEN*. It was relegated to secondary duties: shunting, short hauls, ballast trains and the like. During the Depression years of 1930/31 the loco was mostly stored out of use. When Briggs established their BT mill in August 1932, *BEN BULLEN's* boiler was used to provide steam power for the mill, and the rest of the loco was apparently scrapped. The sandbox however was remounted on the Climax's rear water tank.

The *CLIMAX*. In 1928 an A-Class Climax geared loco was acquired for use on the tramway. It came from Fraser Island, Queensland, where H MacKenzie & Co closed down their operation and auctioned their assets in June 1926.[13] However old hands at Briggsvale are positive that the Climax did not arrive until about 1928. In fact, they tell the story that when GL Briggs went to Fraser Island to pick up the second-hand rail that he had purchased, he saw the Climax loco "laying abandoned in the bush" and, reasoning that no-one wanted it, picked that up too. The story continued that he was surprised some time later to be summonsed on a charge of stealing a locomotive, but the matter was seemingly settled out of court The apparent delay between purchase and arrival at Briggsvale may have been due to one of the conditions of the auction sale — that the rails on Fraser Island would not be lifted until all the machinery and plant had been dismantled and moved to the wharf. It would also seem that the Climax did not attract a buyer at the main auction.

The early ownership and identity of the Climax are poorly documented It is believed to have been built in 1912, by the Climax Manufacturing Company, USA, and imported for use on the Great Northern Timber Company's line at Woolgoolga, NSW.[14] This venture ceased by 1916 and its assets were acquired by MacKenzies for use on Fraser Island The Climax loco is recorded as being on Fraser Island in August 1920[15] and again in May 1926.[16] The loco was not a success there, sand caused havoc with the bevel gears on the axles and line shafts and wore them out in a matter of months.[17] It is doubtful if the Climax saw much use at all on Fraser. The MacKenzie operations were purchased by the Queensland Forestry Department in 1926. The Climax does not surface again until

1928 when it was acquired by GL Briggs & Sons Ltd.

As acquired by Briggs, it was a 3 ft 6 in gauge machine, wood-framed, and with a round wooden water tank. The loco was regauged to 3 ft, possibly before arriving at Briggsvale, because it is said to have been re-assembled and steamed on the line on a Sunday "within two days of delivery". The original wooden water tank was removed and replaced with the square steel tank towed around by *BEN BULLEN* to increase water capacity. Surviving photos and old hands' recollections indicate the smokebox door builder's plate had been lost or removed before arrival at Briggsvale.

The Climax worked on the Briggsvale line between 1928 and about 1942. It was advertised for sale in 1945[18] but is believed to have been scrapped by EA Marrs about 1946, possibly following the 1946 sawmill fire. It is believed the engine unit was saved by EM Baldwin of Castle Hill, NSW, while the boiler was rumoured to have been used to power a steam drogher owned by Mitchells of Narooma, NSW. During 1987, an American enthusiast purchased the engine unit for restoration purposes.[23]

Both the Climax and *BEN BULLEN were* fired with coal, a stock being kept at the mill for that purpose. At Briggsvale the Climax's maximum boiler pressure was 100 psi.

The Mill Plant Register of 1934[18] gives an interesting insight into the manufacture and supply of spare parts for a Climax loco in Australia, long after the makers had gone out of business. Some examples are:

Bevel Pinion (without wings) £2.15.0
Bevel Pinion (with wings) £4.17.6
Vickers Drawing 7190B
CS Universal Wing Couplings (round shaft fittings) — Drawing 9019 . . . . . £4.5.6
CS Couplings — Drawing 9020 . . . . . £1.6.0
Crossheads. Vickers Pattern 9862 . . . . £3.17.6
Crankshaft — made by Overalls.
Splines and Gears — made by Sowerdales.
Cross Head Brasses—Pattern at JT Jays No. J113
Piston Rings — from AEC — 4 required — 6 11/16" x 9/16"
Gear Shaft — Shaft with High and Low Gears On. — Commonwealth Steel Sketch S.B./3

All major repairs including reprofiling of wheels was done at the Briggs Sydney factory. Up until the early 1960s a complete set of wooden patterns for the Climax was still held by the Company.

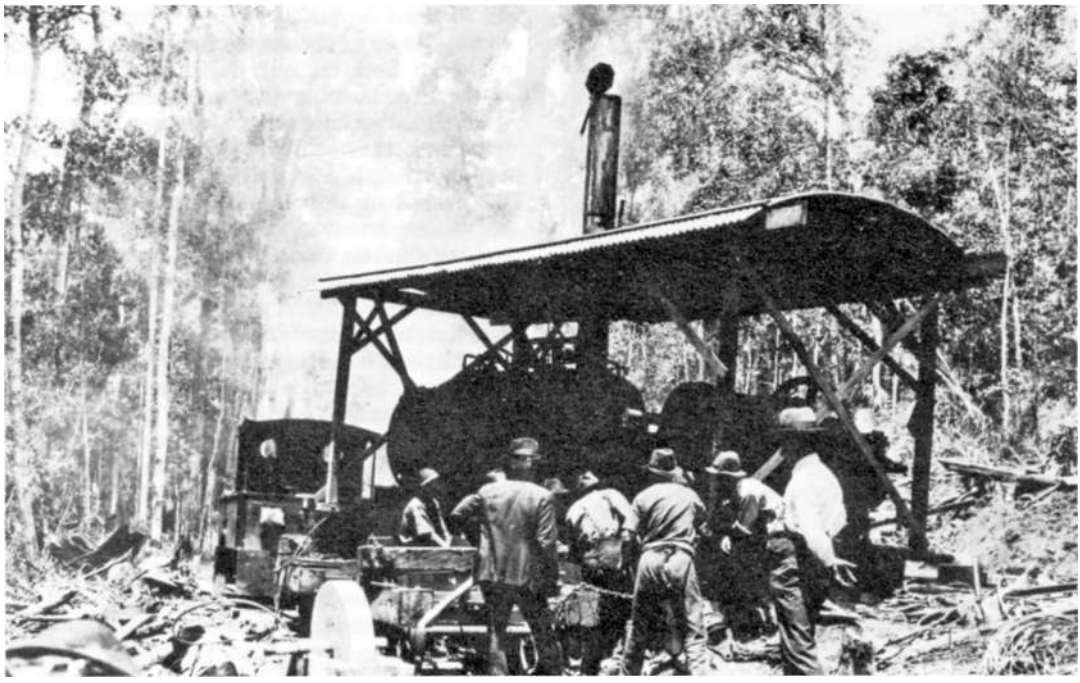
It is possible that difficulties in obtaining spare parts during the Second World War contributed to the demise of the Climax and the Briggsvale tramway.

Operations

There was no logstock kept at the Briggsvale mill. They cut and hauled in the logs as required to keep the production going, and keep the hammering costs (royalties payable) down. Thus the tramway was a very important part of the operation.

There were usually two return trips to the mill each day, and night shifts were worked during busy periods. A full load consisted of between 9 to 12 logs, each of 18 to 40 feet long. Empty log bogies were pushed out to the loading site by the loco, and full loads pulled back in. Propelling loads was frowned on due to the risk of pushing a log into the boiler or water tank in a derailment. This reduced the load the Climax could haul back to the mill, because if the loco was loaded up to its limit with a long trailing load, it tended to pull trucks off the line on sharp curves. For most of its working life the Climax ran bunker first out to the forest

Loading logs onto a tramway truck at a logging depot on the Briggsvale tramway, September 1930. The loading jib is suspended from the spar tree which is used for "high lead" logging.
Photo: FM Bailey, per NSW Forestry Commission



Installing the Harman logging winch at a new bush site. The winch is being lowered off the tramway trucks used to deliver it. *BEN BULLEN* is in the background. Photo: E Harney, per Mrs I Smith

The Climax is remembered with some affection by Mr Wal Vaughan, the regular driver between 1934 and 1940. It took 30 to 45 minutes to raise steam in the morning, was easy to fire, and steamed well. Working steam pressure in the boiler was 100 psi. The routine was to start at 7 am Wal and his fireman would set the fire, oil and grease the loco with special attention paid to the bevel gears on the axles and line shafts, fill the sandboxes, coal the loco and take water. If they were short on water at the mill, they would run light engine to the bush camp to get a fill.

At the logging camp, the bush crew would load up the log bogies using a small steam winch and a derrick pole hung off the spar tree, while the loco crew had crib. At lineside loading ramps the loco crew helped load the logs, hauling them onto the log bogies by means of a wire rope attached to the loco.

They topped up the loco's water tank at the logging camp. On return trips the practice was to stop at the site of the old Welcome Flat camp for 10 to 15 minutes, to rake ashes from the firebox, build up the fire, and check for hot bearings. They also checked the load, tightening down the chains, and adjusting any out-of-balance logs. They reckoned this was time well spent, as an unbalanced log could easily derail a truck on sharp curves, taking anything up to two hours to rerail. Wal Vaughan said he always thought the rails used on the Briggsvale Tramway (about 20 lbs/yd) were a bit too light for the loads.

None of the log bogies had brakes, though there was talk from time to time of fitting up a few sets. It required more than a little skill to keep a loaded train under control on down grades, and a good knowledge of when to use the Climax loco's low gear. To change gears it was necessary to do a "double-shuffle", like in an old car. Wal developed the knack of changing gears when in motion, a feat not normally thought possible. Low speed was essential to climb the steeper grades especially out of Skookum Gully. Inexperienced drivers would try to rush hills in top gear, only to run out of steam and stall. There were no brakes on the log bogies, and in wet conditions the whole train could go sliding backwards. The Climax was fitted with sanders, but the rear ones were mounted under the water tank and often got damp, which didn't help the braking capacity when running bunker first

Back at the mill, the logs were unloaded by the

Stacks of sawn timber at Briggsvale sawmill in 1936. Note hand trolleys used to move planks.
Source: John Briggs

yard crew. The loco crew stabled the loco out in the open; there was no engine shed Track layout in the mill was spartan — the main line coming in from the bush, the loco siding and a single siding for unused or crippled bogies. After *BEN BULLEN* was scrapped, run around loops were not needed, and the one at the mill was soon removed.

Occasionally ballast and fettling trips were run, using old log bogies converted for the purpose. There were two fettlers employed full time during the 1930s, maintaining the track and bridges, laying in new branches and taking up old ones.

Accidents and Incidents

The Briggsvale Tramway was not immune from mishaps, and some of these were faithfully reported by the local newspaper— the *Don Dorrigo Gazette* — which occasionally upset the Tramway's owners. *BEN BULLEN's* only recorded incident occurred in 1928:[19]

> A sensational bolt occurred on the Briggsvale tramline owned by Messrs GL Briggs & Sons Ltd, on Wednesday. Several trucks of logs were being hauled to the mill, when the loco refused to make further progress. During the holidays vines had grown over the track, and the wheels of the loco crushing these made the rails slippery. The brakes of the loco were applied, but the weight of the load proved to be too much for the small engine to hold under such conditions, and slowly the train commenced to back down the incline, which is rather acute for the distance of a couple of miles from the mill. With every few yards covered the train gathered momentum until it was racing backwards at a speed of about 30 miles per hour. There were three men aboard including Mr GL Briggs. At short intervals, each man, deciding that discretion was the better part of valour, jumped from the moving train and fortunately landed safely on Mother Earth. One of them found a resting place in a maze of prickly vines but, due to the excited state of his nerves, it was not until afterwards that he discovered they had thorns. He plucked a few out of his legs and arms (and another place) half as long as pins. If he had only known he could have saved himself all the bother, for the train clung to the rails and came to a standstill at the bottom of the incline. Mr Briggs decided that in future the Briggsvale "Puffing Billy" shall not be used as a crushing machine. He will see that the track is clear of all obstacles that may impede progress.

Minor derailments were not uncommon — particularly to log bogies. The biggest risk for inexperienced drivers was in climbing the steep grade out of Skookum Gully with a full load of logs for the mill. If the driver did not start the climb in low gear, the loco would stall half way up. The Climax came to grief quite spectacularly in January 1934. Wal Vaughan recalls that John Briggs, then a young lad, was riding on the footplate that day when the Climax began sliding back down the Skookum Gully grade. He pushed young John off the loco before jumping himself. The *Don Dorrigo Gazette* of 11 January, covered the story this way:

> The brief break from operations over the

The overturned Climax loco following the January 1934 runaway. The bogies, gears and underframe details are clearly seen. Photo: WT Vaughan

Christmas and New Year Period was responsible for a sensational runaway at Briggsvale on Tuesday afternoon.

A train heavily laden with logs got out of control when approaching the mill, and racing backwards came to grief in sections. Considerable damage was done to engine, trucks and rails.

Grass and weeds had grown up on the line on a rather steep incline not far from the mill over the holidays. The engine began to slip backwards, and the brakes would not hold the consist The driver and his mate jumped clear as the train gathered speed down the incline.

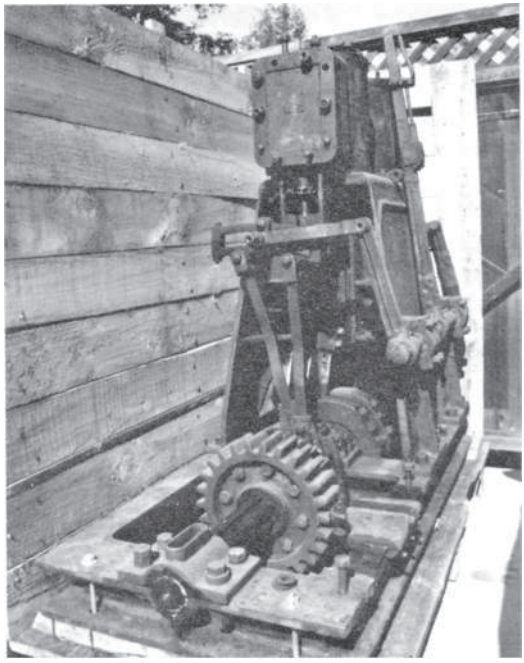
The engine and two trucks overturned on the side of the line, the engine tipping one way, and the trucks another. A quarter of a mile further on the remaining two trucks had jumped the rails on a bend while travelling at terrific speed.

Less serious derailments at Skookum Gully were recorded in October 1933, May 1934, and March 1936.[20] On another occasion the Climax jackshaft dug into the ground on a sharp curve, derailing the loco and fracturing two steam pipes. The fireman "took off", but there was no explosion. Mr Edgar Harney, an old hand on Briggs bush crew, tells the story of how BEN BULLEN once began slipping on the Skookum Gully grade, and the driver and his mate bailed out. They walked back down the line fearing the worst (and the wrath of old Mr Briggs). They were astonished to find the loco and train slowly steaming back up the hill. They decided not to trouble the management with an account of the incident.

Closure

The Briggsvale tramway ceased operations in about 1942. The reasons are not difficult to understand. Faced with enormous war-time demands for timber during 1942, the Forestry Commissionrevoked the practice of granting exclusive cutting rights over tracts of timber to individual mills, multiple quotas being issued instead. Road trucks, logging tractors and forestry roads had already made serious inroads into the tramway's traditional role, and this trend accelerated during the war. Getting sawlogs to the Plateau mills was considered so important during the war that scarce petrol was released for log lorries, after trucks fitted with the producer-gas units proved to be dismal failures on mountain roads.

The Climax loco was advertised for sale in July 1945[10] and it and most of the rails were sold to the Sydney firm of EA Marrs,21 probably shortly after a serious fire at the mill in September 1946. The Climax was scrapped, though the engine unit has been preserved, and it is believed some of the rails were re-used in the first post-war construction effort of Sydney's Eastern Suburbs Railway.



The engine unit from the Briggsville A-class Climax locomotive, after shipping to California, USA, in 1987. Photo: Richard Dunn

Remains Today

There is very little to be seen of the tramway over the first five miles. Intensive forestry operations and road works have left only the occasional trace of the formation. For most of this length a forestry road, called Tramway Road, has been built right on top of it from the rear of the sawmill out to Cedar Road. Cedar Road follows the route of the tramway out to the end of track. This is rougher country and quite a bit of the formation is intact, including three or four small bridges, a log loading ramp and a 400 metre section complete with steel rails. The Forestry Commission has cleared off some of the formation as a walking track. Remains of log bogies and wheel sets can be found at two other locations. Markings noted on the wheels indicate that they were very much second hand when obtained by GL Briggs:

IBBOTSON & SONS LIMITED,
SHEFFIELD 1877
H & S BARKER & CO LIMD MEXBRO

There is not much left of the tramway at the sawmill. Mill fires in 1946 and 1956, extensive

rebuilding and expansion over the intervening years have completely altered the mill. Near the entrance to the mill however stands an old wooden gantry with a 4-wheel trolley on rails on the top. This marked the end of the loco siding where maintenance was carried out, the gantry being used as a crane to lift heavy loco parts.

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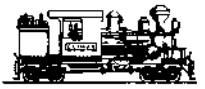


5. BRIGGS' SLINGSBYS ROAD TRAMWAY

The"BT" Sawmill

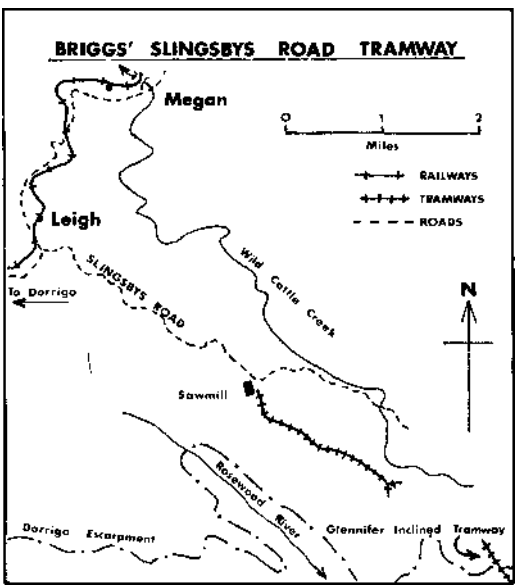
In early 1932 GL Briggs & Sons Ltd purchased the assets of the Bellinger Timber Company,[1] including the sawmill at Gleniffer and the inclined tramway up Syndicate Ridge. Briggs used the incline and the winding engine to recover steel rail and other salvageable plant from the Gleniffer mill, and hauled it to the top of the Plateau. The recovered material was used in the construction of a small mill some four miles east of Leigh railway halt at the end of Slingsby's Road.[1]

The new mill, known locally as the "BT" (for Bellinger Timber) mill, commenced operations in September 1932. It was a small steam powered softwood mill and had a single Canadian breaking down saw and one breast bench (an ordinary circular saw bench with friction feed rollers) cutting 2 in x 1 in sizes and upwards. Nine men were employed cutting 6,000 super feet per day.[2] The boiler from the locomotive *BEN BULLEN* was initially used to provide steam to power the mill.[3]

Tramway Construction

The BT mill constructed a 3 ft 6 in gauge tramway in stages from the mill east towards the edge of the Plateau. It was a combination wood- and steel-railed tramway, steel rails being used on curves and gradients, and brushbox rails on the easier sections. Surviving mill records give an interesting insight into tramway construction costs. The first section of 92 chains cost £3.1.1 per chain, exclusive of rails and sleepers. The second section, 25 chains, cost £3.7.0. per chain. There were 50 chains of steel rails in the first mile.

The tramway ran almost due east from the mill following a ridgeline parallel to the headwaters of Wild Cattle Creek. At 1.6 miles from the mill was a junction: one branch headed south along a spur ridge for about 1 mile, while the other line continued east for a further half mile.[4] Earthworks and gradients were kept to a minimum, and the few bridges were generally small affairs made of large logs laid criss-cross fashion.



Operations

A small 4-wheel Fordson rail tractor was the sole motive power for the line. Dorrigo researcher Bob McLeod[6] reports that remains still at the mill site show it had a cast iron frame 9 ft long, a 4 ft wheel base and 22 in diameter wheels. The machine was powered through a chain drive off a gear box and a heavy coupling rod between the wheels. Heavy under-frame sandboxes mounted fore and aft completed the picture. It ran on kerosene and was apparently smaller than the rail tractor used on the Timmsvale line. It was re-engined in 1935 with a re-conditioned re-bored engine from AEC, No. 509239. The rail tractor hauled two pairs of log bogies and could bring in up to 3,000 super feet of logs at a time. About three trips a day would have been required to keep the mill going. Logs were dragged to the lineside by bullock team and loaded onto the tramway trucks from loading ramps.

The BT mill cut brushwood logs — coachwood, sassafras, crabapple, etc — drawn from the thickly timbered headwaters of Wild Cattle Creek, now the Killungoondie State Forest. Sawn timber was transported by motor lorry to Megan Railway Station, six miles away, for transport to Coffs Harbour and shipment to city markets.

Closure

After the mill acquired a Caterpillar logging tractor in 1937 the tramway was little used, and was out of use by 1942. The Fordson rail tractor and, it is believed, *BEN BULLEN's* boiler were both advertised for sale in 1945.[5] The BT mill continued cutting until 1956 when it was razed to the ground by fire. It was never rebuilt and the log quota was transferred to Briggsvale. Only traces of the tramway remain today, hidden by tangled forest growth. The remains of the old rail tractor are still at the mill site.

References

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3. J Briggs, personal communication.
4. Site investigation is incomplete for this tramway, main route details were taken from the 1:63,360 "Dorrigo" Army Survey Map.
5. *Sydney Morning Herald,* 21.4.45.
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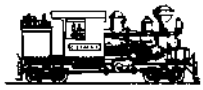


6. THE CASCADE TRAMWAYS

Cascade is a small timber village on the Glenreagh to Dorrigo branch railway, some two miles east of Briggsvale. It is a picturesque settlement sited in the midst of Wild Cattle Creek State Forest, and is home for the Forestry Commission's local Works Depot

EARP, WOODCOCK, BEVERIDGE & CO LTD, CASCADE

After GL Briggs & Sons Ltd, the second timber company to move into eastern Dorrigo following the opening of the railway was Earp, Woodcock, Beveridge & Co Ltd (EWB). They were a well established timber milling company with sawmills at North Dorrigo, Leigh and Megan. Their Leigh mill was originally built in 1911 by the Colonial Milling Co and was purchased by EWB in 1914. In March 1925 this softwood mill was moved to a site on the Dorrigo Railway, two miles below Briggsvale.[1] This site became the picturesque timber village of Cascade. The firm also had two short private railway sidings constructed into the mill site, which were opened for traffic on 9 May 1925.[2]

Early Operations

Initially logs were hauled in from the surrounding forest using a steam winch, with a half mile of wire rope, sited at the mill. Horse and bullock teams also hauled in softwood logs independently. Sawn timber was railed to Coffs Harbour for shipping to Sydney and interstate markets.

A small village was established by the mill: houses for married men, huts for single men. The construction road, put in by the Dorrigo railway contractors in 1923, soon became untrafficable through lack of maintenance and after the temporary creek bridges collapsed. The only link with the outside world then was the railway, and remained that way until the Forestry Commission began putting in forest roads in the early thirties.

Earp's Horse Tramway

By 1929 the timber around the mill had been cut out EWB had extensive timber leases to the north-west of Cascade in Wild Cattle Creek State Forest. They began construction of a wooden railed, 3 ft gauge horse tramway. The rails were of 4 in x 3 in brushbox lengths, and it was gradually extended out into the forest to its maximum length of three miles. An old hand whose father helped put in the tramway recalls that at first no corduroy packing was put in to give the horses a solid footing. The tramway quickly became a sea of mud after the first

rain, and two men had to be hired specially to dig out the mess and put in wooden packing.

The tramway was used initially to haul in hardwood logs. Up to six or seven horses were used to pull in one log bogie pair at a time. The logs were cut up in the bush; one log, up to 18 ft long, per load. Softwood logs continued to be hauled to the mill by horse and bullock teams.

The Tramway Route

EWB's tramway headed west from the mill, dropping down to and crossing Cascade Creek on a large trestle bridge at the 0.3 mile mark. There was a steep climb for another 0.3 miles after which the line crossed gently undulating country for about 0.6 miles. The line then turned generally north west, crossing the headwaters of Mobong, Welcome and Welcome Gully Creeks on modest trestle bridges.

Earthworks were generally light, though some of the cuttings were significant. Gradients too were light — except for the drop down to Cascade Creek when approaching the mill. There were a few short temporary branches.

Fire and Reconstruction

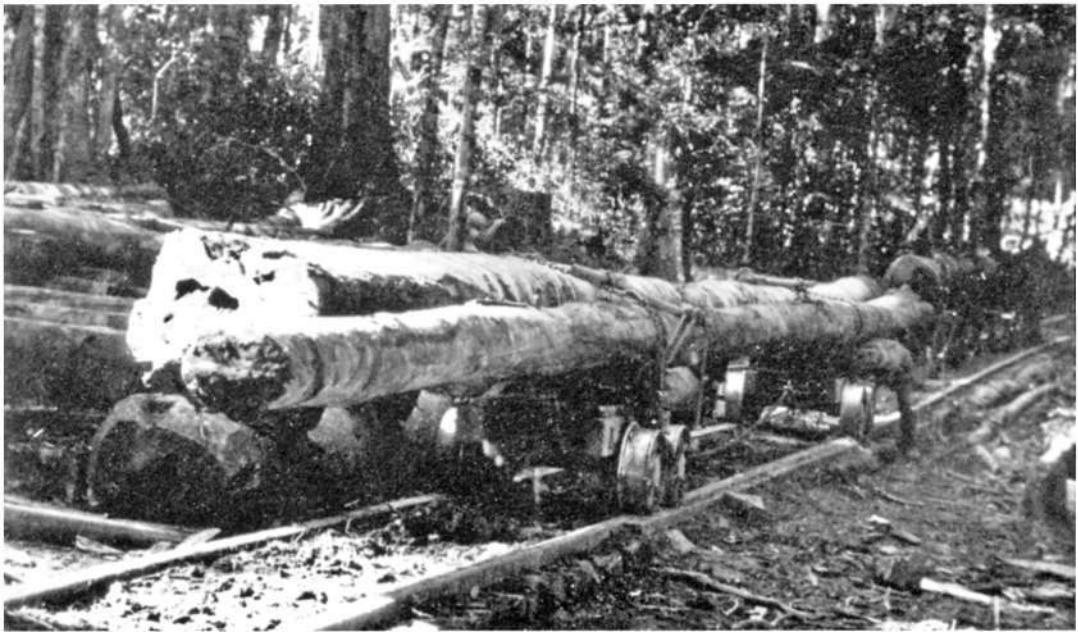
On 29 July 1931 the Cascade sawmill was destroyed by fire in a spectacular blaze.[3] This was in the midst of the Depression, when times were hard for the timber mills on the Dorrigo Plateau EWB did not return until June 1933, when they dismantled their Megan mill and removed it to Cascade.[4] During the interim they relinquished their private rail siding at Cascade, and it was taken over by their local rivals, Eades & Co.

The Fordson Rail Tractors

After the Depression, the demand for timber improved. EWB found that the horse teams on the lengthening tramway could not meet the mill's requirements for logs. So in 1935 they purchased two Fordson rail tractors. They were 4-wheeled machines with kerosene engines and con rods connecting the wheels together on each side. One tractor was equal to 7 horses on the tramway and they were used both singly and in tandem.[5]

EWB quickly found that the tractors were very hard on the wooden rails, specially on curves and grades. In a first effort to overcome this difficulty, 2 in x *2.75* in angled iron bands were nailed to the wooden rails at wear prone locations. This was not very successful and, within a year or two, light-

Earp, Woodcock & Beveridge 3 ft gauge wooden tramway to Cascade, September 1930.
Photo: FM Bailey, per NSW Forestry Commission



Coachwood logs on trucks ready for haulage to the sawmill by horse team, Earp, Woodcock & Beveridge & Co, September 1930. Photo: FM Bailey, per Dorrigo Historical Society

weight steel rails (about 20lb/yard) were put down on curves, bridges and grades.

The rail tractors were housed in a small loco shed at the mill. The Railway would deliver the occasional truckload of sand to Cascade for the Fordson's sandboxes, to the delight of the Cascade youngsters.

Mr Stanley Sly on the Fordson rail tractor at Cascade mill, Earp, Woodcock & Beveridge 3 ft gauge tramway, 1940. Photo: N Sly

Mr Neville Sly, whose father managed the Cascade mill, recalls how one day the Fordson tractor with a load of logs got away from its driver on the steep grade down to Cascade Creek. The driver, Jack Hinchey, and a couple of passengers bailed out before the loco and log bogies derailed on the Cascade trestle bridge and fell into the creek.

Expansion and Takeover

In December 1935, EWB took over their Cascade rivals, Eades and Co, ending nearly a decade of rivalry.[6] Their new assets included Eades' sawmill (only a stone's throw from the EWB mill), horse tramway, and steam log hauler which they promptly removed to their own tramway. The two mills continued operating side by side until the beginning of World War 2 when they were joined by a third "quick mill". This was a mill erected specially to saw class 3 timbers (crabapple, sassafras, carrabeen, etc) for army ammunition boxes and the like. Very soon afterwards however, in April 1942, Eades old mill was razed to the ground in a disastrous fire.

Tramway Closure

The huge demand for timber during World War 2 spelt the end for the Cascade tramways. Mills no longer had exclusive rights to blocks of timber — instead two or more mills would be given cutting rights, using Forestry Commission built roads paid for out of timber royalties. Under these

circumstances private timber tramways were uneconomic, and the EWB tramway closed in about early 1942.

The EWB presence finished in Cascade in 1961, after they had cut out their softwood licence. They sold the business to GL Briggs & Sons Ltd, of Briggsvale, who transferred the hardwood licence to Briggsvale and closed the Cascade mill. The substantial remains of this mill were "burnt" for the shooting of a scene in the film *The Winds of Jarrah* in 1984.

Remains

Today the Forestry Commission has constructed the Mobong Falls Walking Trail over a part of the old tramway, and many of the sleepers and wooden rails can still be seen. Further out some of the old steel rails are still in situ. The large Cascade trestle bridge is still standing (1983) and Forestry Officers report that some of the smaller bridges still stand in remote gullies, but it is rough going finding them. Elsewhere extensive forestry operations have covered over other signs of the tramway.

The Bostobrick Mill

EWB's mill in North Dorrigo was initially bought from Trimm & Co in 1915. In December 1927 it was moved five miles north to Bostobrick,[8] and re-erected as a hardwood mill. It had no tramway and relied on horse and tramway teams to draw the logs in. Horse teams took the sawn timber to Dorrigo Railway Station. It became the largest, and the longest lived of the EWB mills, though it was razed by fire in December 1929,[9] and was not rebuilt until October 1931. It is still operating today, though in a much modernised form and under Allen Taylor ownership.

WALTERS, MIDDLETON & EADES

The third timber company to move to the Eastern Dorrigo was the Sydney firm of Messrs Walters, Middleton& Eades. In June 1926 they moved their Dorrigo mill, which had been idle for over 12 months, to Cascade. They secured timber leases to the east of Cascade, adjoining those of Earp, Woodcock, Beveridge & Co.

Eades Mill

The Eades mill was re-erected on a small rise immediately adjacent to the Dorrigo Railway, overlooking the present day Cascade level crossing, less than 100 yards from the EWB mill. It was known as the "top mill", while Earp's mill was referred to as the "bottom mill". EWB's No. 1 rail siding was lengthened to serve Eades Mill, opening for traffic in April 1926.[10]

There was considerable rivalry between the two firms which extended to the employees and their families — there were even separate tennis courts. The story is told of how one day the Railway

Eade & Company's mill in 1940, taken from Cascade village. The NSWGR Dorrigo railway is in the foreground. Photo: N Sly

Steam hauler on Eades & Co tramway, September 1930. A brush box log is on the truck for horse haulage to the mill. Photo: FM Bailey, per Forestry Commission of NSW

shunted a single truck into the siding, and both firms claimed it Clem "Peggy" Tabor (he had a peg-leg) was EWB's manager, and he wanted to fight Harold Eades' mill crew for the truck after a tug of war over it In the end he bluffed Eades out of it by claiming that though the truck had been left standing on the points where Eades' siding began, more of the truck was standing on EWB's side.

Eades' Tramway

Initially a steam winch was sited at the mill to haul in logs directly from the surrounding forest In 1929, the Company began the construction of a short 3 ft gauge wooden railed horse tramway to bring in logs from further afield. Horses were the sole motive power, and timber slabs were packed curduroy fashion between the rails to give the horses firm footing. In 1930, Eades are recorded as complaining to the Forestry Commission that royalty should not be payable on timber slabs used in tramway construction — to no avail, 2d per slab was levied.

Immediately behind Eades's mill, the ground sloped steeply down to Cascade Creek, and it is claimed (though not found in 1984) that a switch-back was needed to get a tramway gradient suitable for horse teams. The tramway crossed over Cascade Creek downstream from Earp's bridge, and a substantial trestle bridge was constructed. There was a steep climb up the other side: old hands recall that when horse teams were returning to the mill in dry weather the screech of the wooden brake blocks on the bogie wheels could be heard for miles. In wet weather the horses had to be unharnessed on this section for safety. Once over Cascade Creek, the tramway headed generally northwest, crossing the low divide between Cascade and Mobong Creeks, then dropping down into Mobong Creek valley and following it downstream for about 0.6 miles to the end of track. At its maximum extent, the tramway was about two miles long. It is possible a few short branch lines were put in, though no traces can be found today.

Eades had an Allporte steam log hauler which was stationed out on the tramway. There was no bush crew stationed out in the forest, as was the case at Briggsvale, and timber workers generally walked out from Cascade each day.

Following the fire that destroyed EWB's Cascade mill in June 1931, Eades took over the private railway siding at Cascade, and it was renamed Eades & Co's Siding in the NSWGR records (and remained under that name until the siding was

closed in February 1959).

Closure

Eades mill was never a large or really thriving concern, and was often reported as lying idle. On December 1935 the mill and tramway were taken over by their larger Cascade neighbours, Earp, Woodcock, Beveridge & Co Ltd.[6] The tramway closed in early 1942, and the final chapter was written in April 1942[11] when Eades old mill was destroyed by fire.

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7. THE TIMMSVALE TRAMWAY, 1929-1935

Introduction

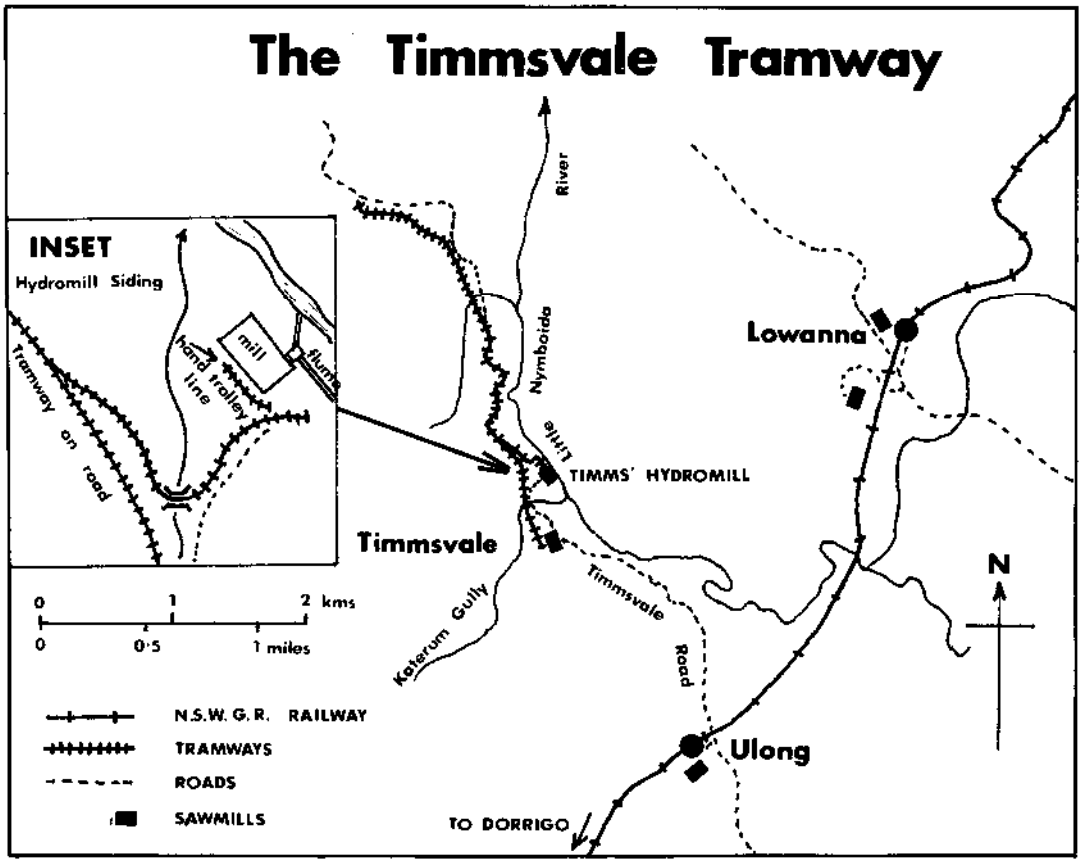
Timmsvale is a small sawmilling village on the Eastern Dorrigo Plateau, two km east of Ulong Railway Station. It was named after one of the first settlers in the area, Mr TB Timms, who came up from the NSW South Coast in 1907 when the district was thrown open for settlement.[6]

Tom Timms was a resourceful and inventive man. In 1922 he built the first water-powered sawmill on the North Coast, based on an idea he got after attending the official opening of the Dorrigo Hydro-electric Power Station. A dam across the Little Nymboidia River and a pipeline to the mill supplied the water pressure to drive a turbine at the mill. This hydro-mill continued operating until burnt down in July, 1933.[1]

The Timmsvale Timber Company

In February 1929, TB Timms entered into a partnership with the four Beale brothers (of Beale piano company fame) to form the Timmsvale Timber Co with a capital of £30,000.[2] A large

The Timmsvale sawmill, 24 August 1937. Photo: WAJ Maston



steam-powered sawmill was built at Timmsvale. It was a softwood mill, cutting hoop pine, coachwood, sassafras, red and yellow carrabean. Logs were also sawn for other timber getters in the area Up to 100 men were employed at the mill and three shifts were worked during the Depression.

TB Timms fell out with his partners in 1930 and returned to his hydro-mill. He continued to operate this for for another two years until it was burnt down in July, 1933.[3] The Timmsvale Timber Co eventually invested over £70,000 in their Timmsvale operation, but in doing so over-extended themselves and began to incur losses. In 1937, they approached Allen Taylor & Co, stating that they had lost on their venture and wanted to sell out[4] Allen Taylor's were cautious about investing, so the enterprise was sold for cash back to TB Timms,[5] whose family continued to operate it until final closure in 1968.

The Timmsvale Tramway

A short wooden railed tramway was laid down in 1929 to bring logs from the forest to the mill. It was about two miles long and physical remains today suggest it was 3 ft 6 in gauge. Log bogies were acquired from the defunct Brooklana Timber Company's tramline (see page 12).

The tramway was single track throughout. It commenced at a small "engine shed" on the north side of the mill and headed out in a north-westerly direction, roughly parallel to the Little Nymboida River. There were quite a few bridges on the line, the largest one being over Katerum Creek just behind the mill — part of this was still standing in 1986. There were few grades of any consequence, the steepest being the short climb up from Katerum Creek Bridge to the mill.

There was a single siding, branching off at the 0.3 mile mark, to TB Timm's hydro-mill. The stub points faced the forest, so that logs could be delivered directly to the hydro-mill without shunting. The siding was less than 300 yards long dropping

down a steep grade to the hydro-mill on the Little Nymboida.

Operations

A 4-wheel Fordson rail tractor was purchased to operate the line. Mr Guy Cameron, the regular driver for three years, recalls that it was a heavy, noisy machine, with a chain drive, a forward-reverse transition gear-box, and a speed gearbox with four speeds. The tractor was kerosene powered.

The Fordson would push one truck (pair of bogies) and pull another, hauling five or six logs at a time if softwood was being carried. The practice was to go out "fast", but to come back to the mill very slow to keep the load under control.

The steep climb from Katerum Creek to the mill often caused problems in wet or frosty conditions. Sometimes the loco would lose traction and the whole consist would slide back down over the bridge. The experienced driver divided the load at Katerum bridge and brought it up to the mill in two goes.

The heavy Fordson "chewed up" the wooden rails on the curves, making frequent renewal necessary, and restricting the load that could be carried. The Fordson also had a bad habit of climbing up over wooden rails on curves and derailing itself. To curb this drivers carried a length of angle iron on the loco, and would stop and lay the iron on the outside rail of the worst curves, ease the train round, then retrieve the iron again. All this was pretty time-consuming, and steel rails were soon installed on most of the curves.

Only the Fordson loco had brakes. Guy Cameron recalls it getting away from him one day with a full load in wet weather on one of the grades, he bailed out when the whole consist "took off" at speeds up to 30 mph, landing bruised but otherwise unhurt The Fordson didn't capsize, but tore up the rails on the first curve spilling logs and trucks.

Bullock teams were used to drag logs from the forest to the tramline, where they were loaded onto the log bogies using the loco, parbuckling style. Sawn timber was conveyed to Ulong railway station by bullock wagon. For the first few years timber was railed directly to Coffs Harbour Jetty, then shipped to Sydney.

Closure

By 1935/6 the tramline had outlived its purpose, and closed. Crawler tractors and lorries replaced the bullock teams and the tramway.

There are very few remains of the tramway left today, as logging operations and bushflres have taken their toll. The Timmsvale Road is built on the old formation for some of its length, and the occasional bridge timber, sleeper and shallow earthwork remain to mark the route.

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8. CONCLUSION

The timber industry was slow to develop on the Dorrigo Plateau, due to difficult access and the late arrival of the Dorrigo railway. Likewise the region's tramways were late starters and were fairly small affairs when compared, say, with the extensive networks in the southern forests in Victoria. Nevertheless they played a significant role in developing the industry, and contributed to the prosperity of the eastern plateau.

Today the tramways have gone, and of the 40 odd sawmills that once dotted the plateau during its heyday, only a handful remain. Logging is now carried out under the sustained-yield policy of the NSW Forestry Commission, in marked contrast to some of the early exploitative practices.

In one area however, the years have been rolled back. The Dorrigo railway, closed in 1972, was re-opened in 1986 by the Dorrigo Steam Railway & Museum Society after enormous efforts to clear the forest back off the rails, repair the bridges and fill in the washaways. The Society has a large collection pre-war locomotives, carriages and goods wagons, and one day the hills around Dorrigo may echo once again with the sound of a hard working steam locomotive hauling timber to the coast.

Acknowledgements

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Mrs J Bell, Messrs TJ Best, G Bond, J

A small log bridge on the Briggsvale tramway in 1984, now part of a Forestry Commission walking track, Cedar Road. Photo: I McNeil

Browning, Coffs Harbour Forestry Office, T Durie, R Ellis, Mrs V Fahey, R Goodrick, J Kerr, Dr J Kramer, A Johnson, V Lovell, B Macdonald, WAJ Maston, Mitchell Library, NSW Forestry Commission, FJ Reid, Mrs B Sawtell, M Sly, S Sly, C Wilson, D Wood. To any who may have been accidentally overlooked, apologies are extended.

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- Mr E Graham, who undertook most of the early research into the Glennifer inclined tramway.
- Mr R McLeod, for additional field investigation in very difficult country.
- Mrs I Smith of the Don Dorrigo Historical Society, for background material and photographs.
- Mr C Wilson of the Light Railway Research Society, for substantial assistance with key historical data.

Interviewees, to whom I am especially indebted, were:

- John Briggs, Sydney, Managing Director of the family Timber Company and GL Briggs' grandson.
- Guy Cameron, Coffs Harbour, driver of the Timmsvale Fordson rail tractor, circa 1931 to 1934.
- Dave Durie, Port Macquarie; worked at Briggs' Megan mill 1916-1921, and at the Briggsvale Mill 1933-1945.
- Stan Edwards, Dorrigo; grew up in Cascade, his father was the District Forester.

- Edgar Harney, Coffs Harbour, worked on the Briggsvale log hauler between circa 1927 and 1933.
- Fred Irwin, Newcastle; worked at Briggsvale Mill and in the forests between circa 1935 and 1940.
- Gordon Haydon, Dorrigo; worked for Earp, Woodcock & Beveridge for over 20 years from about 1925 on.
- Pat Sinclair, Dorrigo; worked for nearly 60 years in the Plateau timber industry.
- Roy Sinclair, Newcastle, worked for 15 years at Briggsvale, latterly as mill manager.
- Neville Sly, Maitland; grew up in Cascade, father was the manager of the local Earp, Woodcock & Beveridge mills.
- Lyle Timms, Timmsvale; father was one of the district's first pioneers.
- Wal Vaughan, Sydney; drove the Briggsvale Climax loco from 1933 to 1940.

Log loading arrangements on the Briggsvale tramway. The "neutral" position of the loading job was over the centre of the tramway. Logs were lifted by a secondary steam winch driven off the main hauler.
Photo: FM Bailey, per NSW Forestry Commission

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