

Steam locomotives on Victorian timber tramways – Part 2

by Frank Stamford

The first 'big' locomotive

The next venture into steam power was significant, since it appears to be the first to involve the purchase of a new locomotive from an established locomotive builder. In 1889 Cropley Bros took delivery of a 3ft gauge Fowler 0-4-2ST (B/No. 5851 of 1888) for use on their Darnum–Ellinbank Tramway in west Gippsland. It weighed 16 tons, had 9in x 14in cylinders, and 30in driving wheels. With those specifications it was much bigger than anything that had so far worked on a Victorian timber tramway. The tramway was substantially laid, using 50 and 60 lb/yd rails from the Victorian Railways, but that did not mean an easy life for the loco. By the time the mill and tramway closed in 1903 it was in very poor condition and it took a long time to find a buyer. It was eventually sold for £194, having cost £1118 fourteen years earlier. It went to Penrose & Oddy's firewood tramway at Mitchellstown, where it was used for a couple of years before going to the Warburton Steam Tramway Syndicate in 1909. They must have been desperate for motive power, for the firebox sides and crown were bulged, and the crown showed signs of collapsing! Engine driver E Totterdell was so concerned about its condition that he resigned.¹

In 1891 Mason & Co Ltd, who had a 3ft gauge tramway at Port Welshpool took delivery of a very small 2-4-0T built by Bagnall (B/No.682 of 1885) named *KHARTOUM*,² or

KARTOUM, which is how it was recorded in Bagnall records.³ It had 5½ x 9in cylinders, and a rigid wheelbase of only 3ft 6in. Some confusion has existed about this locomotive, but it now appears that it was built for the Beaconsfield Tramway in Tasmania, and there is evidence that it had arrived there by September 1885.⁴ Presumably it was named after the heroic (and ultimately unsuccessful) defence of the town on the River Nile which ended in January 1885 with a massacre of the Egyptian garrison and its British commander General Gordon by rebel troops loyal to the Mahdi Muhammad Ahmad. It was certainly not built for timber tramway use, but Mason & Co. Ltd obtained it for their tramway which ran from Hodgkinson, near Hedley, to Port Welshpool. From there the timber was sent by ship. The rails were wooden, surfaced with 14lb Krupp steel. One suspects the locomotive was probably going cheap, and how it performed for Mason is not known, but its subsequent owners found it underpowered.⁵

There was then a hiatus due to the depression in the 1890s, until 1895 when the Australian Seasoned Timber Company purchased a Baldwin 3ft 6in gauge 0-4-0ST locomotive (B/No. 7556 of 1885), which had been used on land reclamation works for the Melbourne Harbor Trust. This company operated a large sawmill in the Plenty Ranges and seasoning works at Wandong. Several locomotives of this type subsequently worked on timber tramways in three Australian states, and their rugged simplicity seemed to suit the work.⁶

Most steam-operated Victorian timber tramways only had one or two locomotives, but the next firm to use steam traction – Sanderson & Grant, of Forrest, was exceptional in using six, but with never more than three available at one time. The reason for the high number was Alex Sanderson's



3ft gauge Fowler 0-4-2ST locomotive (B/No 5851 of 1888) seen at Cropley's Darnum-Ellinbank tramway c. 1892. Cropley Bros bought it new and used it for 14 years, by which time it was in very poor condition. Photo: LRRSA collection



Baldwin 3ft 6in gauge 0-4-0ST (BNo. 7556 of 1885) working on the Australian Seasoned Timber Co.'s tramway at Wandong, c. 1898.

Photo: LRRSA collection



Fowler 3ft 6in gauge 2-4-0T patent jack-shaft drive locomotive PARROT (B/N. 4150 of 1881) at work on Sanderson's tramway, hauling sawn timber from his Noonday Creek mill, c. 1899. It was supplied for sugar plantation use and was found to be under-powered for timber tramway work.

Photo: LRRSA collection



Locomotive maintenance area at Sanderson's Noonday Creek mill, c. 1904. On the left is Hudswell Clarke 0-6-0ST TOM CUE (B/No. 378 of 1891), and on the right Bagnall (B/No. 682 of 1885) 2-4-0T, WESTWARD HO (formerly KHARTOUM). Like PARROT, WESTWARD HO was not built for use on a timber tramway, and was underpowered. On the other hand, TOM CUE performed well, as did identical locomotives working on timber tramways in Tasmania and Western Australia. Photo: LRRSA collection

constant searching for more suitable motive power, whilst selecting from a somewhat motley collection of second-hand locomotives. The first was a 2-4-0T jackshaft-drive Fowler with 5½ inch cylinders named *PARROT* (B/No. 4150 of 1881), which was built for John Spiller of the River Estate Sugar Plantation at Mackay in Queensland. The locomotive was sold, probably in the period up to 1891 when the sugar mill at River Estate closed, and its subsequent whereabouts are obscure. Seeking a small 3ft 6 in gauge loco, Sanderson purchased it, and it apparently arrived in Forrest sometime in 1899. Sanderson used it to haul sawn timber from his Noonday Creek Mill to Forrest railway station. This involved a steep grade against the load in the last 400 metres, and *PARROT* proved underpowered for the task. In 1901 Sanderson sold it to WW Gunn for his tramway at Crossover.⁷

Sanderson's second locomotive was the 2-4-0T Bagnall (formally *KHARTOUM*, renamed *WESTWARD HO* before it came to Sanderson) used on Mason's tramway at Port Welshpool. It was regauged to 3ft 6in, but where this was done is not known. By 1902 when Sanderson had opened a new sawmill at the Barwon River he needed two locomotives. *WESTWARD HO* having proved also underpowered, this time he bought something bigger: 0-6-0ST *TOM CUE*, (Hudswell Clarke, B/No. 378 of 1891). Before coming to Sanderson, *TOM CUE* had worked on railway construction contracts in Western Australia, and on the North Mount Lyell Railway construction in Tasmania. It had been overhauled in 1900. It is probable *TOM CUE* arrived at Forrest in 1902, and both *TOM CUE* and *WESTWARD HO* were used until Sanderson found something more powerful to replace *WESTWARD HO*.

This came sometime in 1903 or 1904, and was the Baldwin 0-4-0ST (B/No. 7556 of 1885) from the Australian Seasoned Timber Company of Wandong, which had closed due to running out of timber. At Forrest it was known as 'Black Angel'. *WESTWARD HO* was now sold, probably via a dealer, and eventually turned up at Cuming Smith's tramway at Britannia Creek, near Yarra Junction in 1907, still named *WESTWARD HO*, but converted back to 3ft gauge.

TOM CUE and 'Black Angel' seem to have met Sanderson's needs until 10 July 1907 when 'Black Angel's' driver 'Hellfire Jack' Southall was killed when the locomotive derailed. At the time there were five people crammed in the cab, and the driver was killed as a result of a log crashing through the back of it. (A similarly fatal accident had occurred at the Australian Seasoned Timber Company's Comet Mill in 1896.) 'Black Angel' was repaired but rarely used thereafter, being considered unsafe due to the ease with which logs could break into the cab.

Sanderson's next, and final, locomotive purchases, were the two engine units of the Victorian Railways' Rowan cars, (Kitson B/Nos T69 and T70 of 1883). These were 0-4-0 vertical-boilered tank locomotives. Sanderson had made enquiries to the VR about purchasing them on two previous occasions, 1901 and 1904, and was successful in obtaining them in 1907. Sanderson converted both to 3ft 6in gauge by moving the underframes in by more than 600 mm and shortening the axles. A wooden-framed cab was fitted, though there is one early view showing one working cabless. They were both known as 'Coffee Pots' at Forrest.



Ex-Victorian Railways Rowan car engine unit (Kitson B/No. T69 or T70 of 1883) regauged to 3ft 6in at Sanderson's Barwon Mill c. 1908. These locomotives performed well, and were popular with the crews.

Photo: June Minogue, courtesy Fraser Brown



After PARROT was found wanting at Forrest, it went to WW Gunn's tramway at Crossover, which had a very steep grade against the load. Not surprisingly, it could not cope and was regarded as "useless". It was abandoned near Crossover for many years, as shown here, c. 1936. Photo: Ray Pearson

These locos appear to have been well liked by the crews, and considered safer than 'Black Angel', as errant logs would hit the high buffer beam, and not enter the cab. Despite that, one of the locos was involved in an accident on 21 November 1907, which killed Alexander Sanderson and his son Marshall. This was due to a bridge collapse, but it is possible the locomotive contributed to the accident due to its relatively high centre of gravity.

The two 0-4-0VBs and TOM CUE remained in use until 1919 when tramway operations were scaled down. One ex-Rowan car was taken out of use, and its boiler used to power a winch. The other usually operated the tramway, with TOM CUE used as a spare. Steam operations ended on the tramway in 1923. TOM CUE was left at Forrest until finally scrapped, whilst the boiler of the second Coffee Pot was also used to power a logging winch.

At Crossover, on the Victorian Railway's Warragul-Neerim South line, W W Gunn commenced sawmilling operations around 1897, and laid many miles of tramways in iron and steel

rails obtained from the VR. In 1901 he obtained PARROT, the Fowler jackshaft-shaft-drive 2-4-0T from Sanderson, then in 1904 he obtained a Phoenix tram motor from the Bendigo tramways. In later years, one of his locos was described by an ex-driver as "useless", and this was presumably PARROT, which had been found wanting at Forrest. However, it is possible Gunn had another locomotive in use as early as 1897, the identity of which is not known. In any case, in PARROT's defence it had to contend with a grade of 1 in 18 against the load at Crossover!⁸

The next use of steam traction was on Anderson's Tramway at Warbuton, where an extremely odd, four-wheel chain-coupled gear-driven locomotive was tried around 1902. It appears to have been converted from a portable engine, with a single cylinder on top of the boiler, and was apparently intended to work on wooden rails. It is unlikely it ever got past the testing stage, and the only evidence of its existence is a magnificent photograph reproduced in *Mountains of Ash*.

In 1904 the North Long Tunnel Gold Mining Company at Walhalla purchased a new 2ft 6in gauge Bagnall 0-4-0ST (B/No. 1729 of 1904) for use on their firewood tramway to the north of Walhalla. It must have performed well, for in 1906 a second one was ordered (B/No. 1801 of 1907) by the Long Tunnel Extended Gold Mining Co., which had acquired the North Long Tunnel Company. The tramway was well graded, and the company had the resources to maintain its plant and equipment in good condition. It is interesting to note that 2ft 6in gauge was widely used in the tramways around the Walhalla gold mines. As a result, when timber tramways were being established in the Erica area after the opening of the Moe-Walhalla railway in 1910, many of the people who built the first of these had had experience with the Walhalla tramways, and so carried on using 2ft 6in gauge, possibly also using wheel-sets from Walhalla. So, when the Forests Commission Victoria built the Tyers Valley Tramway in 1927 they adopted 2ft 6in gauge, because that was the gauge being used by the saw millers, who would connect to the FCV line. The FCV's choice of gauge had nothing to do with the gauge of the Walhalla railway. However, it had the good long-term



Baldwin 5ft 3in gauge 2-6-0 locomotive MAJOR (B/No. 10067 of 1889) at McIvor Siding, c. 1906. MAJOR and its identical mate McIVOR were light and flexible and perfectly matched for the task. Photo: courtesy Miss Mavis Prince



Bagnall 2-4-0T (B/No. 682 of 1885) WESTWARD HO at Britannia Siding, near Yarra Junction, on the Britannia Creek tramway, 23 November 1907. This was the official opening day of the Britannia Creek wood distillation works. After about 10 years service the locomotive was replaced by horses, apparently due to its propensity for starting fires in the huge stacks of drying timber at the distillation works. Photo: LRRSA collection

side effect that Climax locomotive 1694 could have a new life running on the Puffing Billy Railway! Two-foot six-inch was not an ideal gauge for timber tramways, especially for carrying logs, as it was a little narrow and unstable. That is why the great majority of Victorian timber tramways were built to 3ft or 3ft 6in gauge – the track could be less well graded and maintained and still provide acceptable stability.

The Long Tunnel Extended Gold Mining Company sold the two Bagnall locomotives in 1912, when the gold mines closed and the locomotives went out of forestry service.⁹

A 5ft 3in gauge tramway

The McIvor Timber and Firewood Company was unusual in using a 5ft 3in gauge timber and firewood tramway, but the gauge suited the relatively flat topography through which the tramway ran. It was about 42 km long, but the route of the outer half changed radically around 1912 when the company moved its operations from the Mitchellstown area to Moormbool West. The company was extremely fortunate to be able to purchase two Baldwin 2-6-0 locos, which had been used by Arthur T Robb in the construction of Victoria Dock. These rugged, simple, light and flexible locomotives were ideal for the task, and remained in use until 1925, when they were considered beyond economic repair. To tide the company over for its last two years of operation, it bought a VR W class loco, (Baldwin 4-6-0 B/No. 6622 of 1882). The W class was no heavyweight; its axle loading was less than that of a VR NA-class 2ft 6in gauge loco; but it was nevertheless significantly heavier than the 2-6-0s it replaced, and caused more damage to the light track.¹⁰

In 1907 Penrose & Oddy purchased the Fowler 0-4-2ST which had worked on Cropley's Darnum–Ellinbank tramway. It was used for only two years on their iron-railed tramway, taking logs to their firewood sawmill at Mitchellstown. The mill closed in 1909 and the locomotive was sold to the Warburton Steam Tramway syndicate.¹¹

Also in 1907, Cuming, Smith & Co. established a wood distillation works at Britannia Creek, 5 km from Yarra Junction.

This required vast quantities of timber, which was heated in retorts, to enable the extraction of chemicals by a distillation process. They purchased the 2-4-0T locomotive *WESTWARD HO* (Bagnall B/No. 682 of 1885), which had previously been used by Sanderson at Forrest, and before that by Mason & Co. at Port Welshpool. Cuming, Smith was a large well-resourced company, and would have been able to look after the locomotive well, but its performance was apparently not very inspiring, and in about 1917 it was taken out of use and replaced with horses! Horses remained the motive power until the closure of the works in 1924. The locomotive was abandoned and eventually scrapped.¹²

In 1909 Hayden Bros of Barwon Downs took advantage of the availability of redundant steam tram motors from the electrified Bendigo tramways, to provide a locomotive for their 3ft 6in gauge Barwon Downs – Callahan Creek tramway. They purchased two Baldwin 0-4-0ST tram motors (from the batch B/Nos 12241 to 12245 of 1891), one of which was



Ex Bendigo Tramways Phoenix steam tram motor converted from standard to 3ft 6in gauge out of use on WW Gunn's crossover tramway c. 1936. Though not built for timber tramway use, it performed well.

Photo: Ray Pearson



Fowler 3ft gauge 0-4-2T (B/No. 13576 of 1913) of the Warburton Timber and Tramway Co. between Warburton and Big Pats Creek. It was a 3ft gauge version of a standard 2ft gauge Fowler design used on Queensland sugar tramways, even having a tropical cab, which was not well suited to the Warburton climate.

Photo: AP Winzenreid and JL Buckland collection

converted to 3ft 6in gauge by the Geelong engineering firm J. C. Brown & Co. Pty Ltd. The other was cannibalised in the process, and then used as a source of spare parts. Although city street tramways seem a far cry from timber tramways, these Baldwin steam tram motors and their larger Phoenix Foundry derivatives seem to have performed well in the forest. This locomotive remained in service until 1917, when Haydens ceased sawmilling. The locomotive was sold to Cameron & Sutherland, who in turn sold it to the State Rivers & Water Supply Commission for use on the Hume Weir construction.¹³

In 1910 the Warburton Steam Tramway Syndicate built a 3ft gauge tramway to connect La La Siding, at the end of the Warburton railway, to Big Pats Creek, from where a number of tramways penetrated the forest. For their first locomotive they bought the Fowler 0-4-2ST (B/No. 5851 of 1889) from Penrose & Oddy; this was the one originally purchased new by Cropley Bros of Ellinbank. It proved to be a problem due to its terrible condition rather than because of any design fault, and apparently an Andrew Barclay 0-4-2ST locomotive

(B/No. 311 of 1888) was purchased as a stop gap replacement. This had been built to 2ft 9in gauge for an unknown New South Wales customer (possibly Leconfield Colliery). It was subsequently converted to 3ft gauge before coming to Warburton. If used at Warburton it was only for a very short time, as it was sold in 1913 to the Victorian Powell Wood Process Ltd for use on their tramway at Powelltown.¹⁴

The Warburton company must have been satisfied with the basic design of their worn out Fowler, as they went to John Fowler & Co to order a brand new replacement 0-4-2T (B/No. 13576 of 1913). This must have performed up to expectations, for in 1923 they ordered another, slightly larger one (B/No. 15989 of 1923). These two locos worked on the tramway until 1934, when steam operations ceased and rail tractors took over.

There must have been a locomotive shortage in Australia in 1916, as the old Fowler 0-4-2ST (B/No. 5851) was sold to the New South Wales Public Works Department for use at Walsh Island Dockyard, a large engineering establishment. They would have had the resources to rebuild it, but there is no record of it ever actually being used there. The two later Fowlers were sold to Mount Morgan Mines in 1940. At least one of them has survived, in pieces, and is back in Victoria.

Port Albert – logs on 2ft gauge

In 1910 the Port Albert–Mullundung Forest tramway went into operation, but was extremely unusual in being 2ft gauge, and carrying logs on that gauge. It was owned by the Goodwood Timber & Tramway Company, whose owners were Western Australians, involved in the Kalgoorlie & Boulder Firewood Co. That company had 2ft gauge firewood tramways at Beria, near Laverton in WA, and it would seem that the success of those influenced the choice of 2ft gauge for the Port Albert operation. However, the company's Victorian tramway was not a firewood operation, its sawmill producing sawn timber, sleepers, poles and piles.

The first locomotive was an Orenstein & Koppel 0-4-0WT (B/No. 3961 of 1910), which was purchased new. It was followed by a Krauss 0-4-0WT (B/No. 6415 of 1910) also purchased new, and joined in 1913 by Orenstein & Koppel



Orenstein & Koppel 0-4-0WT 'Lily' (B/No. 3771 of 1909) on the 2ft gauge Goodwood tramway at Port Albert – probably the only 2ft gauge line in Victoria built to carry logs in addition to sawn timber.

Photo: Mike McCarthy collection

0-4-0WT (B/No. 3771 of 1909). This locomotive was transferred from the Kalgoorlie and Boulder Firewood Co.'s tramway at Beria, WA. The locomotives were known as 'Amy', 'Mona', and 'Lily', respectively. 'Mona' had the misfortune to explode her boiler in 1914 but was repaired.¹⁵

The topography of Port Albert meant that there were much gentler hills than usual on Victorian timber tramways, so the smaller locomotives on 2ft gauge could handle the loads adequately, but the large logs on 2ft gauge may have contributed to the unusually large number of accidents on the line. These were not likely to be due to poor maintenance as the company was well-financed and well-managed. The company also employed a locomotive fitter and had a well equipped workshop to look after locomotive maintenance.

This operation ceased around March 1920, and the locomotives were sold, only one of which definitely turned up again on a Victorian timber tramway, but in a very different form. More of that later.

Locomotives for tight clearances

A second 3ft 6in gauge steam-operated timber tramway commenced operation at Forrest in 1911 when Henry & Sons purchased what seemed an amazingly unsuitable second-hand locomotive. It was a very small cabless 0-4-0WT built by Beyer, Peacock, (B/No. 3057 of 1889). The locomotive's first owner was the Moonta Mining Company (later amalgamated into the Wallaroo & Moonta Mining & Smelting Company) of South Australia. It had been built to 2ft 9in gauge specifically for operation on an isolated piece of track in the copper ore concentrating plant, a task for which it was probably very well suited. The design was based on two 18in gauge locomotives Beyer, Peacock had built, one for use within their own factory, and the other for use within the workshops of the London & North Western Railway Company.

At some stage the Wallaroo & Moonta Company converted it to 3ft 6in gauge. At Forrest it was known as 'Tom Thumb'. Henry tried it on his tramway between No.1 Mill and Forrest, but it proved underpowered for this. It was subsequently restricted to working on a 3 km stretch of track running along the river between Henry's big tunnel to the three-road interchange sidings at the junction of the route to the No.2 Mill. This



Beyer Peacock 3ft 6in gauge 0-4-0WT locomotive 'Tom Thumb' (B/No. 3057 of 1889) on Henry's tramway at Forrest. Originally built to 2ft 9in gauge it was in other respects identical to an 18 inch gauge loco Beyer Peacock built for use within their own factory. The driver is Alex McLaws. Photo: W Henry LRRSA collection



Henry's 3ft 6in gauge tramway at Forrest had tight clearances, due to a tunnel. To operate it Henry purchased a specially built loco, seen here at Henry's No.1 Mill. It was a Hunslet 0-4-0ST (B/No. 1100 of 1911) with inside cylinders and a hinged funnel.

Photo: W Henry LRRSA collection

route was reasonably level and the grade favoured the load. The loads consisted of both logs and sawn timber, and the tiny locomotive was able to cope with this. It remained in use until about 1915. It was then abandoned, but was not scrapped until about 1951.

Henry was limited in the type of locomotives he could use due to the tight clearances in his big tunnel. For that reason he was probably forced to buy a brand new locomotive to use on the outlet tramway from No.1 Mill to Forrest. This led to the purchase of a most unusual 0-4-0ST with inside cylinders. It was built by the Hunslet Engine Co. of Leeds, England, (B/No. 1100 of 1911). The specifications called for a locomotive 5ft wide and 6ft 3in high. To meet the height restrictions, a hinged funnel was provided, and this was lowered when going through the tunnel. The locomotive went into service late in 1912 or early in 1913. It was known as 'Little Green Beetle'. It remained in service until 1935 and was then abandoned in the Forrest railway station yard, being finally cut up about 1951.¹⁶

To be continued...

End Notes

1. McCarthy, Mike; *Settlers and Sawmillers*, LRRSA 1993, p.115 and 121.
2. McCarthy, Mike; *Mountains of Ash*, LRRSA 2001, p.165, 174, 178, and 179
3. Baker, Allan C & Civil TD Allen, 2008, *Bagnalls of Stafford: Builders of Locomotives for the World's Railways, A History of the Firm and its Folk* p.615
4. *Launceston Examiner* 1/9/1885 via Richard Horne
5. Winzenreid, AP; *Britannia Creek*, APW Productions 1986, pp.55-60.
6. Bowden, Keith; *The Great Southern Railway*, self-published 1970, pp.43-44.
7. Details from John Browning and Colin Harvey. This corrects details published in *Light Railways* No.65, 'Saga of Sandfly and the Lost Tribe'.
8. Details of Sanderson's locomotives provided by Norm Houghton. See also Houghton, Norm; *Sawdust and Steam*, LRRSA 1975, pp.37-50
9. Details from Norm Houghton and Mike McCarthy; and Frank Stamford interview with AN (Tony) Holden, a former driver on the tramway.
10. Details on identity of locomotives from John Browning.
11. Buckland, JL; 'McIvor Timber & Firewood Company Private Railway, Tooborac', *ARHS Bulletin* No.43, May 1941, pp.56-59. Plummer, Mark; 'Victoria Dock Construction', *Light Railways* No.27, Autumn 1969, pp.16-18
12. McCarthy, Mike; *Mountains of Ash*, LRRSA 2001, p.165
13. Winzenreid, AP; *Britannia Creek*, APW Productions 1986, pp.55-60. Baker, Allan C., 'The First Hundred Bagnalls', *Industrial Railway Record* No.100, pp.239 and 256
14. JC Brown & Co. Pty Ltd, Ledger Book in Geelong Historical Records Centre. See also Houghton, Norm; *Sawdust and Steam*, LRRSA 1975, pp.22-32
15. McCarthy, Mike; *Mountains of Ash*, LRRSA 2001, chapter 8
16. Information on the locomotives from John Browning and Mike McCarthy. This corrects the locomotive information in *Light Railways* No.124 'Goodwood'.