



CHAPTER 11

THE TRAIN TO MONTEZUMA

In this chapter we consider gauges less than 3 ft 6 in.

We look at gauges that have no application to regional and intercity routes. There have been break-of-gauge sites associated with these very narrow-gauge lines but they have not been the cause of chaos that we have seen with the wider gauges. There was one driving force behind these very narrow-gauge railways, which was the obsessional search for the cheapest line of railway where the trains that ran on these tracks were not in a hurry.

It has been the intention that this book should contain itself to public railways and not delve into the private railways of mining or timber and others of similar purpose. But there have been situations where these narrower gauges have found application to the general purpose rail operations.

Chapter 2 closed with a discourse that asked the question as to the narrowest gauge possible for a regional or intercity route. Des Smith said that for practical purposes he believed it was the metre gauge. He described these very narrow-gauge railways as 'toy trains'. I discuss these narrower gauges even to the extent of monorails.

There was metre gauge at Hartley Vale Colliery in NSW, and 3 ft 3 in at Koolooloa, near Gympie. And it is believed that the underground railway at the 420 metre level at the Olympic Dam mine is metre gauge.

ZEEHAN. In the 1890s deposits of silver were discovered on the rugged West Coast of Tasmania. It was a 'trademark' of the Krauss locomotives to have vertical oval shaped front cab windows. **JLW COLLECTION.**

There was a railway at Portland (Victoria) that had a gauge of 3 ft 1 in but it was never completed. The 3 ft gauge had made a very brief appearance in Western Australia. It was also of transient existence on the wooden rail tramway of the Mount Bischoff mine in Tasmania. The Powelltown Tramway in Victoria was built in 1913 to the 3 ft (914 mm) gauge. It was built for the transport of timber but provided passenger services and continued operation to 1945.

All of these operations would have encountered the same problem that probably put them at quite a disadvantage in sourcing rolling stock. There were locomotive and rolling stock manufacturers, mainly from Europe, who had developed a business model based on supplying equipment for light railways that they were able to supply almost 'off the shelf'. But there was little variety when it came to gauges. They were dealing in 2 ft 0 in (610mm) or 1 ft 11½ in (600 mm) gauge.

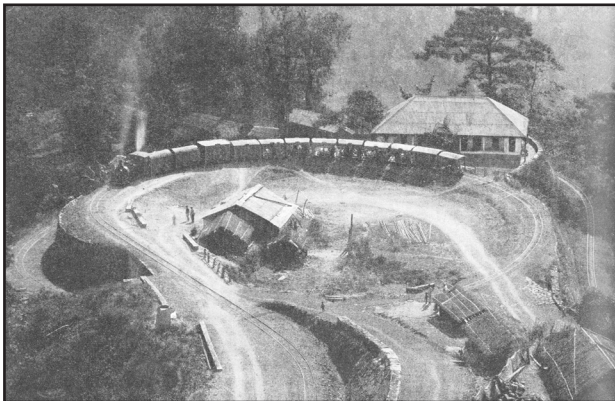
This craze for very narrow-gauge railways developed in the early 1890s, possibly fuelled by the hard economic times and the emergence of light industrial locomotives by several manufacturers in Europe. In Australia, there were two European companies that were selling these narrow-gauge systems. There was the French company Decauville, and from Germany, Lokomotivfabrik Krauss.

By a process of natural selection, they established their respective territories and seem to have avoided working in each others patch. The French company, Decauville saw potential in the sugar industry and actively promoted its products in Queensland. They also saw potential in Victoria. The German Krauss cultivated their patch in Tasmania.

The economic climate in Victoria had been a decade of indulgence and extravagance during the 1880s, but the 1890s brought depression, drought and the failure of banks. It was the time when Richard Speight was the Chairman of the Victorian Railway Commissioners and knew no restraint when it came to expenditure. The Parliament had passed what was known as the 'Octopus Act' which authorised many railways, from Melbourne, in all directions. Many of these lines were doubtful regarding their economic viability.

But even in the 1880s there were some regions in Victoria that had missed out and these communities were clamouring for their railway. The narrow gauge had been put to rest in the early 1870s but there were still the believers. People had either forgotten, or had chosen not to remember, that Victoria had previously explored this. There was a new generation in Parliament. Once again there were cries that more miles of narrow-gauge railway could be built than the broad gauge, which was denounced as being wasteful.

In the early 1890s there were the usual community meetings calling for narrow-gauge railways but by the mid-1890s the talk had changed. It was about light narrow-gauge railways and the 2 ft gauge. The lines were described as being feeders to the main trunk lines.



NEXT PAGE. THE TRAIN ON THE NORTH EAST DUNDAS TRAMWAY AT THE MONTEZUMA FALLS. This photograph is listed within several catalogues which suggests that a number of copies were done. The copy listed by the National Library of Australia attributes it to Beatie in 1899. The locomotive is one of two built by Sharp, Stewart & Co. **BELOW.** The Darjeeling Railway in India. The illustration in Black & White is from the *Railway Wonders of the World*, a two-volume book that was published about 1935. The black & white image on this page has been colourised by James Andonoplous at our request. James has a sophisticated computer programme but the process requires some research regarding colour schemes of the locomotives and carriages. I have included the 'before and after' images of the Darjeeling train to illustrate the quality improvement from the process.

The proponents of these lines could quote the experience in Europe where the lines had been hailed as a success. And there was no disputing that these light railways could be built with curves as tight as 1 chain, which made them a logical choice for mountainous terrain. It seemed that everyone had heard about the 2 ft gauge Darjeeling railway, with its 1 chain curves, 1 in 28 gradient, that climbed 7000 feet in 60 miles. (*Daily Telegraph, Sydney, 10 January 1895*).

The newspaper editors once again became the new railway experts. Reputable publications left their readers in no doubt that the Railways Department was obstructing progress.

From the *Leader, Melbourne, 12 June 1897*:

Nothing is more difficult to overcome than the obstinate prejudice of the official mind...for years the construction of narrow-gauge railways has been urged as a means of providing cheap transport facilities for remote and mountainous districts...The Railways Standing Committee undertook thorough investigation of the matter in 1894....and finally in 1895, came to a conclusion...that one or two trial lines in suitable districts should be constructed with a gauge of 2 feet.

The *Age, (27 December 1900)* went as far as to claim that 'the departmental officers were, almost to a man, against the scheme of narrow-gauge lines.

Decauville had an agent in Australia, a Mr C Van de Verde who was feeding the company's message to the newspapers. Decauville was using marketing tactics that were very similar to those that had been used by Robert Fairlie in his sales strategy of the early 1870s. The narrow-gauge movement in Victoria and Decauville found themselves with common objective with their lobbying.

The irony is that neither Fairlie nor Decauville, despite their efforts, sold anything to the Victorian Railways. Macdonald and Small have researched and written the history of Krauss locomotives in Australia (*ARHS Bulletin* No 391, May 1970). They have likened the light railway and the Krauss locomotives as meeting the same need as the 5-ton truck for a modern business. Krauss had exhibited in the Melbourne Exhibition in 1888. They had built engines for all gauges from 15 inch to 5 ft 6 in but it was the 2 ft (610 mm) that was their core business.





THE CLIMAX ENGINE ON THE PUFFING BILLY RAILWAY. The Climax was a locomotive with a geared drive that found favour amongst private railways servicing coal and timber operations. Credit is due to the Puffing Billy Railway for restoring this engine from a derelict state. **THE COLLECTION OF THE NATIONAL RAILWAY MUSEUM.**

BELOW. Trove references illustrate the relative fortunes of the Decauville and Krauss locomotives and their manufacturers.

Charles Small has written a history of the Decauville locomotives in Australia, or as near as possible as can be achieved given the limitations of the records that are available. (*The Bulletin of the ARHS* No 402, April 1971).

He wrote that despite the noise and effort that Decauville made, they only sold 18 locomotives into Australia. They had some initial success in 1883 in selling 2 ft gauge lines to the sugar industry in Queensland. That was for the Colonial Sugar Refinery which involved a contract for 6 locomotives, 50 miles of track, and 300 cane wagons. As such, Decauville can be credited with the 610 mm which is standard for the sugar industry for Queensland.

In 1895 Mr Van De Verde gave evidence to the Victorian Standing Committee on railways that was considering the railway to Mildura. This was reported by the **Argus (Melbourne), 15 March 1895:**

The witness went into a description of the Decauville system of light railways and placed £2,000 per mile as the extreme cost of a 2 ft line with rolling stock in rough country. He declared that no broad gauge railway could be built in any way complete for £6,000 per mile in the same way.

Decauville enjoyed some success in the French colonies in Polynesia.

Now to Tasmania.

There is a saying in Tasmania that if there was a steam roller that was big enough it could flatten the island state and make Tasmania larger than the rest of Australia. Having dealt with the break-of-gauge at Evandale Junction and Launceston Junction in Chapter 8, Tasmania was relatively free of gauge problems for the rest of the 19th century.

Tasmania's rugged west coast saw the emergence of a mining industry during the last quarter of the 19th century. This presented a challenge to the railway engineers as the nature of the country called for extremely tight curves much greater than could be achieved with the 3 ft 6 in.

In the case of the North East Dundas Tramway, it called for curves of 1½ chains. There were lines for the scattered mines of the Zeehan district where there was a two-gauge yard with the 3 ft 6 in and the 2 ft gauge.

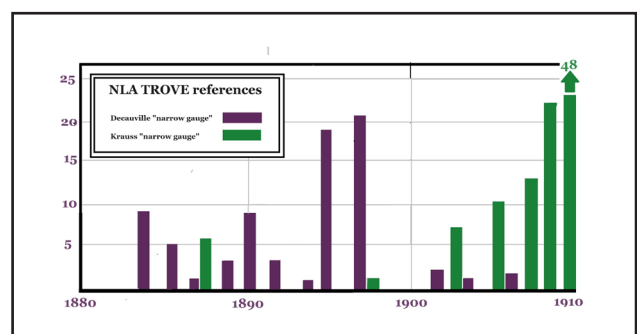
Montezuma was the silver mine quite close to Tasmania's highest waterfall and the tight curve at the falls on the North-East Dundas Tramway was the reason for the choice of 2 ft (610 mm) gauge. Meanwhile Krauss had been quietly working away at the market and would subsequently become the major supplier of the 2 ft (610 mm) gauge locomotives. Tasmania has had more railway gauges than any other colony:

- The convict railway, gauge unknown.
- Mersey & Deloraine Railway 4 ft 6 in.
- The Launceston & Western Railway 5 ft 3 in.
- Mount Bischoff wooden tramway 3 ft.
- Tasmanian Mainline Railway 3 ft 6* in.
- The North-East Dundas Tramway, 2 ft.
- But Tasmania has never had any 4 ft 8½ in.

Did the North-East Dundas Tramway have a break-of-gauge connection with the 3 ft 6 in? **The Daily Telegraph (Launceston), 19 January 1900**, has the answer.

Good progress is being made with the construction of the narrow-gauge line connecting the North-East Dundas railway with the Tasmanian Smelting Works.

* 3 ft 6 in gauge in Tasmania was often called 'broad gauge'.



At the present moment ore brought to Zeehan railway station in narrow-gauge trucks has to be reloaded into broad-gauge ones thus adding considerably to the charges.

We will now return to Victoria and Queensland.

Queensland took a particular interest and given that they already had 2 ft gauge lines for their sugar cane, there was the natural progression for these to provide passenger services and common carrier functions. These included the Innisfail Tramway and the Woongarra Tramway.

The Queensland Engineer-in-Chief was Henry Stanley. The Parliament could see the potential of the very light narrow-gauge railways and sent Stanley overseas to report. His task was not confined to the matter of light narrow-gauge railways but to report on all methods applied by the overseas countries with respect to many aspects of railway operation. Stanley's report is summarised in the ***Brisbane Courier*, 29 September 1897:**

Compared with, the broader gauge railways of the southern colonies, those of Queensland may be termed light. Mr Stanley defines the light railway as one which in its essential features is a departure from this standard or normal railways of the country, either as regards the gauge or character of the works with the view to secure economies of construction.... Many districts in the country are more or less isolated, which are at great disadvantage through the absence of economical means of transport of produce to a market, but where the probable traffic does not warrant normal lines for these he does not hesitate to recommend this to a smaller gauge, say 2 ft 6 in.

But in all the reports by the newspapers on Stanley's travels I have been unable to find a mention of a specific railway of 2 ft 6 in (762 mm), nor of 2 ft (610).

Very interesting is the account given by Mr Stanley of these light railways in the countries visited. They are not much used in America where reversion has in many cases been made to the standard gauge. In Canada standard gauge light railways are not uncommon... In England an Act has recently been passed to facilitate their construction. It was on the Continent that Mr Stanley saw most narrow gauge light railways and formed his impressions of their great facility. No fewer than nine pages besides diagrams are occupied with his account of the light lines of Belgium. The gauge of these railways is 3 ft 3 in (the metre) or 3 ft 6 in...light railways in France with the gauge from a metre down to two feet as with the Decauville company.

One of Tim Fischer's legacies has been a chart that lists all the railway gauges of the world. It is published on page 48 of *Trains Unlimited*. Relevant to this chapter are the following:

1 ft 11 5/8 in (600 mm) DECAUVILLE PORTABLE NARROW, including Eritrea and France.

2 ft (610 mm) CANE NARROW, Queensland, Tasmania.

2 ft 6 in (762 mm) SUEZ WALHALLA, Worldwide, including Australia, China, India, UK and USA.

The nomenclature deserves some comment. One of Decauville's innovations had been railway track that could be relocated depending on where it was needed, hence it was portable.

In Australia the one operation that took advantage of portable track was the Sons of Gwalia firewood tramway north of Kalgoorlie. As one patch had been harvested the track was relocated. However, the gauge of the Sons of Gwalia was narrower, 1 ft 8 in (508 mm). Regarding the 2 ft 6 in gauge, the name acknowledges its application in Suez. The application of Walhalla is curious because the railway to Walhalla was late in the history of Victoria's narrow-gauge lines.

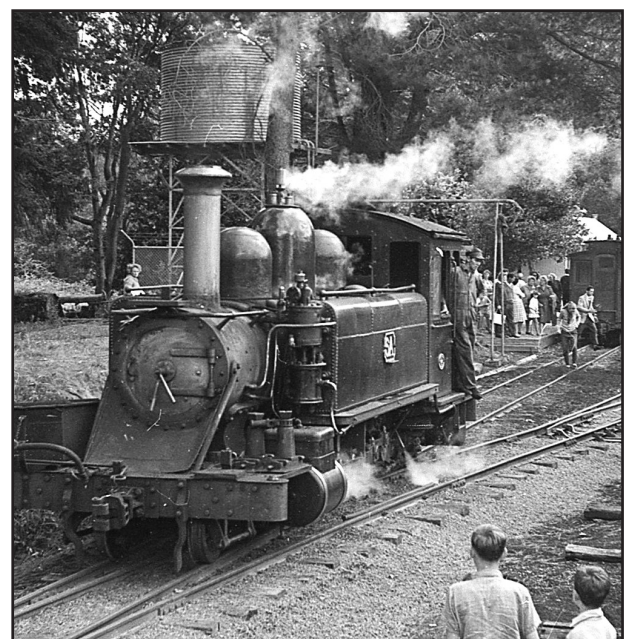
Given Tim Fischer's description of the wide distribution of the 2 ft 6 in railways in the world, we can reasonably conclude that Stanley would have seen the 2 ft 6 in gauge in operation. (The 2 ft 6 in gauge beyond Australia is quantified as 760 mm).

Victoria's Standing Committee on Railways had to deal with a number of railway projects that had been submitted for consideration for being built to the 2 ft narrow gauge:

Colac to Beech Forest	30 miles
Forrest to Beech Forest	31 miles
Beech Forest to Wattle Hill and Princetown	36 miles
Traralgon to Carrajung	23 miles
Traralgon to Carrajung, via Callignee	31 miles
Wangaratta to Whitfield	31 miles
Ferntree Gully to Gembrook	19 miles
Lilydale to Yarra Junction	19 miles
Lilydale to Warburton, direct	23 miles

THE GEMBROOK LINE IS NOW THE PUFFING BILLY RAILWAY.

This is one of the NA class of 2-6-2 locomotives of which there were originally 17 built. Two (Nos 1 and 2) were built by the Baldwin Locomotive Company of Philadelphia in 1898. The remaining 15 were built at Newport. **JLW.**





ON THE PUFFING BILLY RAILWAY. The locomotive is the Garratt, G42 that was built by Beyer Peacock & Co in 1926.

PHOTOGRAPH BY MARTIN BENNET.

The committee resolved that it would recommend four of those to be built as an experiment. Those lines were:

Wangaratta to Whitfield.

Ferntree Gully to Gembrook.

Colac to Beech Forest.

Lilydale to Warburton. Subsequent assessment found this route would be a viable proposition as a broad-gauge line and it was authorised as such. The line from Moe to Walhalla was subsequently included.

The Parliament duly passed the authorisation for these lines to be 2 ft gauge late in 1897. The railway from Wangaratta to Whitfield was the first to have construction commenced. In February 1898 the Standing Committee on Railways was provided with Stanley's report. Francis Rennick was the Engineer-in-Chief, who had long been opposed to the narrow gauge, and was consulted. He was faced with the reality that if a change was not made, the narrow-gauge lines would be built to the 2 ft gauge. 2 ft 6 in was a definite improvement. It was reported (**Age, 30 March 1915**) in his obituary:

Mr Rennick made a reputation for himself when the question of adopting narrow-gauge railways was warmly discussed in the years 1894-5, and the adoption of the 2 ft 6 in gauge for some light branch lines in preference to 2 ft was largely due to his advice.

Comment is appropriate about the discussion being 'warmly'. On reading the newspaper reports, the impression is that it was rather hot!

Without seeking any further information or opinions regarding gauge, the Standing Committee on Railways made the recommendation that all future narrow-gauge lines should be 2 ft 6 in. The track-laying of the Whitfield line had not commenced and so, it too would be a 2 ft 6 in railway. On reading the reports it appears that if there had been any 2 ft gauge track already laid for the Whitfield line, the construction would have continued as such. That would have seen Victoria operating two different narrow-gauge systems. This would have been an additional inefficiency in that there would have been no flexibility of engines and rolling stock between the narrow-gauge lines.

It appears that they were quite prepared for that.

The Railways Commissioner at the time was John Mathieson who said in 1898:

With respect to the narrow-gauge railways which have been authorised, I desire to state that in my opinion they will be found to be very costly experiments. The estimated saving in cost of construction is relatively so small but it cannot possibly compensate for the delays in transit or the transfer charges, additional cost of handling, and the general inconvenience necessarily involved in breaking the gauge on such branch lines.

It is not hard to imagine a situation whereby Mr Van de Verde would have been sending telegrams to his principals in France advising of the progress of the authorisation of the narrow-gauge railways in Victoria. And it is not hard to imagine those principals rubbing their hands in anticipation of an order for their 2 ft gauge locomotives. But imagine then, the message sent by Mr Van de Verde, that the Parliament had then changed the gauge. Decauville would not have had any 2 ft 6 in locomotives 'on its shelf' and there is no evidence that they had ever produced a 2 ft 6 in gauge locomotive nor had any drawings. In the listing of the 18 locomotives that Decauville had provided, 1897 was the last year that they did any business in Australia.

The Wangaratta to Whitfield railway was the first of the narrow-gauge lines to be opened for traffic on 14 March 1899. There was no formal ceremony but the commencement of operations was reported by **The Weekly Times (Melbourne), 18 March 1899:**

An expert from Queensland happened to be present and expressed himself as thoroughly pleased with the result, stating that the report made by his Engineer-in-Chief, Mr Stanley, to the Queensland Parliament on the advantages of the 2 ft 6 in gauge were now accurately demonstrated by the first Victorian trial line.

The opening dates of the lines were:

Fern Tree Gully to Gembrook	18 December 1900
Colac to Beech Forest	1 March 1902
Moe to Walhalla	3 May 1910
Beech Forest to Crowes	20 June 1911.

Regarding the subsequent history, Harrigan* provides the following:

Mathieson's objections to narrow-gauge railways were proved to be sound soon after the lines began working. The subsequent history of the four groups showed generally recurring series of annual deficits, which became progressively greater as road motor competition and rising costs made heavier impacts on operations.

The South Australian Government was also watching the progress of the light narrow-gauge railway and was considering this for the Pinnaroo railway, as reported in the *Narracoorte Herald*, **26 November 1901**:

The Bill was introduced for a line of the 3 ft 6 in gauge, adding another to the variety of gauges throughout South Australia, but some wanted the line as an experiment on the 2 ft 6 in gauge, and, therefore, the Commissioner devoted much of his speech to the question of gauges. From inquiries he had made in Victoria, where the 2 ft 6 in gauge had been experimented with, he had received unfavourable replies. Therefore, he had abandoned the very narrow gauge and now he proposed to abandon the 3 ft 6 in gauge included in the Bill, in favour of the 5 ft 3 in gauge.

In 1903 the South Australian Parliament was still squabbling about the gauge of the Pinnaroo railway. Pinnaroo and its railway became the subject of a Royal Commission, or more to the point, it was really trying to find the cheapest way to open up the land. More about Pinnaroo in Chapters 15 and 23.

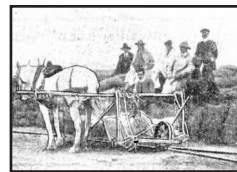
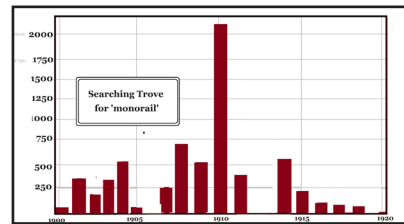
The 2 ft and 2 ft 6 in gauges were not completely dead in South Australia. There were still some who saw the 2 ft 6 in gauge as being the answer. The *Advertiser*, **22 October 1903**, reported proceedings of the Legislative Council where a statement had been provided, quoting John Mathieson, who had been the Commissioner of the Victorian Railways to 1901:

He had frequently pointed out to the Minister the utter absurdity of building a narrow-gauge line on to the end of the cockspur* that had been a dead loss from the start. A continuation of the broad gauge, which could have been provided at the same cost would have enabled the department to probably wipe out the deficit of the Fern Tree Gully line. That showed that they had made a big blunder in Victoria in constructing that line to the 2 foot 6 in gauge.

The 2 ft gauge had a try in 1909 when the railway from Cummins to Minnipa Hill (on Eyre Peninsula) was under consideration.

*Cockspur. In this context it refers to a very short branchline.

Tim Fischer's list of gauges does not go all the way down to zero. He was probably correct in not going there, but I think there is a place for mentioning monorails. I punched 'monorail' into the Trove search facility. 1910 was obviously the big year for them. They did not catch on. These monorails would have produced some strange break-of-gauge stations.



THE MONORAIL

From the *Observer* 20 May 1911.

The proposed light lines would have created two more of the dreaded break-of-gauge, one at Tailem Bend (5 ft 3 in to 2 ft 6 in) and one at Cummins (3 ft 6 in to 2 ft).

There were two good things that came out of the 2 ft and 2 ft 6 in railways of the 1890s. The first was the Gembrook line which is now better known as the Puffing Billy Railway. There would not be a railway enthusiast in the land who would not get a warm feeling, deep inside, when watching the children riding on the Puffing Billy Railway.

The second was a development in Tasmania, where there was a quest for a more powerful type of locomotive. The problem was that the more powerful locomotives were much heavier and were damaging track. This was particularly a problem with the solitary Hagans** engine.

Back in England, about 1907, an engineer called at the office of Kitson and Co with a rolled-up paper on which that engineer had made some sketches. Kitsons were not interested. His next visit was to Beyer Peacock & Co in Manchester.

Beyer Peacock were a larger enterprise than Kitson and were well respected in the Australian colonies. Collectively, the colonies had, to this time purchased close to 1000 locomotives from Beyer Peacock & Co. The Tasmanian Government Railways had made Beyer Peacock aware of their difficulty. At Beyer Peacock, the sketches were examined, and the concept was developed. The sketches were for an articulated locomotive that had been drawn by the engineer, who hitherto had followed an unspectacular career, including time in New South Wales. Beyer Peacock built two of the locomotives for the Tasmanian Government Railways. The engineer - Herbert William Garratt. There will be more about these articulated engines in Chapter 16.

*Harrigan, Leo J. *Victorian Railways to '62*. Published by the Victorian Railways Public Relations and Betterment Board.

**The Hagans was a 1900 German engine that was described as semi-articulated. It was too heavy and was destructive of the track.