THE NARROW-GAUGE QUESTION

by W. L. Hanks

The question has often been asked as to how a group of narrow-gauge railway lines came to be built by the Victorian Railways and in particular, "why was a gauge of 2 ft 6 ins chosen?"

The cost of constructing new lines to the gauge of 5 ft 3 ins was being scrutinised and with the view towards cheaper construction, narrow-gauge railways were being considered.[1] This happening at least as early as 1870, for in 1871 a report on the Festiniog Railway in North Wales was presented to both houses of the Victorian Parliament.

The report on the Festiniog Railway was in the form of a letter from Guilford L. Molesworth Esq. Director-General of the Ceylon Railway, sent from London, on 24 March 1871. This report briefly describes the history of the railway, its geography, construction, locomotives and rolling-stock. It also outlines the operation and finances of the line. The report discusses in some detail the advantages and disadvantages of using a narrower or different gauge than that already in use by a particular network.[2]

On 23 October 1871 an Act was passed by Parliament for the construction of three new railway lines and stipulated that costs were not to exceed £5000 per mile. The lines authorised for construction were Ballarat to Ararat, Castlemaine to Maryborough and Dunolly, and Ballarat to Maryborough via Creswick. For the first and second lines tenders were called for construction of either 5 ft 3 ins or 3 ft 6 ins gauge. For the first line the difference in cost per mile was £150 and for the second it would have been £181.[3]

The savings that would have been made in construction costs by adopting 3 ft 6 ins gauge, would have soon been soaked up by the transhipment costs at the break of gauge points, consequently the lines were constructed to a gauge of 5 ft 3 ins.

On 9 October 1890 an Act was passed by the Parliament for the formation of the Parliamentary Standing Committee on Railways, for the purposes of investigating and reporting on proposed railways. The first committee being formed soon after. The committees received directions from the Parliament and made recommendations on all proposed railway. Prior to the formation of the PSCR discussions and decisions on new lines were made by Parliament on advice from the railway commissioners.

During 1890/91 the first PSCR, whilst inspecting and taking evidence of some of the proposed railways, had it brought to their attention, that it would be desirable to adopt narrow-gauge lines to serve the outlying mountainous districts of the colony, "...where they would not connect with the existing railway system . . ." The question of using a narrow-gauge was, from then on, to be considered when individual lines were dealt with.[4]

It is interesting to note that by 1891 a number of broad-gauge routes to Gembrook had been proposed, originating from Beaconsfield, Dandenong, Pakenham and Ferntree Gully. All of these routes, except that from Ferntree Gully, had detailed surveys and estimates carried out, including an extension beyond Gembrook of 3.08 miles.[5]

On 2 February 1892 the PSCR sent a letter to the Premier asking him to obtain information on Narrow-gauge lines from the Australian Colonies, New Zealand and India. In particular the information sought from India was of mountain railways of 2 ft gauge. The Committee also requested that a scheme for a cheap railway be suggested to serve a district where a broad-gauge railway was impractical. The proposed line that was chosen was from Bruthen, at the head of navigation on the Tambo river.[6]

The broad-gauge line to Bairnsdale did not reach Bruthen until 1916.[7]

This proposed 2 ft gauge railway from Bruthen to Omeo would have been quite spectacular. It was to be 64.59 miles long with ruling grades of 1 in 30 and curves as sharp as 5 chains radius. At a total cost of £1,247,902 or £19,320 per mile, it would have cost nearly twice that of the average broad-gauge line at the time.[8] The Committee's decision was postponed until information was received from India.

A hiatus of some two years on inquiries into new lines occurred when, on 5 April 1892, the Parliament was dissolved and the PSCR was disbanded. A second Committee was appointed in June 1894, but lasted only three months until Parliament was again dissolved on 4 September 1894. A third Committee was appointed in October 1894.[9]

On 31 October 1894 the Legislative Assembly referred the question of narrow-gauge railways to the third Committee, together with evidence on

Narrow gauge loco 8A at Belgrave. Photo: Phillip G. Ellis Collection.

the subject from the second Committee. Evidence had been collected from a number of witnesses, including officers of the Engineering and Locomotive branches of the Railway Department, others from outside the railways and agents of the 2 ft gauge lines that had been built in parts of France and Germany.[10]

Evidence was so conflicting that on 15 August 1894 the Minister for Railways was requested to have two surveys made on gauges of 2 ft and 5 ft 3 ins on lines through "hilly" country and "very hilly and difficult" country. The districts chosen for the surveys were from Cunninghame to Orbost and from Moe to Walhalla.[11]

A report on the narrow-gauge principle was presented to Parliament on 10 October 1895. It contained a number of recommendations:

1. Two trial lines to be constructed to 2 ft gauge.
2. Lines to be selected according to the Railway Standing Committee Act.
3. Tenders to be invited for construction:
   a. on the Decauville system,
   b. on the Bochumer-Verein system, or
   c. with wooden sleepers and second-hand rails.
4. Estimates of probable traffic, along with costs of construction and equipping 2 ft gauge lines.[12]

The report on the question of "Selecting Localities for the Permanent Survey of Narrow-Gauge Lines" was presented to Parliament on 18 August 1896. It reported that the PSCR had inspected fourteen localities where it would be practical to build 2 ft gauge railways. Out of these four districts were recommended for the construction of trial lines, having presented the strongest claims for a narrow-gauge railway. These were:

Wandin and Warburton District
King River District
Gembrook District
Beech Forest District

The report went on to detail all fourteen districts as to the traffic that would be available, costs of construction and equipment requirements.[13]

In 1897, the Fifth General Report of the PSCR was presented to Parliament. It was broken into three parts, with the third being devoted entirely to "The Question of Narrow-gauge Railways".

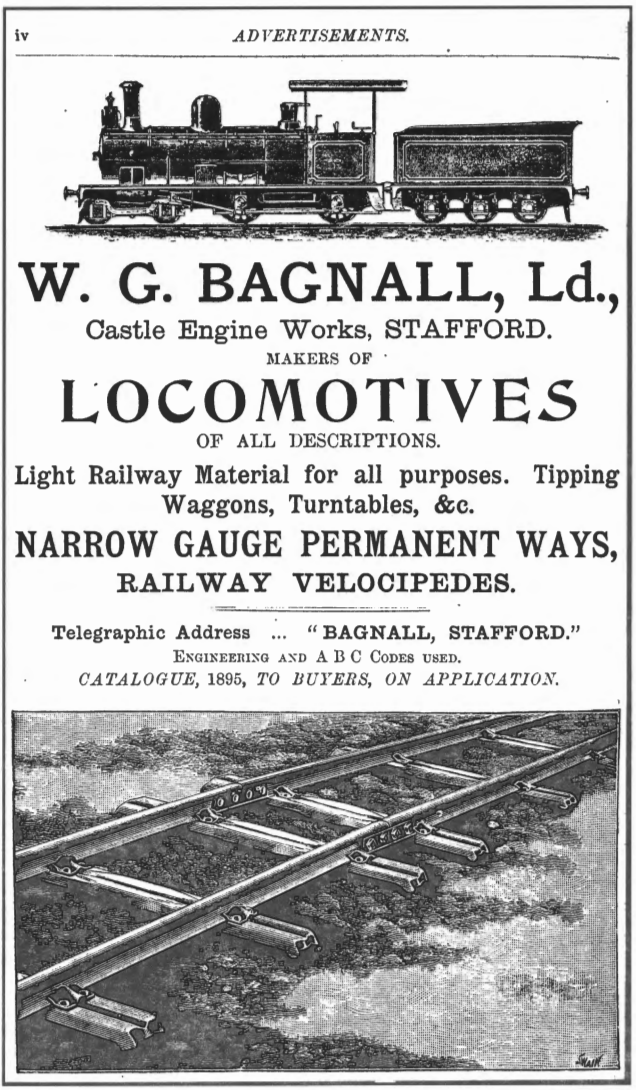
When the Committee reported in favour of the narrow-gauge principle in October 1895, it drew special attention to a line in Tasmania that was then under construction, the North-East Dundas

tramway. The Committee went to Tasmania in May 1897, travelling by steam-ship to Launceston, then over the 3 ft 6 ins gauge railway to Hobart and then by steam-ship again to Strahan on the West coast. From Strahan they travelled the 28 miles to Zeehan on the 3 ft 6 ins gauge railway of the T.G.R., where the 2 ft gauge North-East Dundas tramway began.[14]

The Committee gathered much information on the construction, locomotives, rolling-stock and operation of the tramway, which was then reported in much detail. It was expressed in this report that it would be absurd to depart from the 5 ft 3 ins gauge if all that was to be attained was the placing of the rails 2 ft apart on heavy earthworks, but expressed that much could be gained from the proper application of narrow-gauge.[15]

Appended to the Fifth General Report are reports from the General Manager of the Tasmanian Government Railways, Mr Frederick Back, and the Engineer-In-Chief of the Victorian Railways, Mr Fred Rennick. Both these reports make interesting reading on their own, but it

Advertisement in contemporary catalogue in the Victorian Railways Secretary's business papers.



became obvious that there was friction between the two gentlemen as to the application of 2 ft gauge railways.[16]

The report on the question of narrow-gauge railways presented to Parliament on 10 October 1895, had recommended that a gauge of 2 ft be adopted for use on narrow-gauge lines in Victoria. The Committee decided to reconsider the question before any trial lines were commenced, as they had recently received further information. The Engineer-In-Chief had directed that ". . . the 2 ft gauge lines have curves no sharper than 2 chains radius . . ." and informed the Committee ". . . that a line of 2 ft 6 ins could be laid down on such curves, costing only about 5 per cent more, whilst using the same weight of rails."[17]

The Chief Engineer of Railways in Queensland, Mr H.C. Stanley, who had recently returned from a tour of railways in America and Europe, had reported to the Queensland Government, ". . . it is not advisable to employ a gauge less than 2 ft 6 ins . . ."

Mr Calthrop, late Assistant Locomotive Superintendent of the Great India Peninsula Railway, said that, ". . . after thorough investigation, it was decided to adopt the 2 ft 6 ins gauge for the Barsi Railway which he is constructing in India." Mr Calthrop said of the 2 ft 6 ins gauge – "There is no doubt that, as compared with all others, it is the gauge possessing the greatest carrying capacity per cent. of cost of track . . ."

In view of these opinions and ". . . as a considerable increase in traffic capacity can be secured without an undue increase in cost of construction . . ." the Committee recommended that the 2 ft 6 ins gauge be adopted as the narrow-gauge standard in Victoria.[18]

Mr John Mathieson, the Victorian Railways Commissioner, expressed his concern over the adoption of narrow-gauge railways – "With respect to the two narrow-gauge lines which have been authorized, I desire to state that, in my opinion, they will be found to be very costly experiments . . ."[19]

The Whitfield Line had been authorized by Act No. 1492, on 24 August 1897. "The gauge has, however been increased from 2 ft to 2 ft 6 ins, under instructions of the Minister for Railways on 24 February 1898 following the recommendations of the Parliamentary Standing Committee on Railways".[20] Construction commenced on 1 March 1898, was completed on 14 March 1899 and opened for traffic on 29 April 1899.[21]

The Lilydale to Yarra Junction line, whilst passed by the Lower House of Parliament for construction at 2 ft gauge, was altered by the Upper House to a broad-gauge line starting at Coldstream. It was then postponed for the consideration of the new Parliament and was eventually built as a broad-gauge line.[23]

The fact that the Wangaratta to Whitfield line was authorized as a 2 ft gauge line, but was actually built as 2 ft 6 ins, is reflected in many of the plans for the line, with the 6 inch pencilled in after completion.

A relevant book held in the Public Transport Corporation's library, is called "Light Railway for the United Kingdom, India and the Colonies" by John Charles Mackay, printed in 1896. It appears that this book was obtained by an officer of the Victorian Railways on 5 May 1896. A number of points in the book are highlighted, but the most interesting is the sentence – "The most suitable gauge for local railways may be taken to be 2 ft, or preferably 2 ft 6 ins". It is this author's opinion that this book would have been read by the Engineer-In-Chief, Mr Rennick and played a large part in the decision to select a gauge of 2 ft 6 ins.

REFERENCES

1. Vic. Rail Annual Gen. Rpt 1872
2. Report on the Festiniog Railway.
3. Vic. Rail. Annual Gen. Rpt 1872
4. PSCR 1st Gen. Rpt 1891.
5. ibid
6. PSCR 2nd Gen. Rpt 1892.
7. Vic. Rail. Annual Rpt 1917.
8. Appendix to PSCR Rpt 1892 of Sectional Committee No 1.
9. PSCR 3rd Gen. Rpt 1895.
10. ibid
11. ibid
12. PSCR Rpt on Narrow-Gauge Railways.
13. ibid
14. PSCR 5th Gen. Rpt 1897.
15. ibid
16. ibid
17. PSCR 6th Gen. Rpt 1898.
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19. Vic. Rail. Annual Gen. Rpt 1898.
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23. PSCR 6th Gen. Rpt 1898.

Advertisement for light railway plant. The Victorian Railways considered this information and ultimately opted for Baldwin pattern locos.