

Canterbury – Full Steam Ahead 1863 – 1878

The History of the Canterbury Provincial Railways



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A Dissertation Presented for the Degree of Bachelor of Arts
(Honours) in History

2015

University of Canterbury

Abstract

This research essay examines and investigates the history of railway transport in New Zealand by utilising the Canterbury Provincial Railways (in operation 1863-1878) as operated by the Canterbury Provincial Government as a case study. The Canterbury Provincial Railways are considered by New Zealand historians and in particular transport historians to be the beginning of the modern-day New Zealand Railways network and the start of the rail-making era of New Zealand History. I consider the role that the Canterbury Provincial Railways have played between 1863 and 1878, and to what extent the railways benefited the region of Canterbury. In addition, the place of other Provincial attempts at railway construction are also briefly considered and their place in New Zealand's railway history next to that of the Canterbury Provincial Railways. All previous revisions of the Canterbury Provincial Railways' history have either been to look at it in a regional rail perspective or to solely focus on the railway, but not within the wider context of Canterbury region, which this research essay seeks to do. Overall, this research essay seeks to develop better the understanding of the place the Canterbury Provincial Railways plays in the wider history not only of the Canterbury region but also New Zealand too.

This dissertation is submitted in part fulfilment of the requirement for the degree of BA Honours in History at the University of Canterbury. This dissertation is the result of my own work. Material from the published or unpublished work of other historians as used in this dissertation has been credited to the author in the footnote references. The dissertation is approximately 8,422 words in length.

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Chapter One

Genesis of the Provincial Railways 1853 - 1863

From the outset of European settlement in New Zealand, railways were not seen to be a priority; rather, the focus was on developing the urban centres and increasing the population in order to support such grand works. Within twenty-three years of signing the Treaty of Waitangi, however, the colony would possess its first, short railways. The most well-known and successful of these, and considered by most historians to be the fore-runner of the modern-day railway network, was the Canterbury Provincial Railways, or more correctly the Canterbury Railways, opened on 1 December 1863 and running between Christchurch and the 'stopgap' terminus of Ferrymead.

Very little has been said to date on the Provincial railways of Canterbury other than the excellent book *Canterbury Provincial Railways* by W. A. Pierre, written in 1964, and the occasional footnote on the existence of the railways in wider histories of the New Zealand Railways. The only revision in later years to have come of this was not a wider history of the railway, but instead a review by Christchurch enthusiast Gerald Petrie of the hitherto obscure history of the steam locomotive in New Zealand from 1863 to 1878.

It was only appropriate that the cradle of the future New Zealand Railways should be located in Christchurch; the steam locomotive was an English invention, first developed by Richard Trevithick at the Pen-y-daran Ironworks in Wales in 1804. And Christchurch was a Church of England settlement; founded in December 1850, the last major centre to be so incorporated, and inhabited by largely expatriate English settlers who had travelled on the 'first four ships' chartered by the Anglican Church-backed Canterbury Association. Moreover, Christchurch was, in the words of Philippa Mein-Smith, a "transplanted England. It assumed as its own the goal of civilisation that had been at the heart of British colonisation overseas since the sixteenth century."¹

However, unlike other major centres of the time, Christchurch had one impediment to its development in the form of the Port Hills. Once the remains of a great volcano, the hills provided both sheltered anchorage in a natural harbour, and a barrier to those wishing to travel from the port settlement of Lyttelton, at the foot of the hills, to Christchurch proper. There were few options available for those wanting to cross the hills to the embryonic city at this point, with the main route being the main Bridle Path which climbed across the hills before descending into the Heathcote Valley. For those less inclined to climb, the alternative was to transfer or more correctly 'tranship' the goods onto a steam lighter, which had as an advantage the ability to sail up the Heathcote and

¹ Mein-Smith, Philippa, *A Concise History of New Zealand* (Cambridge: Cambridge University Press, second ed. 2012). p. 63.

Avon Rivers to the many wharves built to serve the settlers' needs. Unfortunately, this required vessels with shallow draught, thus requiring calm seas to make the trip from Lyttelton, which also included a trip across the treacherous sandbar at the entrance of the Heathcote-Avon Estuary at Sumner.

Although seen as an inconvenience at the beginning of settlement in Canterbury, the lack of communication between Christchurch and Lyttelton proved before long to be more serious than the first settlers had anticipated. Lyttelton needed to be made more accessible; the consequences of not doing so would throttle the region's economic development.² The existing methods of transport were too expensive to be economically viable; for example, the cost of sending bales of wool to Lyttelton via Heathcote was five shillings per bale, while wheat was priced at three shillings per bushel and potatoes at eight shillings a ton, which in turn added considerably to the cost of the goods when finally sold.³ With this in mind and shortly after being appointed the first Superintendent of Canterbury Province in 1852, James Edward FitzGerald (1818-96) accordingly formed a Commission in 1853 to investigate how best to overcome this barrier. The option of a railway was presented with a choice of two routes; one directly through the Heathcote Valley with a tunnel to Lyttelton, the other running along the Heathcote-Avon Estuary to Sumner and thence through a tunnel under Evans Pass to emerge near Gollans Bay. The Commission, however, could not decide whether a railway or road would be more suitable for the time being, although they acknowledged that the railway would be the better of the two so long as funding could be found. The railway proposal was instead quietly shelved and FitzGerald's government instead hastily built a cheap road over Evans Pass.⁴

The Evans Pass Road was not intended to be a permanent solution to the problem of transport across the Port Hills, although FitzGerald had merely deferred any decision on a solution to the matter until his resignation in 1857 and replacement as Provincial Superintendent by William Sefton Moorhouse (1825-81). Moorhouse saw the value in having a railway connection to Lyttelton and further afield and tasked the Provincial Engineer, Edward Dobson, A.I.C.E., with surveying railway routes to Lyttelton, Timaru, and the Kowhai River.⁵

The proposed railway was entirely ambitious in that it would be the first locomotive-operated railway in New Zealand, rather than relying on horses to power trains along its route. Already two

² Kemp, Doreen, 'William Sefton Moorhouse, 1825 – 1881', MA thesis (History), University of Canterbury, 1950. p. 39.

³ Topp, Edlene, 'The Contribution of the Railways to the settlement and development of the South Island of New Zealand', MA and Honours thesis (Geography), University of Canterbury, 1947. p. 51

⁴ Pierre, W. A, *Canterbury Provincial Railways: genesis of the N.Z.R. system* (Wellington: New Zealand Railway & Locomotive Society, 1964). p. 19.

⁵ Kemp, p. 43.

short lines had been built, a short mine railway near Kaitangata in Otago Province and the 13½-mile long Dun Mountain Railway at Nelson, both relying on horses to propel the wagons. Neither were particularly long-lived as railways with the Dun Mountain line being shut down beyond the outskirts of Nelson in 1872 at which point it became New Zealand's first street tramway.⁶

Moorhouse was successful in persuading his Provincial Council colleagues to consider building a railway from Christchurch to Lyttelton in 1858 and consequently a Railway Commission was formed on the Province's behalf in England which included former Superintendent FitzGerald, Provincial Agent H. S. Selfe, and bank manager G. J. Cummins. The Commission was to have worked in concert with the famous railway engineer Robert Stephenson, son of renowned engineer George Stephenson of Liverpool & Manchester Railway fame, though ill health forced Robert to pass the contract to his younger cousin George Robert. The latter duly travelled to New Zealand and reported back in August 1859, advocating the 'direct' route through the Heathcote Valley as first considered in 1854.⁷ Like Moorhouse and his fellow colonists, Stephenson saw the proposed railway in the same context as a local line between port and plains, and not as a part of a national rail network. This view was the prevailing mind-set of settlers throughout New Zealand at this time, the focus at this stage being on improving communications between city and port, and would subsequently require the vision of Minister of Public Works, Julius Vogel, to remediate this short-sightedness in future years. It must be noted though that Stephenson was not unfavourably predisposed to building further railway lines in Canterbury; indeed, he felt that there would be little challenge for the railway-builders on the broad, flat Canterbury Plains. But having said that, Stephenson was of the belief that no other railway line in Canterbury Province would be of any greater financial benefit than the line to Lyttelton which would reliably connect Christchurch to its port for the first time since settlement had begun.⁸

Following the recommendations of the Stephenson Report, Moorhouse and his colleagues voted in favour of the 'direct' route via the Heathcote Valley in late 1859, even going so far as to pass the Lyttelton and Christchurch Railway Ordinance in December of that year to legally begin construction. In doing so the Provincial Government overstepped its legislative boundaries and led Governor Gore Browne to disallow it. In reply, Moorhouse re-wrote the Ordinance as a Government Bill which he then presented to the House of Representatives in his capacity as Member for Canterbury in August

⁶ Stewart, Graham, *The End of the Penny Section: When trams ruled the streets of New Zealand* (Wellington: Grantham House, second ed. 1993). pp. 3-5.

⁷ Pierre, pp. 20, 23.

⁸ Topp, p. 52.

1860. On this occasion, Moorhouse was successful and the Lyttelton & Christchurch Railway Bill passed into legislation on 28 September 1860.⁹

Less successful were the works associated with the new railway tunnel. Stephenson had contracted the British contractors John Smith and George Knight to build the railway and tunnel on behalf of the Provincial Government in late 1859 for the sum of £235,000. Subsequently Smith & Knight had sent their agents, McCandish & Baine, to New Zealand shortly after and, possibly at the same time, a team of miners who had begun digging trial shafts both at Heathcote and Lyttelton. Both shafts had struck hard rock, and led Smith & Knight to seek an increase in their contractual payment of £30,000, an increase of 12.8%, which Stephenson believed unacceptable. Smith & Knight duly gave up the contract, and left the Provincial Government to seek advice from noted geologist Julius von Haast who duly observed that the hard rock was in fact only a small part of what he expected would be bored through by the tunnel-builders.¹⁰

By this time, opposition to the railway had been rallied under no less than FitzGerald himself, recently returned from his post as the Emigration Agent for Canterbury Province in England and now one of the founders of the *Press* newspaper, in which he and other noted citizens of Canterbury who shared his views bluntly claimed the tunnel scheme was a “mad idea”. FitzGerald himself was biased in the matter; he had an emotional interest in the alternative railway route planned via the Heathcote-Avon Estuary, Sumner and Gollans Bay with a tunnel under Evans Pass.¹¹ Moorhouse himself was undaunted and sailed for Melbourne, where he both floated a loan of £300,000 over a five-year period with the Union Bank of Australia, and signed a contract with the Australian railway-engineering firm of Holmes & Co. who agreed to build the railway and tunnel for the sum of £240,500.¹² Of that sum, the railway tunnel and its portals were to cost £195,000 together following an amendment to the tunnel portal at Lyttelton; the remainder was worked out at £3,066 per mile of railway line including sidings at three stations and wagon turntables; embankments, fencing, drainage and level crossings cumulatively totalled £21,989; while the bridges similarly were to cumulatively total £2,814, of which most would have been expended on the bridge over the Heathcote River at Opawa.¹³

With the contractors having taken up their task – the ceremonial ‘first sod’ of the tunnel being cut by Moorhouse himself on 17 July 1861 at the Heathcote end of the tunnel – and the funds to build the

⁹ Peck, E. M., ‘William Sefton Moorhouse: with a Chapter on Samuel Bealey’, MA and Honours thesis (History), University of Canterbury, 1923. p. 15.

¹⁰ Kemp, pp. 52-54; Peck, p. 16; Pierre, p. 67.

¹¹ Pierre, p. 168.

¹² Kemp, p. 53; Peck, p. 17.

¹³ Pierre, p. 69.

railway at hand, work could now progress.¹⁴ The only thorn in Moorhouse's plans, however, was the time estimated to build the new railway tunnel. Edward Dobson had himself examined the trial headings after Smith & Knight abandoned them, only to state that while the funding had been adequate, the tunnel would not be finished as soon as hoped – in fact, it would be completed by 1866-67 at earliest. Instead, it was decided to build a wharf at Ferrymead, and use this as a temporary railhead from Christchurch until Holmes & Co. had finished building the tunnel. This wharf, known as the Railway Wharf, was a component of the Holmes & Co. contract, whereby the contractors were obliged to build it as a place to land railway materials and rolling-stock after transshipping it from Lyttelton.¹⁵ The wharf was to be connected to the future Lyttelton railway by a short branch line, the construction of which was included in the contractual obligations but not in the price agreed between Provincial Government and contractor, instead being built to a rate as agreed between both parties in Holmes & Co.'s contract. Despite some difficulty, enough of the wharf was completed on 27 April 1863 when Holmes & Co. landed their first locomotive, a British-built tank locomotive obtained nearly-new but unused from the Melbourne & Essendon Railway in Australia. Its arrival was of some considerable importance to the Provincial Government; not only was it the first steam locomotive to arrive in New Zealand, but it was built to work on the so-called Irish broad gauge of 5 feet 3 inches (1600mm) between rails.¹⁶ Originally the contract had specified the Imperial broad gauge of 5 feet 6 inches (1676mm) between rails as used in India, but Holmes & Co. were evidently able to negotiate the gauge reduction based on their possession of the unused ex-Melbourne & Essendon locomotive. This change in gauge was, in turn, a result of the Australian 'gauge wars' of 1850-52, occasioned by the construction of the Sydney Railway Company's line between Parramatta and Sydney. Originally, the railway was to have been built to the Irish broad gauge as selected by its first engineer, Francis Webb Shields, a decision which was legislated by the New South Wales state government and later followed by the states of Victoria and South Australia. However, Shields resigned and was replaced by James Wallace, who argued successfully for a change of gauge to the so-called Stephenson standard gauge of 4 feet 8½ inches (1435mm) in 1852. In turn this created a 'break of gauge', since both Victoria and South Australia were building to the Irish broad gauge and one company, the Melbourne & Hobson's Bay Railway Company had already started building for the broad gauge and even acquired rolling stock which its Sydney-based

¹⁴ Dew, Leslie, *On the Move: The Country Commuter – the regional railway network of Christchurch* (Christchurch: Christchurch Transport Board, 1988). p. 7.

¹⁵ Dew, Leslie, *On the Move: The Tidal Travellers – the small ships of Canterbury* (Christchurch: Tramway Historical Society, 1991). pp. 37-40.

¹⁶ Fischer, Tim, *Railways Unlimited in the 21st Century* (Sydney: HarperCollins, 2012). pp. 50-51.

counterpart was yet to do owing to the gauge change.¹⁷ This 'break of gauge' would persist in Australia across various states until the nineteen-sixties, and would also be of sufficient concern in New Zealand at a later date to require redressing by the General Assembly in 1870.

At that time, the railway scheme of Canterbury Province was not the only one being advanced; the provinces of Auckland and Southland were also now joining the early 'Railway Fever' which was starting to take hold in colonial New Zealand. Southland was looking to build a wooden-railed railway to the Davies Patent system with the intentions of tapping into the goldfields in the Lake Wakatipu region, while Auckland was seeking the funds to build a 'military railway' to transport troops south in the aim of claiming victory in the latest stage of the 'Māori Land Wars' then raging in the Waikato region. Neither was particularly well advanced at the time, although Southland would shortly steal the march on Canterbury by trialling the first working steam locomotive in New Zealand, the Australian-built *Lady Barkly* on the Stead Street Wharf in Invercargill on the evening of 8 August 1863.¹⁸

¹⁷ Preston, R. G., *125 Years of the Sydney to Parramatta Railway* (Burwood: New South Wales Rail Transport Museum, 1980). pp. 26-27.

¹⁸ Petrie, Gerald, *In the Beginning: The story of the New Zealand locomotive 1863-1877* (Christchurch: Locomotive Press, 1996). p. 150.

Chapter Two

Full Steam Ahead – Canterbury Provincial Railways 1863 - 1870

With the railway construction now firmly underway by 1863, Holmes & Co. were subsequently able to erect their first locomotive, known officially as N^o 1 and unofficially as *Pilgrim*, in June of that year.¹⁹ Built by the British firm of Slaughter, Gruning & Co of Bristol as their Works N^o 488 of 1862, it had been trialled in England before being dismantled for the trip to Melbourne later that year. However, the Melbourne & Essendon Railway had not developed the level of traffic anticipated when they brought the locomotive and so it was on-sold to Holmes & Co., who had either purchased N^o 488 outright or at least procured the right to buy it prior to October 1862.

Although complete by June 1863, *Pilgrim* was to be without work until November as Holmes & Co. were yet to lay any track for it to run on. Stored initially under tarpaulins and later in the new goods shed at Ferrymead, it was finally put to work in mid-November under the care of engine-driver Abraham Beverley, who had been brought out from Victoria by Holmes & Co.²⁰

With the railway now largely completed, the momentous occasion of the railway being opened could finally take place, this being done on 1 December 1863. The *Pilgrim* subsequently performed the honours at 2.02pm, leaving Christchurch with the official opening-day special bound for Ferrymead, some 4¼ miles distant. The ceremony itself had been delayed on two counts; firstly, Provincial Superintendent Samuel Bealey had been delayed owing to the antics of one of the horses pulling his carriage, and secondly, the carriage had to return to its starting-point to collect the rest of the 'Executive Council' as the *Lyttelton Times* of 3 December 1863 named the members of the Provincial Council.²¹ As befitting his role as father of the railway, William Moorhouse, now practicing once more as a private lawyer following his resignation from the position of Provincial Superintendent, was given the privilege to ride on *Pilgrim's* footplate on that inaugural trip with driver Beverley and his fireman.²²

Holmes & Co. duly provided a banquet for the distinguished guests that day, among them the Venerable Archdeacon Matthias, Moorhouse, Bealey and others. Moorhouse duly gave a speech in the goods shed, where a banquet was held (another following thereafter for the workmen), before

¹⁹ It should be noted that there is no evidence for the *Pilgrim* name other than from contemporary newspaper reports. Neither of the two photographs of the locomotive show any evidence of a name having been added to the engine, and officially it was only ever referred to as N^o 1.

²⁰ Petrie, pp. 65-67.

²¹ "Opening of the Canterbury Railways", *The Lyttelton Times*, 3 December 1867; paperspast.natlib.govt.nz/cgi-bin/paperspast?a=d&cl=search&d=LT18631203.2.15&srpos=2&e=01-12-1863-10-12-1863--10--1---00Opening+of+the+Canterbury+Railways-ARTICLE-. Sighted 15/10/15, 12:20pm.

²² Troup, Gordon, *Footplate: The Victorian Engineman's New Zealand* (Wellington: Reed, 1978). pp. 5-6.

repeating it from the roof of the railway station for the benefit of the greater public. During his speech, Moorhouse stated:

“Canterbury is an ideal shape and form for the girding and strengthening effect of a railway system. This system we have begun to see in action today, and I venture to prophesy that at no distant date we shall be able to breakfast at Christchurch and dine at Timaru. Yes, you may laugh, you can afford to, so peaceful, so fortunate are you at a moment when our brothers in the North are burying the fallen and consolidating the victory at Rangiriri.”²³

Moorhouse would subsequently be proven right in his prophesy; the railway would reach Timaru, but not until 1876, by which time the narrow gauge had taken over and the broad gauge was in retreat. The banquet was in itself some cause for remark by the *Lyttelton Times* as not all could be seated at the tables placed in the goods shed; some made do with sitting in a line of open goods trucks parked along the siding that ran through the shed, and managed to consume some of the tastier food in a rather crude manner:

We saw one party of nine, amongst whom there were only three knives, one of them being a carver, and two forks. We saw one gentleman insanelly attempting to carve a ham with a penknife no bigger than a knitting-needle; another demolishing a fowl in a very primitive manner; but notwithstanding all these drawbacks, it is a strange fact that the choicest dishes accumulated in a most mysterious manner round these apparent outsiders.²⁴

In the meanwhile, Holmes & Co. were the operators of New Zealand’s first steam-operated public railway on behalf of the Canterbury Provincial Government as per their contract, and were ordering further equipment to complement that already working the line. The second engine, N^o 2 (Slaughter, Gruning & Co. works N^o 532 of 1863) was duly landed at Lyttelton in March 1864 ex-Plymouth, and was subsequently transhipped to the Railway Wharf in April before being put into service in mid-June 1864.²⁵

No tangible benefit could yet be made to the cost of transport yet as the Lyttelton Tunnel was still incomplete and would be for some time. Instead, efforts turned southwards towards Timaru which was to be served by the so-called ‘Great Southern Railway’. Once more, Holmes & Co. were given the contract though this time it was a matter of expedience, as Holmes & Co. were the lessees of the Lyttelton to Christchurch railway, and at the time it was seen that only the Provincial Government’s

²³ Troup, p. 11.

²⁴ “Opening of the Canterbury Railways”, *The Lyttelton Times*, 3 December 1867.

²⁵ Petrie, pp. 68-69

binding clause to operate the railway would be sufficient for Holmes & Co. to acquire more locomotives and rolling-stock.²⁶

At the time, additional clauses were added into the contract which reflected that, at that time, New Zealand's – and, by extension, Canterbury Province – financial position was rather dire. The Māori Land Wars had sapped the nation's economy, while interest charges were absorbing other funds from the South Island which in turn slowed the ability of the Provincial Governments to carry out any large public works schemes such as railways. This had plunged New Zealand temporarily into an economic depression, and as such, the Provincial Government included several clauses that allowed it to either stop work altogether, or to pay with either loan debentures or what was then termed as 'waste lands', lands that were not being used either by the local Ngāi Tāhu Māori or the settlers, either being issued up to the sum total of £50,000.²⁷

Holmes & Co. duly began the contract and ordered a further four locomotives – two of the same pattern as *Pilgrim* and a further two smaller engines, to work the new line. The smaller engines were entirely necessary as the 'government', most likely the Provincial Government, was providing the rail which was of the type known as 'bridge rail'. Used on longitudinal sleepers, as on the Great Western Railway in England, bridge rails were perfectly satisfactory, although as used in New Zealand with light rails of 25 pounds per yard and the sleepers running length-wise under the rails, they were less than ideal and found to be inferior to the 70-pound per yard 'bull-head' rail used on the Lyttelton line. With the financial situation worsening, the Provincial Government found itself short enough of funds that it was finally obliged to call a halt to the works in 1867. By this time, the line had reached Selwyn, some 22½ miles from Christchurch, and where it would stay for the time being.²⁸

Although the economic situation of 1867 was hardly appealing, there was one event which would help to lighten the mood, the opening of the Lyttelton Tunnel. Moorhouse himself had been keenly excited in the lead-up to the meeting of the two ends, hoping fervently they were in line since he had been the originator and would be liable to blame if the ends did not meet. He need not have worried; on 24 May 1867, a workman was sent from the tunnel to the Moorhouse residence to alert the family that the workmen from the Lyttelton end had broken through to the Christchurch end. In order to do so, the worker resorted to throwing gravel against one of the house windows in order to gain the family's attention.²⁹ The *Lyttelton Times* celebrated the event with a special 'extra' edition on 24 May 1867 and a subsequent, shorter, piece on 25 May:

²⁶ Pierre, p. 75.

²⁷ Pierre, pp. 36, 75.

²⁸ Petrie, pp. 69-71; Pierre, pp. 75-76.

²⁹ Peck, p. 24.

At 6.30 a.m. on Friday, the 24th inst., communication was established between the two drives by the miners on the Port side breaking into a drill hole sunk some days previously in the face of the Heathcote drive. After a few minutes spent in enlarging the opening, an iron rod was passed through from drive to drive, the distance between the two faces being fourteen feet. The alignment and the levels are thus proved to have been perfectly correct.³⁰

Subsequently two banquets were held to celebrate, one an official breakfast organised by Holmes & Co. at the tunnel mouth in early June, while Moorhouse gave the workmen a banquet in the tunnel itself on 29 June.³¹ Several months later the tunnel was in a sufficiently complete state and tracks laid to the point that a goods train hauled by engine N^o 3 (Slaughter, Gruning N^o 699 of 1866) was able to pass through the tunnel on the evening of Monday, 18 September 1867.³² Passenger service would have to wait until December 9 when the first through train left the Christchurch Station bound for Lyttelton that morning at 9.00am, the journey through the tunnel taking 6 minutes 27½ seconds.³³

The opening of the new railway consequently saw the end of both the branch line to Ferrymead and the coastal trade; no longer did travellers have to risk the Sumner Bar to reach Christchurch or travel over Evans Pass with its dangerous 'zig-zag'. Now the railway could carry passengers through the hill, and in a much timelier manner without reliance upon the weather or the tides except during a short period in 1868 when the tunnel was closed for repairs. The branch rails were taken up and most of the buildings removed in early 1878 after the line officially closed in December 1877, the first railway in New Zealand and certainly the first branch line to be so treated. The formation lay abandoned, with little awareness of its significance except by railway enthusiasts, until 1965 when the Canterbury Branch of the New Zealand Railway & Locomotive Society began building a museum railway along this short stretch of track.³⁴ The Railway Wharf was stripped of its decking and the piles were left to rot, still being visible as of today.

By this time, both the Southland and Auckland railway schemes had been successfully floated, though neither were of much success. Southland had celebrated the opening of its Oreti Railway as far as Makarewa, a distance of 8 miles, on 18 October 1864; however, the cheaply-constructed railway with its wooden rails, laid to the Stephenson standard gauge (4 feet 8 ½ inches; 1435mm),

³⁰ "Completion of the Moorhouse Tunnel", *The Lyttelton Times*, 25 May 1867; paperspast.natlib.govt.nz/cgi-bin/paperspast?a=d&d=LT18670525.2.9&e=-----10-1----0Completion+of+the+Moorhouse+Tunnel-, sighted 15/10/15, 12:08pm.

³¹ Kemp, p. 141.

³² Petrie, pp. 69-70.

³³ *Steam through the Port Hills* (Christchurch: New Zealand Railway & Locomotive Society. Canterbury Branch, second ed. 1960). p. 4.

³⁴ Dew, 1988, pp. 10, 13.

proved to be, in the words of Government historian Neill Atkinson, a 'fiasco'. Writing in 1965, railway historians A. N. Palmer and W. W. Stewart, summed it up thus: "Unfortunately for Southland, what had promised to be a cheap means of transport proved to be a costly blunder. The wooden rails warped and decayed, or became pulped under the wheels of the locomotives, which themselves were quite unsuitable for the purpose."³⁵ Although the locomotives themselves were workable, the tracks were less so and the line was closed in 1869.

Around the same time, efforts were made to lay a more conventional railway from Invercargill to Bluff, this time with British-made iron rails. Again laid to the Stephenson standard gauge, all of the railway equipment was seized twice and sold by a sheriff on behalf of the contractors McKenzie and Co., first in December 1864 and again in April 1865. Despite this, and the subsequent lack of money that had led to the seizure of the railway in the first place, the Bluff Harbour and Invercargill Railway was opened on 5 February 1867. Following the closure of the Oreti Railway, the management of the Bluff Harbour and Invercargill railway took it over and had it rebuilt with iron rails, this time extending it to Winton.³⁶ This latter section of railway was opened for traffic on 6 March 1871, though it was fated to have a short life as a broad gauge railway after the Central Government legislated, under Julius Vogel, to select the narrower gauge of 3 feet 6 inches (1067mm) as the 'national' railway gauge of New Zealand.

In Auckland, work on the Stephenson standard gauge Auckland and Drury Railway had begun promisingly enough in 1865; a locomotive had been ordered from the Leeds firm of Manning Wardle & Co. and which arrived in August 1865, but dwindling funds put paid to the railway due to greater expenses than the Auckland Provincial Government had anticipated. Work ceased in late 1866, although not before a second engine was ordered and had arrived presumably in early 1867. Eventually the railway was completed in 1872, including the original single-track Parnell Tunnel, but to the narrower gauge of 3 feet 6 inches. The old standard-gauge line, running from Newmarket (to where it had been extended in September 1872) to Mechanics Bay, was removed, and the second engine joined the first working on a short standard gauge coal-mine railway at Kawakawa in Northland, until that too was narrowed to 3 feet 6 inches in 1876.³⁷

In the meantime, the Canterbury Railways, to give them their proper title, were running reasonably successfully and had passed to the Canterbury Provincial Government in 1868. Although largely trouble-free, some concern remained over the deterioration of the infrastructure and rolling-stock which was owed largely to the financial recession of the mid-eighteen-sixties, and also to the

³⁵ Palmer, A. N. and Stewart, W. W., *Cavalcade of New Zealand Motive Power* (Wellington: Reed, second ed. 1965). p. 15.

³⁶ Petrie, pp. 152-156; Palmer and Stewart, p. 19.

³⁷ Petrie, pp. 5, 10-15; Palmer and Stewart, pp. 23-24.

alcoholism of former engine-driver, now Locomotive Foreman, Abraham Beverley. Having been promoted to that post by the Provincial Government, Beverley's addiction later cost him his job and was replaced by another of his former Holmes & Co. colleagues, a Mr. Dickenson, in 1871. Since Beverley's judgement was in question due to his alcoholism, Superintending Engineer for Railways of the New Zealand Public Works Department, H. P. Higginson, was engaged to carry out inspections of the six locomotives then in operation in late 1872. Beverley had claimed the locomotives were in 'good repair'; Higginson's inspection found otherwise, with several engines in fact being in dangerous condition and the first three engines in particular (N^os 1, 2, and 3) were at risk of suffering a boiler explosion due to the state of their boilers.³⁸ With no locomotives to hold in reserve if any were to break down, which had already occurred to engine N^o 4, the unwarranted pressure of the locomotives' poor conditions was reason enough for General Manager, John Marshman, to request that extra locomotives should be ordered. At least one more had already been ordered in early 1871; a second was ordered as a matter of priority in March 1872, as the first had been held up for various reasons since its arrival at Lyttelton in August.³⁹

While Marshman fretted over the need for more locomotives, the General Assembly was already in the process of selecting a single, national railway gauge in place of the several that already existed. Canterbury had its 5 foot 3 inch (1600mm) Irish broad gauge; Southland, now merged back into its neighbouring province of Otago, had 4 foot 8½ inch (1435mm) Stephenson standard gauge, while Auckland Province and the directors of the short coal-mining railway at Kawakawa in Northland had also adopted the Stephenson standard gauge too. This multiplicity of gauges was seen as unnecessary, and in 1870, Otago Superintendent and member of the General Assembly, James Macandrew, successfully put for a select Committee to report on selecting a single railway gauge. The committee recommended in favour of the narrow gauge of 3 feet 6 inches (1067mm). It was felt that the narrower gauge would be cheaper than the wider gauges, just as comfortable, and more than capable of carrying the traffic then available to the railways with ease. This in turn led to the passing of the Railway Act (1870), a key piece of legislation that, although its effects were not being felt straight away, in time would spell the demise of the broad-gauge Canterbury Railways in the interests of national communication.⁴⁰

³⁸ Pierre, p. 114.

³⁹ Petrie, pp. 71-74.

⁴⁰ Pierre, pp. 85-86.

Chapter Three

End of the Line – Canterbury Provincial Railways 1870 – 1878

Having opened the tunnel to Lyttelton in 1867, and with the financial situation now eased after 1870, the Canterbury Railways were now in a position to resume both the Great Southern Railway towards Timaru and the new Great Northern Railway to the Kowhai River. Previously its spending had been subject to unwelcome scrutiny in 1868 by the Paterson-Symington Commission of the Provincial Government; now, however, with more funds in hand and the call for railways to open up more of the surrounding area, the Canterbury Railways could once more proceed. In turn this required a special amendment to the Railway Act of 1870, since the new lines were to be built to the Irish broad gauge (5 feet 3 inches; 1600mm), but would later be narrowed to the narrow gauge of 3 feet 6 inches (1067mm), the new national railway gauge as stipulated in the act.⁴¹

Not only did the Canterbury Railways have more funds with which to build railways, it also had a new Consulting Engineer; George Robert Stephenson had relinquished this post, which he had held since 1859-60, to his nominee G. W. Hemans of London in 1870.⁴² Hemans would subsequently be in charge of obtaining additional locomotives, materials such as rails and bridge-girders, and generally supervising the affairs of the Northern Railway, construction of which was started in September 1871 by a Mr. E. G. Wright, who was awarded the contract to build the railway from Addington Junction to Kaiapoi. In turn, Wright subcontracted out some of the work which in turn delayed the building of the railway beyond Styx which was reached in October; more luck was had with the Great Southern Railway, the formation of which had been completed by September 1872 allowing Joseph Taylor to obtain the contract to lay the railway lines from Selwyn Station to the north bank of the Rakaia River, as yet unbridged.⁴³

The Rakaia River itself posed a challenge to engineers – should they attempt to cross it at the Rakaia Gorge, which would require a narrower bridge, or at the Rakaia township, 14 miles inland from the river mouth? The original survey of 1864 projected for the Gorge crossing, and the bridge there was subsequently built to carry the weight of the trains. When the actual railway was laid in 1872, however, the engineers came down in favour of the Rakaia township location which was on a more direct route to Christchurch, and had easier gradients. The disadvantage of this was that the bridge itself was much longer and posed the concern of shifting shingle beds. Similar debate also took place over the siting of the Rangitata and Orari River bridges, the latter being determined by the location of the former; eventually, the lower crossing of the Rangitata and Orari river channels was chosen,

⁴¹ Pierre, p. 55

⁴² Petrie, p. 72; Pierre, p. 81.

⁴³ Petrie, pp. 71, 73.

although by the time the rails reached either the tracks were now being laid to the Government-standard 3 foot 6 inch narrow gauge.⁴⁴

Likewise, much debate was expounded over the route of the Great Northern Railway beyond Kaiapoi, which was reached by rail in 1872. Originally two routes had been proposed in 1864; a seawards route had been projected which avoided Kaiapoi and crossed the Ashley River at its narrowest point, and a second, inland route which passed through Kaiapoi before turning to skirt the Māori reserve at Tuahiwi and crossing the present-day Boys Road and Rangiora-Woodend Road, where the Rangiora station would be located, before heading north-east to join the proposed seaward route at the point where it crossed the Ashley River. A third, Parliamentary route was drawn in 1870 which conformed similarly to the inland route of 1864 but which followed the present-day Lineside Road to a point nearer Southbrook where the Rangiora Station would be located before it turned to join the inland route near Boys Road. At this point local politics came into play; the Ashley Road Board wanted a line that passed directly through Rangiora and Southbrook before crossing the Ashley to the north of Rangiora and then turning north-east towards Sefton. The engineers were not inclined towards this option, since it would require a steep gradient between Southbrook and Rangiora, and because it was significantly longer than any of the options previously proposed. However, the Rangiora politicians managed to sway the opinions of the Provincial Council and other senior politicians, and subsequently the railway was laid through Rangiora to the engineers' dismay.⁴⁵

In the same vein, the local sawmill-owners of Oxford were able to sway the Provincial Government into providing them a railway, in order to supply timber for the Northern Railway construction from 1871 onwards. Eventually two lines were built to appease the interests of local communities; one line ran from Rangiora and westward through Cust to Oxford which opened in stages between December 1874 and June 1875, while the other turned off from Flaxton Junction near Kaiapoi and passed through Ohoka to serve Eyreton and thence meet the Rangiora-Oxford railway at Bennetts Junction, this line being opened between December 1875 and February 1878. As prescribed by the Railway Act of 1870, both were built to the narrow gauge (3 feet 6 inches; 1067mm), and were operated as isolated sections until the narrow gauge reached Flaxton and Rangiora.⁴⁶

Broad-gauge rails reached Kaiapoi in April 1872 with the official opening and connected festivities being on 29 April; by September, E. G. Wright had finished enough of the railway to Southbrook that engine N^o 5 and a short train were able to open this small section of line. The short length of railway to Rangiora was opened on 5 November 1872, during which the celebrations at Kaiapoi were

⁴⁴ Pierre, pp. 48-50.

⁴⁵ Pierre, p. 55.

⁴⁶ Dew, 1988, pp. 51-54; Pierre, pp. 63-66.

reputedly outshone by those of the jubilant Rangiora citizens. Further north, Wright found construction of the railway slower due to the major cuttings and embankments needed around the foot of Mount Grey, but was subsequently able to reach Balcairn by November 1875 and finally Amberley, to which the railway was opened on 28 March 1876.⁴⁷ Amberley was the final and northernmost terminus of the broad gauge built by the Provincial Government and the last part of the broad-gauge network to be opened; the Railways Act of 1870 was now fully in effect and resultantly no further broad-gauge tracks would be laid, with all railways from this point on being to the narrow gauge of 3 feet 6 inches (1067mm).

While Amberley was the northernmost limit of the broad gauge Canterbury Railways, the southernmost limit was Rakaia itself, finally connected to Christchurch by railway on 29 May 1873. The Rakaia Bridge, finished as a combined road and railway bridge, was built by self-taught Canterbury contractor, William White. White was chosen in preference to Melbourne engineer W. T. Doyle, who had advocated for a wrought-iron bridge on cast iron piers in 1864 due to his belief that wooden bridges could not withstand the flooding experienced periodically by Canterbury's braided rivers, a flawed argument since the Selwyn bridge, itself built with iron girders, had been wrecked by flooding in 1867 although this had been in part due to the reduction in the river channel by the two embankments either side of the bridge. White had proven previously that wooden bridges could withstand such flows with his bridge over the Waimakariri River, built in 1860, and it was this that swayed the Provincial Government to give him the contract in preference to Doyle.⁴⁸

While the broad gauge had now reached its southern extreme, it was not to remain the southern limit for long. Difficulties were encountered in transshipping goods as 'break of gauge' stations, which would have influenced costs in the same way that the transshipping of goods to Lyttelton via the Heathcote-Avon Estuary would have. With the impossibility of laying a third rail inside the broad gauge lines and utilising one of the existing rails as a common one for both broad and narrow-gauge trains, it was instead decided that the tracks would be re-gauged in sections with the narrow gauge lines laid inside the broad gauge ones. Work duly started on converting the first section, Rakaia-Dunsandel, on 24 August 1874. Within nine days of work commencing the broad gauge had been replaced with narrow as far as Dunsandel; over a year later, by February 1876, it had been replaced as far as Rolleston.⁴⁹

The 'break of gauge' matters were compounded even further by the fact that the Canterbury Railways had, at this time, acquired a tenth locomotive from their favoured supplier of Slaughter, Gruning & Co., now restyled as the Avonside Engine Company. That the new broad gauge engine

⁴⁷ Dew, 1988, pp. 45-47; Petrie, pp. 71, 74, 82.

⁴⁸ Dew, 1988, pp. 26-27.

⁴⁹ Dew, 1988, pp. 27-28; Pierre, p. 54.

was delivered only a short time before the southern line to Rakaia was about to be converted to the narrow gauge proved to be of concern since it demonstrated there was a time-lag in procuring new rolling stock; moreover, the way in which the conversion proceeded effectively created two separate railway systems with a narrow-gauge railway from Ashburton (to which the railway had opened on 24 August 1878) to Lyttelton, and a broad-gauge railway from Amberley also running to Lyttelton. Present Provincial Superintendent, William Rolleston, had been unable to see that the future was in the narrow gauge and had as a result procured no less than two Acts of Government in 1870 and 1872 to allow the broad gauge to reach Amberley and Rakaia, and in the process complicated the situation by not building them to the narrower gauge. While in that respect the parochialism of the Provincial Council was a failure on their part, their planning for conversion was done smartly enough – the first eleven miles of narrow-gauge track were to be procured from the general government, after which point the old broad-gauge rails starting from Rakaia could be used up to Christchurch. This in turn would provide enough 65-pound per yard rails to be held over from the conversion and used to similarly treat the Lyttelton line.⁵⁰ The start of the conversion also coincided with the arrival of four narrow-gauge tank locomotives from the British firm of Black Hawthorn & Co. of Gateshead-upon-Tyne; upon their arrival at Lyttelton, the General Government gave orders for the conversion of the broad gauge ‘southern trunk railway’ to the narrow gauge.⁵¹

Initially Lyttelton had to make do with a narrow-gauge line laid alongside the broad gauge with a section of combined, or gauntleted, track through the tunnel to Lyttelton. This work was completed by April 1876; until December 1877, trains of both gauges used the Lyttelton line although evidence suggests that the broad-gauge line was no longer in use after December 1877. By December 1878 it had been converted to the narrow gauge, in the process duplicating the line between Christchurch and Heathcote and leaving only a small amount of broad-gauge track at Lyttelton to hold the now-redundant broad-gauge stock.⁵²

The year 1876 also witnessed the demise of the Provincial Government system; henceforth all government would be that of central Government, now relocated from Auckland to Wellington at the behest of William Moorhouse over a decade before. With this change of governance, the railways of the Provincial Governments were taken over by the Public Works Department which now set to work arranging the gauge conversion of the northern railway to Amberley. The line was duly closed on 20 December 1877, and was entirely converted, albeit with some small amounts of work to be done, the following day.⁵³

⁵⁰ Pierre, pp. 87-90.

⁵¹ Petrie, p. 84.

⁵² Dew, 1988, pp. 14-15; Pierre, p. 89.

⁵³ Dew, 1988, p. 47; Petrie, p. 99.

By this time the narrow gauge stretched from Amberley to Oamaru, at which point there was a break in the network until Port Chalmers, the harbour-town servicing Dunedin, at which point the pioneering 3 foot 6 inch (1067mm) Dunedin & Port Chalmers Railway began its line to Dunedin. This was the first narrow-gauge line to be built in New Zealand, and had been purchased by the Government from the D&PCR promoters in 1873, as a 'strategic purchase'.⁵⁴

The question now remained what to do with the remaining broad-gauge equipment; at the time, the former Canterbury Railways owned nine locomotives and the chassis of another – locomotive N^o 1, the *Pilgrim*, which had been retired in 1876, 22 carriages, 4 guard's vans, and 287 four-wheeled trucks, of which seven were designed for special use. The stock was offered initially to the Victorian Government in Australia but eventually all was sold to the South Australian Railways for the apparent sum of £14,500.⁵⁵

At the time the South Australian Railways needed more carriages and South Australian Railways Engineer-in-chief H. C. Mais duly came to Lyttelton in March 1878 where he inspected the equipment and agreed to purchase it on behalf of the SAR, who were the only party interested since the Victorian Government had declined any interest. The purchase was duly concluded on 19 March, at which time Mais attempted to charter the *SS Ellora*, the only ship available at Lyttelton, to carry the railway equipment to Adelaide. Instead, the South Australian Government chartered the *SS Hyderabad*, then docked at Port Adelaide, much to Mais' disappointment. The *Hyderabad* itself could not carry all of the cargo, with at least three locomotives left on at Lyttelton with a number of pieces of rolling stock when the *Hyderabad* sailed for Adelaide on 22 June 1878.⁵⁶ The three locomotives, N^o's 3, 4, and 9 and remaining rolling stock which could not be accommodated on the *Hyderabad* were sent instead on the *SS Bulwark*.⁵⁷

The difficulties did not end at this point though; the *Hyderabad* was driven ashore and grounded at Waitarete Beach, between Foxton and Otaki on the south-west coast of the North Island by gale-force winds on the night of 24 July.⁵⁸ The *Hyderabad* was a total loss; the railway equipment, though, was salvaged and duly transhipped to South Australia by several ships, the *Bulwark*, *Greyhound*, *Glenelg*, *Matilda* and *Ridge Park*. The *Glenelg* was also chartered by the South Australian Government to assist in salvaging the railway equipment from the wrecked *Hyderabad*.⁵⁹ Eventually all of the rolling stock arrived in South Australia and was put to work; the last of the rolling-stock

⁵⁴ Petrie, p. 122.

⁵⁵ Petrie, p. 100; Pierre, pp. 128, 138.

⁵⁶ Church, Ian, *The Wreck of the Hyderabad* (Palmerston North: Dunmore Press, 1978). p. 42.

⁵⁷ Petrie, pp. 69, 71, 76.

⁵⁸ Petrie, p. 100; Pierre, p. 128.

⁵⁹ Church, p. 54; Pierre, p. 128.

known to be in service, the former Canterbury locomotives N^o 2 and N^o 4, were not retired from service until April 1929.⁶⁰

Thus ended the last of the Canterbury Railways, with the only remnants left being occasional pieces of track, infrastructure, and occasionally point levers in out-of-the-way locations and station sidings, and its greatest monument in the form of the Lyttelton Tunnel. New Zealand's first publically-operated steam railway was now gone, though not completely forgotten.

⁶⁰ Petrie, p. 100.

Chapter Four

Postscript – The Canterbury Provincial Railways’ Legacy

Without any doubt, it was the efforts of William Moorhouse, nicknamed ‘Railway Billy’ by some, who gave Canterbury its first railway, and the proud distinction of being the first steam-operated railway in New Zealand. Such was his vision that he prophetically suggested on 1 December 1863, during the great banquet thrown by Holmes & Co. that he hoped he would see the day when a merchant in Lyttelton could send a clerk to Timaru and back within one day. Although greeted with incredulous laughter at the time, Moorhouse ultimately proved right in his vision.

The Reverend W. A. Pierre, writing in 1964 on the Canterbury Railways, claimed that the broad-gauge Canterbury Railways had been a success when compared to similar schemes in Victoria; frequently, the promoters ran out of money, and some had to resort to mortgaging their works. That this happened in a state with twenty times the population of Canterbury, and that it subsequently moved the Victorian Government to take action, Pierre suggested, made the Canterbury Railways’ achievements appear “not inconsiderable, and its decision in favour of public ownership not unwise.” Indeed, Minister for Public Works and former Provincial Superintendent of Otago, James Macandrew, was able to report in 1878 that the amount of land revenue from Canterbury and the funding derived from that was justification enough for the railways already construction, and for those at the time under construction. It had furthered rural development, and, as Pierre suggested, had stimulated secondary industry in the cities.⁶¹

The Canterbury Railways were an experiment in the formative years of the heroic rail-making period of New Zealand’s history, and would go down in history as the start of the formative New Zealand Railways. At times a ‘political football’, at others a cause for civic pride, it would help to shape and give form to the embryonic New Zealand Government Railways when that organisation was formed as a separate entity from the Public Works Department, to which the responsibility of railways had previously belonged.

Similarly, the railway acted as an economic stimulus to the Canterbury region and particularly so after the Lyttelton Tunnel was opened for traffic in September 1867. No more did passengers and commerce rely upon the sea voyage from Lyttelton across the treacherous Sumner Bar; no longer was the journey dictated by the tide and the weather. Costs commensurately shrank now that the small ships of the Heathcote and Avon Rivers were no longer needed to carry cargo and passengers around the coasts; against it though, the railway cost Lyttelton its status as an important town. Important persons were no longer to receive formal receptions at the port town with the opening of

⁶¹ Pierre, p. 171.

the tunnel – instead, they could now be taken to Christchurch to enjoy the residents’ hospitality within half an hour of having landed at the port.⁶²

The only feature which gave Lyttelton any particular importance was its place as the harbour for Christchurch, and that too was almost lost to it by proposals raised between 1894 and 1909 to build a port closer to Christchurch. The key factor in this was that the New Zealand Railways had built its goods-handling sheds in Christchurch, thus ‘monopolizing’ the carriage of goods between Christchurch and Lyttelton.⁶³

Ultimately the Canterbury Railways were more beneficial to Christchurch and the greater Canterbury region than harmful as some sources, such as the largely-unsupportive *Press*, would have suggested. It opened up vast areas of the Canterbury Plains for development, of which the predominant use was agricultural; not only that, it provided a good means of transportation even if the fares were perhaps slightly beyond the reach of the average working man.

With that, came the great bonus that Moorhouse’s foresight had provided the beginnings for the trunk railway network that even today is still serving New Zealanders; though ultimately the trunk route would not be completed until the final link in the chain, the Main North Line from Addington to Picton along the east coast of the South Island, was finally and ceremonially completed at Kaikoura Station on 15 December 1945 when the Minister of Works and Railways, the Right Honourable Robert Semple, drove a diesel-mechanical railcar through the ceremonial ribbon to signify the removal of the last barrier in the Main Trunk railway network.⁶⁴ Here, at last, was the vindication of the dream that William Sefton Moorhouse and Sir Julius Vogel had dreamed of; the focus had shifted purely from linking ‘port to plains’ as originally envisaged by James FitzGerald in 1859 to linking New Zealand together as a unified nation through its transport networks.

Writing in 2007, Government historian Neill Atkinson paid tribute to the part that railways, including the Canterbury Railways, played in moving New Zealand forward:

“Certainly, few would dispute its role in this country’s development. In the century after its first appearance in 1830s England, the steam-powered railway changed the world forever – and New Zealand was no exception. Britain’s farthest-flung colony was a child of the railway age, an epic era when the steam locomotive was the snorting spearhead of modernity... The steam railway was the first of the complex, large-scale technological systems that would dominate the industrial-capitalist age, helping to kickstart more than 170 years of ceaseless, ever-accelerating change. The very concept of acceleration is inextricably linked to the railway, the first form of land transport able to surpass the speed

⁶² Dew, 1988, p. 13.

⁶³ Dew, 1991, pp. 78-80.

⁶⁴ Churchman, Geoffrey and Hurst, Tony, *South Island Main Trunk* (Wellington: IPL Books, 1992). pp. 77-78.

of a galloping horse – even if some early New Zealand trains struggled to get much above walking pace.”⁶⁵

The development of which Atkinson speaks was spear-headed by no less than the tenacity, determination and vision of William Moorhouse, and driven forward by his creature, the Canterbury Railways. It brought about change to the Canterbury Plains, reducing the time taken to travel great distances, providing cheap transport for the produce of the region, and in turn drove forward its economic prosperity and development. This is the legacy of the Canterbury Railways, and it is for this reason that its place in the history of New Zealand cannot be understated.

⁶⁵ Atkinson, Neill, *Trainland: how railways made New Zealand* (Auckland: Random House, 2007). pp. 10-11

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