

In 1945, the Auckland Transport Board faced a conundrum. Their tramway network, previously the jewel in Auckland's crown, had been run into the ground during World War Two.¹ Its replacement was essential.² In their annual report, the Board described themselves as having two options for the future. One involved 'restoring the tramway system to something like its pre-war standard'.³ The other constituted 'changing over to the new form of transport', with that 'form' being trolleybuses.⁴

Yet this description of the situation is a little misleading. It is true, at least in theory, that the Board had reached a fork in the road by 1945 where they had to choose one of two paths forward for the tramway system. It should not be presumed, however, that the Board viewed each path with comparable levels of enthusiasm.⁵ The trolleybus option was overwhelmingly appealing and had been for some time. In fact, the Board had essentially already decided to replace Auckland's tramway network with trolleybuses by 1944, at the very latest.⁶ Their tendency after 1944 to describe restoration of the trams as a possibility, even when Auckland's future already lay with trolleybuses, was probably part of an attempt to examine the transport landscape as thoroughly as possible.⁷ Thus, despite the Board's conduct it was very clear which way the wind was blowing. Upon the end of the war the permanent removal of Auckland's trams, and their replacement with trolleybuses, was essentially a foregone conclusion.

¹ Auckland Transport Board (ATB), *Seventeenth Annual Report and Statement of Accounts for the Year ended 31st March, 1945*, 3.

² ATB, *Seventeenth Annual Report*, 3.

³ ATB, 3.

⁴ ATB, 3. Motor buses were preferred in sparsely populated areas.

⁵ ATB, 3.

⁶ ATB, *Sixteenth Annual Report and Statement of Accounts for the Year ended 31st March, 1944*, 4.

⁷ ATB, *Seventeenth Annual Report and Statement of Accounts for the Year ended 31st March, 1945*, 3; Gribble and Foster, *Investigations into Modern Passenger Transport Development in The United States of America, Canada and England*, 10.

A lonely tram trundling along Dominion Road. Note its vertical trolley-pole and, faintly, the overhead wires. (Photograph by Graham Stewart. 1940s. Trams Auckland, Tram 9, 14-0102. Walsh Memorial Library, The Museum of Transport and Technology (MOTAT).

<https://collection.motat.nz/objects/83453/trams-auckland-tram-9.>)



A typical trolleybus; this one crossing Mount Albert Road on Sandringham Road.

Rubber tyres and double-pole usage differentiate it from the tram. (Photograph by Graham Stewart. 1956. 08/092/220. Walsh Memorial Library, The Museum of Transport and Technology (MOTAT).

<https://collection.motat.nz/objects/95454/auckland-trolleybuses.>)

But why was the Board so eager to replace trams with trolleybuses? While some of the reasons for this have been briefly mentioned already, there were in reality a wealth of factors contributing to the

Board's stance. In fact, these were so numerous that it seems best to split them into three categories. These are: modernity, cost, and convenience.

A taste for newness

First of all, the pursuit of modernity was incredibly influential in convincing the Board to replace their trams with trolleybuses. However, the Board had not always viewed such a switch as being necessary for the sake of modernisation. So, when did this change? We noted in the previous article that from late 1938, Farmers' trolleybuses captured the attention of many city commuters.⁸ We saw that those trolleybuses were quieter than nearby trams, and that they boasted luxury far beyond what the trams offered (providing leather seats when trams had wooden benches).⁹ One might presume, then, that it was in 1938-39 when the Board wrote off the existing tramway network as outdated, after witnessing the trolleybuses' performance. However, in their annual report that year the Board actually defended their existing trams against accusations of antiquity, calling them as 'modern' and 'well-maintained' as the trolleybuses.¹⁰ In fact, they described the potential replacement of trams with trolleybuses as a problem only for 'future boards' to deal with.¹¹ The Board were thus clearly unconvinced by 1939 that switching from trams to trolleybuses was required immediately.¹²

Yet by mid-1940 – a year later – the Board had changed their tune. The new line was that Auckland's tramways had become outdated and had to be replaced.¹³ It is curious why the Board underwent such a drastic shift in opinion over such a short timeframe, given they had every reason to believe that the trams functioned perfectly sufficiently. Although the network had been running for almost four decades, it had been constantly updated, with the most recent update occurring in 1939.¹⁴ In that same year tram patronage came close to record-high levels – and this was before World War Two augmented patronage statistics.¹⁵ Further, while the war had begun to put some stress on the tramway system by 1940, that only truly escalated in 1941 – and even then, the Board themselves admitted their satisfaction with the system's performance.¹⁶ All of this indicates that the tramway system was not ancient or shabby by 1940. Any serious problems only emerged later once a half-decade of wartime overuse had led to the system's deterioration.¹⁷

⁸ ATB, *Eleventh Annual Report and Statement of Accounts for the Year ended 31st March, 1939*, 4.

⁹ Farmers Trading Company, "Auckland's First Trolley Buses," advertisement.

¹⁰ ATB, *Eleventh Annual Report and Statement of Accounts for the Year ended 31st March, 1939*, 4.

¹¹ ATB, 4.

¹² ATB, 4.

¹³ ATB, *Twelfth Annual Report and Statement of Accounts for the Year ended 31st March, 1940*, 4.

¹⁴ ATB, *Eleventh Annual Report and Statement of Accounts for the Year ended 31st March, 1939*, 4.

¹⁵ Bush, *From Survival to Revival: Auckland's Public Transport since 1860*, 130.

¹⁶ ATB, *Thirteenth Annual Report and Statement of Accounts for the Year ended 31st March, 1941*, 4.

¹⁷ ATB, *Fourteenth Annual Report and Statement of Accounts for the Year ended 31st March, 1942*, 3.

So how can the Board's about-face be understood? The most convincing explanation is that the Board took inspiration from overseas. Starting in 1940, the Board began noting in their annual reports that many foreign cities were replacing their own trams with 'more modern form[s] of transport'.¹⁸ More tellingly, the Board openly admitted that this 'trend', as they called it, would actually inform their own decision-making on Auckland's situation!¹⁹ For example, in their 1941 annual report the Board promised to 'give very serious thought' to adopting the global trend in Auckland, even if doing so proved economically questionable.²⁰

This interest in foreign transport trends gradually deepened. After the war, the Board sent its Secretary, C. R. Gribble, and its Assistant Manager, E. B. Foster, to England, Canada and the U.S. so the transport policies of other major cities could be examined up close.²¹ Their resulting report on the matter revealed that most cities in all three countries had removed or were in the process of removing their trams.²² Importantly, most medium-sized American cities (to which Auckland was compared) had chosen trolleybuses as their preferred replacement, supported by motor buses in outer areas.²³ Of course, both Gribble and Foster noted in their report that the Board would only analyse – rather than blindly adopt – trends they had witnessed from overseas.²⁴ Yet it is hard to believe this this was entirely true, given the Board's past obsession with the worldwide anti-tram trend. It seems probable that 'mere fashion' – the international impression of what was modern and what was not – played some role in the Board's eventual endorsement of the trolleybus option.

Important people inside Auckland's last tram in December 1956. On the far left is C. R. Gribble, one of two Board officials sent overseas in 1946. By 1956 he was the Board's General Manager. (Photograph by Graham Stewart. 1956. [Inside the Last Tram, December 1956], 08/092/166. Walsh Memorial Library, The Museum of Transport and Technology (MOTAT). [https://collection.motat.nz/objects/95400/inside-the-last-tram-december-1956.](https://collection.motat.nz/objects/95400/inside-the-last-tram-december-1956))

¹⁸ ATB, *Thirteenth Annual Report and Statement of Accounts for the Year ended 31st March, 1941*, 4.

¹⁹ ATB, *Twelfth Annual Report and Statement of Accounts for the Year ended 31st March, 1940*, 4.

²⁰ ATB, *Thirteenth Annual Report and Statement of Accounts for the Year ended 31st March, 1941*, 4.

²¹ Gribble and Foster, *Investigations into Modern Passenger Transport Development in The United States of America, Canada and England*, 1.

²² Gribble and Foster, 3-5.

²³ Gribble and Foster, 3-4, 6-8, 10.

²⁴ Gribble and Foster, 1.



Contemporary readers might find this difficult to understand. How could the Board possibly have based such an important decision – at least in part – on a *trend*? Two considerations might be helpful. Firstly, during this time New Zealand was aligned more closely with other members of the Anglosphere than it is today. Consequently, the Board might have felt comfortable adopting transport policies from those nations, if following their lead generally was normal practice.

The second is that even if fashion actually did influence the Board's adoption of this trend, it was still clear that the trend made sense. Foreign cities had chosen to ditch their trams (and in some cases replace them with trolleybuses) for many reasons, and those had been closely studied by the Board.²⁵ Thus, adopting the global trend 'towards modern vehicles' was considered a safe bet because it also seemed to be logically sound.²⁶ If replacing trams with trolleybuses had appeared nonsensical, it seems almost certain that the Board would have remained loyal to its tramway network.

Financial limitations

Cost was another factor influencing the Board's decision to opt for trolleybuses over trams. It is worth noting that over the wartime period, Auckland's tramways were saddled with a series of loans.²⁷ Consequently, the price tags attached to Auckland's options for a new transport network became quite relevant. The Board was determined to avoid more burdensome expenses.²⁸

²⁵ Gribble and Foster, 10-11, 36-39.

²⁶ ATB, *Twelfth Annual Report and Statement of Accounts for the Year ended 31st March, 1940*, 4.

²⁷ ATB, 4.

²⁸ ATB, *Fifteenth Annual Report and Statement of Accounts for the Year ended 31st March, 1943*, 5.

Of the many that existed, the most obvious price-related concern involved the cost of restoring the existing tramway system, as compared to the cost of replacing it entirely with trolleybuses (once the latter had been outlined as the desired alternative).²⁹ When assessing what tramway restoration would require, Gribble and Foster unsurprisingly preferred the most modern approach, insisting that American-developed President's Conference Committee (P.C.C.) tramcars would be the only acceptable like-for-like replacement for Auckland's run-down tramcars.³⁰ It was this that formed the crux of the Board's comparison in cost between the two options.

There was really a lot to love about the P.C.C. tramcars. While Auckland's existing tramcars were noisy and uncomfortable, Gribble and Foster found their P.C.C. counterparts to be 'a revelation in silence and comfort' while riding them in America.³¹ They also boasted an emergency braking mechanism that allowed the trams to be one-man operated. Previously, a conductor had been employed so that someone knowledgeable about the mechanism of the tram would be able to drive it if the driver became incapacitated.³² A higher acceleration rate, further, made the P.C.C. tramcars better in congested streets.³³ Lastly and crucially, daily operation was very cost-effective.³⁴

Yet Gribble and Foster were not convinced – installing these P.C.C. trams was going to be problematic. The first issue was that they cost about \$28,000 USD each; an astronomically high price at the time.³⁵ The second was that their operation necessitated a track in 'first-class condition'.³⁶ Of course, because the existing tram tracks in Auckland had deteriorated significantly during the war, huge expenditure was required to restore those to the highest quality.³⁷ The financial position that the Board was in scuppered hopes of either of those two investments being made. By contrast, trolleybuses were far cheaper to purchase than the P.C.C. trams.³⁸ They also required no tracks at all – therefore less initial investment – and they contained many of the perks that the Board would have received from the P.C.C. trams anyway.³⁹ Consequently, on this front choosing to invest in trolleybuses was a no-brainer. They would offer a comparable service to what the P.C.C. trams promised, yet at a far lower initial cost.

²⁹ Gribble and Foster, *Investigations into Modern Passenger Transport Development in The United States of America, Canada and England*, 10.

³⁰ Gribble and Foster, 10.

³¹ Gribble and Foster, 3, 36; "Call Tenders For 50 Trolley Buses For City."

³² Gribble and Foster, 36; Welch, "Modernization of Municipal Public Transport," 193.

³³ Gribble and Foster, 8, 37.

³⁴ Gribble and Foster, 37.

³⁵ Gribble and Foster, 37.

³⁶ Gribble and Foster, 10.

³⁷ Gribble and Foster, 10.

³⁸ Gribble and Foster, 38.

³⁹ Gribble and Foster, 38.

Other cost-related factors also favoured trolleybuses. Auckland was projected to expand rapidly after the war, so the cost of extending its public transport routes in the future was important.⁴⁰ Trolleybus systems trumped tramways in this regard, according to a 1945 report written by the Board's General Manager, A. E. Ford.⁴¹ Changing routes for both vehicles required the construction of new overhead lines, but trams also required an extension of their tracks, which was hellishly expensive.⁴² (Of course, extending motor bus routes required no special investment at all, which was why the Board eventually chose to run them in sparsely-populated areas where routes changed frequently.⁴³) Further, once the decision to switch to trolleybuses was favoured, the cost of constructing new operating equipment promised to be low. Gribble and Foster noted that in many cases trolleybuses could simply use the existing overhead and feeder equipment used by the trams, as well as their existing substations.⁴⁴ Finally, they also projected that electric power – already at a low price in Auckland in 1946 – was due to become even cheaper in the future. This, coupled with lower maintenance costs, made trolleybuses a more cost-effective option than motor buses despite costing more to purchase.⁴⁵

Consequently, trolleybuses emerged as an incredibly purse-friendly option for the Board in comparison to the existing tramways, and even to motor buses. They slotted seamlessly into the existing electric-powered network, were cheap to operate and update, and cost far less to purchase in the first place while providing substantially the same service as trams. On this front, then, it is not surprising that the Board made the decision they did.

Convenience and practicality

Yet tastes for fashion and penny-pinching were not the only factors driving the Board's decision-making. As mentioned earlier, over the 1940s the Board obsessively analysed practical reasons for and against the removal of Auckland's tramways, and their specific replacement with a trolleybus system. There were two aspects to this process. The first involved comparing between the alternative options to a tram system. The second involved a comparison between the preferred alternative option, and the tram system itself. To avoid confusion, this discussion will follow the same pattern. It should be noted that this is not an exhaustive list of the vehicles' practical benefits. Rather,

⁴⁰ Ford, *Future Transport Development of Auckland*, 3.

⁴¹ Ford, 2.

⁴² Ford, 2.

⁴³ Welch, "Modernization of Municipal Public Transport," 194; Gribble and Foster, *Investigations into Modern Passenger Transport Development in The United States of America, Canada and England*, 8.

⁴⁴ Gribble and Foster, 38.

⁴⁵ Gribble and Foster, 11; Welch, "Modernization of Municipal Public Transport," 194.

it is merely an amalgamation of important aspects about each that the Board stressed in their reports.

Trolleybuses vs. motor buses

The big two alternatives to trams in public transport were trolleybuses and motor buses, so the Board analysed the practical differences between these. The latter certainly boasted a range of advantages. As mentioned earlier, motor bus routes were easier to change than trolleybus routes because no new infrastructure was required.⁴⁶ Aside from saving money, this also saved time.⁴⁷ Additionally, motor buses were easily manoeuvred all over the road, making them great at dodging obstacles, whereas trolleybuses had their flexibility confined by the trolley-poles connecting their chassis to the overhead wires.⁴⁸ Motor buses were also simpler to drive than trolleybuses, and took less time to import from overseas.⁴⁹



A fleet of L.J. Keys Leyland diesel buses, 1947. The Auckland Transport Board purchased the company two years later. (Photograph by unknown. Auckland Libraries Heritage Collections 589-81.)

However, the trolleybus option offered more convincing benefits for Auckland's urban transport requirements, according to Jack Welch, Chief Engineer of the Board from 1951.⁵⁰ He noted that motor buses, being powered by the internal combustion engine, were very loud and prone to giving

⁴⁶ Welch, 193-194.

⁴⁷ Welch, 193-194.

⁴⁸ Welch, 193.

⁴⁹ Welch, 193.

⁵⁰ Welch, 194.

their passengers bumpy rides.⁵¹ By contrast, their trolleybus counterparts provided smooth and silent travel – an attractive proposition for Auckland’s city commuters, as had been proven by the instant popularity of the Farmers trolleybuses.⁵² Gribble and Foster had also projected that training tram drivers to drive trolleybuses would be very easy, owing to the similarities between the two vehicles.⁵³ Further, trolleybuses lasted longer than motor buses on average.⁵⁴

From a technical standpoint, trolleybuses could reach high acceleration rates at less horsepower than motor buses, or alternatively could reach higher acceleration rates outright.⁵⁵ Gribble and Foster felt that this was crucial for Auckland. Like many American cities, Auckland had high rates of motorcar ownership by the late 1940s, meaning public transport vehicles would compete with motorcars on the road.⁵⁶ High acceleration rates would help those vehicles to keep up with the flow of heavy traffic while stopping routinely for passengers.⁵⁷ Welch also noted that, as a temporary resolution to their limited mobility, trolleybuses were able to disconnect from the overhead wires and last on their own electric batteries for short spells.⁵⁸ This meant that they could manoeuvre around dangerous obstacles in emergency situations just like motor buses could. Yet probably the most important difference between the vehicles, according to Gribble and Foster, concerned their relative capabilities on hills. Auckland is a hilly city, so the Board had to find a vehicle that could handle steep gradients with ease.⁵⁹ At the time, motor buses were simply ‘too low-powered... to maintain schedules on [Auckland’s] hilly routes’, whereas trolleybuses fared well regardless of the gradient.⁶⁰

The result of this was that trolleybuses became the Board’s preferred alternative to trams.⁶¹ Yet that did not vanquish motor buses from Auckland’s transport network entirely: the Board decided to follow the American lead and use motor buses to serve Auckland’s outskirts.⁶² This was because

⁵¹ Welch, 194.

⁵² Welch, 193-194.

⁵³ Gribble and Foster, *Investigations into Modern Passenger Transport Development in The United States of America, Canada and England*, 11.

⁵⁴ Gribble and Foster, 38-40.

⁵⁵ Gribble and Foster, 8, 38.

⁵⁶ Gribble and Foster, 10.

⁵⁷ Gribble and Foster, 8, 36.

⁵⁸ Welch, “Modernization of Municipal Public Transport,” 193.

⁵⁹ Gribble and Foster, *Investigations into Modern Passenger Transport Development in The United States of America, Canada and England*, 10, 39.

⁶⁰ Gribble and Foster, 10; Welch, “Modernization of Municipal Public Transport,” 194.

⁶¹ ATB, *Sixteenth Annual Report and Statement of Accounts for the Year ended 31st March, 1944*, 4.

⁶² Gribble and Foster, *Investigations into Modern Passenger Transport Development in The United States of America, Canada and England*, 7, 11.

those areas required frequent route changes, could tolerate higher headways, and were not covered by the existing tram (and eventual trolleybus) system.⁶³

Trolleybuses vs. trams

The Board's more fateful assessment pitted the practical attributes of the preferred alternative, trolleybuses, against those of trams. We have already discussed how trolleybuses, in the view of Gribble and Foster, were capable of providing comfortable and silent travel just like the P.C.C. trams could.⁶⁴ Consequently, the two options were very much alike in practice. However, some significant differences between them still existed – and most of those favoured trolleybus operation.

The first major practical benefit of trolleybuses, according to both Ford and Gribble and Foster, was that they could pull to the kerb.⁶⁵ Trams were incapable of doing this because they ran on tracks. As a result, when using the existing tram system Auckland's commuters had relied on 'safety zones'.⁶⁶ These were small areas in the middle of roads which prospective commuters could wait at if they wished to board a tram. However, to access them commuters had to venture out into fast oncoming traffic, something which was both unsafe and unpopular.⁶⁷ Gribble and Foster had observed that the trolleybuses' kerb-side loading was particularly attractive for American commuters, and presumed that the same would apply in Auckland.⁶⁸

⁶³ Welch, "Modernization of Municipal Public Transport," 194; Gribble and Foster, 8. Headways are a measurement of the distance or time between each public transport vehicle. The higher the headway, the less frequent the service.

⁶⁴ Gribble and Foster, 37-38.

⁶⁵ Ford, *Future Transport Development of Auckland*, 6; Gribble and Foster, 7.

⁶⁶ Ford, 6.

⁶⁷ Gribble and Foster, *Investigations into Modern Passenger Transport Development in The United States of America, Canada and England*, 7.

⁶⁸ Gribble and Foster, 7.



Symonds Street, 1928. Note pedestrians waiting at a safety zone in the middle of the road. (Auckland Libraries Heritage Collections 4-2237, photographer J D Richardson.)

The second practical benefit outlined by the Board was that trolleybuses were incredibly proficient at climbing hills. It has already been discussed that Auckland's steep terrain required a fleet of public transport vehicles which could traverse all gradients. Gribble and Foster analysed this point very thoroughly in their report, and in doing so made an interesting comparison between Auckland and the American city of Seattle.⁶⁹ Seattle's many hills had tortured their old tramway system for decades, and just before World War Two the city decided to replace the system with trolleybuses. Immediately, those trolleybuses were scaling the same hills with relative ease, and even stopped for passengers halfway up.⁷⁰ Glowing recommendations from Seattle's Transportation Commission about this were then echoed by the Bradford and Huddersfield Corporation Transport Departments, when Gribble and Foster visited England. Those cities were also hilly, and consequently stuck to using trolleybuses even though the general English trend was actually to use double-decker diesel buses

⁶⁹ Gribble and Foster, 22.

⁷⁰ Gribble and Foster, 22.

throughout city centres.⁷¹ This clearly influenced the report's eventual conclusion that Auckland's trams absolutely had to be replaced by trolleybus services.

Finally, the Board felt that trolleybuses would fit Auckland's projected growth perfectly. The Gribble and Foster report notes that despite all of their advantages, trolleybuses actually had fewer seats than P.C.C trams and provided less standing space.⁷² This did prove to be a deal-breaker for some foreign cities which required high-capacity public transport vehicles; a good example here would be Montreal, which resisted the trolleybus trend in favour of keeping their trams.⁷³ Yet for others, limited trolleybus capacity was considered unproblematic. On their travels, Gribble and Foster had been informed by numerous American transport authorities that for cities with populations under approximately 500,000 people, modern tramways were not required and lower-capacity trolleybuses could carry the passenger transport burden just fine. The Seattle Transportation Commission seems to have been the biggest influence over Gribble and Foster to this end, but similar sentiments were espoused by transport authorities in Milwaukee and in Akron, Ohio.⁷⁴ Importantly, in 1945 the population of Auckland's metropolitan area was estimated to be just over 200,000 people, and while population growth of up to 75% of that figure was expected by 1952, it was not projected that Auckland's population would rise above 500,000 people quite as quickly as it eventually did.⁷⁵ Thus the Board, taking the advice from their American friends as gospel, felt confident in choosing trolleybuses over an expensive, yet higher capacity, tramway network.

The aftermath

We can see, then, that a number of reasons underpinned the Auckland Transport Board's decision to reject the restoration of their existing tramways, and to opt instead for the installation of a trolleybus system specifically. Trolleybuses were trendy worldwide and a symbol of newness. They were also a cheaper option than trams, and promised to be the most convenient and practical choice for Auckland's specific circumstances. The Board certainly did not make the decision on a whim. Painstaking analysis made sure of that. On the face of the matter, then, it seems as though there would be little to criticise.

⁷¹ Gribble and Foster, 4, 30-31.

⁷² Gribble and Foster, 11.

⁷³ Gribble and Foster, 15.

⁷⁴ Gribble and Foster, 18, 21-22, 37.

⁷⁵ Ford, *Future Transport Development of Auckland*, 3; Gribble and Foster, 21.



Auckland's final tram drawing a huge crowd out onto Queen Street, 1956. The destination sign reads: 'the end of the road'. (Photograph by Ron Clark. Auckland Libraries Heritage Collections 1207-881.)

However, when trams were phased out and replaced with trolleybuses, annual public transport patronage in Auckland dropped like a stone.⁷⁶ It never recovered. Simultaneously, road congestion ballooned – something which continued to the present-day.⁷⁷ It is curious whether the Board's decision had any influence on this development. Had Auckland retained its trams instead, would its transport woes have exploded in the way that they did?

Yet we must pause for a moment. We should remember that our original question was this: did Auckland's post-war aversion to rail, and eagerness to embrace roads and rubber tyres, play a role in its consequent explosion in congestion and public transport decay? The trams and trolleybuses debate was not the only example of Auckland jettisoning rail in favour of roads and rubber tyres during the post-war period.

The other such example constituted the infamous decision to construct motorways around Auckland instead of an underground, electrified railway scheme. It is this that be the subject of the next two articles. Only after analysing the effect of this second example can we attempt to provide an informed answer to our overarching question, because both examples inform and complement each other.

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