

SESSION: HISTORY IS MORE THAN THE ROLLING STOCK - REMEMBER THE INFRASTRUCTURE.

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We all have trams - and yet, strangely, we refer to ourselves as Tramway Museums rather than Tramcar Museums. This is understandable. Without a tramcar, there would be very little point in having a tramway or a tramway museum. We have all gathered up greater or smaller numbers of trams. The lucky groups have obtained them direct and in running order from the operator. Other groups like the small but dedicated one in Rockhampton, the tram in Perth, and ourselves, have been able to find battered remnants lying in orchards or holiday houses and garden sheds and, with much commitment and hard work, turned these into rather good representations of real trams !

However, there was a great deal more to most tramway systems than the rolling stock and it is very easy for us to overlook this in our struggle to create a museum tramway and place a number of serviceable cars upon it.

With the possible exception of Leonora, where the scale of operations was somewhat smaller than that of most if not all of the COTMA groups, tramway systems enjoyed a very special place in the community. Indeed, they were almost a community of their own. Our tramway systems come from a very different era and lifestyle from that of today's world. 90 and more years ago there was no public electricity supply to call upon for tramway power, there were no cellphones, and telephone communication was certainly not available behind every front door in the street in the way that it is today. Even public water supply was the exception rather than the rule. Although roading and other contractors were available, the passionate commitment to private enterprise and competitive tendering was less pronounced than it is in the world of today.

So what is it we are saying to you ? Essentially this - our tramway operators were obliged to establish a complete structure to support their tramway operation. The tramcars themselves were, of course, the most obvious part of the structure to the public using them. But there was a great deal more to it than that. For example:

1. Tramway operators, if not the local authority itself, had to negotiate operating rights in the streets with this authority, or if planning to construct reserved track, like the New Brighton Tramway Company in Christchurch, had to negotiate and purchase land on which to construct their tramway. Mrs Knight in Christchurch comes to mind as a disgruntled property owner who was not satisfied with the price that she received from the Tramway Company for the purchase of her land in what is now Pages Road, and took matters into her own hands in a rather colourful way until she received further compensation !
2. Independent operators like the Christchurch Tramway Board required a Board Room and large administration offices and, if they were a local authority like the Christchurch Tramway Board, arrangements had to be put in place to elect the Board.
3. Workshops to undertake maintenance and rolling stock overhauls had to be constructed.
4. Car barns were required, often on a grand scale.
5. Overhead had to be erected and regularly maintained. Overhead gangs were established and were a regular part of the tramway scene, working from tower wagons.
6. A Permanent Way Department had to be set up. Regular track cleaning and greasing was carried out and track relaying and repairs were a regular feature of the larger tramway organisations.
7. In Christchurch, with its stud of delightful steam trams, water supply had to be arranged as the tramlines grew longer. At first steam trams were provided with condensers. After the advent of the electric tramway system, the condensers were removed and the Christchurch Tramway Board sunk wells and put square iron water tanks at strategic intervals along the lineside to provide water for the steam trams. The water was pumped from the wells into the tanks with centrifugal pumps powered off the 600v DC overhead.
8. Horse tramway operators needed stables, an army of staff experienced in looking after horses and a vast number of horses. Horses needed to be changed virtually every trip.
9. Most tramway system established a telephone network of their own with

trackside telephone that enabled drivers to make immediate contact with office, workshops or power house in the event of mishap or breakdown.

10. Complex accounting and cash handling systems had to be put in place to handle cash fares on a grand scale and staff salaries.
11. And last, but most important of all, an electric tramway system required electricity and this was not available from mains supply in the early days.

It was a very complex system that was set up and it employed many hundreds of people behind the traffic staff who were visible to the public. To be employed by "The Tramways" became a way of life and, among employees, there was pride in belonging to this reliable and faithful provider of service to the public. In Christchurch, the tramway service finished in 1954 and the operating authority itself was abolished in 1989. Nevertheless, it is still relatively common to see in a death notice in the paper in Christchurch after the name of the deceased, the spouse and family, the little note "ex Tramways". These were people who worked for a very, very special organisation and the mana it bestowed has lasted with them for the rest of their lives. (For the benefit of Australian visitors, "mana" is a Maori word meaning "authority", "preferment", or "prestige".)

When we look at our tramway museums, we have to ask ourselves how much of this we really have managed to capture. This is not to be critical - we have done very well I believe, and captured an enormous amount of the style and atmosphere of those early days. Sydney has a grand representation of a real car barn in real brick. Bendigo has a real car barn ! What more need be said. The rest of us enjoy rather cleverly constructed tin sheds which combine maximum achievable elegance with minimal cost. Long years ago when the Christchurch Tramway Board's car barn was standing empty, I telephoned the General Manager and asked him if he would give it to us. It was made of roof trusses supported on 20ft high cast iron pillars and, for anyone with unlimited funds, it would have been eminently transportable. Fortunately for our Society, he very graciously replied that his Board would be delighted to give it to us but that we had better do an assessment of the costs before we committed ourselves because, in his experience, it was always cheaper to construct a new building than to attempt to transport an old one. He was right of course, and the result is our architect-designed tin shed at Ferrymead.

At another stage, we even tried to get the Board Room table from the Transport Board. Fortunately, at that point, we were asked where we were going to put it - and that was a rather relevant question. So it sold instead.

We have all retained in varying degrees some of the infrastructure elements of a tramway system. Most of us own a tower wagon or two. We all have a Perway team, - but it isn't quite the same when it is only manned by Saturday volunteers and doesn't have an entire building and works yard of its own to operate from.

But what about our power supply ? These days most of us purchase our electricity from the public supply and rectify it into tramway power. It is logical and it is cheap to do so. Most of the rectifiers are solid state which is tidy and compact, but there is not a lot to see.

John recalls some 50 years ago, standing on the steps of the Christchurch Tramway Board Power House in Falsgrave Street with his nose pressed to the wire grille door that let fresh air into the building but excluded the public from suffering the indignity of electrocution. Things could be seen rotating and in the foreground were rows of line voltage boosters with blue sparks visible at the commutator brushes. John longed to enter and to inspect this wonderful world close up - but such pleasures are denied small boys !

Many years later John stood with Bruce Dale and peered at the rotary converter set running in the old power house in Ballarat and wondered if there was any way that he could talk it

out of the State Electricity Commission of Victoria. But that was 30 years ago and the time for that project had not yet arrived.

Graeme's story is similar. He came to the Society with a passion for things driven by steam and quickly involved himself in the Kitson Steam Tram.

Some 15 years ago the Society established a large traction sub-station as a museum exhibit at Ferrymead. There was a walk-through public viewing gallery, 11Kv switchgear for power supply to the Ferrymead site and 750kw mercury arc rectifiers to provide DC supply to the trams and trolley buses at Ferrymead. A separate rectifier provided 1500v DC for electric railway supply. The tramway rectifiers were a wonderful hybrid effort incorporating parts from at least three systems. The transformers are from the old Tramway Board power house in Falsgrave Street. Some rectifier parts were from Dunedin and some further parts of the switchgear came from the Auckland Power Board's Hobson Street power house which had been the original Tramway power house for the Auckland trams. The large grass space in front of the sub-station was dedicated to the construction of a "Hall of Power" by the Ferrymead Trust.

However, as most of you will know, the Ferrymead Trust fell upon hard times and this project never proceeded. A one megawatt output steam turbine which had been purchased in 1912 by the Christchurch Tramway Board for the Falsgrave Street power house was salvaged for the Society by an employment promotion scheme in the mid-1970's and stored in the Ferrymead Trust's storage building. And there matters lay for many years until the Trust, driven by its desperate financial plight, began to dispose of all surplus items in its care. A chance reference in a letter from the Ferrymead Trust to the Society alerted us to the fact that this turbine was in imminent danger of being cut up for scrap. A rather passionate discussion at a Society Committee meeting followed up by an impassioned letter to the Trust averted any immediate risk of scrapping. But what can you do with one isolated turbine weighing 30 tonnes and stuck on the ground absolutely immovable in the middle of a large storage shed getting in everybody's way. It was obviously only a matter of time before the scrapping option arose again, and perhaps implemented successfully.

After some very persuasive and enthusiastic advocacy by Graeme, the Society's committee accepted that the only way to ensure the threat of scrapping was never raised again was to use the turbine for its original purpose to generate tramway electricity. The committee agreed to approve a project to construct a steam-driven tramway power house complete with Babcock and Wilcox chain grate fired water tube boilers, a Green's Economiser, the steam driven alternator set, and a rotary converter to produce direct current for tramway use from the alternator. The size of the project was daunting. The cost has been estimated at approximately \$NZ1.5 million. We proposed to recreate a 1905 Tramway Power House - and we had no money and no equipment apart from one second-hand turbo alternator set. Some of our members were shocked ! Some were openly hostile because of the enormity of the project.

However, the sheer size and audacity of the project seemed to capture the imagination of supporters. In a little more than 12 months, two Babcock and Wilcox boilers had been donated and these are now in the process of being removed from the boiler house at Skellerup Industries. A Green's Economiser built in 1882 and in good condition, was found entombed in a freezing works at Smithfield. It had been out of use for 45 years. Gradually, funding for the project began to appear, although we could always do with a great deal more. A seeding grant of \$10,000 was received to get the project started. Lottery funding of \$50,000 was made available to cover the cost of removing the two Babcock and Wilcox boilers from Skellerups. In a little more than 12 months, virtually all of the equipment needed to recreate a working 1905 Tramway power house has been located, and a considerable portion of it has been offered to us.

Interested supporters with an amazing diversity of talents began to appear to provide help. Steadfast workers with drive and vision and not afraid of dirt and hard work, appeared ready to commit every spare minute to supporting this project, and they have continued to do so.

And so a successful new project has been launched. When completed in some 10 years time, it will be a new exhibit for Ferrymead, perhaps the most striking exhibit of all. In addition, the project appears to be generating new enthusiasm and new commitment amongst our members and, even more importantly, is generating new members.

For the remaining few minutes, we will show you a selection of slides showing the original power house in Falsgrave Street and some of the things we have done to collect items for this project.

DISCUSSION/QUESTIONS

Don Campbell (Sydney Tramway Museum): Asked about the type of building proposed in which to house all the equipment for the power house

John Shanks: The building will be a virtual true replica of a typical period structure. It is being designed by an architect who has sympathy with the background to the project and what it is setting out to portray.

Chris Steele (Australian Electric Traction Museum): Asked if the sub-station will be in steam.

Graeme Richardson: Explained that it was proposed to have the equipment operational on special days and produce electricity to power the tramway.

David Verrier (Chairman): Requested a vote of thanks to the speakers, which was carried with acclamation.