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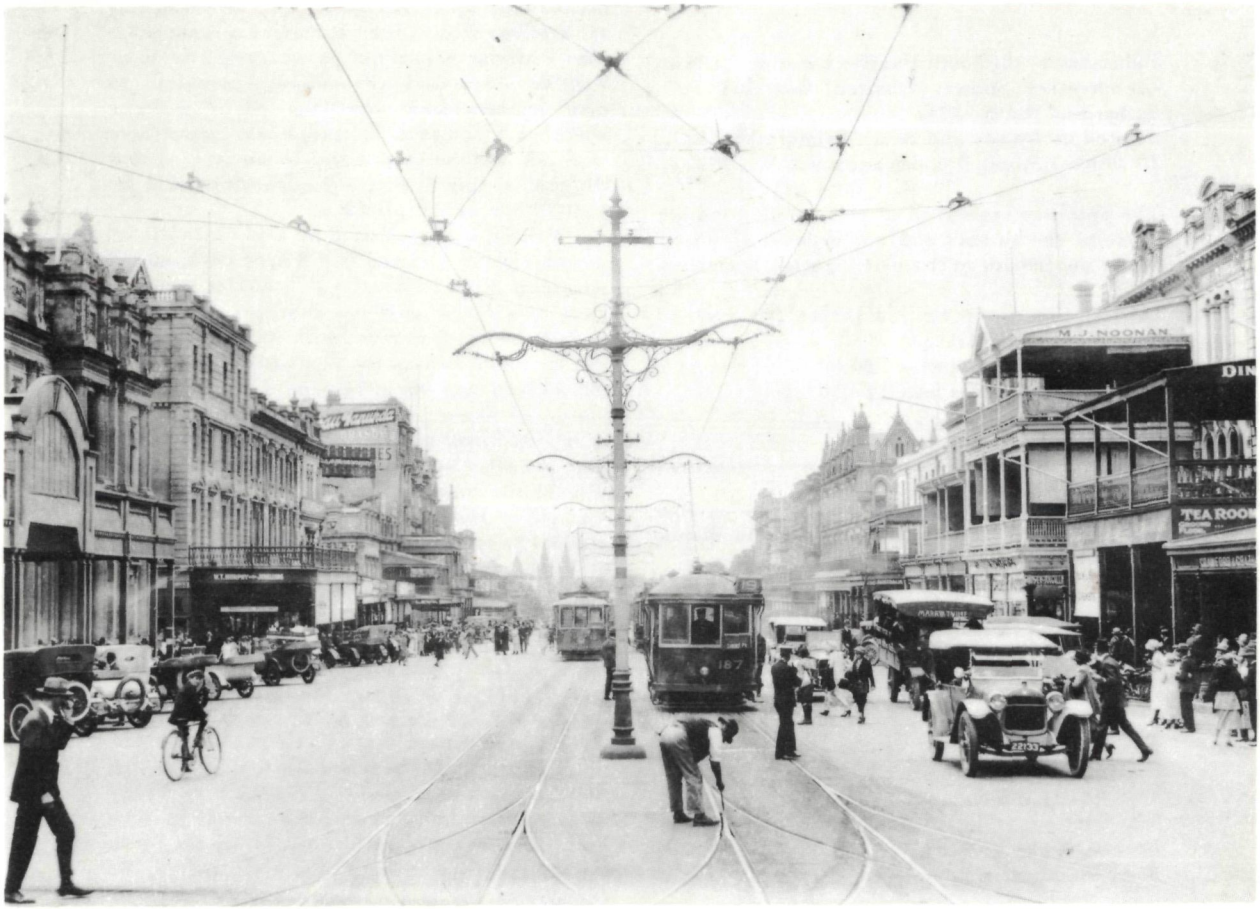

WHY ELECTRIC TRAMS?

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FRONT COVER: *King William Street Adelaide when the question 'Why Electric Trams?' was self answering – Compare C class 187 with the bus to the right. A class 18 in background.*

Comment...

CHANGE AT GOSFORD

A train trip to Wyee in December produced a stark contrast in the quality of service provided by one operator – the PTC.

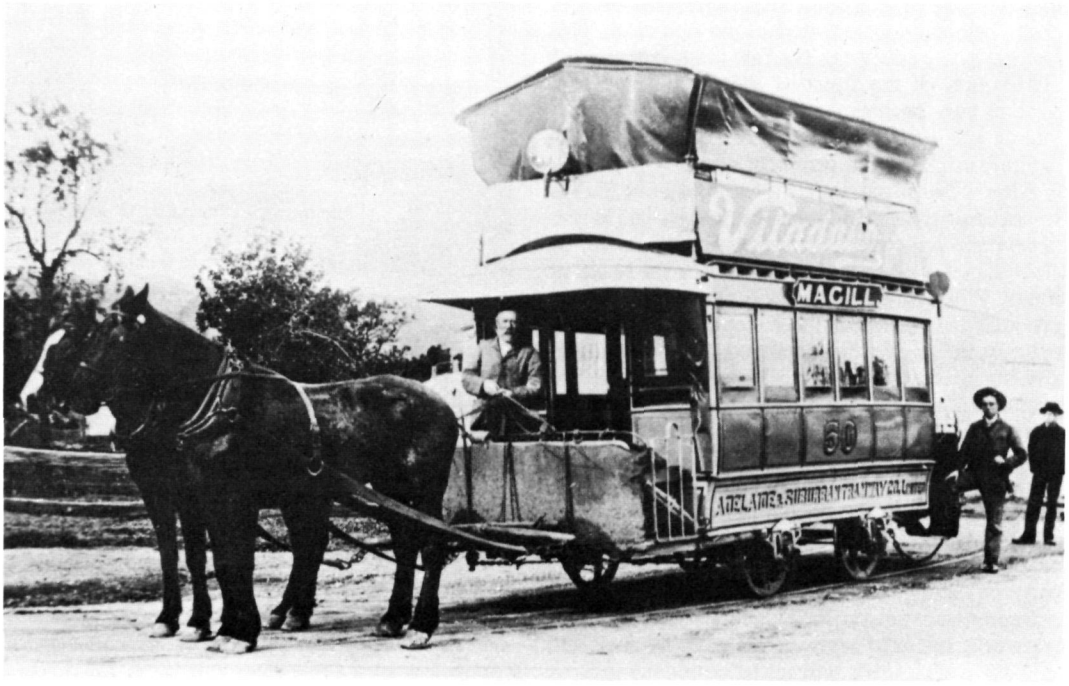
The train from Sydney, joined at Strathfield, was a second series four car double deck interurban. Air conditioned, comfortable and quiet, its progress was as rapid as the sinuous main north would allow. An off peak service stopping all stations from Cowan it carried a reasonable load with the majority of passengers leaving at Woy Woy. Approaching Gosford a pleasant, precise announcement over the public address system advised that the train would arrive there in a few minutes and would terminate and that the connecting train to Newcastle would be waiting across the platform.

Waiting it was! Headed by a 44 class diesel it comprised a van and two R type cars; small, miserable, rough riding, side corridor compartment stock with only one door per side. This train was already crowded with local passengers and time was lost as the new arrivals squeezed themselves and their luggage (it was school holidays) aboard. With a capacity standing load it departed over ten minutes late. Despite stopping at all stations (Most are conditional) to Wyong, the power to weight ratio of the train was put to good use by the driver and time was gradually regained. The scramble was repeated at Wyong as most passengers fought their way off. The long distance passengers thereafter had reasonable room to themselves. An all stations to Morisset leaves Gosford twentythree minutes later, without any further connection from Sydney. This is too late to offer any relief to the first service and when it passed through Wyee it was empty.

Electrification reached Gosford in 1960 but no effort has been made to extend it to Wyong as population has spread northward. It is to be hoped that any proposal to use AC on the forthcoming electrification to Newcastle and beyond recognises the problems that will be involved if DC stock is restricted from working through to at least Newcastle. The necessity to have dual current stock or locomotives available at the right time could result in the change at Gosford being perpetuated when things go wrong which past experience indicates always happen at the worst possible time.

WHY ELECTRIC TRAMS?

By C.J.M. Steele



Adelaide was served by horse tramways for some thirty years, commencing in June 1878. Most were replaced by electric trams although some were abandoned without replacement. Car 50 of the Adelaide and Suburban Tramway Company Limited is seen here outside the depot of the Magill line in Penfold Road about the turn of the century.

This article was presented as a paper to a public seminar, 'Tramways in Adelaide. Their History and Future' at the University of Adelaide on 9 June 1978 in conjunction with the Adelaide Tramway Centenary.

It is interesting to reflect that when Adelaide was founded in 1836, a vast number of older cities elsewhere in the world were equally primitive and their rates of growth had been historically slow.

As a matter of interest London, which was a centre of trade before the Roman invasion of 55 B.C., only reached a population of 1,000,000 at the time of 'Waterloo' in 1815 (and was, in fact, the first city to do so), but had expanded to over 8,000,000 within the next 150 years. The pattern was similar in other long established European cities and indeed in a few Asian ones too. By contrast, Adelaide's growth has been more consistent, rising through 162,000 people at the turn of the century to about 900,000 today.

What interpretation then can be traced to this rapid growth of both old and new cities in the last two centuries? Clearly what we now know as the industrial revolution and the manifestations which sprang from it. Up to this period the majority of people lived in hamlets and villages with little communications between them. Only a minority of large market centres existed, usually on the coast though occasionally on a continental trade route. The villagers produced food and clothing, building materials and implements principally for their own use, surpluses being considered wasteful as well as being difficult to dispose of to others. Ultimately a craft system developed, those with unique skills producing specific goods or wares, such as furniture

or apparel. This in turn motivated a desire to construct a framework, jig or machine to more easily assemble the standard item.

About 1765, Richard Arkwright created a spinnin 'Jenny', a machine that simplified the forming of threads. Adaptations were installed in the houses of crofters and so the small 'cottage' industry was born. It was not long before similar crafts became concentrated in the one area. This facilitated the receipt of the raw materials and the distribution of the finished article. Surplus production now became a profitable business. To all intents and purposes this was the beginning of the capitalistic system of production.

After 1790 when James Watt had invented his steam engine, the primitive factories were no longer dependent on water power, and thus could be erected in any place and not merely on the banks of rivers. Whole towns grew up to manufacture allied products, and a labour force streamed in from the countryside to man the machines. At every successive stage of industrial development communities became more complex in their function.

The growth of the modern city can trace its roots to a time barely 190 years ago. The concentrations of people in the new industrial towns and cities needed a facility to move them about. Hitherto merchants and hawkers provided the earliest types of local conveyances, usually horse drawn spring carts or heavy drags. Stage coaches operated by entrepreneurs ran on long distance journeys between settlements. They were increasingly displaced by railways in most countries following the success of George Stephenson's Canterbury to Whitstable passenger line in Kent, England, in 1830 using steam locomotives.

Although steam traction was applied to road vehicles in the ensuing years, its progress was quickly arrested in most places by poorly surfaced roads and stringent regulations such as the Red Flag Act in Great Britain. The railways escaped the more restrictive impositions of the prevailing legislation because they ran on their own rights-of-way. John Macadam had devised a method in 1815 of consolidating road surfaces with water and aggregate, but this treatment was inadequate to tolerate the cyclic pounding of heavy steam traction engines. The placing of the contrivance on rails laid in the streets was not satisfactory either, the smoke emissions were offensive to pedestrians and adjacent residents alike. Chiefly, though, any mechanical device in the confined space of a street frightened horses which thereby constituted a hazard of their own. So the horse was to remain master in this domain for many years to come.

The advantages of rails as a means of providing ease of motion and manouevrability to large vehicles was, however, not lost on the advocates of

Sydney was a major user of steam trams which were introduced by the Government in 1879. Although electric trams gradually came into use from 1890 the last Government steam worked line lasted until 1937. A private line opened at Parramatta in 1883 ran until 1943 when it closed due to wartime conditions. Ex Govern - motor 5A and a trailer car are seen at the Parramatta Park terminus on Sunday 2 November 1941. / B.H. Stoneman

road transport. The 1860s and 1870s bear witness to their efforts, for in this period horse tramway companies evolved, soon interlacing the streets of scores of cities with their iron rails. These metal links guaranteed a relationship between the diverse activities of the centre and the new residential suburbs which grew almost overnight. In those days nearly everyone was dependent on public transport. Only the rich could afford a private horse carriage which needed constant attention especially when it was necessary to detain it in town for any duration.

By this time the largest cities were indeed becoming large. London had a population of 3,250,000, New York slightly over one million, with Chicago, Philadelphia, Paris, Berlin and Tokyo in the vicinity of this figure. This rapid urbanisation soon pointed up the shortcomings of horse traction. Firstly, it was capable of a speed of only 4-6 miles per hour, barely faster than walking. Secondly, haulage of cars which seated some 46 passengers on average demanded at least two good horses which cost about $100 each and were suitable for three years at most. They could reasonably be expected to do no more than two or three trips a day. This, of course, depended on the type of traffic offering and the nature of the terrain over which the line was laid. In any case a horse tramway operator required some four to ten times as many horses as cars - the former an asset which depreciated quickly and was subject to decimation by disease.

For example, the Adelaide and Suburban Tramway Company had, at one time, 650 horses and 90 trams.

There was an epidemic of horse influenza on the eastern seaboard of the United States in 1872, which killed or disabled 18,000 horses of all kinds in New York alone. Fear of a recurrence greatly increased the incentive of tramway managements to replace horse traction. The social cost of its prolonged retention was also high. A horse would normally defecate over 10 pounds of manure a day on to the streets as well as periodically drenching the pavement with urine. Streets were left unpaved or at best cobbled so the fluid could be absorbed by the ground. Besides, a rough surface was needed to assure traction between the horse's hooves and the street. The manure was not only objectionable but contained the tetanus virus which meant that any skin abrasion on the streets entailed the risk of a fatal infection.

In San Francisco a young man named Andrew Smith Hallidie had, with the assistance of financial backers and mechanical experts, formed a company known as the Clay Street Hill Railroad which opened for revenue service on 1st September, 1873. Hallidie was in the family business of steel cable making, the principal user of which was the mining industry. It is reputed that he conceived the idea of cable tramways in the streets while observing the horses of a car in hilly Jackson Street, San Francisco, slip and lose their traction on the wet cobblestones one day in 1869.

The hallmark of a prosperous 19th century industrial city was often portrayed as a profusion of factory chimneys belching thick black smoke into the atmosphere. The smoke was the exhaust from a coal-fired steam engine in one corner of the plant which drove the machines at the work bench through a succession of fly-wheels, shafts, pulleys and geared belts. The elementary cable installation on the Clay Street Hill Railroad was not only the precursor of the system in that city, which gives so much pleasure to tourists today, but launched an era of cable traction development throughout the world. Ironically, the three San Francisco lines are the only ones to survive. Cable traction was an effort to make a similar mechanical connection between a stationary steam engine in a power house and a detachable conveyance running on a guideway in the streets by means of an endless steel cable. The cable ran in a subterranean cast iron conduit, usually laid between the running rails of the tramway and therein it was supported by pulleys, or sheaves. Depending on the system, the cables ran at

North Sydney was a good example of a waste of time and money in building a cable tramway. Built in the era of electric traction it had a very short life before being absorbed into the growing electric system on the north of the harbour that could just as easily handle the grades and curves found on the cable line. Whilst the early electric cars could haul one trailer this photo demonstrates the power that was built into the cable system which enabled two trailers to be handled on rare occassions.

various speeds, the upper limit being about 14 miles per hour. The cars had a special attachment called a grip which enabled them to be fastened to or released from the continually moving cable.

Needless to say, cable traction did not find its way into every metropolis. No suggestion was ever seriously made that it be adopted in Adelaide, but two lines were laid in Sydney, and Melbourne had the fourth biggest system in the world with 45.5 miles of line. The stimulus for an installation usually required two conditions to be taken into account, either independently or in concurrence; the same ones, in fact, affecting the efficiency of horse tramways - traffic and topography.

The USA had the greatest number of cable car systems - 62 in 28 cities - with an aggregate all-time maximum extent of 361 miles. The zenith in the country of its birth was achieved in 1893 whereupon decline set in. Cable trams were used in perfectly flat cities with arrow-straight streets like Chicago as well as San Francisco and other hilly ones like Kansas City. In the infancy of the technology it was believed that they could never be used on routes with curves. This problem was solved in the antipodes at Dunedin, New Zealand, where the circuitous Roslyn Cable Tramway was built to connect with the city centre in 1880. It is interesting to relate too, that the steepest grade of any cable tramway in the world was found in this city, 28.5% or about 1:3½!

The only other cities with cable tramways apart from those already mentioned were in France, Portugal, The Isle of Man, England and Scotland with Edinburgh's 29 miles of route more than eclipsing the total of the rest.

In the light of subsequent experience only 5.5% of the United States mileage, or about 20 miles, was found inherently suited only to cable traction on the basis of negotiable grades. But it was the most suitable system at the time it was applied. Likewise the justification for converting flat but heavily patronised horse tramways to the mode in the 1880s and early 90s. Cable tramways were very capital intensive and mechanically inefficient. In 1890 it was estimated that the cost of all lines then constructed in the United States averaged $350,000 per mile. An engineer prominent in the design of power houses estimated that 68% of the energy produced for a cable system was expended on moving the cable, 28% on hauling the cars and only 4% on propelling its complement of passengers. Consequently, the public requirement for service had to be enormous to ensure a reasonable return on the capital expended. It was generally reckoned by the industry that cable traction was economic only in cities of more than 400,000 to 500,000 population and then on lines carrying no less than 4000 passengers a day. Usually it was greater than this and the Chicago City Railway reported in 1887 that it was moving 70,000 to 100,000 passengers a day on its two lines at less than half the costs it experienced with horse tramways.

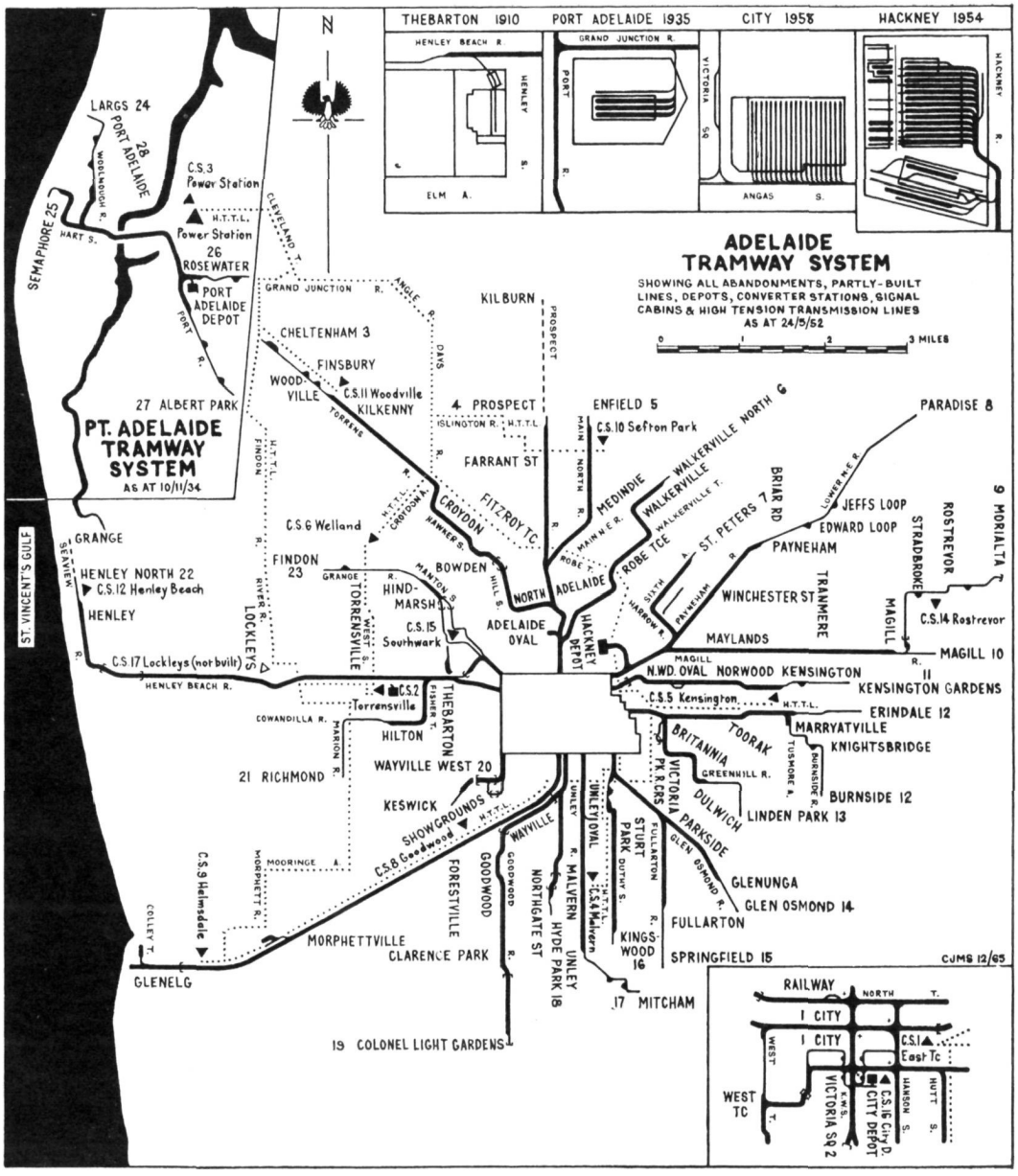
It needed figures like these to make the whole business worthwhile. The cable tramway was the most ponderous creation in the annals of transportation history. The infrastructure, particularly that hidden beneath the surface of the streets, was hideously complicated, subject to all variety of malfunctions and worst of all, accident prone. The treatment of this aspect would require a disertation of its own, but it is pertinent to remark that the problems loomed so large and intractable within the first decade of the cable tramway's development that when a superior system presented itself in 1888 the street transport magnates in the United States were quite prepared to divest themselves of their $125 million investment in cable traction as soon as possible irrespective of its degree of life expiry.

What then was this new technology? Electric traction. It would be prudent at this point to bear in mind that despite the outward, modern appearance of cities in the 1880s electricity was a virtually unknown commodity. Both buildings and streets were lit by gas, heating was done by the combustion of solid fuel and labour-saving mechanisms such as elevators were driven by means of steam engines. Tramway systems were the first industry to employ the medium of electricity because practical necessity demanded it.

It was on 2nd February, 1888, that Frank Julian Sprague successfully demonstrated at Richmond, Virginia, USA, the ability of electricity drawn from an overhead wire to move a procession of individually motored cars under the independent command of their motormen. This was the culmination of many years of research and experimentation by a legion of theorists, scientists and inventors into the properties and potential of the invisible force.

Italians were in the forefront of this quest. Galvani is credited as the first to investigate the effects of electric currents in 1791. His colleague, Volta, later corrected some minor misconceptions. Pacinnotti built one of the earliest machines for the applied use of electro-magnetism as in 1830 the English physicist, Faraday, also studied the phenomena of electric currents being produced by the rotation of a magnet. And so the process of discovery went on, each step advancing the time when electricity would have a commercial application. The electrical units with which we are familiar today, volt, ampere, coulomb and ohm, etc., are a veritable roll call and memorial to the pioneers in this field of human endeavour.

Pre-dating Sprague was the 1½ mile electric



railway in Berlin constructed by Ernst Werner von Siemens in 1881. Two years later Siemens and his brother built a 6 mile line between Portrush and the Devil's Causeway in Ireland. the ubiquitous Thomas Edison had designed an electric locomotive in 1880. In 1885, Leo Daft electrified the Hampden line of the Baltimore Union Passenger Railway which proved to be the first American electric line to operate commercially for any extended period. Simultaneously, Van Depoele developed an electric tramway network in Montgomery, Alabama. Daft used a 120 volt arrangement with the car motor mounted integrally with the controller on the front platform.

Innovators of the electric car suffered from two dilemmas: either they used a low voltage such as Daft's which was unable to carry far, or they used a high one such as Van Depoele's which arced and otherwise presented safety problems. Either they mounted the motor on the axle, where it shook itself to pieces, or they mounted it on the car body, where it made an imperfect connection to the axle via belts

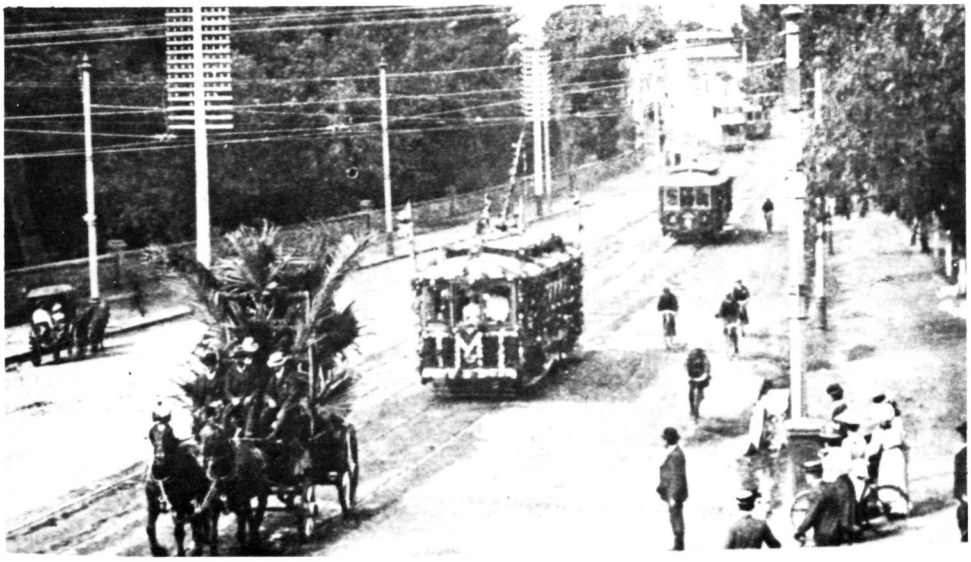
or gears. Sprague's invention was essentially a resolution of both these dilemmas. He developed a workable 500-volt DC motor (later almost universally 600-volts), and mounted it between the axle and a spring so that it made a secure mesh with a gear on the axle, but was cushioned against shocks from the track. By the test of market choice the pre-Sprague electric trams were inferior to cable cars; not a single cable line was replaced before 1888. The story, however, was quite different afterwards.

In 1889, one American transport official remarked that "electricity as a motive power is as far ahead of the cable as the cable was an advance on the horse". As historical evidence was to show, electric traction systems usually required only about one seventh the capital investment of cable tramways and the cars operated for about half the cost as well. The age of electricity was at hand. It had an impact on our grandfathers' generation similar to that which the electronic and data processing revolution has had on our own. It changed a way of life. A new profession developed - the electrical engineer. Admittedly they were originally employed in the tramway and city railway industry, but the potential domestic market for electricity soon provided new opportunities for their expertise.

What were the advantages of electric tramways over their cable counterparts? Most could be summarised as greater flexibility. An electric tram could "back-up" or make up lost time; a cable car could not. Two or more different lines could cross without danger. Braking could be electrical rather than manual, and lighting and heating run as a circuit from the power supply. The list was endless. Conversions to electric traction did not occur overnight. For a start most tramway systems in the world were still horse operated in 1890, and managements' first concern was to put electric trams on these lines. The attrition in cable tramways commenced about five years later and was given considerable impetus when the San Francisco authorities decided against major restoration of that city's system following the 1906 earthquake. It is interesting to note that the last Melbourne line closed in 1940, with one in Dunedin surviving until 1957!

Before proceeding to an examination of the technology of electric tramways it would be pertinent to mention that in some cities, notably London, New York and Washington, municipal ordinances forbade the erection of overhead electric wires for tramways on asthetic grounds. In New York and Washington (to comply with this edict) additional mileages of cable tramways were installed despite their now proven absolescence. In London, engineers adopted the principle of the underground conduit to hide the electric conductor. The Americans, by contrast, adapted their cable conduits to this role, but only with limited success.

Often a city's first major power station was commissioned by an electric tramway undertaking. Adelaide was no exception. The Municipal Tramways Trust built their large facility at Port Adelaide in 1910 – 1911. - State Library Of South Australia



Electric trams using overhead current collection were inaugurated in Adelaide on 9 March 1909. These cars are proceeding to the opening ceremony – performed on the Kensington line – along Botanic Road near Hackney Depot.

New York and Washington each built conduits specially for their electric tramways in later years. Being costly, they were never a preferred option.

It was widely believed by our predecessors that electric wires suspended over the streets constituted a hazard through the likelihood of falling down. This was an erroneous belief, but it triggered off for a brief period all manner of variations for electric current collection. Apart from the conduit electric method already discussed, a seemingly natural choice of alternatives was the battery/accumulator tram. A 7 ton locomotive energised by a 40 cell zinc-sulphuric acid battery was constructed as early as 1838 by a Scotsman, Robert Davidson. In 1851, the US Congress appropriated $30,000 to a professor at the Smithsonian Institution to assemble and test a battery powered electro-magnetic locomotive. It reached a speed of 19 miles per hour on a five mile trip on a railway out of Washington, but the jolting over the tracks cracked the battery beyond repair. Much closer to home, the Adelaide and Hindmarsh Tramway Company tested the "Julien Electric Traction System" in a standard horse car body on their Henley Beach line in 1889. The current was generated from lead/acid accumulators stored under the saloon seats. It was only marginally successful, the wheels jamming in the rails on tight curves. The experience was a general one - the rapid dissipation of power on encountering an adverse grade or increasing speed to any extent. Further development on this system of propulsion was not seriously reconsidered until quite recent times. Today's devotees of battery electric vehicles are still dealing with the same old problems.

Another electric traction device, conceived with the idea of obviating the need for "dangerous and unsightly overhead wires", was the surface contact system which had a burst of what could hardly be called "popularity!" In some technical respects it resembled the conduit system. Fundamentally, it comprised studs placed at close intervals between the running rails of the tramway flush with the surface of the street. Inside each stud was a metal contact which could be energised by the underground network of electric wires only when it was drawn upwards by the magnetic skate fixed beneath a passing tramcar. At least two of these contacts always made a connection with the skate at any one time, so the tram's motors received a continuous supply of electricity to keep it in motion. Once the car had proceeded beyond a stud, the contact dropped down and was automatically de-energised. In practice it didn't quite work out that way! Live contacts were often left protruding in the streets, a menace to people and animals alike. Certainly some horses were electrocuted. A number of patents were taken out while the craze persisted - the Dolter, Lorain and Griffiths-Bedell systems were merely three of them - each trying to perfect the others inadequacies. Remarkably, two surface contact systems in England survived until the

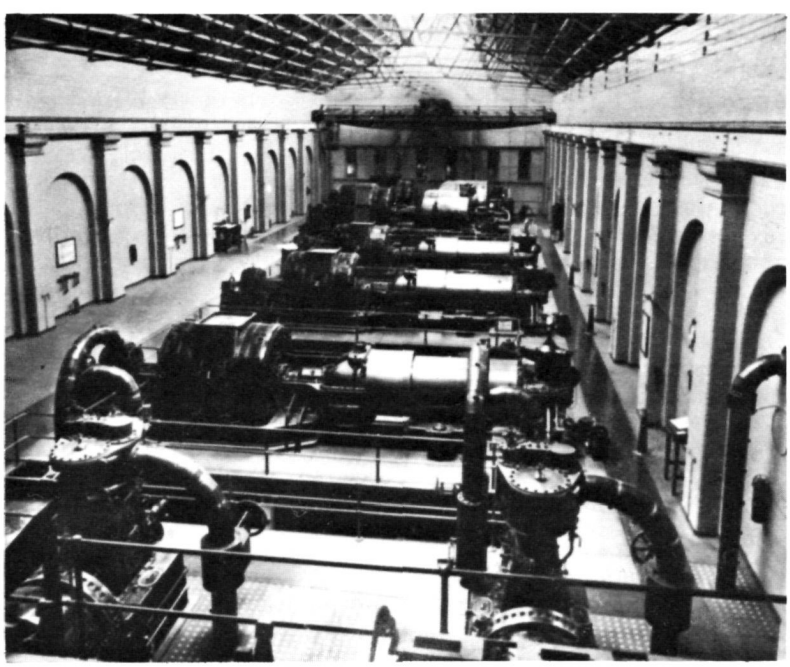
1920s, the one in Lincoln giving almost 14 years trouble free operation.

As with so many innovations which have "first cut of the cake" the overhead wire system was almost fated to prevail once prejudice against it had diminished. It was both the cheapest and most efficient method and remains in use by all electric tramways today. The current collectors originally used above the roofs of the trams were tiny four wheel carts which sat on top of the positive and negative wires. These moved or trolled with the tram by means of the inter-connecting electric cord. They quickly gained the name of "trollers", later corrupted to trolleys, this derivation finding favour as an alternative name to the tramcar itself, particularly in North America. Unfortunately, trollers dewired easily and they didn't stop moving when the tram braked! Many times the flexible electric cord was snapped off by inertia.

Sprague, in his wisdom, employed a single underrunning grooved wheel on the electric wire. This was fitted to the end of a pole pressed upwards by steel springs. The Glenelg tram still uses this method of current collection. In Melbourne, a carbon skid on the pole was found to reduce wear on the wire. The Hobart tramways, closed in 1960, used a metal bow with a collecting pan on their cars.

Those of us who have been to Europe will have noticed the almost universal presence of pantograph collectors on the roofs of trams in that part of the world. All perform the same function - drawing electric power from the copper overhead wire, feeding it through the circuit breakers to the motorman's speed controller which then regulates its passage by means of resistors to the motors. The return circuit or negative current is made through the bonded steel rails the tram runs on.

The electricity was normally produced in huge coal-fired power stations. By way of simple explanation water was turned into steam in the boilers, and after suitable treatment was forced at a high pressure into the myriad blades of a turbo-alternator. The rotation of the spindle was coupled to the electro-magnetic section of the machine from which the alternating current was drawn off. The power was then switched through transformers into the high tension transmission lines at a pressure usually of 11,000 volts. To be suitable for driving trams it was necessary to change the electricity into direct current at 600 volts. This was achieved in sub-stations located at strategic points within the tramway system. Transformers and switchgear also existed here together with the necessary rectifier or rotary converter. The final step was to convey the



Another view of the MTT's Port Adelaide power station showing the engine room. Electricity was reticulated from here to the various converter stations serving the tramway system at a pressure of 11000 volts.
- State Library Of South Australia

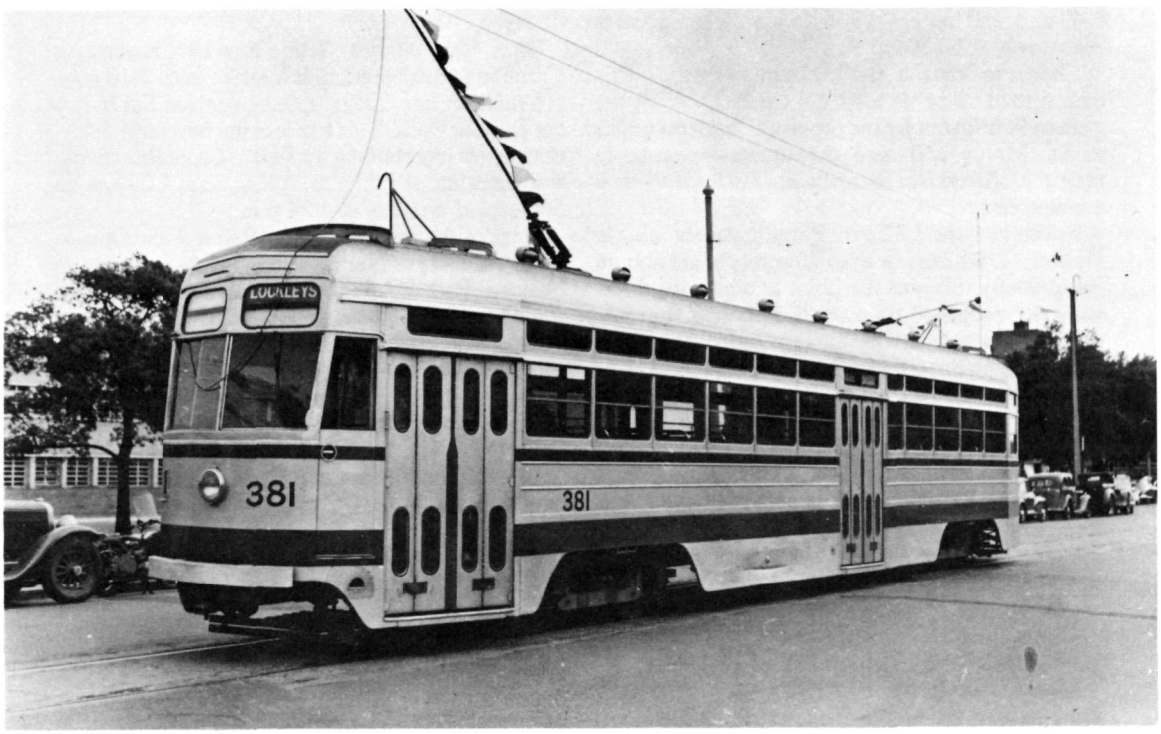
electricity to the tramway by feeder cables. The MTT had a power station at Port Adelaide which was commissioned in 1911. Although this no longer exists - it was closed in 1956 - two converter stations, at Forestville and Helmsdale, are visible beside the Glenelg line.

Adelaide, of course, didn't commence operating electric trams until 1909 when the first line to Kensington was opened. This was almost in the middle of the electric tramway boom which lasted from 1889 to the mid-1920s. 154 electric tramway systems were opened in the United States in the first two years alone! By the end of the Great War in 1918, some 60,000 trams were operating on 26,000 miles of line in American cities and transporting no less than 11,000,000,000 passengers annually! In Great Britain there were about 14,000 tramcars running in 140 or so towns and cities. Much the same figures could be presented for other industrialised societies of the time, west central Europe, Australia and Japan. The Sydney system, once the largest in the southern hemisphere ran 2000 cars on 200 miles of route. The Adelaide tramways carried their greatest number of passengers, 95,000,000 in 1945, representing an average of 295 journeys for every man, woman and child!

The first fleets of trams engaged on the thousands of systems were either made by established carriage builders, or constructed in the operating authority's own workshops. It would be true to say they were tailor-made to their operators' requirements and took on all forms, shapes and sizes. Only mechanical and electrical parts observed some degree of conformity. The lack of any genuine standardisation caused no real cost problems while tramways enjoyed a virtual transportation monopoly in the cities. Although it enhanced technical progress in the early developmental stages this ossified when the industry took its position for granted. It was the Great War which heralded the turning point.

To Be Continued

The ultimate development of the tramcar in Adelaide was the construction in 1953 of the sole H1 type car, No. 381. In the same year the abandonment of the tramway system and its replacement by motor buses was announced. The semi modern car is seen here in West Terrace near Currie Street. - D.A. Colquhoun



A DAY A-ROVING

Three railway fans, Neville Martin, Bill Belford and Keith Seckold discussed a desire to have a tour over as much of the suburban electrified network as possible in daylight hours. Working timetables were closely examined and it was determined that we could cover all lines in daylight except Sandown, Ropes Creek and Pippita.

A timetable was prepared starting at Lidcombe at 5.58 a.m. and finishing at Lidcombe at 8.33 p.m. You know the purpose of timetables - to give a guide as to what should be possible and usually doesn't occur.

Saturday, 10 February 1979, was selected as a suitable day. Arising before 5 a.m., Neville and I met at his house and set off by car to Lidcombe, noting as sunrise approached that the day was going to be sunny. At Lidcombe (before 6.00 a.m.) the ticket seller looked at us as though we were escapees from an asylum (wanting Day Rover tickets before daylight was fully upon us.)

Down to Platform 4 to await Run 94f, the 5.58 a.m. train to Riverstone. In came 2 car D/D T10, and away we were at 6.00 a.m. Pleasant trip to Toongabbie where we picked up Bill Belford - also we first saw the sun. Once on to the Richmond Branch the spark raced along, into Riverstone at 6.40 a.m. and out again at 6.45 a.m. with arrival at Blacktown at 6.59 a.m.

Change to Run 82f, the 7.09 a.m. to Penrith. This train turned up as set S20, a 4 car D/D. Away we went to Penrith noting the provision for extra tracks to St. Marys and also the upgrading work in progress. Arrival at Penrith at 7.30 a.m. - two minutes early.

Noting that the 7.32 a.m. Penrith was standing in Platform 1, we made a mad scramble to get aboard (incidentally this was the point at which we threw away our proposed timetable). This was Run 9A, worked by Set S 51 (4 car D/D). Good fast running especially the through running between Seven Hills and Parramatta. On time arrival at 8.40 a.m. at Central.

Around to Platform 10 to board Run N67, the 8.50 a.m. interurban, to travel to Cowan via Strathfield. This was a 4 car double deck interurban of the first series and did some good running on the rising grades, arriving at Cowan on time at 9.35 a.m. Our next train was N112, a 4 car Double Deck interurban of the second series comprising car sets V 13 and V 14. Out of Cowan at 10.06 a.m. we raced to Hornsby arriving early at 10.17 a.m.

We changed to the 10.22 a.m. ex Hornsby via Shore to travel to Clyde. This was set S 5, a 4 car Double Deck. Off we trundled down the Shore, across the Bridge, along the Western line racetrack and into Clyde at 11.32 a.m.

Our next train (to Carlingford and return) was Run 87g (a 2 car Double Deck) set T 37. This departed Clyde (from the Down Main) at 11.37 a.m., arrived Carlingford 11.55 a.m., departed 11.58 a.m. and duly returned to Clyde by 12.11 p.m.

Examination of the timetable indicated re-arrangements were again necessary. It was decided we would go to Campbelltown via Granville so we joined Run 12A, the 12.20 p.m. ex Clyde. This was set S 52, a 4 car Double Deck. A good run except between Liverpool and Ingleburn where we were continuously stopped by signals. Arrival at Campbelltown was at 1.04 p.m. Away from Campbelltown at 1.27 p.m. on Run 94g (set T 6, 2 car Double Deck) via Regents Park to arrive at Lidcombe at 2.12 p.m.

Our next train was the first late running for the day. Run 37t, a 6 car Double Deck, consisting of S 34, T 21 was due at 2.19 p.m. but didn't arrive until 2.29 p.m. This train ambled on its way and was still 10 minutes late at Redfern, so we had to abandon it at Redfern and forgo travelling around the City Circle.

Then came our next delay. Run 14b, Redfern to Cronulla at 2.52 p.m., didn't arrive until 3.10 p.m. (18 minutes late). This train comprised Set S 7, 4 car Double Deck. This trip was the best for the day. Because of late running it raced to Cronulla arriving 9 minutes late at 3.55 p.m. - off again at 4.05 p.m. to Sutherland arriving at 4.24 p.m.

Next of the tour was Run 19A, a 4 car Double Deck set S41, to National Park. It duly arrived at National Park at 4.53 p.m. and left at 4.58 p.m. We stayed on the train until Tempe at 5.36 p.m. At Tempe Run 26A the 5.39 p.m. to East Hills was waiting. It duly reached East Hills at 6.09 p.m. and left at 6.16 p.m. Travelling on the "Snake Gully" line is never fast, and so we reached Sydenham at 6.49 p.m.

We were now on the last leg of our journey. Run 84A the train comprising 2 x 2 car sets T 29 and T 41. It left Sydenham at 7.01 p.m. via Bankstown and after a slow run arrived at Lidcombe at 7.38 p.m. just as the shadows were becoming noticeable.

Thus ended our day. We had travelled 277.24 miles for only $2.00 each.

Addendum

It will be noted that all trains travelled on this trip

were Double Deck Cars.

The Pippita, Ropes Creek and Sandown lines have a peak/change of shift service only as do lines in the Enfield and Chullora areas which are for PTC employees only. The Warwick Farm Racecourse branch which carries a race service only had not reopened by this time.

If one wishes, a return ticket from Cowan to Hawkesbury River may be purchased - the extra trip can be done without loss of time - approximately 11 minutes stopover at Hawkesbury River.

THE SYDNEY SCENE

Transport News from the Sydney Region

The Minister of Transport announced on 23 March 1979 that PTC fares and parcel and freight charges would be increased from 22 July 1979. The average fare rise will be 17%. The minimum train and bus fare will rise from 10c to 20c. There will also be wide ranging changes to the fare and ticket structure. Upon gaining office in 1976 the Labor Government reduced fares by 20%. This is the first increase since then.

The long awaited restructuring of the PTC was also announced. Two new authorities will be formed:

An Urban Transport Authority to control public transport services in Sydney, Newcastle and Wollongong.

A State Transport Authority to operate all country passenger and freight services and to control the railway workshops which will function with a seperate board.

The UTA would directly operate the present PTC bus and ferry services and contract with the STA to operate rail services. It would also control private bus and taxi services within its area and be able to contract with these operators to provide services to supplement or replace its own.

The present Chief Commisioner of the PTC, Mr. A.S. Reiher, will be the sole commissioner of the STA and the Chairman of the UTA.

Railways

ROLLING STOCK: Further deliveries have taken place from Goninan's at Broadmeadow. C3002 and T4102 arrived at Flemington depot on Monday 26 February behind 4894, having left left Newcastle earlier in the day. On this and subsequent deliveries the driving cab end of the motor car was leading. Accomodation van W37 and JHG 34958 completed the train. Although still subject to out of gauge load conditions speed restrictions and specific routing, passing movements by down trains were permitted except on the Cowan Bank. The two cars entered traffic with C3001 and T4101 as set S5.

Other deliveries have been 3003 and 3004 on 19 March, 3003 and 3006 on 2 April, 3007 and 3008 on 9 April and 3009 and 3010 on 24 April. The cars have generally entered service in two car sets with new Com Eng driving trailers but some have been noted in four car sets with ordinary trailers and a Com Eng motor.

A recent visit to Elcar Workshops revealed that it was rather empty, caused by the present rolling stock shortage. Prototype double deck motor cars C3802 and C3803 are being rebuilt as trailers. The roofline has been altered to confirm with the Tulloch double deck trailers and the drivers cabs have been removed. However tne guards compartments remain. As previously reported former parcel van C3552 has been narrowed but to date further work has not been undertaken. When completed it will be numbered C3594. The other remaining wooden bodied former parcel van (besides C3558, now SPC 1), C3555, has been rebuilt as a brake test car. It is painted dark green with yellow lines and is numbered C3595.

Electric loco 4604 entered Elcar on 27 March for an overhaul, the first time one of its class has done so, although Elcar has undertaken work on components previously.

T4963, the suburban double deck trailer with experimental bogies underwent trails to Penrith, then on the main north to Hornsby and

FROM THE PUBLISHING STAFF:

We are inreceipt of an ever increasing amount of correspondence from readers seeking information, often very detailed, about tramways in general and Sydney in particular.

It is regreted that in general we are unable to supply information or reply to letters. The results of continuing research will be published at the first opportunity. Requests will however be noted and the most popular dealt with first if possible.

on the North Shore during March but has not been sighted since.

EASTERN SUBURBS RAILWAY: This line will be officially opened by the Premier on Saturday 23 June 1979.

Driver training ceased on 20 March. Towards the end of the training period the two car set used was supplied from Flemington instead of Punchbowl. Training will recommence on 18 June for five days prior to the opening.

Observations indicate that the noise level in the tunnels is excessive. It is also high on the viaducts but during the day, at least, is not unduly obtrusive in surrounding areas. Extreme suppression measures have been taken in the Woollahra cutting. Concrete baffles lined with fibreglass insulation have been installed on each side of both tracks. To help overcome the noise problem the D scrubber returned to the line on 24 March (see page 24). Noise tests with two car double deck sets were carried out as far as Martin Place on 2, 3 and 4 of April and to Bondi Junction on 10, 11 and 19 April.

A tunnel cleaning machine has been purched by the PTC. Comprising two units and a small tractor, all four wheel, it was manufactured by Com Eng and was assembled and put on the line at the Domain (Art Gallery) portal.

WARWICK FARM: The branch line to the racecourse at Warwick Farm was reopened on 17 February after being closed for a year. It has been relaid and some of the sidings at the terminus lifted.

Trams

Trams have been on the move around Sydney lately. As well as the regular appearrances of D 134s, Melbourne W2 234 visited Sydney for a tourist promotion during March. This is one of the pop art painted cars. It was on display in Hyde Park for five days from Monday 5th.

O 805 and R 1738 were moved from Ultimo tram depot where they have been stored since 1963 to Castle Hill. Ultimo depot is being cleared in anticipation of work starting on the conversion of it and the sdjoining power station into a new complex for the Museum of Applied Arts and Sciences.

CITY SECTION

News of the Melbourne and Metropolitan Tramways Board

The first major track renewal for the year took place during January and February in Maribrynong Road Ascot Vale between Union Road and Ascot Vale Road. It is interesting to note that a change took place in the construction of the temporary track used to keep the service running. In the past, whenever new rail has been used, tie bars (made of round steel) have been used to hold the rails to gauge. On this occassion, many of the tie bars have been made of heavy angle (about 4 x 4 x 3/8 in). Part of the junction at St. Kilda Road and Park Street was renewed during March and the Queens Bridge Street, South Melbourne, crossover was removed during the weekend of 20 and 21 January. Track renewal in Power Street Hawthorn between Wallan Road and Burwood Road commenced on Monday 26 March using temporary track on the inbound line initially.

No. 115, the last of the extended order of the 100 Z class trams, arrived at Preston Workshops on 20 February 1979, while 116, the first of the next 100 cars, arrived on 8 March. This latter car will undergo extensive testing (new AEG electrical equipment and Duwag bogies) before being commissioned. Sunvisors are being fitted to W5, SW5, SW6, W6 and W7 class trams, commencing in February, as an aid to drivers.

The Premier of Victoria, Mr. R.J. Hamer, when speaking at the commencement of the Cavalcade of Transport on the Australia Day holiday 29 January 1979, officially launched tram V 214 in its guise as an open crossbench tourist car and stated that it would commence running regulary from the following Sunday, 4 February. The route would be from Batman Avenue terminus via Swan Street to Power Street Hawthorn and return. The single journey adult fare is 40 cents with pensioners and children at half fare, but other concession tickets are not recognised. In inclement weather, refurbished X2, 676 is used. Patronage for the first few weeks varied from quite good to poor. The only publicity noted is a timetable (with a photo of each car) displayed in the Batman Avenue terminus starter's cabin window. It is understood that it was decided to see the public's reaction under these conditions rather than risk being overwhelmed if a publicity campaign was successful. Headway is every 40 minutes.

Cencus figures for June 1976 give some interesting facts on how people in Melbourne travel to and from work – car 68%, train 12%, tram 6%, bus 6%, walk 6%, bicycle 1%, motor bike 1%. Thus only a quarter of the people use use public transport – a dramatic reversal to

* Museum Notes and News

C.O.T.M.A.

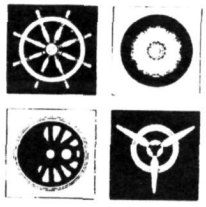
News from the Council of Tramway Museums of Australasia

The Secretariat has been quiet of late but it would appear that activity is about to increase with some equipment being made available from the M&MTB ex W2 class trams.

The Executive Officer has recently been able to assist SPER obtain a set of ex-MMTB AEC Mk3 type bus seats to assist in the restoration of of Kogarah Double Deck Trolley Bus 19. The style of the Melbourne seats is almost identical to those used in the TBs, whereas those now available locally differ.

Oue EO obtained permission from the friend of a friend to remove the required seats from buses he had purchased for conversion to caravans. He also made preliminary enquiries about a group of SPER members purchasing an AEC from the Board to use to transport the seats to Sydney. The whole matter was successfully completed around the Australia Day weekend and the bus and seats were collected by a number of SPER members down for the Cavalade and driven back to Sydney without mishap. However this was not the end as three one-passenger seats were still required. Our EO appealed to a long time friend in the executive of the Bus Proprietors Association of Victoria for help. A paragraph appeared in the next fortnightly newsletter and a western district operator phoned to say he had two to spare. These have yet to be collected and a third one found, but we are working on it.

GLENORCHY . . .



Tasmanian Transport Museum Society

Tram 141

One of the most momentous days in the history of the Society occurred on Friday 6 April 1979 when Hobart bogie tram 141 was moved from the Hobart railway yard to the Transport Museum at Glenorchy.

Built by the Hobart Municipal Tramways, 141 entered service in 1952 and was withdrawn from service in October 1960 with the closure of the Hobart system. It has since been safely stored in the roundhouse near Hobart station, awaiting the move to a permanent home. With the near completion of the Museum building, the long awaited move was announced.

Much preliminary work was necessary to prepare the tram for the 5½ mile journey over railway tracks. The route was checked for possible track complications, a drawbar for connection to the locomotive manufactured and tested and lengthy negotiations carried on with railway officials to satisfy them that the move could be safely made.

The tram left Hobart yard at 9.30 am towed by diesel shunter V13 with an imposed speed limit of 10 kmh. Public interest in the move was considerable and many persons including school groups manned vantage points. It was anticipated that the smaller wheel profile on the tram could be a problem on rail tracks and

Hobart bogie tram 141 being towed by ANR Drewey shunter V13 along the railway line near Botanical Gardens en route from the Hobart railway yard to the TTMS Museum at Glenorchy on Friday 6 April 1979. - D.H.Jones

there were real fears of derailments particularly at the numerous points and crossovers. Fortunately all were negotiated and the tram arrived safely at the Museum at about 11am. The newly laid rail connection into the Museum was used for the first time.

A small group of members worked well to make the move successful, particularly those who travelled on the tram, alighting at various points to carefully guide the wheels over potentially hazardous sections. Much of the credit for the operation however lies with Don Large, the Society's caretaker of electric traction vehicles who has carefully supervised the maintenance of 141 over many years and who prepared and negotiated for the move.

Museum Building

With the fixing of bracing to the walls and roof the framework is now complete. 264 sq m of kliplok roofing was fixed in place over two weekends in March and cladding the walls with colourbond sheets has commenced. This work expected to continue during April. The floor has been graded and levelled for eventual concreting and the area to be occupied by track has been depened so that the rail will finish flush with the floor.

Provision of electric lighting and power is being investigated and the installation of windows and doors will follow the present work programme. The building should be completed by the end of June.

Railway Passenger Stock

Following the cessation of rail passenger services in Tasmania the ANR has called tenders for the purchase and removal of all remaining passenger stock including carriages and self propelled diesel rail cars and trailers. Naturally the Society is most concerned that significant examples are set aside for preservation so consequently it has tendered for four items – two carriages, a railcar and trailer.

Interest in the disposal of the rollingstock has been considerable within Tasmania and from preservation groups in other states. Should the Society be successful in obtaining stock it will be taken to the Museum at the earliest opportunity. This will put pressure on available track space and would make the provision of further track in the near future a necessity.

Restoration

Member Marius Fenger has commenced repainting Mt. Lyell No.2 Abt system loco, one

of the Society's more interesting exhibits. The locomotive was built in 1898 and used on the Mt. Lyell Mining & Railway Co's railway between Queenstown and Strahan on Tasmania's west coast. It was acquired by the Society in 1967 following closure of the railway in 1963. Marius has made considerable progress with cleaning the loco and applying metal primer.

New Exhibit

A railway carriage body, thought to be about 100 years old was transported to the museum on 18 April. The car was originally built for the Tasmanian Main Line Railway which commenced operation in 1876. The Bellerive – Sorell railway which opened in 1892 was equipped exclusively with rolling stock from the TMLR and the first class, end platform car, classified A–17 was used on that railway until it was closed in 1926. All stock was then sold and A– 17 ended up in the back yard of a Bellerive (an eastern shore Hobart suburb) home where it remained until recently donated to the Society. The carriage is possibly the only example of an unmodified TMLR car still in existance and its smaller dimensions will make an interesting comparison with more modern stock. The body is in generally sound condition but will require extensive restoration and mounting on a suitable four wheel underframe.

A party of schoolchildren at Moonah watch 141 pass by on its way from Hobart to the Museum at Glenorchy. - D.H. Jones

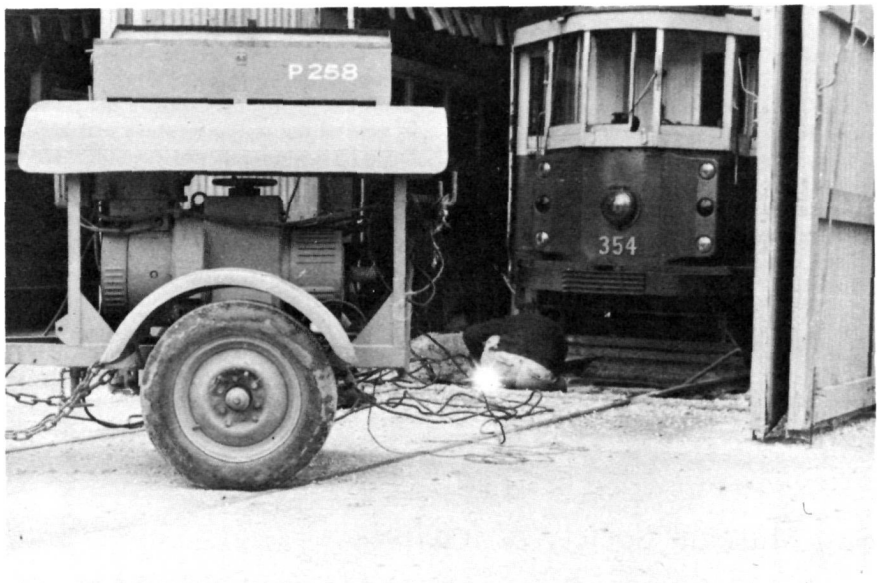
LEFT:
A happy group of TTMS members with 141 following its arrival at Glenorchy. 6.4.79

BELOW:
TTMS members Ted Lidster and David Flecker fix roofing to the new museum building.

Both - D.H. Jones

ST KILDA . . .

Australian Electric Transport Museum



Using power from the MTT 600V DC welder, Max Fenner is seen reconstructing a rail joint inside the main depot prior to the section of track being set in concrete. - J.C.Radcliffe

Depot Completely Reroofed

One of the most important tasks to be completed at St. Kilda for some years was finished in February 1979 when the last of the new roofing iron was installed on the main tram depot. The entire roof of the 60 ft X 105 ft depot was replaced during five weekends between November 1978 and February 1979. The project was spearheaded by a regular team made up of John Pennack, Max Fenner, Robert Magnussen and Michael Haesler; this group being joined by other members each weekend as required. Special attention had to be paid to weather conditions during the project as work could not be undertaken on those days when high temperatures were likely to make the iron too hot to handle, nor on those days when strong winds would make it dangerous to attempt to take sheets over 30 feet in length up onto the roof. The elimination of the many leaks which have developed in the old roof in recent years will reduce car maintenance and will also make it much easier to keep the cars clean and sparkling for traffic use.

Waiting Seats Repainted

The recently installed waiting seat was completely repainted during February 1979 and work has now commenced on repainting the Inspector's Cabin.

Display Revised

In line with the practice widely adopted by major museums, the display in the trolleybus shed was revised and rearranged recently. Following successful birdproofing of the shed, it has become much easier to keep the buses

clean. Sunbeam 526 has been relocated to a new position at the rear of the shed, while the portable display has been rearranged to provide a new pattern of visitor circulation. Additional items made available to the museum after the Centenary Celebrations have also been placed on exhibition.

Surprise Overhead Purchase

The Museum recently had a surprise opportunity to purchase a quantity of wrought iron scrollwork from some former MTT centre poles. The ironwork had been acquired by its previous owner over twenty years ago with the intention of incorporating it into a front fence, but the project was never carried out. When the owner recently visited the Museum, the iron was offered to the Museum. Subsequent inspection showed it to be in excellent condition and it was snapped up for future use.

Sufficent materials were obtained to make it possible to create four more centre poles in addition to the two poles already in use at Mangrove Loop.

294 Restoration

Restoration of W2 class car 294 is now forging ahead. Although it had originally been intended to refinish only the exterior of the car, it has now proved possible to refinish all the interior as well apart from the colorfleck ceiling which is to remain as it is. All of the side window frames have been removed for stripping, repainting and varnishing. Several frames in poor condition are being exchanged with better frames from the Museum's work car, 354, as the latter car is not operated in public traffic. Revarnishing of the western end saloon is now virtually completed and considerable external surface preparation has been carried out.

BYLANDS . . .

Tramway Museum Society of Victoria

As reported in *TW* for February 1979, the TMSV participated in the Cavalcade of Transport, on the Australia Day Holiday (Monday 29 January), organised by the Premier's Department as part of The Melbourne Pageant — Salute To Australia commemoration.

Although the activities and arrangements were basically similar to the 1978 Cavalcade, the location for the tram display and the electric tram shuttle service was different. This year the cable and horse trams were displayed in William Street at the Dudley Street shunt and the five electric trams operated in Latrobe Street between Swanston and Spencer Streets. The grassy bank of the Flagstaff Gardens along the west side of William Street provided a convenient grandstand to view the large cavalcade of motor vehicles and also the horse and cable trams. Road vehicles and steam engines and locos were displayed in the nearby Victoria Market and a bus service was operated between the Market and Spencer Street Station by the Bus and Coach Society of Victoria using member's preserved buses.

The horse tram was brought down from Bylands on the Friday proceeding the Pagent and Mr. Twentyman's cable tram set, dummy 436 and trailer 290, was loaded onto trucks on the same day. All these vehicles were delivered to William Street early on Monday morning and were unloaded without the difficulties experienced at Bourke Street in 1978. Charlie arrived from Bylands in a horse float on the Monday morning and was unloaded at the Council depot in the Flagstaff Gardens.

We were responsible for organising the tram and bus service ticket arrzngements and also provided some of the ticket sellers. A caravan lent by a member, parked adjacent to our display, provided a convenient revenue office and control point. Over 30 members were rostered to staff the exhibits and man the selling points. More than $600 changed hands at our sales tent, located on the traffic island near the Dudley Street shunt.

Our members sold more than 2100 of the approximately 6800 tickets for rides on the vehicles and nearly 800 ticket buyers rode on the horse tram. Charlie and the horse tram again proved extremely popular and Tuesday morning's *Age* featured a delightful telephoto shot of the pair under the headline 'Charlie... the big draw of the day'..

At the conclusion of the Cavalcade the Premier, the Chairman of the M&MTB, Mr. F.D. Snell and the Chairman of the Melbourne Pagent Committee, Mr. N. McPhee visited our display in William Street. The Premier was invited to inspect the horse tram and then took charge of Charlie and the fully laden tram for a run along the length of the shunt. Our guests expressed great interest in our display and the Premier took the opportunity to briefly discuss our proposal to set up a tramway museum in Melbourne.

The Latrobe Street shuttle service finished at 5 pm and within two hours our display was packed up and the various items despatched to their destinations. Despite the heat and length of the day's activities everyone agreed that the day had been a great success and one worth repeating next year.

We must take this opportunity to record the passing of '332'. MacDonald's Shoeway has served the citizens of Melbourne for nearly a century and it was not an easy decision for Mr. Scholten and Ron to close the buisness at 332 Flinders Street Melbourne. The 'Shoeshop' has become famous in tramway circles for being the sales outlet for the Society for the past eight years. Our finances have benefited well from an almost unbelievable turnover in this time and we must record our tremendous grattitude to our benefactors for the use of their shop and their personal efforts on our behalf – all at no cost to the Society. Although the existence of the buisness has been under a cloud for two or three years due to the possible demolition of the building, it lingered on until last March before finally closing. No more will our mail outs to members urge them to buy their men's shoes from MacDonald's as a mark of appreciation for what Ron and his father were doing for the Society. But we do suggest that members in particular and readers in general, keep in their memories the part that '332', Ron and Mr. Scholten have played in tramcar preservation in Victoria.

With the eventual closure of this sales outlet in mind, our sales policy has changed greatly during the last few years. The accent has moved from books to items, such as tie bars, souvenirs etc, which is likely to appeal more to the general public at Bylands, Transport Cavalcade, etc. There will surely be further changes in the future as we adjust to meet changing conditions, but the '332' era of the Society is unquestionably the period when our sales department came of age.

Victoria's Premier, Mr. R. Hamer (arms folded) on front platform of horse tram 256 during the Melbourne Pagent. 29.1.79. Also on platform are Len Millar (left) and Tony Sell. Tony Cook is on the roadway with back towards camera.
- K.S.Kings

MELBOURNE TRAMWAY MUSEUM AND TOURIST TRAMWAY

Following the enormous success of the 1978 Australi Day Cavalcade of Transport, the Premier, The Hon. R.J. Hamer, expressed a desire to see historic trams provided as a tourist service in Melbourne on a regular basis. The TMSV immediately alerted the Premier to the existence of its large collection of old Melbourne trams and its wish to make them more available for public use. The Premier noted our interest and advised that the matter was being pursued.

In April, the Minister of Tourism announced that a special grant of $25000 had been made for the restoration of two historic trams. Subsequently, TMSV Directors revived the long standing idea of establishing for Melbourne a tourist tramway and museum along the lines of those operating in Ballarat and Bendigo. In brief terms the scheme was to set up a museum in part of the Hawthorne Depot and to operate selected historical trams between the depot and Princes Bridge (via route 70) on Sundays and special occassions.

To initiate the project an 18 page illustrated bound brochure was prepared. The brochure concisely explained the scheme and recommended that the Society, M&MTB and the Ministry of Tourism investigate a joint project. In October 1978 Mr. Max Crellin MLA for Sandringham and a long time supporter of the Society, led a deputation of Directors to the Minister of Tourism, the Hon. Digby Crozier. Our proposal was explaned to the Minister who promised to examine it and determine how it could be financed. Copies of the proposal were handed to the Chairman of the M&MTB and circulated to the Premier, the Minister of Transport the Lord Mayor of Melbourne and the MLA for Hawthorn.

The Premier was most enthusiastic about the great potential of the idea and expressed his willingness to support it. The Lord Mayor also indicated his personal support. As mentioned earlier in these notes, the Premier visited the TMSV display in William Street during the 1979 Melbourne Pagent and the proposal was again discussed. The Premier reinterated his enthusiasm for the scheme and expressed a desire to get the parties together so that investigations could commence. Only an hour or so earlier the Premier had announced the inauguration of a regular historic tourist tram service along the lines of that proposed by the Society.

The Society strongly believes that historic Melbourne tramcars should be presented in their native environment. It is accepted that the main aim of the M&MTB is to provide an efficient public transport facility. The Society does not intend to encroach on that function. However, our plan is feasible, realistic and a practical way of preserving the past beside the present. Its tourist and educational potential is unchallenged.

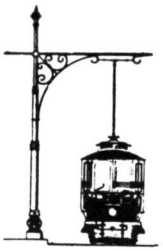
With this in prospect all major capital works at Bylands were suspended during 1978. The establishment of a Melbourne museum will not mean that Bylands is to be abandoned, although it will probably mean that it will not continue as a museum regularly open to the public. When definite arrangements are made for a Melbourne museum the Society will be in a better position to determine the exact future of the Bylands property. Every museum needs a private repository in which to store its unrestored or less presentable possessions: it is thus likely that a Melbourne museum will be the showcase and the Bylands property the warehouse or basement. England's TMS use their Clay Cross property thus to good effect.

At this stage it is intended that electrification of the Bylands tramway will be completed: the connection of a commercial type power supply to replace the present domestic supply is necessary for efficient use of the site and will facilitate the movement and testing of trams. The Bylands project has not been a waste of time, money and membership energy. In retrospect, it has been a stepping stone in a long but steady forward progression. It has given the Society the opportunity to demonstrate its ability; it has taught the Society to stand on its own feet; through it the Society has learned how to set up and operate a public museum. Without Bylands, the 14 trams and four road vehicles collected over the past eight years may never have been preserved.

A considerable amount of work has been done to get Hawthorn Depot approved in principle for use as a museum; much more will be required to transform the idea into reality. The establishment of a tramway museum as an adjunct to an operating tramway is new to Australia. It is a challenging concept with successful precedents in overseas cities. Detailed arrangements will be reported as progress is made.

V 214 in Wallan Road passing Hawthorn Depot, proposed site of Melbourne's Tramway Museum. - R.W. Green

LOFTUS . . .



South Pacific Electric Railway

New Arrivals

Some time ago the Society acquired a 3 ton Ransomes Rapier petrol electric crane. Off site storage was initially obtained for this unit but it recently became necessary to move it to Loftus where it is now stored amidst an ever increasing jumble of vehicles and machines in the yard.

An extremely useful and interesting item, although now somewhat outdated, it is believed that it was initially used on the construction of the Harbour Bridge. It later passed into the possesion of Yellow Express carriers as their No. 1 crane.

The Society recently purchased Sydney R1 tramcar 1971. Sold complete when the system closed in 1961 this car has rested for the past 18 years in an orchard at Hartley on the western edge of the Blue Mountains. The plans of its new owner never eventuated and the car has deteriorated due to open storage and vandalism. Some items, such as controller tops and trolley bases have disappeared.

Although purchased for its equipment it did not prove possible to break the car up where it stood and it became unfortuneately necessary to move the car to Loftus. It was moved by road on Friday 9 March 1979. Five members stayed at Blackheath overnight to ensure an early start with preparations. By 11 am the car was loaded and heading for Loftus where it arrived at 3 pm. After unloading at the highway terminus the car was stowed in the yard, on the main line with 1030 as the yard tracks in front of A & B roads and the shunting neck are

R1 reunion! 1979 and 1971 together in the depot at Loftus. R 1740 is to the right.
- Vic Solomons

already fully occupied. Although the future of this car is yet to be decided some work has been undertaken to arrest deterioration.

With these latest arrivals there are now 13 vehicles, both rail and road, in the yard as well as two ABV bodies, 6 LCL containers, the wheel lathe and other machines, bogies, poles, rail and sleepers. It was necessary to move the trolleybus to get the crane in. It had been hoped that some of these items could have remained elsewhere until they could be taken direct to the new site.

Tramcar Restoration

R1 1979: The long drawn out restoration of this car slowly continues. The ceiling has received three coats of undercoat and the first gloss coat.

LP 154: All the woodwork in the northern end compartment has received one coat of varnish. A start has been made on applying the first coat of gloss white paint to the ceiling.

F 393: The entire floor of the northern end open compartment has been removed and repair work as necessary, done to the main frame. The sanding gear at this end has been dismantled and overhauled. The footboard brackets and hangers are being removed and cleaned and primed and reinstalled. The bogie frame from this car which has lain for so long in the yard has been taken away by Bob McKeever so he can work on it at home. One end of this car is supported on the spare plate frame bogie for Brisbane 295.

D 134s On The Move Again

After a brief stay at home, at Loftus, the the D Scrubber 134s returned to the Eastern Suburbs Railway on Saturday 24 March 1979.

Loaded at Loftus in the morning it could not be unloaded onto the ESR at Dowling Street Woolloomooloo until after 4 pm as a special train was run at short notice for an inspection by the Premier. After this had returned the power was turned off in the section and the overhead earthed. Little time was then wasted in lifting the D back on to the rails and connecting up its power supply, once again mounted on the small 4 wheel flat truck. This time the car was placed with the resistence grids at the Bondi end and the power unit was also coupled to this end. In place of the Fiat/McFarlane diesel alternator set used previously a Rolls Royce/McFarlane set was supplied this time. Its output is lower at 100 KVA 415V AC which has resulted in series being used on some of the longer heavier grades. The diesel is noisier and smokier than the Fiat and make operating conditions very unpleasent.

Some initial problems were encountered with the engine and after a trial run the unit was stabled in the down platform at Kings Cross until Monday morning when it was given a clean bill of health and set to work between Edgecliff and Bondi Junction. It is expected to be on the ESR for three to four weeks.

Buses

Radio station 2WL in Wollongong has hired Albion double decker 1615 for use in promtional work and to this end it has been registered with normal private plates instead of its usual vintage vehicle status and has been taken to Wollongong in the care of Bill Parkinson. It is usually kept in Ruttys bus depot.

Tours

On 17 March a mystery tour was held. The notice was supposed to give some clue as to what to expect but it was also a mystery and intending patrons could only glean the facts that a bus would be used and that it would depart from Parramatta. As it turned out a Cumberland Leyland National was used and the tour covered the former tramlines in Parramatta, Manly and part of the Eastern Suburbs, a very widespread area that kept everyone really guessing where they were going (it was suspected that the driver did not know either).

An inspection of the Elcar electric train workshops was held on Saturday 24 March. This was the first time that most of the small party had been there and whilst the rollingstock was the main attraction the technical aspects were closly examined and many searching questions asked. The work in the bogie and electrical shops received the main attention. Much of the machinery is old, if not obsolete, and is being replaced. We were shown one radial arm drilling machine that was out for tender at the time, it was just the right size that would do at Loftus. The Society was subsequently the successful tenderer for it.

Brisbane Closure Anniversary

The 10th anniversary of the closure of the Brisbane tramway system was marked at Loftus on Easter Saturday 14 April 1979 by operating the service during the day exclusively with three of the Society's four Brisbane cars – 180, 295 and 548, the first time that no Sydney cars have operated during pyblic running. Albion double deck bus 1615 was up from Wollongong but was stabled in the depot for most of the afternoon (which at least proves that deckers fit in).

A barbecue was held at night and this was followed by a film show of regular working and SPER tours in Brisbane.

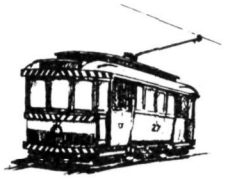
Royal National Park Centenary

The centenary of the Royal National Park occurs in 1979 and numerous events are being staged to mark this event.

A rededication of the Park and opening of the new visitors centre took place on Saturday 28 April. For this occasion the State Govenor and other dignitaries travelled from Sydney on the Vintage Train, which because of the new station arrangements – a single deadend, had to back out to Loftus after which it was used by the RTM for a tour to Waterfall and Cronulla. An open day was held at the Museum with the main interest being photographing the train alongside the trams. This was not as easy as in years gone by due to the growth of vegetation between the two tracks.

Backing the Vintage Train out from The Royal National Park, 1709 and 1243 pass C 290.
- Vic Solomons

BALLARAT . . .



Ballarat Tramway Preservation Society

Depot Extension

The construction of the depot extension is slowly proceeding but after discussions between and comments of concern by our Board Members to the contractor we hope for some quicker progress. Some columns and roof trusses have yet to be erected before the cladding can be affixed.

Begonia Festival

This event was held from 3 to 12 March and was as usual very popular. The trams ran over both weekends and on Monday 12th. They were very well loaded with passengers, a most welcome sight. The only disadvantage experienced over this period each year is the total traffic congestion on the road which requires the full attention and alertness of our crews, especially the drivers. A Society sales tent was placed at the Gardens Loop and it did a welcome trade along with our normal souvenir sales at the depot.

Sleepers

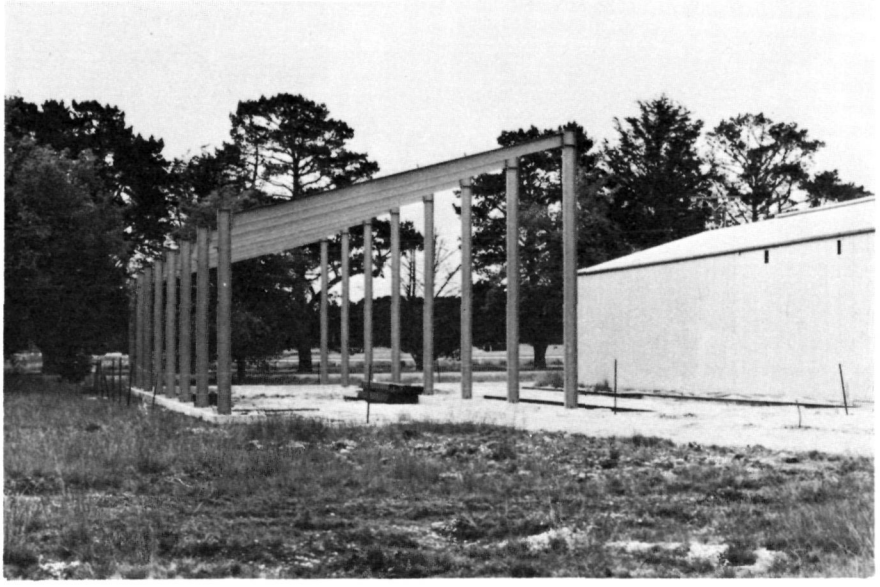
We have received a consignment of second hand sleepers from the ANR. Thet were trucked from near Eucla, on the Nullabor Plain and have been sorted into three categories and will be used on track construction associated with the depot extensions.

Publicity

Channel 7 Melbourne, televised a segment featuring the Society on 'Camera 7' on Sunday 25 March 1979. The Society welcomes this sort of publicity and intends purchasing a a 16mm copy of the film for the archives.

A short history of the Ballarat Tramways was presented on the ARE sponsored program on radio 3CR, Melbourne, on Saturday 17 March.

A group of 61 people from the Rail & Coach Travel Association visited the tramway on Sunday 18 March. They rode the trams and partook of afternoon tea at our members' house at Bungaree. The day was most pleasant and we thanked the group for their business and they responded by expressing their appreciation of our hospitality and especially mentioned the good quality of the afternoon tea provided by the Society.



The extension to the BTPS Depot takes shape. - G. Jordan

ALBION PARK . . .

Illawarra Light Railway Museum Society

Open For Regular Operation

On 11 February the ILRMS Museum at Tongarra Road Albion Park opened for regular operation. The operating day selected is the second Sunday in each month between 11 am and 5 pm. On these occasions the miniature live steam trains of the South Coast Model Engineers, who sub lease part of the ILRMS site, and the half scale Birney tramcar will also be providing rides for the public.

At the time of writing, two regular operating days have been held, on 11 February and 11 March and on both occassions over 600 visitors took rides on the ILRMS 2 ft gauge steam trains.

Locomotives

The Department of Labour and Industry reissued the boiler certificate of the 0-6-0 Hudswell Clarke loco (1706 of 1939) *Cairns* just prior to the first February steaming day. A steam pressure of 120 lbs per square inch has been permitted. This loco and the 0-4-0ST Davenport (1517/1596) *Kiama* are both in steam on regular open days.

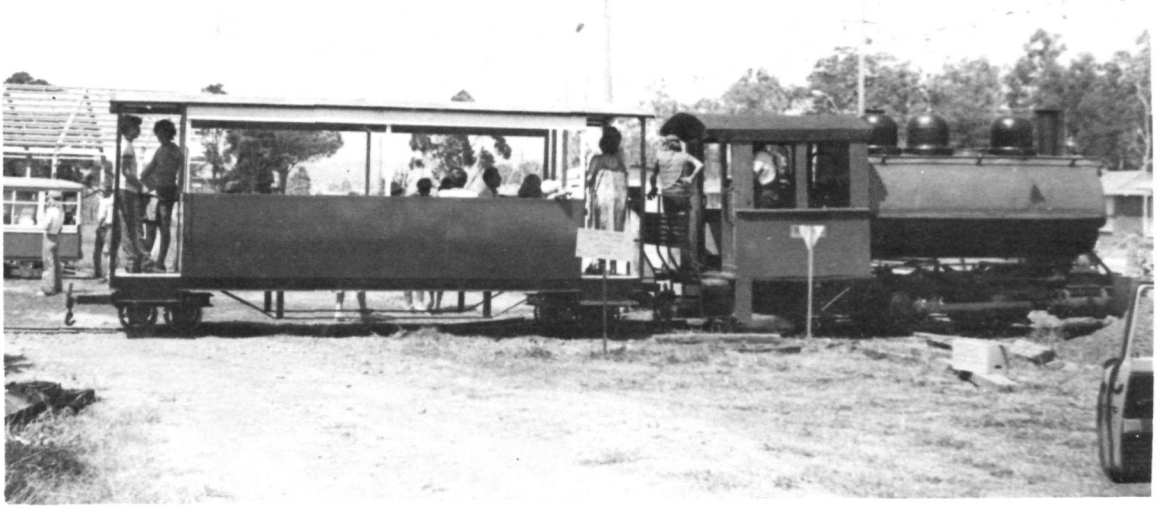
Members of all museums never cease to be amazed at the archive material and small relics that visitors seem to unearth. On Sunday 18 March a visitor donated a blue print to the museum of vital importance. This proved to be detailed drawings of the new boiler for the 0-4-0ST *Burra* (Hawthorn 3574 of 1923) which was manufactured by Clyde Engineering Company in 1945. The reboilering job was thought to have been undertaken cira 1940 – 1941 but the drawings carry the date 22 February 1945.

The locomotive *Burra* will have to be taken apart for a thorough overhaul before it can again be steamed and this boiler drawing will be of great assistance when the work is undertaken.

On 20 January the steam engine unit, positioned earlier on Shay no. 2, (Lima 2097) was fastened to the firebox side and during March the framework and cab side panels around the engine space were completed. Sheet galvinised steel is currently being stockpiled so that lagging and clothing of the Shay boiler can be completed in the near future.

A spare boiler and saddletank for the 2 ft gauge Davenport were received at Albion Park on 22 February. Between 1918 and 1926 two 2 ft gauge 0-4-0ST locomotives (Davenport 1595

The boiler and saddletank from 2 ft gauge Davenport loco Bn 1595 on the Cleary farm at Douglas Park, 22 January 1979. - K.McCarthy



and 1596) were used on the Cordeaux Dam construction for the Sydney water supply scheme, working on the Douglas Park to Cordeaux Dam railway. Between 1927 and 1932 these two locos next worked on the Menangle Sand Company railway along the flats of the Nepean River hauling sand to Menangle Station for the Sydney Harbour Bridge construction.

With the completion of the bridge, the two locomotives stood derelict at Menangle until cira 1936 when Bn 1596 was sold to the Kiama gravel tramway and eventually used as a reconstructed composite loco with Davenport 1517. The boiler of 1595 was eventually used at a sawmill at Douglas Park.

Mr. M. Cleary of Narellan owns the Douglas Park property and when approached in January he generously donated the boiler to the ILRMS. The saddle tank is in very poor condition but a closer inspection of the boiler has revealed its good state of repair. The Society plans to overhaul and possibly retube this spare boiler at some later date and have it as a standby for the restored Davenport, 1517/1596.

Mr. Cleary also donated three side tip waggons to the museum. These cars have a turntable frame which enables the hoppers to tip to the side or over the ends of the chassis. Although built to 18 inch gauge, the inside axle bearings will enable conversion to 2 ft gauge. These waggons were constructed by Hodkinsons of Newtown N.S.W.

The kerosene Fordson engine and transmission of the Days/Malcolm Moore four wheel loco, which arrived from Fairymead Sugar Mill during February 1978, have been lifted from the chassis and are now being overhauled in the workshops of Cleary Brothers, Albion Park. This unit was painted yellow during the recent holiday period to make it more attractive, as it in direct view of the Illawarra Highway.

Rolling Stock

During January Society members were able to remove valuable parts from a former Sydney tramcar. This was the body of O 1197 which was built at Meadowbank and entered service on 23 December 1912. Withdrawn from traffic on 5 August 1955, the tram was stripped and sold on 29 August 1955. The body was used at Canning's Kennels at Fig Tree and when first inspected some four years ago was in relatively good order. In the meanwhile, however, the piers on which it has rested had pierced the rotten floor leaving the body in a somewhat dangerous position.

Due to recent rapid deterioration the ILRMS was only able to safely remove interior advert racks, seat slats, open seat ends, some grab rails and small fittings from the tram. These items will eventually be used in the reconstruction of the cira 1918 International bus body into a California type passenger car for use behind the 2 ft gauge steam locos. (See *TW* p26 August 1977).

During March a start was made on repainting the standard gauge coal hopper waggon from Corrimal Colliery. This item is the property of the NSW Division of the Australian Railway Historical Society. At the same time ILRMS member Peter MacDonald assembled the underframe of a vintage, outside axle box, fourwheel cane truck from the Moreton Central Mill.

Around The Museum

Although major reconstruction work still needs to be carried out to the western end of former Yallah station building which was damaged by fire during November, the eastern, or waiting room end has been cleaned, two windows fitted and is now used for refreshment sales during steaming days.

Further track construction has been carried out using 45 lb rails. This project has been assisted by the use of power drills and pneumatic ballast tamping tools. The next track laying programme will result in the main line reaching the terminal yard adjacent to the Yallah station building.

MUSEUM DIRECTORY

SYDNEY TRAMWAY MUSEUM Princes Highway, Loftus N.S.W. (South Pacific Electric Railway Co-op. Society Limited).

Electric trams from N.S.W., Queensland and Victoria.

Tram rides Sundays and Public Holidays (Except Christmas Day and Good Friday) 10.30 am — 5.00 pm.

5 minutes walk south from Loftus Railway Station.

Correspondence: The Secretary, SPER,
Box 103 G.P.O., Sydney.
N.S.W. 2001.

TASMANIAN TRANSPORT MUSEUM SOCIETY, Glenorchy, Tasmania.

Comprehensive transport museum under construction

Correspondence: The Secretary, T.T.M.S.,
Box 867J, G.P.O.,
Hobart. Tas. 7001.

VICTORIA'S TRAMWAY MUSEUM Union Lane, Bylands, Victoria. (Tramway Museum Society of Victoria Limited.)

Horse tram rides, museum site, trams, photos and other items on display, Sunday 11.00 am to 5.00 pm.

Correspondence: The Secretary, TMSV,
Box 4916 Mail Exchange,
Melbourne, Victoria. 3001.

STEAM TRAM & RAILWAY PRESERVATION (CO-OP) SOCIETY LIMITED Parramatta Park Steam Tramway, Parramatta N.S.W.

Steam Trams are operated on the 3rd Sunday of every month, from 1.30 to 4.30 pm.

The Society possesses 1 steam tram motor, 2 steam locomotives and 5 various trailer cars.
The surrounding parklands are suitable for picnics, barbeques, etc. and contain historical buildings.
Public transport is available. Rail to Westmead station then walk across parklands to the depot.

Correspondence: (SAE would be Appreciated)
The Secretary, S.T. & R.P.S.
Box 108 P.O., Kogarah.
N.S.W. 2217

AUSTRALIAN ELECTRIC TRANSPORT MUSEUM (SA) INC. St. Kilda, South Australia.

Trams — Trolley Buses — Electric Locomotive

Trams operate Sundays & Public Holidays 1 — 5 pm. (Except Christmas Day and Good Friday)
Groups may arrange inspections on Saturdays by appointment.
No public transport available. Interstate visitors please contact AETM if transport required.

In emergency phone (08) 297 4447.

Correspondence: The Secretary, AETM (SA) INC.,
Box 2012 G.P.O., Adelaide,
S.A. 5001.

BALLARAT TOURIST TRAMWAY
Ballarat Botanic Gardens, Wendouree Parade, Ballarat, Victoria (Ballarat Tramway Preservation Society Limited).

Tram Rides, Static display of trams, photos;
Sales Department etc.

Operates Saturdays, Sundays and Public Holidays (Christmas Day excepted) and most days during Victorian School holidays and the Ballarat Begonia Festival 11 am — 5 pm.

Telephone: Tram depot (053) 34 1580,
Bungaree House (053) 34 0296

Correspondence: The Secretary, B.T.P.S.
Box 632, P.O., Ballarat.
Victoria. 3350.

BRISBANE TRAMWAY MUSEUM SOCIETY McGinn Road, Ferny Grove, Queensland

Static Display of trams and trolleybuses

Correspondence: The Secretary, B.T.M.S.,
McGinn Road, Ferny Grove,
Queensland. 4055.

WESTERN AUSTRALIAN TRANSPORT MUSEUM (INC).

Tramway Museum and Bus Operation, Castledare Boys Home, Watts Road, Wilson. W.A.

London RTL Double deck bus rides 1st Sunday in month 1.00 pm to 5.00 pm.

Correspondence: The Secretary,
Box 33, P.O. Maylands,
W.A. 6060.

OPPOSITE:
The 2 ft gauge Davenport loco Kiama *with the new passenger car at the south end of the track at Tongarra Road on the first regular operating day at Albion Park, 11 February 1979. The half size Birney tramcar can be seen on the electrified track in the background.* - K.McCarthy

BRISBANE REMEMBERED

The last tram ran in Brisbane on Sunday 13 April 1969. Do you remember?

THE LAST TRAM

The night was cold and windy
Like many a-night before
The last tram was in the depot
Five hundred and thirty four

It was all set and ready
To journey on the map
From the city to the suburbs
Before being sent to scrap

For the last time forever
And struggling with the load
It ran up to the terminus
In Alexander Road

Departure time came quickly
With that customary ring
The conductor gave the signal
For the journey to begin

Through Ascot, on to Doomben
And over Breakfast Creek
That tram dashed without worry
Though its future looked so bleak

The city streets were dismal
To reflect the general tone
As that silver car came racing
With an aging, tired groan

Into Ipswich Road it turned
With that grinding sweet old rhyme
And sparked its way towards us
Losing even yet more time

Past the saddened people
Who, with future fears
Had come to pay respects
To the friend of many years

Still the night was cold and windy
Like many a-night before
The last tram was in the depot
Five hundred and thirty four

Then in a quick split second
The controls were switched to off
Five thirtyfour, it seemed now
Had coughed its final cough

Its best days all were over
When it would without a fuss
Move twice as many passengers
As can fit in a bus

For years the streets of Brisbane
Saw trams and trollies reign
Until politics took over
And put them all to shame

'Our new bus is better
Its quicker, cheaper, clean!'
But what a shame they overlooked
It ran on dieseline

So as fuel becomes scarcer
And we all begin to choke
The old folk will look back on
What they though was just a joke

Of those days of easy travel
Of that air so fresh and clean
Overhead those trolley wires
From the road that silver gleam

Last night was cold and windy
Like that night ten years ago
At the 'Creek', was that a ghost tram?
Or just a mere Volvo

– Glen Hunter

BRISBANE REMEMBERED