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MELBOURNE TRAM GOES TO CANADA

TROLLEY WIRE

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CONTENTS

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SW6 car 930 at South Melbourne Depot on 9 February 1997, shortly before its transfer to Malvern. South Melbourne Depot had closed on the previous day.
Dale Budd

Front Cover:
SW6 car 930 on the Port Melbourne line, at the Montague Street stop immediately past Southbank Depot, during its transfer from South Melbourne Depot on 9 February 1997. This tram now resides in Edmonton, Canada.
Dale Budd

Back Page Top:
Five-section Combino 5003 running trials on 7 January 2004. The location is Flinders Lane at William Street.
Ray Marsh

Back Page Bottom:
SW5 car 848 with pantograph is seen at St Vincents Plaza operating a route 30 service. The supplementary sign on the dash reads 'Flinders & Market Streets via Docklands'. Steven Altham

THE ELECTRIC SUPPLY COMPANY SALOON CARS

By Alan Bradley

Introduction

The Electric Supply Company of Victoria (ESCo) operated electric tramways in Ballarat and Bendigo prior to their takeover by the State Electricity Commission of Victoria (SEC) in 1934.

The ESCo's most numerous class of tram in Ballarat consisted of cars 1 to 18. They were a 'California combination' type with saloon in the centre and open seating at each end. They were however known in Ballarat as 'saloon cars'.[1] The ESCo also operated two types of crossbench car in Ballarat.

The Ballarat saloon cars were interesting, in that they were an electric tram type rebuilt from an earlier form of street tramway vehicle: they were converted former Sydney cable trailers and electric trams. The Ballarat Tramway Museum (BTM) is currently rebuilding saloon car No. 12 to operating condition. This article deals with the history of the Ballarat saloon cars, and the rebuilding of No. 12.

Recycling of old trams

Electric traction swept away most of the horse, cable and steam tramways around the world during the 1890s and early 1900s. Numerous tramway operators tried to prolong the life of the redundant vehicles by converting them to electric trams. The earlier cars were lightweight so they could be easily hauled by straining horses, steam motors or cable car dummies. But electric operation led to higher speeds, and more vibration and wear on the bodies. Thus the converted cars usually had a short operating life and were replaced by trams of more robust construction. For various reasons the Ballarat saloon cars ran for up to 30 years as electric trams.

The first Australian conversion of old rolling stock to electric cars was carried out in Brisbane, where the first electric trams ran in 1897. Many of the horse cars were converted to saloon, combination and crossbench electric cars. A few cars were later converted to service stock after their passenger-carrying days were over.

In Bendigo the ESCo electrified the steam tramways in 1903. The first twelve cars were built new. The next three cars (and possibly a fourth) were converted from steam trailers – an ominous indication of what was to come in Ballarat. Probably too much money had been spent in Bendigo, because the electrification in Ballarat was done 'on the cheap'. The horse tram depot became the electric tram running shed, and the power station used part of the walls of an old flour mill. The initial fleet of twenty trams included only two new cars, crossbenches 19 and 20. The remainder were the eighteen saloon cars that were converted from second-hand Sydney trams.

The Ballarat conversion

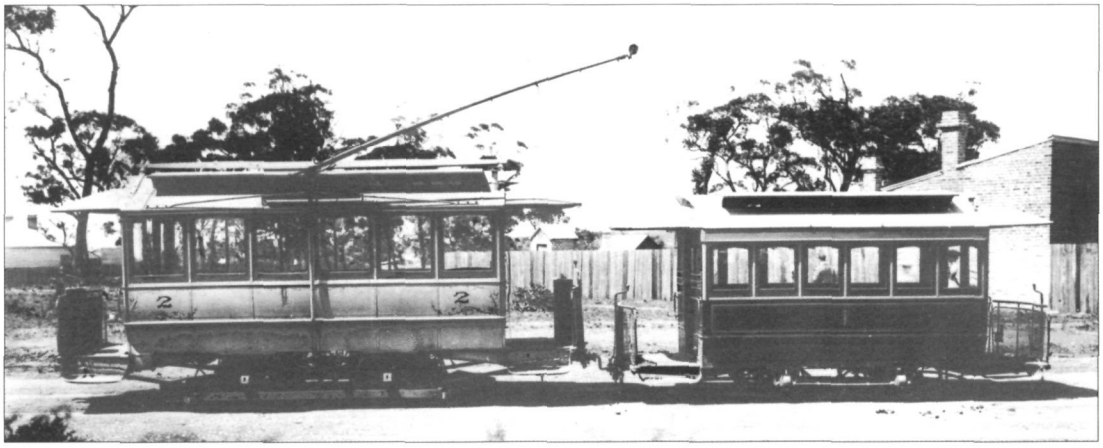
The conversion of the ex-Sydney trams into 'new' electric rolling stock was carried out by Duncan & Fraser. This firm had built Ballarat's horse trams and the Bendigo electric cars. The venue for the work was the Exhibition Buildings in Grenville Street, Ballarat (north of the Alfred Hall), which were normally used for mayoral functions. This forced the Mayor of Ballarat's return ball to be postponed for a month.[2]

Twelve of the Sydney cars were cable trailers built between 1886 and 1898 by various builders for the King Street and North Sydney cable lines. The North Sydney trailers were transferred to the King Street cable lines after electrification in 1900. The King Street lines were electrified in January 1905. The cable trailers became Ballarat cars 1, 4, 6 and 10 to 18.

The other six were early Sydney electric cars, which had become surplus by 1905 as a result of the building of more modern tramcar types. Experimental cars Nos. 1 to 3 (Sydney's first overhead wire electric trams) were built by John Stephenson of New York in 1890. They became Ballarat cars 2, 7 and 9. Hudson Brothers built Sydney C class cars 14 to 16 in 1898. They became Ballarat cars 3, 5 and 8.

The conversion process was similar to that used on the Bendigo steam trailers. The saloons were placed on long underframes, and the roof was extended. The window arrangement in the saloons was altered from six windows each side (in the case of the cable cars) to three. The former Sydney C class had seven windows

[1] They were called 'saloon cars' in H P James' article 'Conductor 23', reprinted in *Trolley Wire* February 1997
[2] *Ballarat Courier* 5 July 1905



per side, so the middle windows were larger than the others. The bodies were placed on short wheel-based 1950mm Brill trucks.

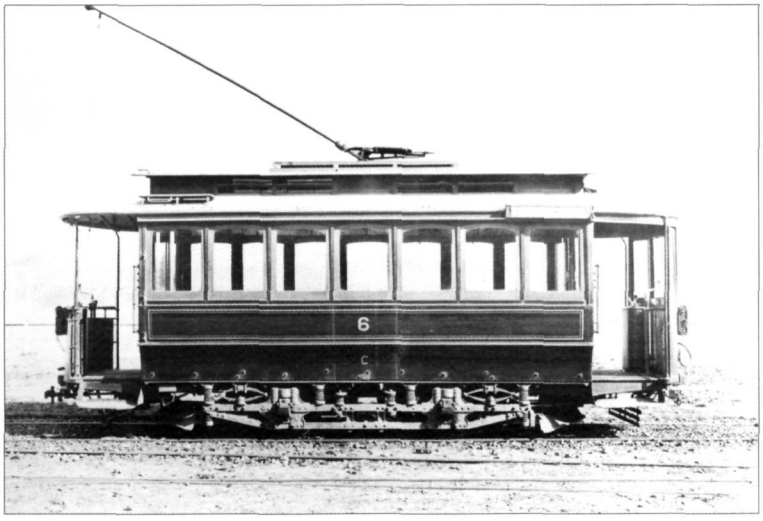
The saloon cars in Ballarat, like the cars in Bendigo, were of a light construction. The Ballarat saloon cars weighed between eight and nine tons.[3] According to *Destination Eaglehawk* the ex-cable cars weighed ten tons, the other saloon cars weighed twelve tons, and the Bendigo cars weighed eight tons. The later SEC-era single truck trams weighed about 12 tons.

The problems of light construction would only become apparent in the future. Meanwhile the 'new' electric trams made a favourable impression. The *Ballarat Courier* published this report a month before commencement of electric services:

"The new electric trams present quite an artistic appearance. Each car will carry about six electric lights at night time, apart from the headlight, and the electricity will be supplied by an extension of the current from the motor on each vehicle. Furthermore, the trams will be supplied with revolving street directories. These will indicate to passengers the name of the cross street they are approaching. An up-to-date brake is also installed, which the driver will be able to apply quickly and effectively."[4]

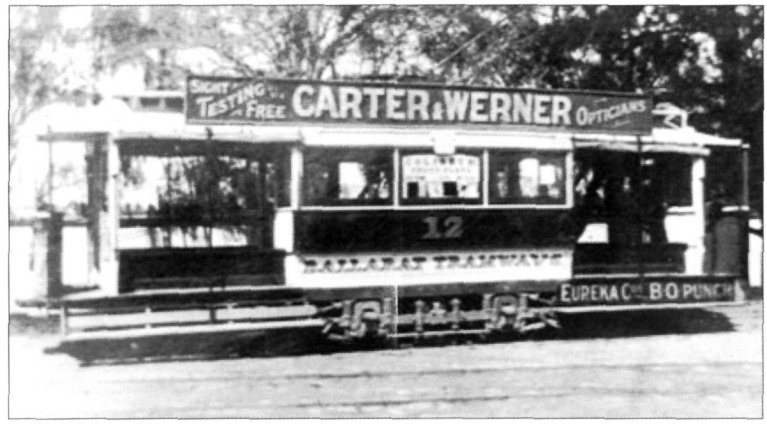
The first trial of these trams took place on 31 July 1905. The official opening of the electric tram service took place on 19 August 1905. A convoy of trams was headed by saloon car No. 1 driven by the Mayor of Ballarat, Cr M. Barker. A few days after services commenced the *Ballarat Courier* noted some faults that had become apparent under traffic conditions:

> "Complaints are being made as to the height of the tramcar steps, and one or two minor accidents have already occurred owing to the difficulty of stepping gracefully from the car to the ground. There is another point to which attention has been called.



Above: Sydney experimental electric car 2 and a cable trailer on the North Sydney lines. The three experimental cars and twelve cable trailers similar to No. 1 were sold to the Electric Supply Company of Victoria.
R.I. Merchant collection

Left: Sydney C car 6 is similar to the seven-window C cars numbered 14 to 16, which were rebuilt by the Electric Supply Company into Ballarat cars 3, 5 and 8.
R.I. Merchant collection



Electric Supply Company car No. 12 outside the Wendouree Parade depot after the installation of motormen's windscreens in 1912. The seats have still to be fixed in the inward facing position.
BTM collection

People sitting on the end seats are cautioned to hold on. If they hold the backs of the seats they are likely to meet with a surprise when a jolt comes, because the backs are not fixed, but are so arranged as to allow passengers to face inwards or outwards."[5]

The *Courier* even noted the sign writing inside the cars. They were "liberally adorned with warnings not to get off while they are in motion, not to talk to the conductor, to hold on (this while travelling in the open compartment)".[6] Another report listed the signs as "Wait till the car stops" and "Beware of the swing at curves".[7]

In operation

Some of Ballarat's double-deck horse trams were used as trailers, both in Ballarat and Bendigo, during busy periods. This was, of course, another easy way to re-use old rolling stock. Connection between saloon car and trailer used a dog-legged bar, due to the different height of the bumper bars. There was no braking connection between the two, so the conductor of the trailer had to use the ratchet brake used in the horse tram days. At night an adaptor from the electric car lighted the trailer.

The end platform seating arrangements of the saloon cars were similar to those of the dropcentre of a Melbourne W1 class. The passengers sat back to back and faced outwards. If it rained the seats could be faced inwards and weather blinds brought down. There were no sidebars, so passengers could board and alight on either side. Conductors were required at all times for fare collection.

This side view of ESCo car No. 8 shows the car has been fitted with windscreens and is set up for one man operation. The tram is still fitted with magnetic track brakes and the seats have been fixed to face inwards, although the step section by the seats has not been covered. The photo was taken after 1912. The large centre window indicates the car was constructed from a Sydney seven-window C class car.
From George Netherway

[3] Testimony of ESCo manager P J Pringle at 1912 Arbitration hearings
[4] *Ballarat Courier*, 21 July 1905
[5] ibid 22 August 1905
[6] ibid `9 August 1905
[7] ibid 27 December 1907

The normal service brake was a handbrake, of the 'gooseneck' type rather than the wheel type used in later cars. The Westinghouse magnetic track brake was only used in emergencies, as it damaged the motors. There was no seat for the motorman, because that would have interfered with use of the handbrake. The ESCo was unwilling to fit air brakes. Initially there were no windscreens to provide protection for the motorman against the cold Ballarat winters. Some motormen caught pneumonia as a result.

The destination signs were originally metal plates hung over the aprons. Next came square four-sided revolving boxes on the roof, and finally revolving linen signs in a square box on the roof.

One-man operation

In 1913 the ESCo completed electrification of the Sebastopol horse tram line. It launched crossbench cars 21 to 23, the last trams built new for Ballarat. It also introduced one-man operation, due to disappointing financial results with its tramway undertakings. As the first electric tram operator in Australia to do so, it worked out its procedures through experience.

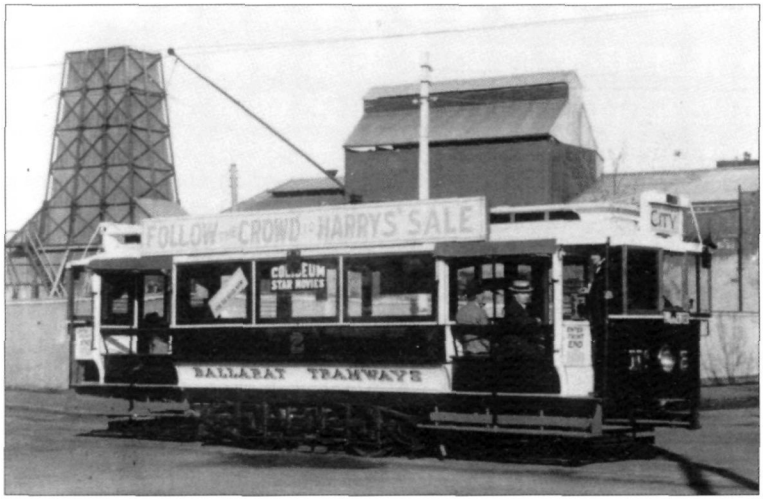
Hinged gates were placed on each doorway with a notice "Enter front end". Notice plates were placed at the top of the dash at each end. A "pay as you enter" sign was displayed on cars running into the city, and "pay as you leave" was displayed on outward-bound cars. On Sundays during busy periods this arrangement was reversed for cars heading to the Gardens. The procedures were designed to avoid having a large number of passengers paying their fares at once.

Ladies complained that during wet weather they were forced to stand on the platform while paying their fare. Windscreens were soon placed on all of the Ballarat saloon cars, to the relief of all concerned. It took several years before all Bendigo cars were fitted with windscreens. This is a comment, perhaps, on the milder climate of Bendigo compared to that of Ballarat. With the fitting of windscreens the 'gooseneck' handles were altered for inside use.

The seat bases on the end platforms were moved outwards, and the seat backs fixed to face inwards. The footboards were initially kept at their original length, and passengers frequently rode on the footboards on busy days. The motorman was, apparently, expected to collect the fares! Late in 1923 the footboards were shortened.

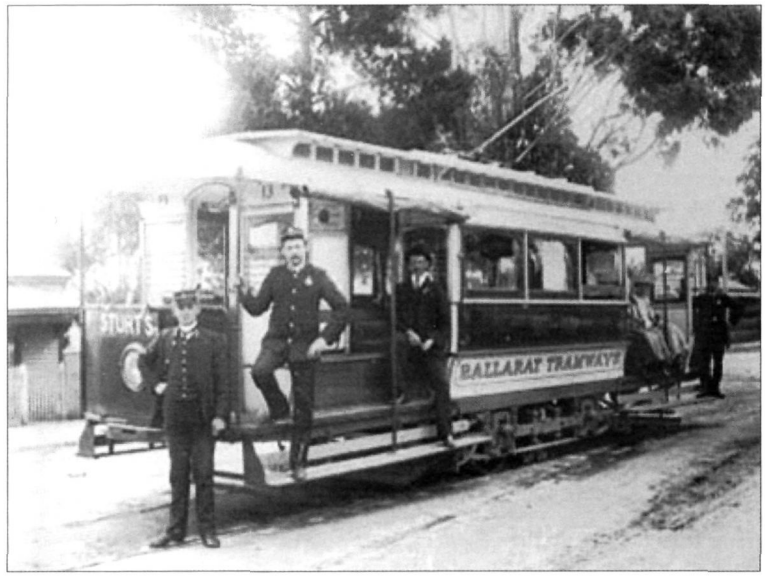
Fare-boxes were placed next to the motorman. These were fitted with mirrors so that when coins were inserted they could be seen while they remained in a tray. If the amount was correct the motorman pressed a button and the coins down into the box. The saloon cars became known as 'fare-box cars' to distinguish them from the five crossbench cars, which always required conductors. However the saloon cars still required conductors (usually maintenance staff pressed into this service) during busy holiday traffic when trailers were used.

One-man operation was controversial. The Ballarat Council felt that it inconvenienced the public, and questioned its safety. It was unpopular with the tramways union. Many conductors lost their jobs, and there was more for the motorman to do. Eventually the simmering industrial issues that arose from one-man operation resulted in a two-week strike in 1922. However a detailed discussion of the strike and its causes are beyond the scope of this article.



Electric Supply Company car No. 2 passing the power station in Ripon Street near Wendouree Parade. The car is fitted with windscreens and has the seats facing inwards.

From print suppled by
Max Harris,
Harris House of Photography



Electric Supply Company car No. 13 is seen near the tram depot in Wendouree Parade circa 1905. The tram is not yet fitted with destination boxes and has a destination panel hanging on the dash. BTM archives

The 1920s

By the 1920s the lightly built saloon cars were in poor condition. In 1921 a Ballarat councillor said that the trams were not fit for the public to ride in.[8] The *Ballarat Evening Echo* (a union newspaper) stated:

> "As a matter of fact a ride in a Ballarat car, as was recently remarked by a Brisbane visitor, is no joyful experience. If you successfully negotiate the entrance in the crush there is always a good chance of the machine's oscillating propensities precipitating one to the floor. Elderly persons know this unique feature by their own personal and painful experiences."[9]

The Tramways Union stated its dissatisfaction with the cars in both Ballarat and Bendigo:

> "The cars on the Ballarat and Bendigo systems are makeshift cars converted from old two man cars and not embracing any of the modern devices and safeguards embodied in the cars on overseas systems. The driver is in the narrow passageway by which the passengers have access and there is no seat for him. The fact that he is called upon to give change prevents him from using gloves in cold weather. The nature of the uniforms provided, the change pocket being inside his tunic, necessitates his overcoat and coat being either left open or being very frequently opened."[10]

The ESCo spent as little as possible on its Ballarat and Bendigo undertakings, because of the pending end of its franchise. The trams rocked and swayed on rough track which had subsided in some locations. The cars sometimes ran on one motor, and looked increasingly shabby. The three former Sydney C class cars had stiffening rods placed in their larger middle windows.

During 1927 the ESCo was trying to convince the Ballarat Council to extend its franchise. It stated that the lurching and vibration of the trams was due to track condition, rather than defect in the cars. It proposed to upgrade the existing saloon cars by moving the screens behind the motorman further back to make a wider entrance. It stated that the light design of the cars had helped to reduce the wear and tear of the track.[11] However the Council decided not to extend the ESCo's franchise.

In hindsight, the proposed upgrade if adopted would not have been much of an improvement. The already worn-out cars would have remained in use. There was no mention of badly needed improvements, such as air brakes and a seat for the motorman. In reality, nothing short of a total renewal was needed for the Ballarat and Bendigo systems.

Disposal

In 1930 the ESCo purchased several single truck

[8] ibid 3 May 1921
[9] *Ballarat Evening Echo* 22 April 1922
[10] Undated submission from Australian Tramway & Motor Omnibus Employees Association
[11] ESCo to Ballarat City Council, 7 June 1927

Car No. 18 is seen at Grenville Street around the mid-1920s. It has windscreens installed, the seats have been reversed and the adjacent part of the step has been covered to prevent passengers standing on the step behind the seats. An 'Enter Front End' sign is at the rear of the tram

From H.P. James collection, BTM collection

trams from the Melbourne system to replace the cars in Ballarat and Bendigo which were the most worn out. Several more came over the next few years. By the end of 1935 the last of the eighteen Ballarat saloon cars had been scrapped and replaced by eighteen ex-Melbourne single truck cars. In Bendigo some of the original ESCo cars lasted until 1947, with the bodies heavily braced to keep them straight. It was only union action that prevented further upgrading of those cars.

The SEC took over the Ballarat and Bendigo systems from 1 July 1934 and soon afterwards the rehabilitation of both systems commenced. The ex-Melbourne cars were converted to a new one-man layout, and painted green. On 12 September 1935 the Mayor of Ballarat launched the first of the 'new' cars. Old No. 1 was then still in use: it was just over 30 years since another Mayor had driven it to launch the electric service.

The *Ballarat Courier* noted the passing of the old saloon cars:

> "Love of old things, and surely our trams are old things, is a commendable trait that has manifest itself in Ballarat's antique exhibitions from time to time. Residents of Lydiard Street North never feel in need of a sea trip nowadays, and musical folk of Sebastopol have come to love the violin-like vibrations that accompany the twisting of loose joints which marks the meanderings of trams along that route. Drummond Street North residents of an older generation, with Wendouree Parade passengers combine to praise the frolicking of the pole. New trams will stop all that. Yet there is hope, still, for those who fear the worst. They may not be new trams. Close scrutiny may prove we are about to don the discarded habits of Melbourne's suburbia. Antiquarians and experts nevertheless believe they will soon be at home and wear well on our venerable tracks."[12]

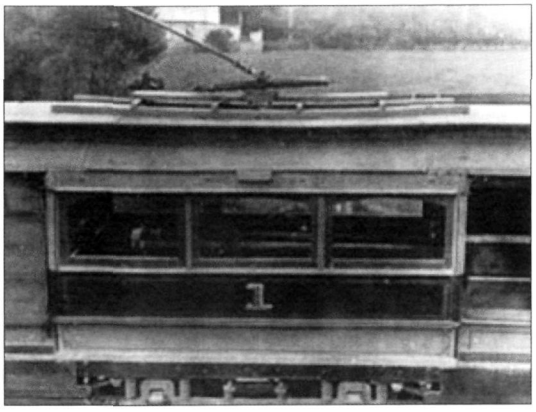
Rebuilding of No. 12

After the ESCo withdrew its original cars some of the bodies were sold. The body of No. 12 was bought in 1935 and placed on a property in Nerrina, on the north east outskirts of Ballarat. The house itself was historic, part of it having been built in 1854, and other sections added later. The tram body was built into the side of the house and used as a bathroom. VicRoads acquired the property for the building of the Ballarat by-pass, and the house was demolished. On 5 November 1990 the body of No. 12 was carefully lifted from its resting place of 55 years and taken to the BTM depot.[13] The intention was, and remains, to return No. 12 to operating condition, so that the BTM could have an operating car from each of the three Ballarat tramway operators.

Only one side and end of No. 12 had been exposed to the weather, and the rest of the car had been protected. On the protected side the colour scheme, number and lining were well preserved. Inside were the number and some original instructions to passengers. There was one light globe in each end section, and a cluster of three globes in the centre of the saloon.

[12] *Ballarat Courier*, 5 September 1935

[13] See *Trolley Wire*, February 1991 for an account of this move.



This elevated view shows car No. 1 in the depot circa 1935. This view shows the car's broken roof weighed down by the trolley base. SECV – BTM collection

Stripping of the body of No. 12 revealed some of its history. The number 18 was found above the bulkhead doorway. No. 12 was originally North Sydney cable trailer No. 18, built by Benjamin Carne in 1892. Examination has shown the main colours of Columbia red and white, lining and 'Ballarat Tramways' lettering used by the ESCo.

The body also shows the construction techniques used on the saloon cars. For example, the roof was constructed in five sections, rather than having continuous slats. No wonder the roof sagged under the weight of the trolleypole and base.

The first major work was the strengthening of the underframe with steel. Then came the repair or rebuilding of the corner pillars and side framing. Currently work is under way on the roof. This has been a slow and painstaking task, as each piece is being treated separately.

Meanwhile a grant application to obtain funding for construction of a truck was unsuccessful. Provision of a truck and electrical equipment is the main barrier to No. 12 being restored to operating condition.

Reflection

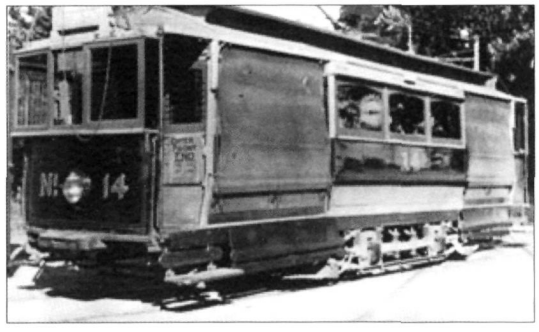
The Ballarat saloon cars were the last electric car rebuilds from an earlier form of street tramway vehicle to enter service in Australia. They were not however the last in the world. For example, when the cable tramways in Edinburgh, Scotland were electrified in the early 1920s the first electric cars were converted from double-deck cable cars. However by then this type of rebuild was rare.

The saloon cars were too lightly built to cope with the demands placed upon them, but they provided an important service to the public of Ballarat. They carried many full loads, at a time when dependence on public transport was higher than it is now.

Various Ballarat saloon car bodies remained intact for many years in various parts of Victoria, but No. 12 is now the only car of its type known to still exist. Several electric trams converted from horse and cable cars have been preserved in the USA.[14]

A number of ESCo cars other than No. 12 have been preserved. Ballarat crossbench car No. 23 is preserved by the TMSV in its later form as the Ballarat scrubber. The BTM has the body of sister crossbench car No. 21. Bendigo crossbench car No. 17 became a scrubber, and was returned by the Bendigo Trust to its crossbench form. The Bendigo Trust has rebuilt the saloon and one end of Bendigo No. 7 for static display. Not counted in this list are the ex-SEC cars preserved in Ballarat and Bendigo that were operated for a few years by the ESCo.

Despite its shortcomings No 12 is a rare type of tram. It represents the transition between the earlier forms of traction and electric trams, and is worth the effort to return it to operation.



Car No. 14 is seen in the depot circa 1935. The blinds on 14 have been rolled down and the step below the blinds can be seen with its covering. Note also the 'Enter Front end' sign in the nearest entrance. SECV – BTM collection

[14] Refer to Dave Macartney's articles on No. 12 in the BTM newsletter *Fares Please*, September 1993, and *Trolley Wire*, November 1993.

MELBOURNE TRAM GOES TO CANADA

Compiled by R. I. Merchant

SW6 class car 930 has been donated to the Edmonton Radial Railway Society in Canada. The group submitted a business plan to the Victorian Government in March 2003 requesting a cultural exchange in the form of a Melbourne tramcar. The donation was agreed to on the basis the car would stay in its M&MTB colours.

The car was cleaned and repainted to ensure it provided a good image for Melbourne, and left Preston Workshops on 3 December 2003. The car will be used on the newly extended 'High Level Bridge' line in Edmonton and be a very visible ambassador for Melbourne in Canada. The car came from Melbourne's reserve fleet, being one of those restored to M&MTB colours but without conversion to One Person Operation. It was one of two trams which made the ceremonial last departure from South Melbourne Depot following its closure on 9 February 1997.

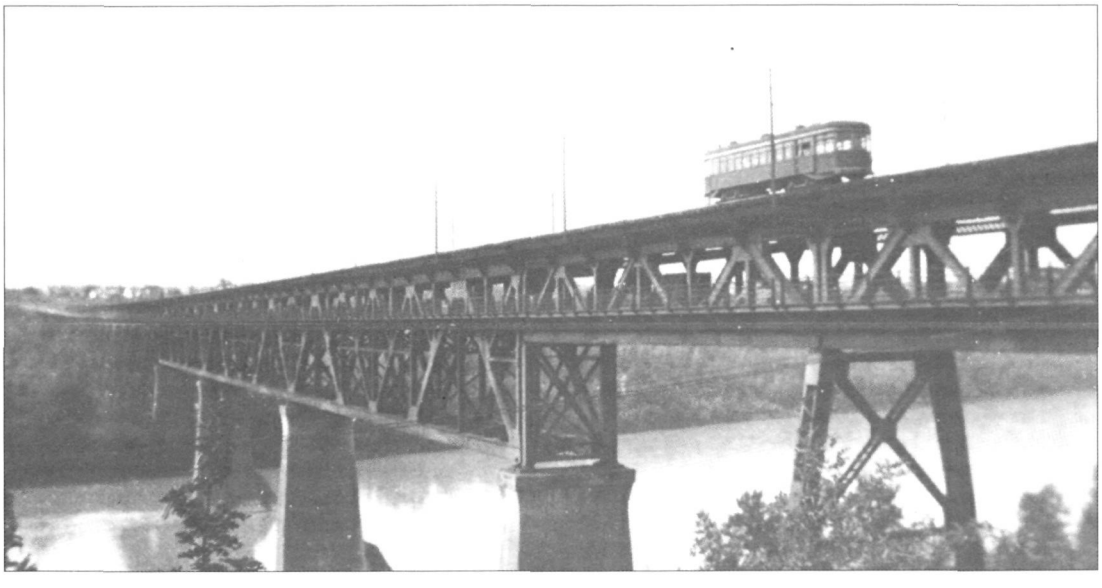
Who or what is the Edmonton Radial Railway Society, and what is the High Level Bridge line? The story below has been taken from the Society's website at http://www.edmonton-radial-railway.ab.ca/ with additional material from *Edmonton's Electric Transit* by Colin K. Hatcher and Tom Schwarzkopf (Railfare, 1983).

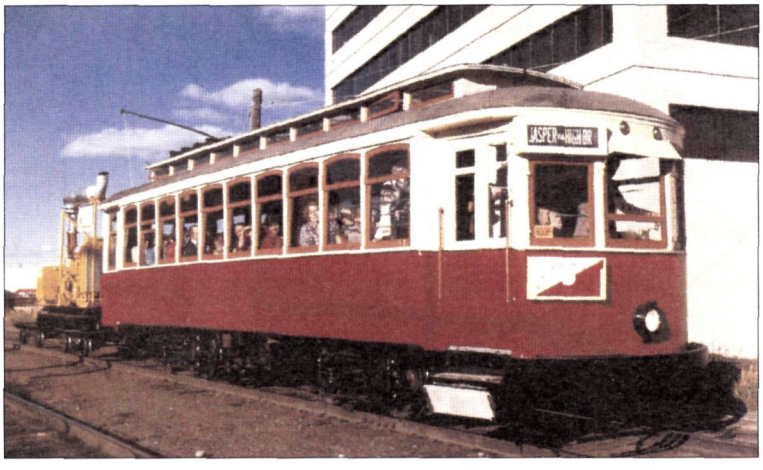
The High Level Bridge

In the early hours of the morning of 2 September 1951 Edmonton streetcar No. 52 made its final trip along 109 Street from 83 Avenue across the top deck of the High Level Bridge. It brought to an end a service that had been inaugurated some 38 years previously on 11 August 1913. The Edmonton Radial Railway (ERR), as the system was known, had become famous throughout Canada because of its unique streetcar ride over the North Saskatchewan River, the highest river crossing by streetcar in the world. The top deck of the bridge had three sets of tracks running across it: the centre track carried the Canadian Pacific Railway (CPR) steam trains, while the outer tracks carried the ERR streetcars. The view for the passengers was both spectacular and exhilarating.

The cars operating over the bridge were single-ended with doors on the right hand side only. Around 1918, as a concession to passenger's nerves, crossovers were introduced at the approaches to both ends of the

One of Edmonton's most distinctive engineering features is the spectacular High Level Bridge between the north and south sectors of Alberta's capital city. On 25 June 1948 a southbound Edmonton Transit system car occupies the left hand track, contrary to the 'rule of the road' in North America. The double track was transposed on the bridge so that, in an emergency, the car's passengers could alight safely onto the centre of the bridge. A. Clegg





Fully restored to operating condition, car No 1 pauses on one of its trips on the CPR right-of-way on 8 October 1979.
Colin K. Hatcher

bridge so that the cars adopted left hand running while on the top deck. In the event of a car becoming disabled, this meant that passengers could alight on to the centre of the bridge rather than stepping out into space! In fact there were few problems and the High Level Bridge tram service ran accident-free until abandonment in 1951.

That could well have been the end of the matter as far as streetcars on the High Level Bridge were concerned. However in early 1979 a group of volunteers from the Canadian Railroad Historical Association and some interested Edmonton Transit System employees began to restore Edmonton streetcar No. 1 to full operating condition. This was the only car in the city to survive, and its body had been restored between 1962 and 1967. It was their intention to run the car over the High Level Bridge during the Thanksgiving weekend as a contribution to the City's 75th Anniversary celebrations. And indeed the car did run for those three days in October 1979, albeit on the surviving centre track and towing a generator car.

Thus, after an absence of 28 years, a streetcar made a brief but triumphant return to the High Level Bridge. Several branches of the Toronto-Dominion Bank sold the 5,000 five-cent tickets in a period of some three hours on the first day they went on sale. Passengers took in the magnificence of the fall colours in the river valley that weekend.

Those same volunteers later formed themselves into the Edmonton Radial Railway Society (ERRS). In the past 25 years, starting with nothing, they have built a streetcar line at Fort Edmonton Park (see below), restored more streetcars and acquired several other Edmonton streetcar bodies for eventual restoration. For many ERRS members the ultimate dream is to once again have a streetcar service across the High Level Bridge as a heritage line. In 1989 a task force with representatives from the Society, the City and the Old Strathcona Foundation was formed, and a plan for a two-year demonstration streetcar operation from Edmonton Transit's Grandin LRT station to Old Strathcona was presented to, and approved by, the City Council in October 1990.

Unfortunately the plan had to be put on hold because at that time there was no agreement in place between the City of Edmonton and Canadian Pacific concerning use of the line for streetcar operation. However, in the interim, the CPR formally abandoned its track west of 103 Street over the High Level Bridge, and an agreement has been reached between the Province of Alberta and the City over use of the right of way. The City Council, again with funds raised or donated by the interested parties, and Federal Infrastructure grants, would cover capital costs for the top deck refit of the High Level Bridge since the rest of the bridge was to be rehabilitated in any case. As it turned out however, because of higher than estimated costs, the rehabilitation of the High Level Bridge did not include the top deck, the work being confined to the roadway level, the bridge piers and repainting the structure.

The Edmonton Radial Railway Society, as proponent of the High Level Bridge streetcar, refused to give up on the idea of vintage streetcar operation over the bridge, in spite of this apparent setback. Then, in a remarkable turn of events, a few weeks before the 1995 Fringe Festival, the Society was approached to see if it would be possible to operate a streetcar between 104 Street and 109 Street. One of the Fringe productions was to take place in the Granite Curling Club, while another production was located in the tunnel just west of 108 Street! Support was forthcoming from the City, the Granite Curling Club

and Fringe Theatre Ventures, and the Society at very short notice decided to 'go for it'! Because of the absence of turning loops on the stretch of track to be used, it was essential to run a double-ended car. The Edmonton Radial Railway Society had acquired such a car in 1990 from Osaka, Japan. The car was built in 1921 and operated as No 247 on the Hankai Tramway in that city. After some rebuilding in 1947 the car had been in daily service until its retirement in 1990.

There was clearly insufficient time to erect an overhead power supply (to say nothing of the cost), so a diesel generator mounted on a small truck towed by the car provided electric power at 600 volts DC. The car performed very well during the 1995 Fringe Festival, and for about eight weeks thousands of delighted riders enjoyed a leisurely trip from the south end of the bridge to Strathcona on a seventy-year-old streetcar, as part of their Fringe activities.

Strathcona Carbarn

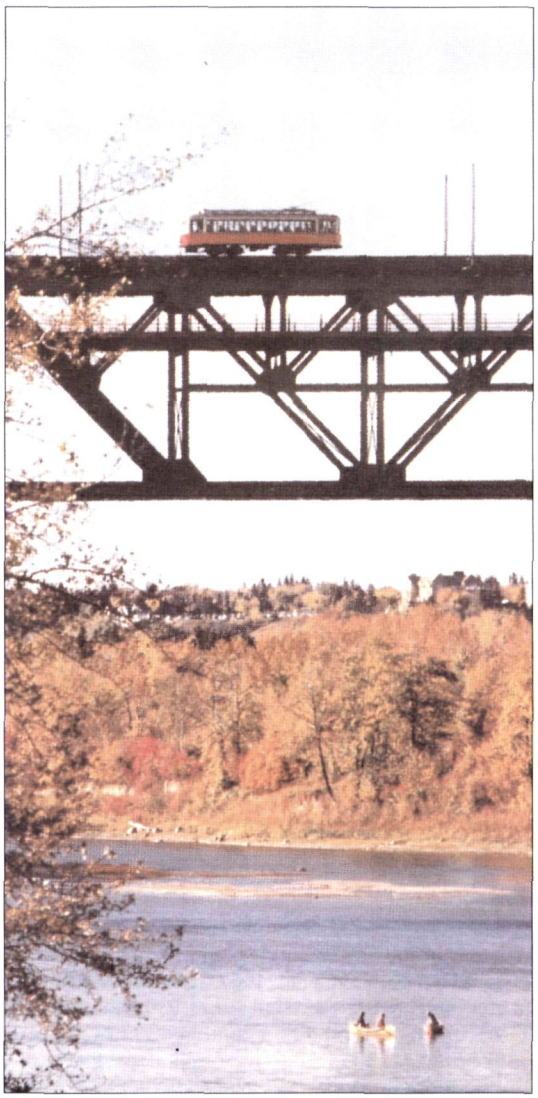
On 1 September 1951, Edmonton Transit opened a brand new garage in Strathcona to house many of the trolleybuses which were to replace the city's streetcars. The streetcar system had served the city faithfully since 1908, but sadly it was finally abandoned later that month.

Strathcona garage was home to electric trolleybuses for over 30 years. By 1984 it was deemed to be unsuitable for the city's growing transit fleet and was closed.

The CPR's line across the High Level Bridge passed by the north end of the former Strathcona trolleybus garage and after abandonment of the rail line, ERRS plans for a restored service began to take shape. There were three major steps to be achieved before a service could be put in place:

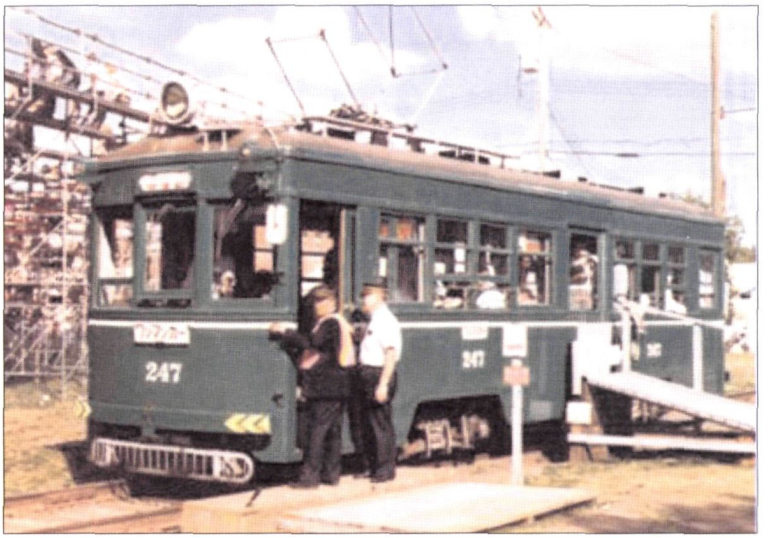
- restore or acquire a double ended streetcar;
- electrify the old CPR line from Strathcona to Grandin;
- obtain safe, covered storage for the streetcar(s).

As mentioned above, the Society acquired a suitable car from Osaka's Hankai Tramway in 1990. Although the Society was interested mainly in the parts, Hankai sent the car in full running order and it immediately became a candidate for operation on the bridge line should that ever become a reality. Negotiations were started with the city for permission to operate across the river. As previously mentioned, in the summer of 1995 at the request of the City the Society operated 247 (with a diesel generator in tow) for about eight weeks, running from Strathcona to the south end of the bridge.



Car 1 crosses the High Level Bridge just as it did in the first half of the 20th century. The original of this photo, taken on 8 October 1979, was carefully retouched to eliminate the power generator that trailed behind the streetcar. Colin K. Hatcher

Given the success of the 1995 operation the Society was determined to carry on with the venture. The generator, while satisfactory in the short term, was noisy and smelly. Clearly an overhead wire system would be superior in several ways: quieter, cleaner and most of all more authentic. However the quotation received for electrification – poles, fittings and erection of overhead wire – was prohibitive and



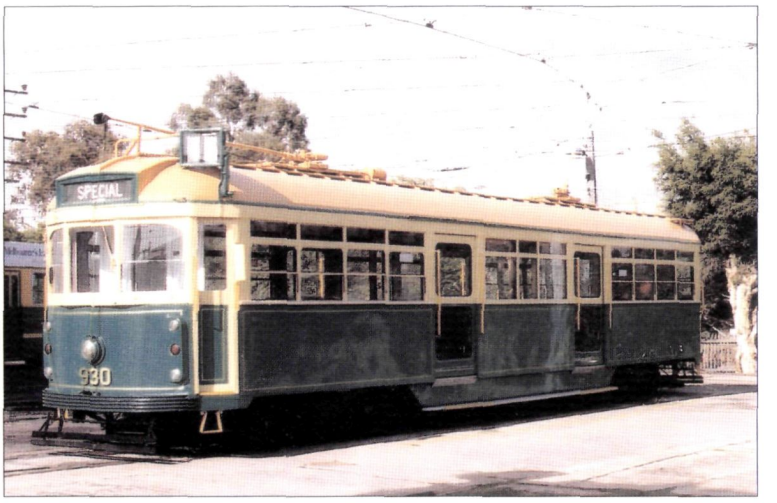
Hankai 274 is ready to depart from Strathcona with a full load.
Mark Kavanagh
(www.ktransit.com)

certainly well beyond the resources of the volunteer Society.

Undaunted, in a giant leap of faith, it was decided that the electrification could be tackled by the members themselves. And indeed the dedicated overhead crew came through with flying colours! It had been hoped to have the car up and running for the 1996 Fringe Festival but, because of delays due to the non-arrival of the wire from Mexico as well as some vandalism, the line was not ready until late September.

Overhead wire had now been strung on this section and a 600V power supply built. The following August overhead electrification was completed all the way from Strathcona to the north side adjacent to Edmonton Transit's Grandin LRT station across from the Legislature grounds. As well an agreement was finalised between the ERRS and the City to enable the Society to operate a streetcar over the High Level Bridge. That left the third problem of safe storage for the car when not operating.

Each winter from 1995/1996 onwards the car had been stored outside under tarpaulin at Strathcona and during the summer operating season it was parked each night on the bridge behind locked gates fitted with barbed wire. Sadly the car was subject to vandalism on several occasions each year, but fortunately never to the extent of making it inoperable. So it was imperative to find a covered home for it as soon as possible. Negotiations started with the City (as owners of the



SW6 class car 930 at Preston Workshops before being loaded for transport to the docks.
Peter Hann

On 9 February 1997 eight W series trams were transferred from South Melbourne Depot to Malvern Depot by means of an AETA tour. They were officially the last trams to be transferred from South Melbourne following its closure the previous day. Travelling in convoys of two trams, the transfers followed a variety of routes including some interesting diversions. Here cars 930 and 843, at rear, are shunting in Market Street. These two trams were the second-last and last, respectively, to leave South Melbourne Depot on that day. Dale Budd

former Strathcona trolleybus garage) and Fringe Theatre Adventures (as major tenants of the building) for space in the building to house car 247 and possibly one or two others that would be restored in the years to come. The former CPR line ran outside the building, so once an agreement was worked out giving the ERRS permission to occupy part of the old garage the Society began altering the interior space to accommodate streetcars and constructing lead-in tracks off the CPR 'main line'.

There were several phases to the construction work, which began in the fall of 1998. First, two bays had to be excavated inside the building and rebuilt with rails set in concrete; a third bay with an inspection pit was to be built at a later date. Second, the doors of the building had to be removed and completely new, much taller doors, build and hung for streetcar access to each road. Third, a yard network of three access tracks had to be planned and built to provide access to the barn tracks from the old CPR line. This involved the installation of three switches, two of which come off the 'main line'. As well, the yard network had to be provided with proper drainage and fully ballasted. Fourth, overhead wire had to be erected in the whole barn area to allow for movement of cars in and out of the barn, and spliced into the existing overhead system on the line.

Work proceeded steadily in the autumn of 1998 before freeze up and resumed as soon as possible at the end of the winter in early 1999. Finally the day came in August 1999 when the west barn access tracks was energised and that evening car 247 gingerly proceeded inside the barn for the first time. Safe at last!

Car 930 shunts 'bang road' beside Southbank Depot on 9 February 1997, allowing a B2 class car to leave the depot. This was Southbank's first day as an operating depot.
Dale Budd

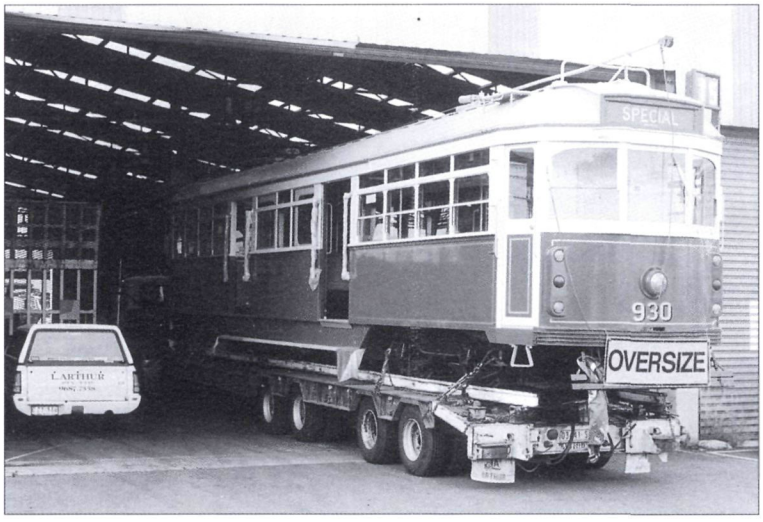
SW6 930 being loaded at Preston Workshops on 3 December 2003 for its journey to Edmonton, Canada. Peter Hann

The effect was immediate. No longer did motormen reporting for their shift have to spend a considerable time removing the not always totally effective anti-vandalism security devices that had been installed on the car every night after the day's operation. Now motormen can simply arrive for their shift ten or so minutes early, carry out a routine check, open the barn doors, raise the pantograph and proceed directly into service. At the end of the day the car is tucked safely away for the night behind the barn doors and the pantograph lowered.

Once again Strathcona has a streetcar connection. It is almost ironic that the building that was erected in 1951 because of the streetcar's demise, itself becoming redundant the same year that streetcar service began at Fort Edmonton Park, and is now being used to house the Strathcona streetcar! What goes around comes around.

The Fort Edmonton Park line

Fort Edmonton Park is a wonderful historic park of 158 hectares, said to be the largest in Canada. It is located a few miles south-west of the city. It re-creates the city of Edmonton from its first settlement up to the 20th century with relocated original buildings and some replicas, set in four time zones. A free streetcar service, opened in 1984, provides transportation along the streets of the site. The Edmonton Radial Railway



SW6 930 is seen at Docklink Road on 3 December 2003, en route to Edmonton, Canada. Ray Marsh

Society built the double track line and operates the streetcars. Unlike the High Level Bridge line, turning loops are provided and single ended cars can be operated. The carbarn, which is a replica of one at 109 Street and 83 Avenue dating from 1908, houses the cars used in the Park. Edmonton No. 1 was moved to the Park in 1981 and is presently completing an extensive rehabilitation of its trucks and traction motors. It is one of eight cars on site. Four cars are available to operate the Park service and four are under restoration. One of the cars, Edmonton 32, operates on ex-Melbourne trucks.

A PHOTOGRAPHIC INTERLUDE - 1

Leonora No. 1 was last pictured in these pages stored at the Council yard. The car is now at the Gwalia Mine Museum where David Keenan photographed it on 23 July 2003.

This view of the destroyed carbarn at the National Capital Trolley Museum (see Trolley Wire, *November 2003, page 12) shows the devastation caused by the fire. Eight streetcars were lost in the blaze.*

Dr Alan Schneider

BOB BUSH AND HIS LEADLIGHTS

By Howard R. Clark

Over the years the Sydney Tramway Museum has employed many tradesmen, skilled in their particular field to assist with the Museum's objectives. Several years ago however, it was most unlikely that the need would have been envisaged to engage the services of a tradesman not only skilled, but also dedicated to the art of leadlighting.

Leadlight windows, whilst known to be a feature in some old U.S. interurban cars, were almost unheard of in Australian trams, except for examples on certain cars built in Adelaide by Duncan & Fraser for the likes of the Hawthorn Tramways Trust in the early part of the twentieth century.

Even in 1997, when the opportunity first arose for the Museum to give notice to the Council of the City of Sydney of its willingness to accept the potential re-erection at Loftus of the 1885 stone façade from the YMCA building in Bathurst Street, Sydney, there was little real appreciation of the upper leadlight windows in that building.

My office building was situated almost diagonally across the road from the YMCA building, and from my 32nd floor office I could look down upon the roof of the YMCA far below. There was little perspective of the building from that level except for the non-original dormer windows protruding from the roof. From a fellow partner's office on the 8th floor the view was clearer, but it was not until viewed from street level that the upper level leadlights (what some may call 'fanlight' windows) were vaguely in evidence beneath peeling layers of grey paint.

In the year 2000 when the reality of the proposed development dawned, once Meriton Apartments took over the site from the original development applicants, closer attention was paid to the fabric and history of the YMCA building. Fortunately, photographs were taken both before and during the demolition phase which helped reveal those leadlights, and they were again included in photos taken at the Moore Park storage site early in 2002.

Researching old YMCA annual reports revealed various references to the leadlight windows within the building. Most of these references appear to relate to windows in that part of the building at the corner of Pitt and Bathurst Streets demolished in 1958 to allow for the building of a new structure for the Commercial Banking Co of Sydney, later absorbed by the National Bank of Australia. Those leadlights depicted images of establishment figures closely associated with the original construction. Scraping the grey paint on the windows from Bathurst Street revealed nothing more than locusts, butterflies, ferns and geometric shapes baked into the glass!

The YMCA façade contained twenty street-facing windows and together with two frames from the rear stairway, twenty two frames were delivered to Loftus by the demolition contractors.

The heritage architects had shown in their inventory that 18 leadlights remained although only 13 were delivered to Loftus of which at least two were badly damaged. Most were smothered in grey paint and all

Bob Bush is seen outside his shop in the Sydney suburb of Summer Hill. Howard Clark

had various panes broken. The first task was to clean/scrape the paint from the glass and the next was to work out how to get the windows repaired.

In the late 1970s major renovations were carried out on my Federation style house at Croydon. This included repairs to the leadlight panel in the front door and subsequently the making of new complementary front room windows. Bob Bush was the local man found in the Yellow Pages.

Over the next twenty years, on each of three occasions after a burglary, Bob attended the premises and duly removed the front door panel for repair. Thus it was that Bob Bush came to mind for the Museum's YMCA project in 2002.

Bob Bush has been in the leadlighting business for more than 25 years. His involvement started from necessity when he could not find a tradesman qualified to fix a problem. As an electrician he saw many examples of people throwing out leadlight windows from Victorian era and Federation style houses, simply because they could not get them repaired.

Given the frustration of not being able to get a job done, Bob decided to go it alone. He chose to take six months off work to teach himself the art of leadlighting, as he saw an opportunity to provide services where there was a real need. There were no classes to attend and by trial and error he gradually taught himself the fundamentals, working from an old English plumbing book with a section on leadlighting. Bob soon found his new-found trade rewarding in many respects. As he says, "people who appreciate leadlight are good to work with – I am not sorry I changed trades."

At first, Bob started his business working from a room at Bottlebridge Building Supplies (mostly recycled materials) at Parramatta Road, Lewisham. For the last 19 years he has been at his present premises in Smith Street, Summer Hill.

With the erection of the façade at Loftus well under way, I went to visit Bob to show him two of the dilapidated windows. I was seeking both his advice on the best method to remove the old paint and the black grime underneath, almost embedded in the glass after so many years exposed to city smog and dirt, and to seek his professional expertise to repair / rebuild the windows.

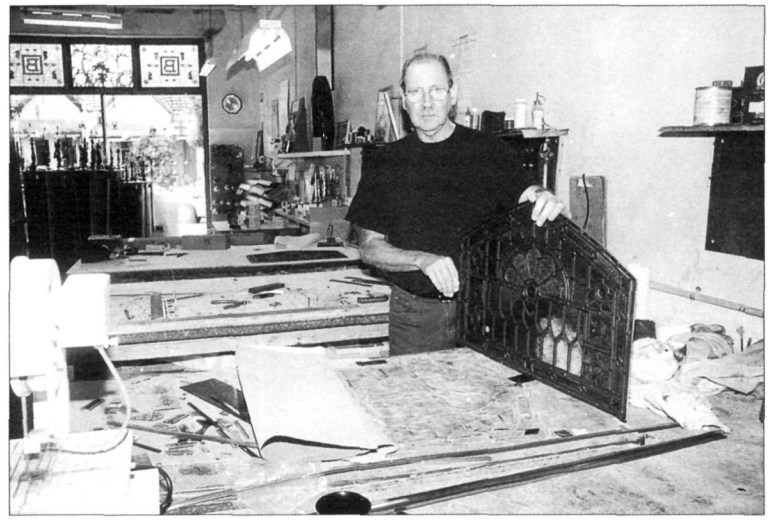
There was no short cut method to remove the paint, Bob said, as the use of paint stripper or solvents may remove the original patterns baked into the glass. The use of abrasives such as steel wool gives the same result. Instead he recommended the slow and painstaking task of using a small screwdriver on dampened painted surfaces. This task took on average about four hour's work, with the worst example requiring nearly seven hours. Once these tasks were completed, the windows were delivered to Bob and those still in their frames were removed by him for the task ahead.

Each of the windows was placed on a plywood drawer beneath Bob's workbenches. The next task with the window still on its drawer was to place it upon the bench and remove the old lead. This task alone took up to two and a half hours. The lead in the YMCA windows "was very pure and well refined." However, it was too soft and not reusable as it was too oxidised to solder. Constant flexing and contraction over time with temperature variations left it cracked as well. The importance of retaining each pane of glass in its original place was emphasised and great care was thus needed when moving the drawers.

Originally when Bob started business he had to buy his lead by the ton from the old Metters Ltd factory at Botany. It was wrapped in wet hessian and delivered on a pallet. It was grooved, but often was bent and weather impacted. These days Bob can purchase his lead from Consolidated Alloys in Melbourne, packed neatly in alfoil in short sections and it stays straight. The lead is now hardened with the addition of small amounts of copper, which allows it to last longer, normally giving it a life of at least 30-40 years. In earlier times antimony was used in the refining, which made the lead brittle over time. Bob informed me that impure lead in old European buildings has lasted for centuries.

The next task confronting Bob, once he had the full inventory of reusable windows, was to take stock of the individual requirements to replace missing pieces of glass, particularly the painted patterns. Numerous panes with leaf patterns, diamonds or circles, along with the grasshoppers and butterflies, needed replacement. All appeared painted on yellow glass.

The demand for colouring or painting glass is "not great apart from church work," Bob says. He does "about three per annum," the last being a "boat for a house at Annandale." The glass painting is a slow task, usually using clear green glass as a base. Using the original as a guide, Bob then set about painting several similar images on a larger pane of glass using lead-based paint. Bob learned this process of "cooking the glass in a kiln" on a "hit and miss basis". Each time he gained greater knowledge. The depth of paint is slowly built up between kiln firings until after three or four firings he is satisfied with the final result. A silver stain (silver nitrate in the old days) with a copper based formula is applied to the glass which is fired at lower temperatures changing the colour of the glass from



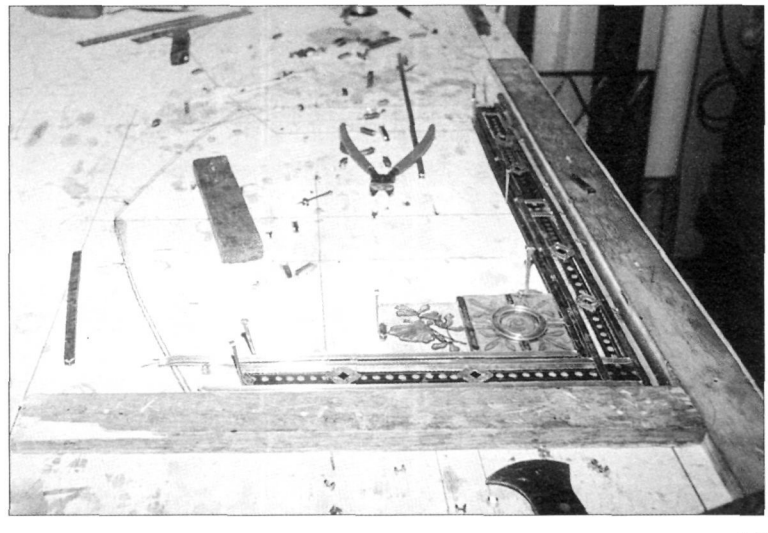
Bob Bush holds a completed leadlight. Flat on the bench in front of it are the glass panels ready for assembly on the adjacent workbench.
Howard Clark

green to yellow in the process. A special stain is required if green is to be retained as the underlying colour.

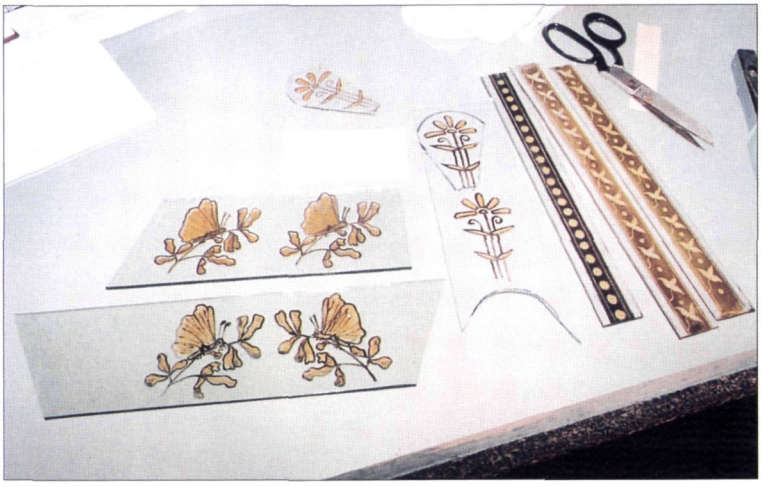
As the windows came in two different sizes, with four narrower windows in the stairway end of the building (which were the most intact and the easiest to clean), Bob made two templates, to ensure an accurate fit within the frames. These were made in hardwood for Ross Traeger, our joiner who was required to repair the useable frames or make new frames.

The assembly process involved the laying out of the desired pattern on the adjacent workbench. Working patiently from left to right the small panes were held in place on an outline set in place on the workbench with soft blue cut (carpet style) tacks, fitting and soldering the desired lengths of lead into place with a linseed black oxide putty separating the glass from the lead. The putty is in a slurry form and applied by hand as it is cleaner. When fully assembled the lead is wiped over with a black stove polish mixture to polish the lead and retard the oxidation process. Steel support bars (two parallel vertical bars), known as saddle bars, are fitted to the frame to limit the flexing and enhance the life of the window. A buff pad on the end of a drill is used to polish the glass before the completed panel is fitted into its frame.

Overall the process of assembling windows and fitting bars took one to one and a half days, with a further one and a half hours to fit in the frame. Bob advised that the YMCA windows were complicated as they followed a 19th century practice of using geometric pieces.



A window assembly in progress. It is seen in the background of the photo above.
Howard Clark



A number of replica painted-glass panels are seen after the final painting and kiln firing. Howard Clark

The story does not end here, as the shortage of original materials required replicas to be made. Bob sketched a design based upon the simplest of the three window patterns. The design proposal included a square centrepiece, with another square set within at an angle leaving triangles within each corner of the larger square.

A chance conversation with Melbourne member Hugh Ballment revealed a similar liking for leadlight. Inspired by Hugh, we explored the possibility of the central square being replaced by a panel of glass containing etched logos of various tramway undertakings. We decided that the remaining windows would be installed on the one floor level with the eight replicas to be used on the other floor. Soon eight different logos were selected (BCC, NSWT, MMTB, SECV, HMT, LMT, MTT and FMT), and Hugh tracked down Celebration Glassware to perform the task.

After checking with Bob, we proceeded to arrange for the centre panels (seven inches square) to be etched (sandblasted). The logos were made more accurate using computer laser techniques. Four were etched in green class and four in red, representing the predominant base colour of the colour scheme in the respective cities. The final result is stunning and the eight replicas will be installed in the building at the proposed archive floor level. Hugh is now proceeding with an additional variety of smaller colour panes similarly etched, to be included in small lower panels of Victorian style double hung windows at the rear of the building.

As a fund raiser towards the costs of the windows in the building, Hugh has proposed that interested benefactors gift $1000 for each of the eight and the two additional leadlight panels, which will now include the NSW Tramways coat of arms and that of the Electric

A completed window. This one is one of the replica windows with the red centre panel showing the logo of the Municipal Tramways Trust, Adelaide. Howard Clark

Supply Company of Victoria. The additional two windows will be installed on the south facing wall of the stairwells of the supporting structure, in a fashion not dissimilar to their original use. The names of the benefactors will be set out on plates fitted to the relevant windows. Hugh is also working on a similar plan to cater for the installation of the other windows at the rear of the building, for the donation of a lesser sum.

As Bob Bush notes, leadlighting has now become a very popular pastime. An example of this is the wonderful work by coachbuilder George Stirling of Bendigo Tramways. He enjoys the pastime and made the four excellent panels fitted to Bendigo 19, illustrated in the November 2003 issue of *Trolley Wire*.

There are many do-it-yourself and design books on the subject. Bob now employs another tradesman on a three-day part time basis, and he conducts classes on Saturday afternoons for keen students. He says Australian leadlighting follows the English method, and the *Australian Leadlighting Book* gives examples of how to design using various styles such as Victorian, Federation, Art Deco and Contemporary. The American method uses heavier glasses and is generally not employed in Australia.

Overall, the Museum is greatly indebted to Bob Bush for his enthusiasm for our leadlight project, his cheerful manner and above all his generosity with his time when charging us for his excellent craftsmanship. Thank you, Bob!

A PHOTOGRAPHIC INTERLUDE - 2

Three-section Combino 3507 passes through St Kilda Junction on 31 December 2003. The advertisements on the side are for Strongbow cider. Ray Marsh

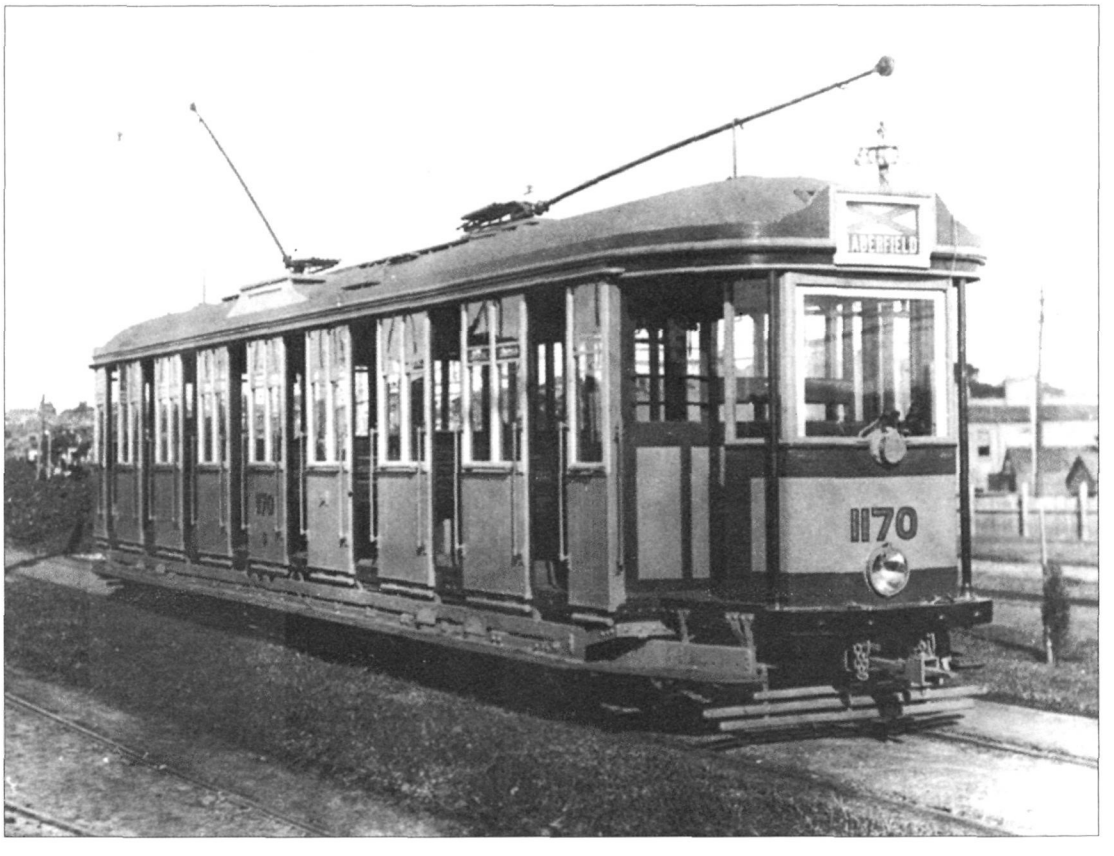
Citadis cars 3028, bound for Southbank Depot, and 3026 on a route 109 service pass on the reserved right-of-way of the Port Melbourne line on 20 December 2003. Ray Marsh

NEW TYPE OF CAR FOR THE NEW SOUTH WALES TRAMWAYS

Reprinted from *Electric Railway Journal*, 28 December 1918

A new type of tramcar has recently been put into service by the New South Wales Government Tramways on the Sydney city lines. This car was built at the tramway workshops at Randwick and embodies a number of new features. Three similar cars are under construction. The general dimensions of this new car are similar to those of the existing eighty-seat 'Class O' car (illustrated on page 4 of the *Electric Railway Journal* of July 6, 1918.) Their general appearance is shown in the accompanying illustration (reproduced with permission of the New South Wales Government Tramways, per C.F. Dewey). Frameless glass windows have been substituted for the wooden panels in the four central compartments, and narrow blinds have been substituted for the glazed wooden doors. This same construction is followed in the end compartments so that the appearance of the car is uniform from end to end. The wide weather blinds previously used and which in some cases were very troublesome have been dispensed with. The windows throughout the car are balanced on the 'raizograph' or 'lazy-tong' principle requiring a minimum effort on the part of the passenger in manipulating them.

The photograph suppled by C.F. Dewey was this view of O/P car 1170 at Randwick Workshops. It was captioned "General Arrangement of new Cars for New South Wales Government Tramways". Car 1170 was the first of eleven O class cars converted to the P design.



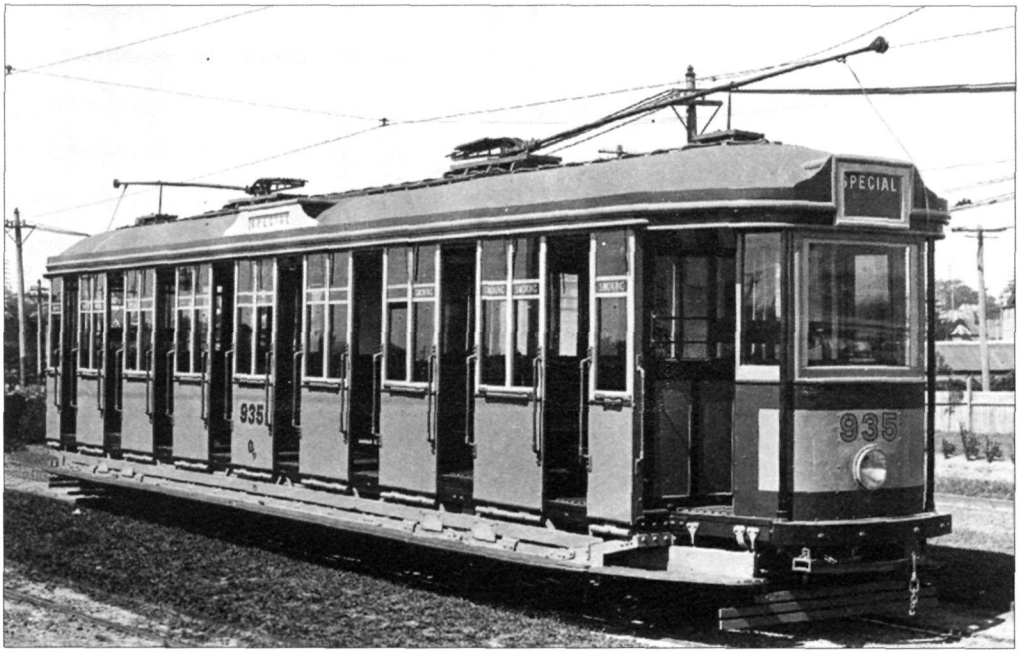
The end destination boxes instead of being placed on the platform aprons are fitted into the roof where they can be more easily seen by the public and the signal men. The side destination boxes are also built into the roof and at night are illuminated. All the destination boxes are operated from the inside of the car, which is far more convenient for the staff than the old system of outside operation. Grab straps, thirty-two in number, inside the car have been replaced by eight wood rails, one to each compartment, running horizontally across the car. This improves the interior appearance and at the same time affords more comfort to standing passengers. The car is designed to give a maximum seating accommodation and also affords rapid entrance and exit facilities.

The underframe is similar to that of the existing 'Class O' car except for one or two minor alterations, including those made to the lifeguard fender. The bogie truck frames were built by the electric welding process, bolts and rivets being dispensed with wherever possible. These are believed to be the first electrically welded trucks made in Australia.

Due to the war just closed and to the consequent need for economy these cars are painted grey with dark green and white facings, with the numeral in gold. The arrangement of these colours is pleasing to the eye and their use effects a considerable saving in paint expense.

The Government Printer's photographer took a front-on view of 1170 at Moore Park.

Direct control O class car 935 was the third O car converted to the P design. It was released for service in April 1919.



HERE AND THERE

NEWS ITEMS OF INTEREST FROM ALL OVER

Unusual City Circle working

Over the weekend of 6-7 December, the short section of reserved track in Victoria Parade between Nicholson Street and La Trobe Street was re-railed. City Circle trams ran on a modified route, excluding the above section as well as Spring and Nicholson Streets, and also Flinders Street east of Exhibition Street. Signs advising passengers of the temporary route were displayed in the trams during preceding days.

Cars travelling in the clockwise direction terminated in La Trobe Street near Swanston Street. Eastbound cars in Flinders Street were diverted at Exhibition Street to Batman Avenue and then travelled past the tennis centre, to terminate beyond the Melbourne Cricket Ground stop on the centre track. This is believed to have been the first use of this relatively new section of track by W cars in regular service.

Hobart's tramway

Hobart City Council called tenders closing on 25 November 2003 to identify organisations with suitable capabilities to submit a detailed proposal for design and documentation for the Sullivan's Cove waterfront tramway. Organisations with capabilities in light rail and/or tram design/development were invited to tender.

Tramway inaugurated in Houston

Siemens has handed over an 11km, $324m urban tramway with 16 stops to the city of Houston, Texas. The trams can reach 105 km/h and the line takes 29 minutes to traverse. The low-floor trams have a hydraulic mechanism ensuring that they are always level with platforms, even at high load. Plans for the system include expansion to a route length of 128km. Conservative groups fought to stop the project by forcing a recent election, which they lost when voters approved the light rail system.

1899 Berlin tramway rules

The following extracts are from the 1899 edition of the Berlin Tramways Rulebook:

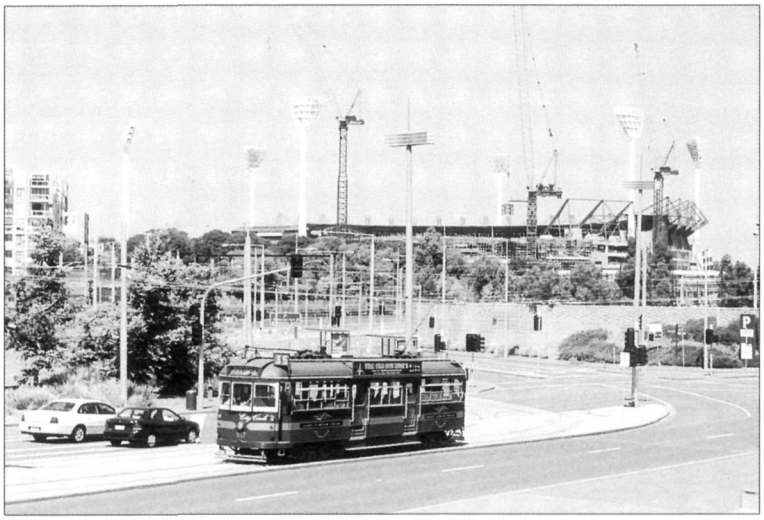
- The petroleum lamp box must not be used to keep burning cigars in.
- The transport of children's corpses is prohibited.
- Carriages of the All-Highest and Highest Lordships do not have to clear the path when the tram driver rings the warning bell.
- Trams must maintain sufficient distance so that horses cannot gnaw at the woodwork of the preceding carriage.

None of these things are prohibited these days. No wonder there is chaos in public transport!

City Circle W7 car 1020 after its arrival at the temporary terminus on the centre track, between the up and down lines, just east of the MCG stop on Saturday, 6 December.

Michael Stukely

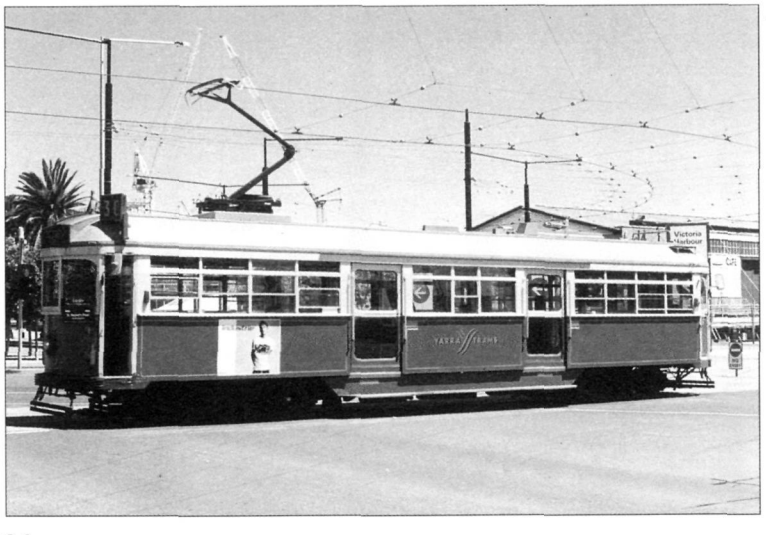
City Circle SW6 car 957 begins the climb up Batman Avenue, approaching the bridge to Flinders Street, on its return run from the tennis centre, on 6 December. Michael Stukely



Combino car 3501 was used for re-railing training at Glenhuntly Depot on 8 November 2003. Re-railing a derailed Combino or Citadis car is a much more complicated procedure than for a standard bogie car.
Steven Altham

In January 2004, the junction at the corner of Swan and Church Streets, Richmond was relaid. This view was taken on 10 January in Church Street looking towards North Richmond. The Swan Hotel is at right and the spire of St Ignatius Church can be seen in the distance. Steven Altham

This view shows the junction viewed from Swan Street looking towards the city. The tower in the background is Dimmey's, a prominent department store in Richmond. Steven Altham



Pantograph-fitted W7 class 1012 in green and cream, on a route 30 service at the corner of La Trobe Street and Harbour Esplanade on 15 December 2003. Steven Altham

End of the line! Three Z1 class cars are ready for disposal. Cars 73, 27 and 17 are seen at Preston Workshops on 26 November 2003. Ray Marsh

Two Combinos and a Z3 ply their trade in Swanston Street on 19 December 2003. Cars 3524, 224 and 3512 are in all-over advertising, the nearest cars advertising American Express and Apple computers.
Ray Marsh

Book review

The Melbourne Tram Book
By Randall Wilson and Dale Budd
80 pages, 186 x 186mm, Perfect bound
More than 130 illustrations including photos (some B&W), maps, drawings, paintings, full colour.
UNSW Press, released October 2003
ISBN 0 86840 646 5
Recommended retail price $24.95

Melbourne's trams are more than a mode of transport – they are a symbol of the city itself. As the only Australian city which refused to discard its tramway network in the mid-20th century, there is without a doubt a special relationship between Melbourne and its trams. While for some, they are viewed as a nuisance or as a way of simply getting to and from work, enthusiasts abound, with many photographing and recording the sound of the trams for their own enjoyment.

A source of affection and inspiration in art and film, trams have also been at the centre of public debate over issues such as ticketing, crewing and the retention of older trams. Randall Wilson and Dale Budd provide a valuable commentary to the many photographs, paintings and tram memorabilia featured in this book.

In this unique record of more than 100 years of street transport, the city's famous tramcars depicted in their surroundings – the streetscapes of today and yesterday. The myriad of images featured include decorated trams, trams appearing in artwork, as well as current and former tram network maps and tram drawings.

The Melbourne Tram Book is a glorious, compact tribute to the trams that have withstood change and time, and have added so much to the exceptional character of a city.

Museums should place orders for the book with UNSW Press Ltd, University of New South Wales, Sydney NSW 2052; fax: (02) 9664 5420; email to info.press@unsw.edu.au.
Their website: www.unswpress.edu.au

On 13 January, the overhead wiring was brought down in Swanston Street by an over-height truck. Tow trucks were called in to rescue stranded trams while repairs were carried out. Combino 3528 is being attached to the tow truck in preparation for towing out of the isolated area. Ray Marsh

Z1 car 61 being towed wrong road (called 'bang road' in Victoria) across Flinders Street after the overhead was brought down in Swanston Street. In the background an overhead crew on a tower wagon can be seen at work. Ray Marsh

In January 2004 there were six Combino cars in all-over advertising. Here 3530 advertises the Heineken Classic at the Royal Melbourne Golf Club. It is seen in Swanston Street at Collins Street on 19 January.
Steven Altham

COTMA

Council of Tramway Museums of Australasia
Executive Officer, 158 Lorne Street, Fawkner, Victoria 3060

From Craig Tooke

KIWITRAX 2004

The Joint Conference of the Council of Tramway Museums of Australasia (COTMA), and the Federation of Rail Organisations of New Zealand (FRONZ), known as KiwiTrax 2004 is to be held in Auckland at the Mercure Hotel, Customs Street, and at the Museum of Transport and Technology. Details of the conference are as follows:

Friday, 4 June

A.M—P.M. With a large number of visitors expected from Australia and southern N.Z. centres, pre-conference optional extra field trips have been arranged to either the 'Rainforest Express Nihotupu' (35 spaces), or the 'Waitakere Dam Tram' (40 spaces). These trips will leave the Mercure Hotel at 12.00 noon. Both of these 2ft gauge tram lines, in the Waitakere ranges on Auckland's West Coast, run for many kilometres through beautiful virgin bush in what is normally a restricted water catchment area.

Evening Joint Registration and 'Meet and Greet' at the Mercure Hotel—cash bar.
FRONZ mainline operators' get-together.

Saturday, 5 June

A.M. Registration continues.
0900 Joint Official Opening by a VIP and the COTMA and FRONZ Chairmen.
0915 Session 1 – 'Yesterday's Heritage – Tomorrow's Challenge' presented by Mike Anderson.
1000 Morning tea.
1030 Session 2 – 'Effective Lobbying' – Presenter to be advised.
1115 Session 3 – 'Recording Oral History' – Presenter to be advised.
1200 Luncheon.

P.M. 1300 Individual COTMA and FRONZ business sessions will be held at the Mercure Hotel.
FRONZ – 'The Year in Review', and the Convenors' panel.
COTMA – Two papers (to be advised) to be presented:
1415 Prepare for field trip. A chartered 'Silver Fern' railcar departs from the new Britomart Rail Station and Transport Centre for the visit to the Glenbrook Vintage Railway. At the GVR there will be a train ride and technical visits of interest, and an evening meal locally prior to returning to Auckland at around 2200.

Sunday, 6 June

A.M. 0830 FRONZ AGM meeting at the Mercure until 1200, then travel by coach to MOTAT.
0830 COTMA delegates travel to MOTAT for business sessions commencing at 0900.
1230 Joint luncheon at MOTAT for all delegates hosted by MOTAT Director Jeremy Hubbard.

P.M. 1330 After lunch FRONZ will visit the Western Springs Railway, MOTAT's Rail Section.
COTMA will continue with meetings, seminars, workshop visits, etc.
1600 Both groups will return to the Mercure Hotel to prepare for the Joint Awards Dinner.
1830 Pre-dinner drinks and get-together at 1830.

Evening 1930 Joint Awards Dinner at the Mercure Hotel.

Monday, 7 June

FRONZ	0830	Meetings continue at the Mercure Hotel. Resource Management Act, Railways Bill 2004, LTSA, etc. until 1230 when FRONZ's formal conference ends.
	1230	Lunch (own account).
	1400	Optional extra field trips to either Mainline Steam/RES Museum/Df class locomotive 1301, or Whangaparoa Narrow Gauge Railway.
COTMA	0830	Delegates leave for MOTAT to continue business workshop and technical sessions.
	1230	Lunch at MOTAT (own account) with 'brag-tape' session.
	1400	Business sessions and presentation of papers continue.
	1700	Return to the Mercure Hotel.
	1900	Informal dinner in the city.
	Note:	COTMA delegates can join the FRONZ field trips.

Tuesday, 8 June

FRONZ		An optional extra for both COTMA and FRONZ Delegates is an all-day coach tour to the Driving Creek Railway and Pottery in Coromandel.
COTMA	0900	Annual General Meeting at the Mercure Hotel. Free time in the city for those not wishing to attend the AGM.
	1200	Light lunch (own account) at the Mercure.
	1330	Travel to MOTAT for tram operating sessions.
	1700	Return to the Mercure.
	1900	Low-key COTMA dinner with final 'brag-tape' sessions

Wednesday, 9 June

First day of a comprehensive post conference tour being organised by Warren Doubleday, COTMA President, to all interesting heritage train and tramway museums in both the North and South Islands.

MOTAT's Western Springs Tramway and Western Springs Railway will be open to host those COTMA and FRONZ delegates and members who remain in Auckland and will not be going on the post conference tour.

Partners' Programme

As it is envisaged that most partners will wish to go on the Saturday visit to the Glenbrook Vintage Railway, a formal Partners' Programme is only being arranged for the Sunday. The local KiwiTrax organisers and hosts can advise and arrange other visits of interest if required.

Bookings

The organisers would prefer that all bookings be made directly with them over the Internet. Visit the FRONZ website at www.railfed.org.nz For those without Internet access, contact COTMA at PO Box 61, Carlton South Vic 3053 and a copy of the package will be mailed to you as soon as it is available.

Post conference tour

COTMA is planning a very flexible tour following the completion of the conference in Auckland on 8 June and motel accommodation will be available for each overnight stay.

The tour is arranged in a number of parts. The North Island only portion is as follows:

Wednesday, 9 June

Auckland to Palmerston by train where a Wellington Omnibus Society-owned coach will meet our party for transport to our motel.

Thursday, 10 June

A morning visit to the Palmerston North electric depot followed by a coach run to the city of Wanganui to visit this river-based historic city and the future home of Wanganui Corporation tramways Boon tram No. 12. Other transportation highlights are the Durie Hill lift and the paddle steamer *Waimarie*. In the afternoon a visit to the Foxton Trolleybus Museum has

been arranged before arriving at our motel in Wellington.

Friday, 11 June

A free day is Wellington to ride the trolley buses and the suburban rail system, including the line to Johnsonville which was part of the original Main Trunk railway.

Saturday/Sunday, 12 / 13 June

The 100 years of electrification of the Wellington tramways/trolleybus festival is being celebrated this weekend. Time is allowed for a visit to the Wellington Tramway Museum's site at Paekakariki. Some railway sites are also open and can be reached by suburban rail services. An evening visit to the Cable Tram Museum is planned, while dinner at own expense at a restaurant nearby can be arranged. Return to Wellington by cable car or to the motel by coach.

Departure for Australia can be made on any day from Wellington.

The South Island portion of the tour is in two parts. The first part is:

Monday, 14 June

Wellington to Christchurch by Interislander Ferry and the Tranzalpine train. An option is to depart for Australia from Christchurch, generally morning flights.

Tuesday, 15 June

Free day in Christchurch to visit Ferrymead and ride the City Tramway. A rail trip to Greymouth can also be made on this day, and prior booking is advisable for this trip.

The second part of the South Island tour is:

Wednesday 16 to Friday 18 June

Travel Christchurch to Dunedin and return on Friday afternoon. Visit the Ocean Beach Railway, ride the Taieri Gorge train and the Pleasant Point Railway.

Saturday, 19 June

Visit Ferrymead, with a City Tramway and City Tramway Restaurant trip in the evening.

Sunday, 20 June

Fly home or continue to do your own touring.

It is expected that costs will be finalised by early March and a deposit of $250 for the post-conference tour will be requested during late April, with final payment to be made by the start of the conference in Auckland.

ST KILDA

Australian Electric Transport Museum (SA) Inc
GPO Box 2012, Adelaide, South Australia 5001 http://www.railpage.org.au/aetmsa

From Colin Seymour

Northern Depot

The Road 9 rails inside the shed have been concreted into position to allow trams to be stored on this road. To allow access to the area, all trams displayed on Road 10 were moved away from the Northern Depot. Mass concreting between the rails is dependent upon future funding. Until this is available, public access to Road 9 will not be allowed. However, the trams positioned there can be seen easily by visitors from Road 10.

H 362 was re-located from the old depot on 12 December 2003 and is the first tram to be stored on Road 9. More trams will be re-located to Road 9 in the future. As there is no overhead wiring erected at present over Roads 9 and 10 of the Northern Depot, shunting of trams is being kept to a minimum.

A museum library is currently being set up in the Northern Depot. The library will include copies of various tramway and museum publications for reference by members and, eventually, certain members of the public.

Workshop Activities

A minor refurbishment of Adelaide's first electric tram, No. 1, was completed in time for the tram to be returned to traffic on 30 November 2003 – the 95th anniversary of its first trial run along North Terrace, Adelaide on 30 November 1908. Work carried out included re-varnishing the outside bodywork, repainting the roof, re-varnishing the seats and other minor touch ups.

Car 362 is about to become the first car to be stabled on Road 9 of the Northern Depot on Friday 12 December 2003. It is being driven with the aid of the wandering lead. Ian Seymour

Chris Summers, John Morphett, Roger Wheaton, John Pennack and Ron White with car No. 1 on its return to service after its minor refurbishment – the date is 30 November 2003 – No. 1's 95th birthday. Ian Seymour

Chris Summers (front) and John Pennack concrete the rails of Road 9 into place. Road 10 to the left had been cleared of display trams to enable easy access for the concrete mixer truck.
Ian Seymour

Peter Letheby and John Pennack test fit a bumper onto the rebuilt eastern end platform of E 118. Ian Seymour

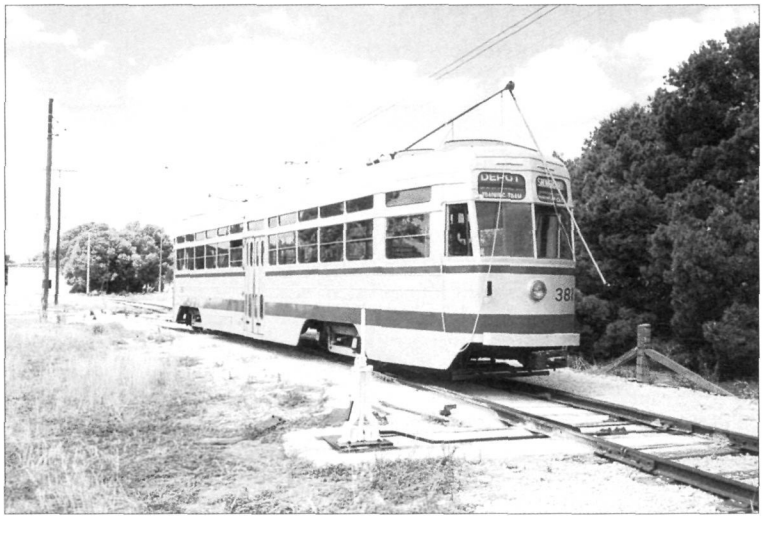
Progress has been made on rebuilding the number 2 platform end of E type car No. 118 – also known as the eastern end, the low end or the saloon end! A new bumper was also test-fitted to the rebuilt platform as the tram was obtained without bumpers in 1982 from Fishermans Bay, near Port Broughton.

History Trust inspection

The History Trust of SA visited the Museum to advise on matters requiring attention prior to our re-applying for full accreditation in 2005. The committee will work on these issues in the coming months.

Traffic communication via mobile phone

A year ago, the Museum's lineside telephone system was replaced by radio phones. However, communication between motormen on trams and the Museum using the radio phones has not been fully successful. There are several locations in museum buildings where an audible communication signal is difficult to achieve. As a result, we have purchased a mobile phone for use by traffic staff with the radio phones being retained as a back up. On a normal operations day, where only one tram is on the line at any one time, the motorman is required to test the communication system upon arrival at the Beach on the first trip for the day by phoning the Despatcher or Gallery/Bookshop Assistant. On busy days, where a crossing movement is required, the mobile phone is used as a staff. Trams must stop at the loop where the 'staff/phone' must be handed to the motorman of the tram travelling between the loop and the beach.



Cars 381 at the new switch stand to Roads 9 and 10. The car was moved, together with the other cars from Road 10, using the wandering lead to enable access by the concrete mixer to the adjoining Road 9. Ian Seymour

BALLARAT

Ballarat Tramway Museum
PO Box 632, Ballarat, Victoria 3353 http://www.btm.org.au

From Dave Macartney

No. 40 was despatched to the Workshop for some attention to motors early in October. After the car was jacked up and the trucks rolled out, the No. 2 motor armature was removed and sent off for re-insulation. Meanwhile, the trolley bases have been removed for refurbishment and a start has been made on the replacement of some of the worst of the guttering. No. 40 has always been maintained in as close condition as possible to its final day on the system, but this time a repaint is going to be required. Preliminary paint stripping has revealed some of the silver paint applied experimentally to the roof in 1953.

On 17 November, a small work party spent the day relocating the overhead at Carlton Street terminus, made necessary by the installation of a new pole near the entrance to the Prisoner Of War Memorial. This pole is on the opposite side of Wendouree Parade to the tramway, and maintains the slight curve in the overhead at this point. Despite the Memorial still being in the construction phase, a couple of prominent tramway workers were observed inside the compound having a good snoop around. It is believed they escaped disguised as German officers.

No. 27 was selected as the Christmas tram this season, and was launched on 14 December festooned with tinsel. At one stage during the preparation the decorating material ran out, but young Sam Boon headed off to the Mall with his saxophone and busked until he had enough cash to buy some more!

On 15 December some speed and braking trials with one-man operated trams were conducted to satisfy the insatiable thirst for knowledge of the regulatory authorities. No. 33 put up the best speed at a fraction under 37 km/h. It always seems a lot faster than that, but it probably says something about the riding qualities of the single truckers on worn track.

In preparation for the Prisoner Of War Memorial opening on 6 February, all the deciduous trees along the roadway in front of the depot were removed during December. These trees had been in poor condition for a number of years, having been crowded out by the evergreens planted alternately with them many years ago. There is now a much more open look to this section of the Gardens. Negotiations are under way with the Returned Services League concerning the transport arrangements on the day. It seems that the tramway will be playing a very real part in the movement of people from the car and bus parks to the event.

WHITEMAN PARK

Perth Electric Tramway Society (Inc)
PO Box 257, Mount Lawley, Western Australia 6929 www.pets.org.au

From Michael Stukely

Tramway Operations

Patronage on the trams through 2003 continued at levels consistently higher than for the corresponding periods in 2002. The most marked improvement was on Saturdays which were generally quiet days at the Park.

This improvement has been largely a result of the abolition from December 2002 of the visitor entry charge to the Park and the very effective promotion of Whiteman Park that has been undertaken by Park Management.

Tram services were suspended from 11 December 2002 to 29 March 2003 because of the non-availability of affordable public liability insurance. This caused a very significant drop in the Society's revenue in the last financial year to 31 March 2003. This year, however, we are reaping the benefits of running throughout the summer holiday period as we did in earlier years. We are currently canvassing options for next year's public liability insurance cover which is payable in mid-February 2004. We are optimistic that there will not be another suspension of operations.

Track and Overhead

Although the initial sleeper replacement program was completed over the whole of the main line from the Carbarn precinct to Stockmans Triangle and to Village Junction in August (Trolley Wire, November 2003), several short sections remained to be treated. Work on these has continued to the end of 2003. A total of 815 steel sleepers have now been installed to replace rotten timber sleepers, since March 2000.

There are several access crossings over the tram line for the occasional use of Park Management, PETS and fire-fighting motor vehicles. The sleepers at these locations are fully covered, with roadbase filled to railhead level. Major work is required to fully excavate and re-sleeper these crossings with steel sleepers so that they can be restored as permanent motor-vehicle access points, with no further risk of the covered timber sleepers failing.

The largest of these access crossings is on the mainline from Stockmans Triangle to the Village, near the cattle grid. This was excavated and fully re-sleepered and rebuilt on 11 October to a narrower configuration with fewer sleepers covered. Terry Verney operated the Park's bobcat, which was of great assistance in both the excavation and reconstruction stages. Lifting and packing of the track was done the following day. Two smaller crossings – one immediately west of the Triangle West points, the other midway along the west-east leg of the Triangle – were reconstructed the same way in early December. The opportunity was then also taken to replace some short lengths of rail at Stockmans West with a new, single length.

The final remnant of the former siding at the old Bennett Brook stop was removed in November when the point blade and turnout rail were replaced with a single new length of rail; six sleepers were also replaced here at that time. Small numbers of additional rotten timber sleepers have also been replaced with steel sleepers from September to December. This was undertaken at various locations on the Carbarn-Stockmans Triangle section – near the Mussel Pool stop and along Swamp Straight; near Bennett Brook Culvert and Mussel Pool East stop; and near Horse Swamp Culvert. The main tasks in maintaining the main line are the lifting and machine-packing of the

A large number of sleepers were replaced between the Village and Village Junction terminus. Trevor Dennhardt (left), Lindsay Richardson, Martin Grant, Kurt Gahler, Terry Verney and Laurie Ahearn are hard at work on 2 August. John Shaw

track and the spot replacement, as required, of timber sleepers at specific locations.

Track team members over this period were Track Supervisor, Trevor Dennhardt; Track Adviser, Lindsay Richardson; and members Jim Paton, Peter Rankin, John Shaw, Martin Grant, John Davies, Kurt Gahler, Terry Verney, Darren Ward, Laurie Ahearn and Michael Stukely. All are to be commended for their continuing efforts in this very important work.

A timber traction pole in a continually wet area at Horse Swamp Culvert collapsed in November following unusually strong winds. Fortunately, the incident occurred on a non-running day. The running wire was undamaged, and two temporary pull-offs were attached to adjacent poles on the curve to allow services to continue until the pole can be replaced. David Secker assisted Ray and Noel Blackmore in this work. It is apparent that other old timber poles in wetter areas will also require replacement in coming years because of the risk of collapse.

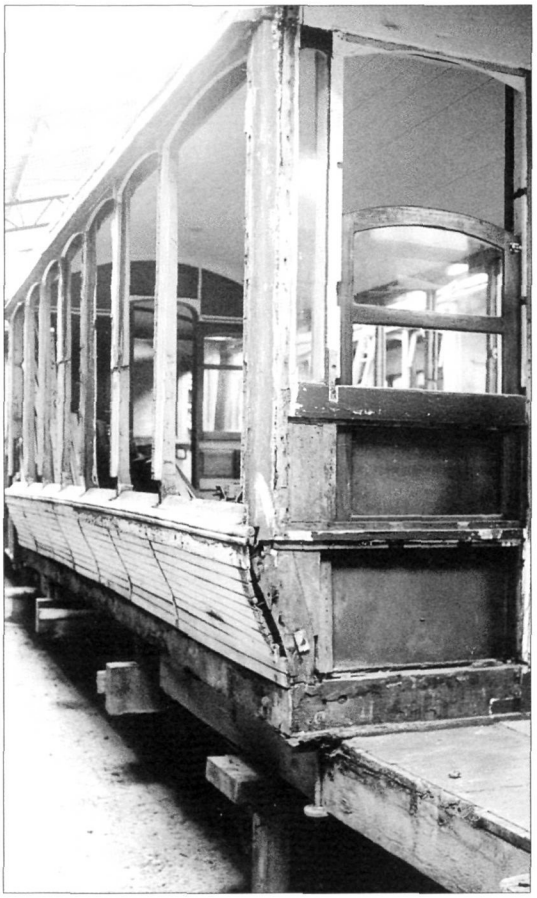
Noel Blackmore and the team completed re-setting the overhead on the Bennett Brook Culvert Curve in October-November. Noel and Kurt Gahler have installed a section insulator at the second pole east of Stockmans Triangle on the Lord Street Branch, so that this little-used section can now be isolated when required. The regular turning of trams using the Triangle is not affected. At Camel Curve at the north end of the Village mall, a curved trolleybus overhead segment is to be installed to ease a particularly sharp curve in the running wire at a bracket arm. Suitable insulators have been obtained, and galvanised adaptor plates manufactured.

Re-sleepering the work-vehicle access crossing between Stockmans Triangle and the Village on 11 October. Terry Verney excavates roadbase covering the timber sleepers with the bobcat, while Lindsay Richardson (nearest camera) is about to adjust the track gauge, as indicated by the gauge-bar, before fastening the newly inserted steel sleeper. Trevor Dennhardt is at left and Laurie Ahearn at right.

Michael Stukely

Late in the day on 11 October, Trevor Dennhardt uses a pneumatic tamper to pack a newly-installed steel sleeper near the reconstructed access crossing, as Darren Ward adds roadbase from the supply in the tractor blade; Lindsay Richardson is at left, John Davies at right.

Michael Stukely



Resting on stands in the Lindsay Richardson Carbarn on 8 November, the body of Perth single-truck B class car No. 15 can be clearly seen, after the all-over sheet-metal cladding was removed earlier in 2003. The cladding was applied for weather protection when the body was used for many years as a holiday chalet at a Mandurah caravan park. Michael Stukely

Trams

The Wednesday Team continues their essential maintenance work on the operational trams. New member, Jim McCamley, ably assisted Geoff Morrison with the recent minor service of W4 tram 674.

W2 class 393 was recommissioned and returned to service in November. It was withdrawn from service in June with faults in both motors of the No. 2 end truck. The truck exchange and the overhaul of a resistor bank were successfully completed – a major team effort. Work has commenced on repairing the faulty truck.

The slatted window-blinds were removed from W4 car 674 many years ago but the gaps in the window sills remained. Timber battens to insert in these gaps were made up, for the cost of materials only, by Gordon Menner, a friend of Noel Blackmore. The battens were installed recently by Geoff Morrison with good results.

The traction-motor overhaul program is progressing. We now have a spare motor for a No. 9 truck on hand, and a MV101AN motor for a No. 1 truck has been sent out for overhaul.

Museum site and facilities

Further progress has been made on the tram service pit, with preliminary levels for the final concreting of the surrounds being determined by Noel Blackmore with the Park's laser-level. Final adjustments to levels, the preparation and cutting of access rails for the pit-road and for manoeuvring trucks into the Engineering Shed, remain to be completed before concreting can commence. Completion of the pit is a top priority for 2004.

The sealing of the base of the newly erected garden shed to its concrete pad in the members' garden adjacent to the carbarn fan was completed in September. Slabs have been placed to allow access for equipment between the shed and the fan.

For many years, Society records and other items have been stored at members' homes. However, finding a long-term solution to this storage problem has recently become urgent with several members no longer having space available. Plans were nearing completion in early January for the purchase of a transportable office and storage building which will be placed in the rear compound beside the western end of the Oketon Geddes Carbarn.

Another shortage of space has become evident recently in the members' meal-room located in the carbarn. This is because of the consistently high attendances of members at Wednesday workdays which is, of course, a real pleasure to report! Following the commissioning of the new office building, it will be possible to extend the meal-room eastwards into the present small office to give the required additional space for the comfort of our hard-working members.

Motor vehicles and plant

A variety of vehicle and plant checks and repairs have been necessary recently, with much searching required to locate suitable spare parts. The radiator of the indispensable per-way Toyota 'ute' finally became unserviceable in September, and was replaced.

The Broomwade compressor, also vital for track work, failed with a melted fusible plug in October after over-heating. A replacement plug was obtained from Melbourne and the unit returned to service. The tamper-plate of one of the ballast tampers suffered a fractured bar, and a replacement had to be sourced from Queensland.

The annual inspection and tagging of the workshop electrical equipment and plant was again carried out by Kurt Gahler in November and December.

After many years in charge of the motor vehicle fleet, long-time member Vic Sweetlove has been unable to continue this role in 2003 and Noel Blackmore has looked after the job. We are delighted that one of our newest members, Pat Ward, is keen to concentrate on this vital area – he carried out maintenance and a general service on the Toyota in November and December.

Promotion and displays

Regular public tours of the carbarn have been held on the fourth Sunday of each month during spring, with a display of photographs being set up and a souvenir and publications sales desk in operation. On these occasions two trams run alternate service trips, with one of them usually being Fremantle 29. Each trip is extended from Mussel Pool to the carbarn fan to deliver visitors for the free tour. This running is easily accommodated with the timetables recently having been changed to one trip every 30 minutes, rather than every 25 minutes.

The displays have been compiled by John Stone with assistance from David Brown and Michael Stukely. The tours and sales have been conducted mainly by Tony and Beth Kelly. These first carbarn tours have been very successful and will be continued until winter.

Displays have also been taken by John, Tony and Beth to several outside venues. These included the Midland Railway Workshops annual Open Day on 14 September; 'Springfest' at the Gloucester Lodge Museum in Yanchep National Park on 2 November; and 'Railfest' at the ARHS Rail Transport Museum at Bassendean on 16 November where Trevor Dennhardt also assisted. This regular public exposure is considered most important for promoting the Society's activities and attracting potential new and enthusiastic members.

BENDIGO

The Bendigo Trust
1 Tramways Avenue, Bendigo, Victoria 3550 http//www.bendigotramways.com

From Kym Smith

High Street overhead, and track repairs

The City of Greater Bendigo has been undertaking a program of laying powerlines underground, removing wooden and concrete poles, and installing replica tramway-type steel poles with added decorative light fittings.

As part of work recently undertaken in High Street, we were required to transfer all of the spans between Forrest Street and Wattle Street from the old poles to the new poles. As most of the spans in this area dated from the SEC days, we were able to negotiate with the Council to renew the span networks, rather than re-hanging the old wire from the new poles. The Council also assisted in purchasing a battery-hydraulic crimping tool which sped up the renewal work. The skyline in High Street now looks completely different without Powercor wires, but with shiny new galvanised tramway spans with white and grey insulators.

A crew led by Bruce Allen has recently welded some of the worst of the broken track joints. Areas treated so far include the Nolan Street bridge, Bridge Street, and the Tramways Avenue Depot fan.

Car news

By 30 December 2003, wiring and piping had progressed on VR 41 to the point where the tram could be lowered onto its 77E trucks. The refitting of internal advertising panels and beadings, and the refurbishment of windows and louvres continues. The brake rigging has been bushed, re-pinned and re-installed under the tram, as has the linebreaker.

Trams 19 and 30 returned to traffic during December after time in the workshop. The motors from No. 19 were replaced with two motors previously

Bruce Allen welds a broken joint on Nolan Street bridge.
Bendigo Tramways

No. 33 (ex SW2 275) departs the Tramways Avenue Depot for North Bendigo.
Bendigo Tramways

Z1 54 near the entrance to the depot after being unloaded in Tramways Avenue.
Bendigo Tramways

prepared for ESCo No. 8, and the motors formerly in car 19 are now being overhauled. Since its return to service, No. 19 has been used extensively on the evening tram service during the school holidays.

No. 30 re-entered service to perform Santa Tram duties, proving popular with children, Santa, and our drivers. It has also been used in regular service on nights when the weather has been too inclement for use of No. 19.

After being purchased at auction by Darren Hutchesson, Z1 54 made the journey to Bendigo on 11 November, being unloaded at 7:30am. Z1 46 followed later in the day, being delivered directly to Bruce and Dea Allen's home. After being lifted from its trucks, the body was lifted into position and the trucks, which Bruce and Dea kindly donated to the Tramways, were taken to the Gasworks for storage.

Meanwhile, the dismantling of Z1 54 commenced at the depot, a task which involved unscrewing, unbolting, or drilling out anything that could be

Z1 54, stripped of fittings, awaits removal from the Gasworks Depot fan.
Bendigo Tramways

Z1 46 ready to be unloaded at Bruce and Dea Allen's property.
Bendigo Tramways

reused. After a couple of weeks' work, the skeletal remains of the tram were towed to the Gasworks to await removal. What remains of 54 was purchased from Darren for use on a nearby property.

Staff amenities area

The area to the rear of the lunchroom has recently been upgraded with the laying of granite sets. This area, which is used for social functions and barbecues, often became unusable after rain and made access to the accommodation block difficult. As well as improved drainage, a finishing touch was the installation in the new paving of one of the H crossings from Charing Cross that was stored previously at the Gasworks. Our problem is that we haven't worked out how to get the scrubber around the back to polish the rails!

Controller keys

We were recently contracted by Bombardier Transportation to supply 40 controller keys to suit RC2 controllers. Many thanks to Tony Smith from MTPA for supplying a pattern key for use in casting.

Annual cavalcade

The Annual Tram Cavalcade was held on Saturday, 13 December 2003 with 16 trams and two tower trucks making the journey to Pall Mall for the line up. Trams involved this year were, in order: 16, 5, 19, 28, 33, 441, 7, 15, 9W, 466, 808, 30, 31, 25, 35, and 44. This left the depot fairly empty, with only 17, Hobart 20, Brisbane 493, ESCo 7 and the Battery Tram No 2 left inside the running shed, plus the miniature promotions tram No. 10.

The volunteers who crewed the trams for the 2003 Annual Tram Cavalcade. Bendigo Tramways

Almost empty! The running shed looks deserted while the tram fleet participates in the Annual Tram Cavalcade. Bendigo Tramways

Ex Sydney, then Melbourne, then St Kilda Adelaide, now Bendigo tower truck No. 15 heads the line-up of trams for the Annual Tram Cavalcade.
Bendigo Tramways

Some of the 16 trams are seen on display in Pall Mall for the Annual Cavalcade.
Bendigo Tramways

BYLANDS

Tramway Museum Society of Victoria
PO Box 27, Malvern, Victoria 3144 www.tmsv.org.au

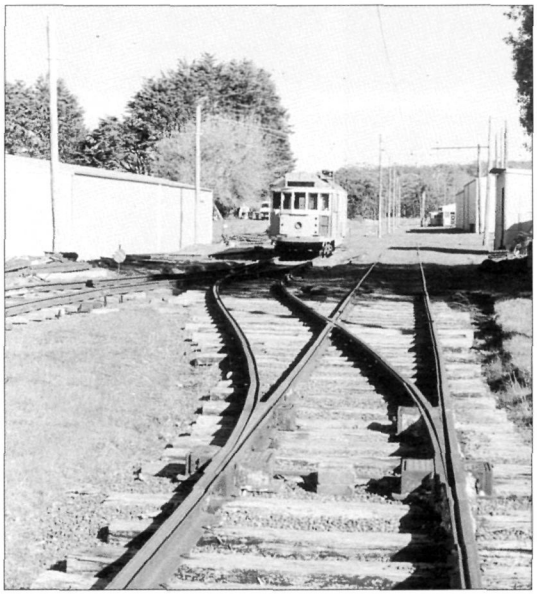
From Running Journal

Museum Work

Most work in recent times has centred on upgrading and enhancing our exhibits. Many hours have been spent on tram maintenance and restorations, with work commencing on improving the external appearance of several vehicles. Work has begun on repainting the cabin ends of Ballarat No. 17, to return it to its 1950s appearance. The dash-canopy lighting and zebra stripes have been removed, and some sanding and priming has been undertaken. Undercoat has been applied to the south end cabin. The green and cream paint colour has been perfectly matched with a commercially produced product.

After many years of storage in the open, both at South Melbourne Depot and at Bylands, work has commenced on 7W to stop further deterioration and to make it more presentable to the public. This car requires considerable work, not simply a routine repaint. It is interesting to note that whilst rubbing down the driver's apron on the north end, the number 356 re-appeared, indicating the origin of the cab frames.

Z1 class No. 5 has also had its share of work. All the additional security grills and doors fitted to the drivers



With work on the new crossover trackwork complete, the opportunity was taken to use it for temporary storage. Seen here on 8 November 2003 is W2 car 457 in the siding, which will eventually be extended to form the double track at Bylands. Graham Jordan

cab areas at both ends have been removed. This immediately made a big difference to the interior of the car. Two conductors' consoles and chairs have been removed from storage, and one unit has now been installed in the north end of the car. The other will be fitted shortly. To fit these units is no easy task as it is necessary to remove or disconnect several fittings to gain access, but patience pays off. Servicing of controllers continues, and this task has been completed on W2 643, W4 673 and W2 509.

Trams have not been the only vehicles undergoing restoration. Work has continued on repairs and preparing MK VI bus No 759 for repainting. To date the vehicle has been rubbed back, and a number of panels both at the front and rear of the vehicle have been identified for replacement. New panels have now been fitted to the rear of the bus, but after removing the front panels, it was discovered that some of the supporting frame has badly rusted, and will require sectional repairs or replacement. Some rewiring of the external lighting circuits will be undertaken during this replacement program. Servicing and minor adjustments have also been carried out on the MK III 537 and Volvo No. 850.

Minor repair works have been undertaken to the king points on the depot fan, which saw new spacer blocks inserted in the interlocking mechanisms. With the arrival of spring weather, vegetation control around the site and along the tracks is paramount. Considerable effort has been put into mowing, slashing or weed spraying to reduce the fire risk and to keep the rails clear.

Because of inclement weather, it was necessary to organise indoor works for the working bee on 22 November 2003. Several small but important jobs were tackled including the internal cleaning of our service trams. In the kiosk building, a new door and architrave were placed in the wall at the rear of the stores section, and the floor was completed at the north

During November 2003 it became necessary to relocate W2 car 457 to another part of our site. The easiest way of doing this was to tow it with another tram. W5 car 795 is about to tow 457 out of the siding. Graham Jordan

During shunting movements one of our oldest exhibits, Ballarat 36 makes acquaintances with our newest, Melbourne Z1 No. 5.
Graham Jordan

end of the breezeway. A start was also made on sorting, filing and rehousing the items stacked or stored in the large rear section of the building. We hope to install the flooring and wall at the south end of the breezeway in the near future. This will finally complete this building to lock-up stage after 10 years.

Check out our Website

The Society now has its own website, www.tmsv.org.au. The site is regularly maintained and updated. We continue to receive positive feedback on the site and its content, and the ease with which it can be browsed.

Fire services upgrade

At the end of July, members of the Kangaroo Flat Secondary College Country Fire Authority (CFA) Youth Crew travelled to Bylands to assist in servicing the museum's fire extinguishers. CFA Youth Crew is a leadership and community service program run in government schools with an emphasis on serving the community through volunteering with the CFA. Accompanying the students were teachers Richard Irvine and Andrew Howlett who are both members of the Maiden Gully Fire Brigade. Andrew is a long-standing Society member and Assistant Principal at Kangaroo Flat Secondary College. During the day, over 60 extinguishers were serviced which would have otherwise cost the museum over $400. The students enjoyed a tram ride as well as exploring the technology

Ballarat 36 has recently been returned to active service at Bylands. It is seen here on its first sojourn on the main line in many years. The new vehicle maintenance building can be seen to the right.
Graham Jordan

that our museum is preserving. This is the second visit of this type in recent years. The Society, in conjunction with the CFA, is pleased to be able to assist our younger people gain worthwhile knowledge and experience that will benefit the whole community in future years.

LOFTUS

South Pacific Electric Railway Co-op Society
PO Box 103, Sutherland, NSW 2232 www.sydneytramway.museum.com.au

From Michael Giddey

Works report

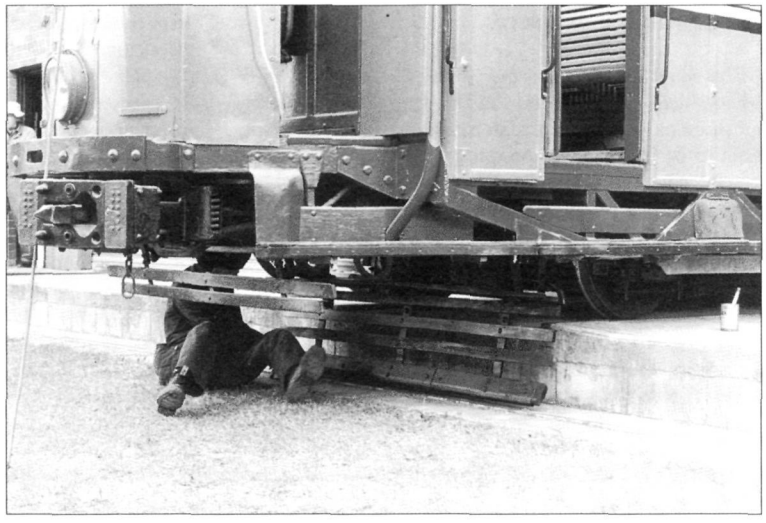
Some years ago we acquired a quantity of 12-metre lengths of 90lb rail from the Shell Refinery near Grand Avenue, Camelia.

These rails were in a stack near the railway sub-station at our present northern terminus and were earmarked for the future relaying of some of the rougher sections of the main line north. About 30 of these rails recently disappeared. This apparently happened while the State Rail Authority and their various subcontractors were using the area for access during one of their track upgrading programs. The gates were left open and trucks and equipment were coming and going. They also moved some of our pointwork components while generally using the area as they saw fit.

Bob Cowing had discussions with the appropriate authorities. The outcome was that we were provided with 270 good second hand sleepers, eight long lengths of 107lb welded rail, and the promise of the use of a heavy duty backhoe for a day. The welded rail had recently been removed from the down refuge siding and is approximately equivalent to the length of the rails that were removed without the Museum's permission. The backhoe was used to relocate the pointwork and to tow the long rails from near Loftus TAFE College nearly a kilometre into our northern terminus area from where a tram could drag them to a point alongside the track on the Army Depot hill.

The sleepers were received first and were moved by our Daihatsu tipper and ballast motor 99u to temporary storage in the yard area of the top shed. It was hoped to get some other use out of the free backhoe, which was expected on site on 15 November, in addition to the work at north terminus.

The dead-end western track north of the Pitt Street crossing was lifted so that a backhoe could regrade the roadbed in preparation for relaying that track with steel sleepers set on concrete strip footings as termites were eating the existing timber sleepers that were bought new in 1988. While this track relaying is not urgent, the opportunity was taken to prepare the roadbed while the free use of a machine was available. The members



Before P car 1497 re-entered service, the overhauled lifeguards were re-installed. To install the one at the northern end of the car, it was found easier to move the front of the car over the traverser pit and work on it there rather than reaching up from the workshop inspection pit. Bill Parkinson

The wheels of car 1979 are slowing turning as Mal McAulay reprofiles the flange on a wheel.
Bill Parkinson

who are doing the work did not feel like digging it out by hand if it could be avoided!

On the appointed day, we were surprised to find not one but two backhoes arrive at Loftus. Someone in State Rail had apparently double booked and, as the contractors would be available for a minimum of four hours, we decided to find work for both machines. The larger one started towing the long welded lengths of rail, some of which were over 100 metres in length. This operation took longer than expected and this machine then relocated the pointwork and generally cleaned up the terminus area assisted by our AEC Matador recovery vehicle. The second backhoe excavated and graded the roadbed north of Pitt Street as planned, and was then used to excavate as much of the trench for the fire main extension as time permitted.

Fire protection measures

The State Government grant that was used to build the top shed and to install the fire sprinkler system in our three main buildings also paid for a 75mm hydrant main to be laid to three on-site hydrant stands. One is located near the main gate, one outside the sprinkler room door and the third is outside the front of Road 1. Funds available at that time did not allow the extension of the main to a fourth hydrant to be located at the corner of Cross Street and Tramway Avenue. The installation of this hydrant is important as it will provide protection for the workshop, the temporary bookshop, the Railway Square waiting shed, to the trams stored in the open near that building, and to the sleeper stack. It would also be used to fight any fires that may break out in the scrub along the highway and railway boundaries that could easily be ignited by windblown embers.

Before the new toilet block was built in Cross Street, and before the road 4 track was relaid and concreted, part of the hydrant main was laid along the rear wall of the workshop and under road 4. We have been steadily concreting the depot yard for some years now, using surplus concrete donated by Concrite. However, we have not been able to concrete those parts of the depot yard where it was envisaged that a hydrant main would be laid. We have been working around those areas for some time but have now reached the stage where we cannot lay any more concrete in the yard until the pipe is laid and covered. For this reason, the opportunity was taken to do as much of the excavation as possible. Since then, funds have become available for the completion of the hydrant main and it is expected that work will be completed in the near future.

In other developments, work is continuing on the workshop extension. We have excavated for concrete strip footings across each end of the extension to anchor the steel columns for the two doorways that are suspended from the roof framing. This also required the placement of various conduits for underground power and new stormwater pipes. Sydney-style track drains fabricated from old rails were installed across both end doorways. The floor area has been levelled for future concreting. A contractor installed the power-operated roller shutters to both doorways on 6 January. The Colorbond sheeting for the roof and walls was erected during the week ending 30 January. Concreting the floor will commence once the reinforcing mesh is purchased and in place.

Work has commenced on de-scaling the components for the Road 14 points. When installed, these will be the first of two sets of points that will provide permanent track access into Roads 12 to 14 in the top shed. More lights have been erected across the rear of

Roads 4 and 5 in the main shed. The spare Brisbane dropcentre bogie has been placed on a short section of track at the rear of the display hall and will form part of the future display. The temporary builder's fencing has been relocated clear of the western track in front of the YMCA Building and the Miranda waiting shed at the front gate is back in use.

Car news

The two bogies from 1979 were reprofiled at Preston Workshops but it was found that the flanges had sharp edges that were not accepted by our Chief Engineer. The motors of each bogie were run in turn at slow speed by the motor generator set and a hand-held angle grinder was used to round the corners of the flanges. The brake rigging of both bogies has since been disassembled and cleaned. One has been re-assembled and work is in progress on the second one. The bolsters were also removed and replaced.

O car 1111 has had two rotten bearers under the north end cab replaced and some minor body repairs. The ceiling and seats have been repainted and the interior varnish was recoated by Ian Hansen and Vic Solomons. This makes a big improvement to the appearance of the interior of the car.

Ballast motor 99u developed a faulty traction motor and smoke was noticed coming from it. It was found that the motor bearings were so worn that the armature was rubbing on the field coils. Fortunately the fault was found in time to prevent serious damage to the motor. On 6 December, 99u replaced 1111 in the workshop for a few hours while it was jacked up and the defective motor removed. The worn bearing will be bored out and re-sleeved, and the armature shaft will also need some light machining. Work is proceeding on cleaning out years of accumulated grime from the motor casings following removal of the field coils for attention to their insulation.

Melbourne Z2 car 111 has had some missing pop rivets replaced and the interior touching up of paintwork is now complete.

Ballast motor 42u (Gentle Annie) has had the first bogie reassembled and painted and work is in progress on the second bogie. Attention to the traction motors will follow completion of motor work on other cars.

Leyland Tiger half cab bus 1275 blew a head gasket and this was replaced by Dennis O'Brien and Craig Parkinson. The bus made two test runs from Tempe to Loftus on 17 January and is now running like a Swiss watch.

A party of Scottish bus enthusiasts is expected in Sydney soon and wish to inspect and photograph Albion double-deck buses in Australia. Our Albion Ventura double deck 1615 was retrieved from the old National Park depot by removing and replacing part of the side wall of Road B as this was easier than moving tons of junk to get it out the front doors. We have been told this bus is the sole surviving pre-war Gardner-engined Albion in the world and is of special interest to the group. After working on the engine for two days, Craig Parkinson managed to get the vehicle operating, which was no mean feat after 12 years in storage.

David Rawlings re-installs pull-offs removed during construction of the workshop extension framework.
Bill Parkinson


FAIRWAY
ALL TIMES
NOT IN SERVICE


30
CITY
848
Forget
the
fairylights...