

# FARES PLEASE!

November 2004

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*Ballarat Trams are Ballarat History*

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Museum Accreditation Program  
Accredited Museum

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## **BTM's Traction Power Problem**

As most readers will be aware, the Ballarat Tramway Museum suffered a loss of Traction Power following a lightning strike, which lead to equipment failure or identification of equipment that could not be economically repaired. This has resulted in the BTM not operating a tram service for a period of about two months.

### *To recap our situation:*

On Wednesday 13th October, a lightning strike very near to the depot resulted in serious damage to our substation. After checks and replacement of diodes, fuses and other equipment, we were able to get the power supply up and running for the following weekend. However, on the morning of Tuesday 19th October, a small fire occurred in the main AC traction switchgear. This piece of equipment could not previously be examined thoroughly, due to being live, but was most likely also damaged by the lightning strike. The fire brigade attended quickly to extinguish the fire and Powercor immediately disconnected the power supply to the depot as a result.

No persons were injured and no trams were damaged, however the switchgear itself, and a considerable amount of associated wiring, was totally destroyed.

The 415V AC power was restored back to the depot by Powercor on Friday October 29th after an electrical contractor installed a new main traction switch, two new switchboards plus a host of other equipment and rewiring to bring the installation up to current standards. The cost for this work is estimated to be well over \$6,000.

At this point in time we could have also run the traction power system had our technical crew not been concerned with the health of the Isolating Transformer. The Isolating Transformer is by far the largest single piece of equipment in the sub-station and is an essential item that enables us to produce the required 600volts DC to run our vintage trams. After conducting standard tests concerns were raised that the transformer may have been damaged by the lightning strike and it was removed and transported to ABB Yarraville for examination and possible repair.

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# Ballarat Tramways News

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An Isolating Transformer is a vital component in the production of DC for electric traction. Without it our equipment would cause a direct short circuit on the incoming AC mains supply. For the technically minded, it converts the 415V AC three phase supply from an “earth referenced” system to a “non earth referenced” or pure three phase AC system to allow us to connect the negative side of the DC supply to ground.

After mandatory testing for toxic PCB contamination, the transformer was dismantled in early November and inspected for damage. Unfortunately being over 60 years of age the transformer, which had suffered substantial internal damage, both from the lightning strike and from water contamination, was deemed to be uneconomical to repair. Now that all of the other works have been largely completed, this is the only piece of equipment we need to get our trams operational again. The old transformer has since been sold for scrap, though the specification plates were collected for the BTM’s archives.

The Board has reviewed the situation in detail, examining all available avenues including the possibility of borrowing a suitable unit from one of our fellow COTMA museums in Australia. The most desirable long term solution, though expensive, is to have a new isolating transformer manufactured for our needs. It has been 30 odd years since we built the previous unit from a second hand power transformer. Such equipment is now available on the market with a four to six week delivery period as a similar design is

also used in many industrial installations for power conditioning. While the cost of a new transformer being around \$16,000 seems high, it is expected that such a unit would see us through many years of trouble free operation and eliminate the need to worry about replacements for several generations.

### *An update:*

Following a Board meeting on Monday 9 November, it was determined to order the new transformer from Coast Electrics of Wollongong, at a cost of \$16,500, with a delivery period of about 4 weeks. Garry obtained some 5 quotes for this item, with varying costs and with delivery periods as long as three months. The manager of the chosen supplier had been a past visitor to the Museum and undertook to expedite the works as much as possible to allow us to resume operations. We have kept a close watch on the production of the new unit and at the last report it was on time for delivery in the second full week of December.

In the meantime our depot crews lead by Garry Wood and Paul Mong and ably assisted by Alan Snowball, Dave Macartney and numerous others, have undertaken preparations to install the new transformer. As it is a different size and shape to the previous unit, the DC panels in the sub-station have been re-organised, the access doorway relocated and the room expanded in order to replace the existing DC circuit breaker with second hand but newer automatic line breakers at a later stage.

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The way the sub-station is controlled is being changed as well. Crews will no longer need to go into the area to switch on the power, but will be able to do this from the mess room through a key switch and a start button.

The automatic line breakers will enable control of the Wendouree Parade and depot power supply by means of small switches with lock out facilities, rather than by mechanical hand operated circuit breakers as is the current situation.

The 600V cabling has been re-organised and renewed, along with most of the AC mains etc. By the time we finish the project, our team will have rebuilt the sub-station almost completely.

All going well, we should be fully operational again by Christmas. Given that we will have been shut down for over two months, a plan has been prepared to re-activate the tramway overhead and track to ensure operational safety.

## Appeal Outcome

The outcome of the appeal for funds to assist with the meeting the cost of purchasing the new isolating transformer for the BTM to get our trams operational again has been most pleasing. So far some \$13,000 has been received from about 100 people or organisations. Separate letters have been written thanking all those who have donated so far.

The Board is most grateful to the Association of Railway Enthusiasts who supported us by including an appeal sheet in their November mailout. A number of donations were received from their members., Ballarat's daily newspaper, *The Courier*, also reported on the situation, that an appeal was being held and where donations could be sent to. A number of readers have made donations, again very pleasing to the Board.

If you have not already donated, your donation would be most welcome. At time of publishing, about 50 members have already done so.

It is planned to formally acknowledge all donations to this special appeal by providing a plaque or a sign listing all those who have donated to the appeal.

In the mean time, thanks to all those who have given to this appeal.

## Resumption of Services

With our fingers crossed, we are planning to celebrate the resumption of tram services and oddly enough, the thirtieth anniversary of the start of the BTPS electric tram operations in Wendouree Parade on Boxing Day, Sunday 26 December 2004.

It is planned to publicise the day by offering rides by donation on the day and possibly some other activities as well. So if you have time on Boxing Day, please drop in and visit us and ride a tramcar.

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# 4..Fares Please!



Above: The old main traction power switch – after the fire.  
19 October 2004. **PAUL MONG**



Left: Garry Wood – works on the relocation of the main DC breaker panel.  
Saturday 30 October 2004.  
**WARREN DOUBLEDAY**

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Paul Mong and Alan Snowball work on the relocated doorway to the sub-station Saturday 30 October 2004.

**WARREN DOUBLEDAY**

Alan Snowball wheels out the old Isolating Transformer to be transported to Melbourne for inspection.

21 October 2004. **PAUL MONG**

# G. Fares Please!

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## **Traffic News**

Traffic News? – You might well ask why this bit. Although we have not been operating, missing out on a number of charters, the depot has been open and the rostered crew providing a depot host service for visitors. Signs have been placed out on the various stops directing potential visitors to the depot. Thanks to those who have provided this service.

## **Resignation**

Long time Board member, John Phillips, has decided to withdraw from active participation in the Museum's activities. We thank him for his contribution and wish him well in his future endeavours. Paul Mong has agreed to join the Board in John's place.

## **New Members & Membership Renewals**

The Museum would like to welcome back Lawrence Savage of Colac as a Member. Lawrence first joined the Museum in 1972 and has been reallocated his original membership number of 269.

Membership reminder notices were posted recently to the few members yet to renew. Only a handful have yet to respond and most of them are expected to renew eventually.

## **Fares**

After a thorough discussion concerning the financial situation of the Museum the Board has reluctantly agreed to increase the fares. The last increase was in November 1998 and since then the Museum has absorbed the GST and weathered a 1000% increase in our Public Liability Insurance premiums. The new fares will be \$3.00 for Adults and \$1.50 for children and pensioners. The Board agreed to discuss the possibility of a Family Ticket in the New Year.

## **Public Liability Insurance**

Our present PLI insurance is provided by the Victorian Managed Insurance Authority at the direction of the Victorian State Treasurer. It is acknowledged that it has not been inexpensive. The VMIA believes that the insurance market has "softened" and the heritage operators should now be able to insure at a lesser premium through the market especially if they work together as a group. The current arrangements have been extended until 31 March 2005 by which time the VMIA would hope the operators to have found alternative cover. The Museum is currently working through the Association of Tourist Railways to seek such an outcome. The groups have been assured that if the deadline cannot be met the VMIA will continue cover until new arrangements are in place. The Museum again acknowledges the Victorian Government's commitment to keep heritage operators running.

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## **30 Years of Operation (or almost!)**

On Boxing Day the Museum will celebrate thirty years of continuous operation. Apart from the unfortunate events of the last two months, the Museum has only missed three operating days during the last thirty years, an outstanding achievement. It is intended to celebrate the occasion in a fairly low key fashion. It is expected that the tramway will be operational by the day and rides by donation will be offered.

## **In the Workshop**

To say that a few things have happened since the last issue of *Fares Please!* would indeed be an understatement. As you will have read elsewhere, the damage to our substation from a lightning strike and subsequent fire have provided a significant challenge to the resources of the technical services group with everyone in the team pitching in and making an extra special effort to get the tramway back in operation.

The first week following the damage was extremely hectic as arrangements were made to obtain replacement parts and contractors employed to undertake the rewiring of the AC mains supply. The monumental task of removing our 2 ton transformer from its home of 30 years and transporting it to Melbourne for examination took two long days and necessitated the removal and replacement of parts of the substation wall plus the hire

of trucks, cranes and associated equipment. Once in Melbourne we had to endure a wait of over a week to find out the likelihood of repairs being possible. In the meantime works continued on removing and replacing damaged items and coordinating the electrical contractor who had been employed to undertake the works needed for us to at least have mains electricity again. Things seemed to be getting back on track by the end of the second week since we finally had power to the depot and no longer had to work with only petrol generators and battery lights. At about this time we discovered however that the old transformer would not be repairable and so we faced the prospect of obtaining a replacement. After what amounted to tens of hours spent on phone calls to manufacturers all over Australia and calls to other tramway museums, electrical surplus suppliers and industry contacts, we felt confident in our decision to pursue the purchase of a new unit with an almost identical specification to the previous transformer.

Since then work has moved steadily forward with the installation of cabling and components for the new DC supply and as of the time of writing has reached a point where almost all that can be done prior to the new transformer being supplied is now complete.

At this time I would like to extend a very hearty thank you to all of those who have been involved in the work done to date and while there are still a number of hectic days ahead I hope that everyone will have the chance for some well earned rest and relaxation over the Christmas period.

# 8. Fares Please!

## From the Editor

By now many of you will have noticed that this edition of *Fares Please!* has been mailed to you slightly later than usual. Owing to the importance of the events over the past couple of months it was decided to hold over production of *Fares Please!* until we could provide our members with all available information regarding the substation failure, and our eventual return to operation.

As previously mentioned on page 3 the appeal is still open for those who wish to send in any donations towards our new transformer.

Mail your cheque/money order or credit card details to:

The Treasurer,  
Ballarat Tramway Museum,  
P.O. Box 632 Ballarat 3353.

Donations \$2 or over are tax-deductible.

Finally, the Board, depot and traffic staff wishes our members, their families and friends a very merry Christmas, and a healthy, prosperous New Year and look forward to seeing you in 2005.

Simon Green,  
Editor.



Left: As reported in the September edition of *Fares Please!* The B.T.M. received a grant from the Museums Australia *Building Better Regional Museums* Grants Program. Frank Puls proudly shows off the portable display banner purchased with some of the funding.

Saturday 30 October 2004.

**WARREN DOUBLEDAY**

**Fares Please!** is published six times a year in alternate months commencing in January and is distributed to members and friends of the Ballarat Tramways. For further information regarding the Museum activities and publications, please contact : The Secretary, Ballarat Tramway Museum Inc. (A0031819K), P.O. Box 632, Ballarat Vic. 3353. Phone / Fax (03) 5334 1580.

E-mail: [btm@netconnect.com.au](mailto:btm@netconnect.com.au)

Our web page: <http://www.btm.org.au>