

Ballarat Tramway Museum

Fleet Conservation Policy

1.0 Aim

Provide a policy framework for the conservation of the Museum's tramcar fleet and associated collection to assist administrators and staff.

2.0 Purpose of Policy

The purpose of the Ballarat Tramway Museum (BTM) Fleet Conservation Policy is to:

- form a set of guidelines and directions for future conservation work on the existing fleet of trams held by the Museum
- formulation of guidelines for exhibition, standards, operational configurations and liveries
- allow others not directly connected with the Museum to understand the background of the policy
- establishment of a policy that enables past errors to be identified and rectified.
- provides the guidelines for the conservation of the Museum's collection in general.

3.0 Guiding Principles

3.1 Conservation Policy - Theoretical factors

The Museum¹ adopted in 1993, the Institute of Engineers Engineering Heritage and Conservation Guidelines. These are based on the Burra Charter.

Some important definitions from the Charter are:

Conservation means all the processes of looking after a place so as to retain its cultural significance. It includes maintenance, and may according to circumstance include preservation, restoration, reconstruction and adaptation and will be commonly a combination of more than one of these.' (Article 1.4)

The aim of conservation is to retain the cultural significance of a place (or object in our case) and must include provision for its security, its maintenance and its future. (Art. 2)

Conservation is based on a respect for the existing fabric and should involve the least possible physical intervention. It should not distort the evidence provided by the fabric. (Art. 3)

The conservation policy appropriate to a place (or object) must first be determined by an understanding of its cultural significance. (Art. 6)

¹ The Ballarat Tramway Preservation Society Ltd. was reincorporated as the Ballarat Tramway Museum Inc. in August 1995.

3.2 Museum Policy

The policy of the museum is set out in the objects of the Rules of the Association. The relevant objects are:

1. To establish at Ballarat an authentic working tramway museum as a tourist historical and educational attraction. (Object B)
2. To acquire, conserve, exhibit and operate trams in a safe manner on the Ballarat tramway system and elsewhere. (modified Object C)
3. To establish at Ballarat a transport museum and for that purpose to purchase take under trust or otherwise acquire any item of transport equipment or of tramway historical significance and to maintain repair preserve exhibit and operate the same.

The general policy of the Museum has always been to make alterations or modifications to trams only after consideration by the Board.

3.3 Museum Collection Policy

A Collection Policy with regard to its entire collection was adopted by the Museum in May 1992. This document has been reviewed a number of times since. Section 5.1 covered the tramcars and is repeated for background information in deriving this policy.²

5.1 Tramcars

The tramcars are the primary collection items of the Society and form the operating section of the museum. While these form the largest single collection item in terms of physical size, they are the smallest in numerical number. The history of the individual trams are reasonably well documented. In the case of tramcars, it is the body number that is considered unique to that car, ie its essence, not its trucks or mechanical equipment, which was often swapped between trams.

The collection has a number of duplications. This is necessary from an operational viewpoint, where restoration or maintenance of a tram to operating condition, can take a volunteer organisation such as ours, a number of years. It also allows the Society to represent the various colour schemes that were used on the various trams. This adds to the visual impact of the collection and enables better interpretation of the story of Ballarat's trams.

To assist in the understanding of the importance of the individual trams to the collection, a classification is suggested. This is:

- Essential** - *BTPS ownership, or under long term control and an essential tram in relation to the history of the tramways of Ballarat. They would not be loaned out, or only leave Ballarat on temporary transfer under the most stringent safeguards.*
- Desirable** - *Not necessarily owned by the BTPS, but completes history of the Ballarat Tramways or useful to maintain or have as an operational part of the collection.*
- Supplemental** - *Owned by the BTPS, but not needed to illustrate the history of the Ballarat Tramways, and/or in poor condition.'*

² This document revised December 1995, primarily for name change. Classifications remained the same.

The classification shown in the table of Section 4.3, is based on the above categories; although as the Collection Policy pointed out, this is somewhat subjective.

3.4 General Policy Considerations

There are a number of general considerations that must be given in formulating a conservation framework for a museum environment. In particular, a museum that operates its tramcars in a public street. At the present time the trams are operated in a relatively safe environment. These considerations are:

- Need for operating the tramcars safely and in a manner that would meet any safety accreditation standards.
- Tramcar operations in a street environment provides a good method of interpretation to the general public.
- Active service in traffic presents specific hazards and problems. (See Conole and Hallett)
- Virtually all the trams are not generic to Ballarat. That is, they have a cultural significance beside that of Ballarat; although they have spent most of their working lives in Ballarat.
- In the past, a number of errors have been made in work undertaken by the Museum. As outlined in Section 2.0, the policy aims to assist in identifying and rectifying these for the future.
- Good records of any work undertaken on the trams are maintained in order for future conservators to know and understand what work was done in the past and when.
- Commercial considerations have to be balanced against the conservation aspects. This is important to ensure that sufficient and secure financial resources are available to enable the tramcars to survive for future generations.
- That prior to the use of new materials and work practices, these continue to be assessed as to their long term suitability, stability and whether there is any possibility of destruction of past evidence of former methods, materials, etc.
- The possibility that the trams could operate again on a larger system in Ballarat.

3.5 Non-Tramcar elements of the Collection

The conservation of non-tramcar elements of the collection will be undertaken to methods and practices recommended by publications such as *reCollections*, 2000, published by Heritage Collections Council of Australia.

4.0 Policy Basis

4.1 Museum Objectives

The objective for the conservation and presentation for exhibition is derived from rules of the Association and the Museum's Mission Statement. The Museum's Mission Statement states that we *Continue the development of a working museum to preserve the style of Ballarat's former street tramways and trams for the public benefit.*

These objectives imply that the various trams are to be conserved and exhibited faithfully to

convey the past operating practices and styles of Ballarat's street tramways. This is in order to display and maintain their cultural significance. In this way, the operating history of each tramcar should be known and when joined with the various operators (i.e. BTCo, ESCo and SEC), a presentation style can be developed.

4.2 Display Themes

Section 4 of the BTPS originated Collection Policy gave the collection theme as:

The theme has been constructed from the relevant elements of the policy basis outlined above, the need to tell the story of an aspect of society in the way that it lived in the past, and the present BTPS Board's aims.

The collection theme for the museum functions of the BTPS is 'the history of Ballarat's passenger tramways, its people, equipment, development and operation in relation to the history of Ballarat and the State Electricity Commission of Victoria.'

The basic principle behind our overall exhibition is to present at least one tramcar in each of the significant body configurations and its respective operator's colour scheme. However some tramcars, such as No. 40 are to remain in their final SEC configuration.

a) Operators

1887 - 1905 ³	Ballaarat Tramway Company (BTCo Horse Trams)
1905 - 1934 ⁴	Electric Supply Company of Victoria (ESCo)
1934 - 1971	State Electricity Commission of Victoria (SEC)

b) Display Configurations

An outline of history of body configurations, styles and types in date form is as follows:

1887 -	Horse trams, some yellow and cream, others probably red and cream.
1905 -	Electric trams - Columbia red and white
1930 -	Indian red and gold
1930 -	Early ex MMTB trams (24-28) converted (stage 1) for one man operation; barrier rails screwed down, pane of glass removed and passageway cut through seat.
1931 -	Second batch of ex MMTB trams (16-20) panelled to waist rail level, part of driver's bulkhead removed with access through former driver's door. (Stage 2)
1935-38	All ex MMTB California combination cars converted to final form with longitudinal seats and stable doors at four corners. (Stage 3).

³ ESCo purchased the Horse Tram Co. in December 1902, and ran the horse trams until electrification in August 1905.

⁴ SEC supervised ESCo's operations from 1931 to 30.6.34.

- 3/1935 - No. 27, is the first tramcar painted in SEC colours of green and cream, with cream rocker panels.
- 1945 - First ex Melbourne maximum traction bogie trams acquired.
- 4/1946 - Cream rocker panels started to be painted over by green colour, and the green changed in colour. Last car repainted in 5/1950.
- 1952 - Four red tail lights, one in each lower corner of each apron fitted.
- 1956 - White reflective tape fitted to aprons and bumpers.
- 1961 - Dash canopy lighting fitted with 4 white lights and two red tail lights fitted to trams. Initially the white strip was painted within the canopy, but this was later (1965) extended half way down the aprons.

c) **Body Styles**

The museum electric tramcar fleet consists of the following body styles:

1. Single Truck - straight sill, open combination (No. 12)
2. Single Truck - drop ends, open California combination (No. 26)
3. Single Truck - drop ends, modified California combination (Nos. 11, 13, 14, 18, 27, 28, 32 & 33).
4. Single Truck, straight sill, closed cross bench (No. 21) known as a Sebastopol type.
5. Maximum Traction truck bogie (Eight wheels), drop end and centre combination (modified and unmodified) Nos. 38, 39, 40 and 121.
6. Equal wheel truck bogie (Eight wheels), drop centre combination (Nos. 661 & 671)
7. Single truck, straight sill, work tram (rail groove and scrubbing) (No. 8)

Definitions:

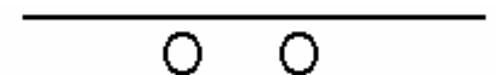
Truck - self contained rectangular frame for the wheels, axles and motors detachable from the tram car. Four wheel trams have single trucks, eight wheel trams have two independent four wheel bogie trucks (or bogies).

Single Truck - four equal diameter wheels, two motored axles fixed to the underside of the tramcar.

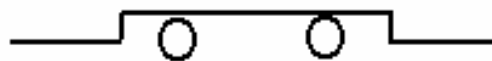
Maximum Traction Truck - Two large diameter wheels on one motored axle (Driving wheel) and two small diameter wheels on an un-motored axle, known as Pony wheels. The tram has only two motors.

Equal Wheel truck - four equal diameter wheels, on two motored axles, ie, the tram has four motors.

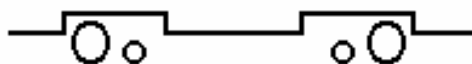
The following sketches give an outline of the floor shape of the tramcar.



Single truck, straight sill

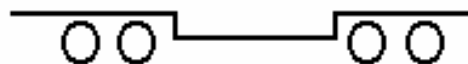


Single truck, drop ends



Bogie, drop ends & centre

"Maximum Traction"



Bogie, drop centre

"Equal wheel"

4.3 Current Status

Table 1 illustrates the current status of the Museum's tramcar fleet. The classification is drawn from the Museum's Collection Policy and is presented in 'Date to Ballarat' order.

Car No.	First Ballarat Operator	Type	Classification	Date to Ballarat	Current Status
1	BTCO	Horse car	Essential	1887	Reconstructed to original style, some minor work yet to be completed.
12	ESCo	Single Truck	Essential	1905	Undergoing Reconstruction. Conservation Plan prepared.
21	ESCo	Single Truck	Essential	1913	Body would need very extensive work. Stored off site
26	ESCo	Single Truck	Essential	1930	Reconstructed to 1930 condition as a 'California combination' car, some minor work outstanding. In ESCo livery.
27	ESCo	Single Truck	Essential	1930	In service in 1935 livery of SEC.
28	ESCo	Single Truck	Desirable/ Essential?	1930	In service, ESCo livery.
18	ESCo	Single Truck	Desirable	1931	Owned by City of Ballarat. In service in early 1960's livery. Was acquired by Borough of Sebastopol from the SEC.
11	SEC	Single Truck	Desirable	1935	Missing motors, needs extensive body work, stored.

32	SEC	Single Truck	Desirable	1935	Stored, needs extensive body and mechanical work.
33	SEC	Single Truck	Essential	1935	In service in late 1960's livery; not yet repainted by BTM.
13	SEC	Single Truck	Desirable	1936	Owned by Lake Goldsmith. In service in late 1960's livery.
14	SEC	Single Truck	Desirable	1936	Owned by City of Ballarat. In service in late 1960's livery. Was acquired by the City of Ballarat from the SEC in 1971.
38	SEC	Max. traction bogie	Essential	1951	In service in early 1960's livery.
39	SEC	Max. traction bogie	Supplemental	1951	Converted to a museum display and souvenir sales centre. Display in early 1950's livery.
40	SEC	Max. traction bogie	Essential	1951	In service in 1960's livery. Not yet repainted by the BTM. Official Last Tram in Ballarat
8	<i>BTM</i>	<i>Single truck works car</i>	<i>Supplemental</i>	<i>1999</i>	<i>In service, undergoing body and equipment repairs pending a repaint.</i>
661	<i>BTPS</i>	<i>Equal wheel bogie</i>	<i>Supplemental</i>	<i>1976</i>	<i>In service in MMTB 1920's livery. Did not run in Ballarat under SEC.</i>
671	<i>BTPS</i>	<i>Equal wheel bogie</i>	<i>Supplemental</i>	<i>1976</i>	<i>In service in BTM created livery using City of Ballarat colours. Did not run in Ballarat under SEC.</i>
121	<i>BTM</i>	<i>Max. traction bogie</i>	<i>Supplemental</i>		<i>Body under control of BTPS/BTM since 1977. Stored off-site. Did not run in Ballarat under SEC.</i>

TABLE 1

(Trams acquired after closure of the Ballarat tramway system in 1971 shown in italics)

4.4 General Policy Recommendations

The following recommendations are made with regard to the policy.

- a) The trams be conserved in line with any written policy or planning document.
- b) The trams are accurately conserved to conform within an era of their previous working life in order to preserve Ballarat's street tramway history and maintain their cultural significance.
- c) Further research into the operating history of each tram to be carried out.
- d) Exhibition themes should be further developed. Each significant body

configuration and livery should be presented where possible.

- e) That all physical and maintenance work on a tram is recorded and done in a manner that minimises the destruction or any significant alteration of past work, practices and/or styles.
- f) That where practicable, identical materials and work practices in securing these materials as used in their formal operating days be followed in the future.
- g) Any use of new materials and methodologies that will alter the original characteristics of the tram are to be fully assessed prior to use. This does not apply to use of tools that are used to fix the materials into position.
- h) If there is consideration of an incorrect livery or modification to a tram that operated in Ballarat prior to 1971 for a commercial reason, then any work undertaken should be reversible in the future.⁵
- i) In the case of the tramcars that arrived in Ballarat after Sep. 1971, all modifications and applied liveries should be able to be reversed if required in the future.⁶
- j) Repainting of tramcars that arrived after Sep. 1971 trams to a SEC or earlier style colour scheme is not considered to be good museum practice. Any proposal for this should be fully considered prior to implementation.
- k) Great care and full consideration shall be taken in any decision to duplicate or replicate any former Ballarat tram with another tramcar.⁷
- l) In any consideration for the modification of the operational equipment or bodies to the pre 1971 Ballarat trams in order to meet any regulatory standards that may apply, then any work undertaken should be reversible in the future. Consideration also should be give to conserving representative samples of each type to which no changes or minimal changes are made and that special operating conditions be applied to the tramcar/s.

5.0 Presentation Plan

5.1 Presentation styles and colour schemes

5 The Conversion of No. 39 as part of the depot display was done in manner that would make reconstruction in the future feasible. Major components have stored under the body. The body structure would need extensive work to make it available for service.

6 See Museum Victoria letter 25/9/95 for further points on this matter.

7 The only body type of ESCo tramcar the Museum does not have an example of, is the Toastrack tramcars No. 19 and 20 of 1905. No remains of the these tramcars are known to exist. Any reconstruction of these trams in the future would be a total replication with some conjecture as to the nature of construction. The reuse of the number 19 or 20 would be acceptable provided it was displayed as a replica tram.

The following presentation styles shown in Table 2 and colour schemes have been adopted (subject to Board approval). Many of the trams, e.g. 26 and 27 have already had a presentation style and livery applied previous to the preparation of this document. These are, at this time, generally treated as being a given. The reasons given in the Comments column is subject to further research, which could alter the result.

Car No.	Presentation Style	Comments - see also notes on following page
1	BTCO original colours	As is. The tramcar was the first tram in Ballarat, and appears from photographs to have had a special colour scheme. The colours have been based on research and rubbing back the panels found on the tram. Further work to be done.
11	SEC 1950's (no dash canopy lights?)	Can only be painted in SEC colours, as it came after the SEC take over in 1934. Interior has been painted pink and green, as was done to only four trams (11,21,39 and 42) by the SEC in the 1950's. Suggest paint exterior in the colour scheme of the time of the painting of the interior.
12	ESCo original colours	See Conservation Plan for this tram
13	SEC as completed	As is
14	SEC as completed	As is. Possibly glaze ends for a winter car*.
18	SEC mid to late 1950's without extended white dash.	As is. Represents the mid-point in the fitting of dash canopy lights
21	ESCo as in 1913	See notes
26	ESCo/SEC Red and yellow	As is, some further work to be done, see notes.
27	SEC 1935 green and yellow	As is, although colour not correct.
28	ESCo/SEC red and cream in period of panelling in the drop ends.	Transition between 26 and 27 with closed ends, but early colour scheme. Note the body/door details are not correct – had smaller doors originally.
32	MMTB (No. 186)	Long term project - California combination tram along with 26?
33	SEC as finished	As is – examine possibility of preserving existing paintwork as long as possible.
38	SEC mid to late 1950's without extended white dash.	As is. Represents the mid point in the fitting of dash canopy lights
39	SEC pre 1956	As is (check tail lights and reflective strips)
40	SEC as finished	As is, due to last tramcar status
8	To be determined as at 1/8/2002	See notes. Planning yet to be finalised,
121	To be determined as at 11/12/95.	See notes. Conservation Plan to be formulated.
661	Keep as is for present	See notes
671	Corporate Colour scheme	See notes

TABLE 2

* temporary glazing panels using perspex have been fabricated so that they can be fitted in a temporary nature to most of the single truck trams,

5.2 Tramcar Notes

No. 1 - Some minor work to be completed; bell cords, signs, bells, etc. and numbers should be in gold leaf.

No. 11 - This tram is one of a few with a painted Parisian Tan and Winter Green interior. It is suggested to keep this and it does show one attempt at improving the appearance of the tramcar interiors for the public benefit. Interior to be repainted as present. The tram is fitted with wooden exterior panels as built; suggestion is to rub down to check on 1935 colours and lining arrangement. It is the only Ex MMTB tram to survive with original timber panels. As a result it is important evidence of earlier times. Replacement of these with steel panels is necessary for continued operation. The removed wooden panels are to be stored to enable the conservation of the panels. Suggestion is to paint the tram exterior in the colour scheme that it had at the time of the interior being painted. Other fittings etc. would follow.

No. 12 - See separate Conservation Plan for details

No. 13 - The green paint applied to these trams by the Museum and supposedly to represent the standard SEC green of the 1960's is slightly off colour (darker). However with current paint technology a more exact match should be able to be obtained. The paint colour should be corrected during any future repaint. Car numbers should be in gold leaf.

No. 14 - Note re paint colour and car numbers for No. 13 refers as well. One possibility being considered is providing a removable glazing system for this tramcar.

No. 18 - Note re paint colour and car numbers for No. 13 refers as well.

No. 21 - Subject to the preparation of Conservation Plan similar to that of No. 12 prior to work commencing. At the time of the preparation of this policy it is possible that the Museum may also obtain the body of similar tramcar, No. 22. If this is the case, then a decision will need to be made as to which body is conserved.

No. 26 - Tram colours proposed to remain basically as is unless further information comes to light. There is a need to review cab doors and windshields as they were supplied in Melbourne and the tram may have run in Ballarat with them. Also was gold leaf lining to the ceilings applied to these trams when they came from Melbourne? Further work to detail the tram required.

No. 27 - It would appear from the sample 'Pay as You Enter' sign obtained with the Wal Jack collection, the green used for this era was actually darker than the colour used in the repaint of the tram. The present colour was based on Bendigo Trust's earlier repainting to this scheme. Body style correct.

No. 28 - If 11 is repainted in the 1940's/50's SEC livery then this tramcar can be painted into another colour. Suggestion in 1995 was to the ESCo colour scheme, in which it would have been painted at one time. (photograph exists) Could set the car up during the change over period between a strict California combination and the SEC Ballarat style. This would

result in another red tram in service. The relocation of the pillars to correct position could be done, although this would constrict the doorway opening. It also would result in only one door on each side instead of two. Door would be on the front left hand side of the car, ie offside when running in traffic. Problem if running north in Wendouree Parade would be the front or driver's door would be on the wrong side to load passengers. A compromise may be needed. Further work to be done on these circumstances.

Repainting of the tramcar into this colour ESCo colour scheme completed 2002.

No. 32 - The popularity with our passengers of tram 26 for both its colour scheme and body design can hardly be disputed. A strong case could be made for another conversion to an open ended configuration. However 32 did not arrive in Ballarat until 1935, and would probably have been converted directly to the current enclosed design (Ballarat SEC layout). One possibility is to convert it to back to a strict California combination, paint it in M&MTB colours and this could be a commercially viable option. This car requires a reasonable amount of body and mechanical work to return to service, but the structural condition is sound. Would be a long term project, so option to change direction remain. It is understood that the tram did operate in Ballarat in the proposed configuration for a short time prior to repainting. This would give two open California Combinations for summer work. Another possibility is 1930's SEC colours to go with 27.

No. 33 - Although it will require a repaint in the future, it the only single truck so far not repainted. It is still in good condition. Therefore, the paint colour is the best remaining example of the actual green colour we have.

No. 38 - As for 18.

No. 39 - Check to be made as to actual finish re tail lights, reflective strips etc.

No. 40 - Last official Ballarat tram in service. To remain in the 1971, ie with advertisement boards. To be repainted along with some minor body repairs.

No. 121 - An ex M&MTB maximum traction bogie tram held in the BTM collection.⁸ This body was acquired when it was difficult to obtain ex Ballarat trams. A formal decision as to the future of this car will be required. Four suggestions in order of preference for reconstruction are:

- a) As Hawthorn No. 15 - an acceptable alternative.
- b) As M&MTB No. 121 - sister trams ex Melbourne did operate in M&MTB colours in Ballarat prior to repainting.
- c) Do our own thing, ie do not go for historical correctness.
- d) Fit out, paint and number as a Ballarat tram. This would not be correct or good museum practice in accordance with above recommendations.

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Built by Hawthorn Tramway Trust as their No. 15. Taken over by MMTB and became No. 121.

No. 661⁹ - The 'as painted' condition of the M&MTB chocolate and cream is not historically correct for the tram. Such a livery decision to do this would not probably be taken today. Question is what livery to paint the tram. Problems are similar to that of 121. The car body needs some repair work as a result of an accident while in Melbourne some years ago. Some suggestions are:

- a) Leave as is.
- b) Repaint in a historically correct M&MTB livery.
- c) Our own corporate colour scheme.
- d) An all-over scheme designed by and done by a local artist or art students.
- e) Carry 'bolt-on' art works by local artists etc. Holes for this on the major side panel exist.

Recommendation at the time of preparation of this document is options a) and e). Note this is not an important priority project. The tramcar could do with body repairs and minor patching works.

No. 671⁹ - At the time of the initial policy preparation, the tram was prepared ready to be repainted in M&MTB 1950's livery. Analysis showed that the problems were similar to that 661 and similar suggestions applied except for a). These are:

- a) Not applicable
- b) Repaint in a historically correct M&MTB livery.
- c) Repaint in our own corporate colour scheme.
- d) An all-over scheme designed by and done by a local artist or art students.
- e) Carry 'bolt-on' art works by local artists etc. New holes for this purpose would be needed.

Recommendation during the finalisation of this document, was that option c) be adopted (Sep. 1995 Board meeting - item 7A, reflecting the City of Ballarat corporate colours.) This decision has subsequently been implemented, and the tram was launched on 4.12.95.

⁹ Marker lights fitted to each end of the 661 and 671 in 1999 using bicycle battery powered lamps for use during night charters. These have been located underneath the bumper bar.

No. 8 – Ex MMTB/PTC No. 8W, originally known as No. 8. Suggestions being considered for this tram at the time of updating this document are:

- a) Repaint back to the MMTB 1930's colour scheme – green and cream, with less side lights. Would require the removal of the body bracing and many other components to be of the original appearance.
- b) Repaint to the MMTB 1961 livery of string and black.
- c) Paint to a 'corporate' colour scheme using colours similar to No. 671 or reversed in emphasis, that is primarily white with some blue.

5.3 Time Scale Comparison

The following list based on table 2 shows the various colour schemes over the years and how the trams would represent this.

BTC_o - (1887 - 1905) - 1

ESC_o colours schemes (1905 - 1935) - 12, 21, 26 and 28

SEC first colours (1935 - 1945) - 27

SEC second colours, (1945 - 60) pre dash canopy - 11 and 39

SEC small white dash - (1960 - 65) - 18, 38

SEC as finished (1965-71) - 13, 14, 33 and 40

6.0 Conservation Work principles

6.1 Background

The physical conservation work on the Museum's trams involves a number of aspects and these often result in compromises to achieve the final results. Some of these are:

- safety of the public and staff
- the use of the tram leads to wear and deterioration in the various components, with the need to replace them resulting in the loss of evidence of past practices
- the existence of hazardous materials such as asbestos
- better materials and products to protect for example, tram roofs, than existed in their operational days
- that the trams have had an operating life of many years, including accidents, resulting in different repair techniques being adopted by workers some of whose techniques were of a low standard
- work carried out by the museum in the past has not always been of a good standard and with some doubtful conservation practices
- the desire to have a first class job at the end of the conservation work can lead to over embellishment and sometimes falsification of the finished product
- the person undertaking the work has their own ideas, skills and principles that will affect the final product
- available financial and labour resources.

The proceedings of a seminar *Heritage Artefacts, hands on, hands off?* is an excellent

publication that addresses many of the conservation issues. Some relevant quotations from a paper by Graham Clegg of Powerhouse Museum are:

'Museums are in the dual business of preserving information and telling the truth.'

'An object's manufacturing history is told in its materials and construction methods. It's working story and history are contained in its degraded surfaces, its wear patterns, its modifications and repairs and each are as much as document as are words on paper.'

'..the unjustified polishing of components and application of high gloss paint systems to what were once vehicles and machinery known for their poor or utilitarian finish.'

'..we must ensure that in either conservation, restoration, or actual working, we preserve what information the object has to convey. To do so otherwise, either by over-restoration or embellishment, is to alter history, to tell lies to our visitors, and to falsify objects for future generations.'

In many projects, people often state 'it has been restored to original condition!'. An impossibility for a 75+ year old tramcar if one takes that statement literally. What is original? This problem was addressed in a 1993 article on English steam locomotives¹⁰.

6.2 Undertaking the Conservation Work

It is not the purpose of this document to set out a full set of rules of how work should be undertaken. It would be very long and virtually pointless. However it is aimed to set out some guiding principles to work by and to be taken into consideration.

1. Understand the object or piece you are working upon. What is its significance in the overall object and its functions? Has it safety problems? In other words think before undertaking work and take the appropriate steps.
2. Do not alter the final appearance of an object unless absolutely essential. For example do not use TEK screws in work, ie keep to the correct materials and fastenings. Another point is the use of enamel paints, not acrylics.
3. Keep records of what you have done, especially if any work alters something. If parts are removed or scrapped due to wear etc, see whether they should be stored as archives for reference in the future.*
4. It is not only the tramcars that are being conserved but their technology. If you add something to the object to strengthen it, or make a change to the way it operates, make sure it can be differentiated as such in the future.
5. Be familiar with the appropriate methods, materials and use them to the best of your ability.

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Gerard M-F Hill, 'The Only Genuine Article?', Steam Railway December 1993, pp 63-64, looks at the philosophy of preservation in the English steam locomotive arena. Copy appended.

6. Talk to others with appropriate experience if you are uncertain on what you are doing or just to confirm that you are doing the right thing. Find out what other museums have done about the problem.
 7. If an object has safety problems, undertake a risk analysis and make appropriate decisions, for example replacement of asbestos,* use of safety glass is virtually mandatory, but some items though they would not meet today's safety standards can be acceptable if appropriate procedures and protective measures are made. An example is the use of air-brakes on a tram that was not fitted with them.
 8. Don't over embellish.
 9. If a method of work can be improved, or better products are available to do something, check that it is suitable and not likely to result in more extensive deterioration in the future.
 10. Keep all work faithful to the object's history and cause.
 11. Paint colour matching - keep samples of all paint coatings on the trams, as a reference for future work. Refer Museum of Victoria letter, page two, of 25/9/95, Appendix 1.
- * Keep in particular original parts or samples that date from the builder, the Melbourne operators or the SEC. These should be stored in appropriate containers etc.

References

1. W.Scott, Ballarat Vintage Tramway, Ballarat Tramway Preservation Society, Ballarat 1983 and 1993.
2. N.Cross et al, Destination City, Australian Electric Traction Association, Sydney, 1981 and 1994.
3. J.Richardson, Destination Eaglehawk, Traction Publications, Canberra, 1965.
4. K.S.Kings, The Ballarat Tramways, Australian Railway Historical Society, Melbourne, 1971.
5. A.Bradley, Tramways of the Golden City, unpublished, in preparation.
6. Institution of Engineers, Australia, Engineering Heritage and Conservation Guidelines, Canberra, 1992.
7. L.Conole et al, Hands On Hands Off Heritage Artefacts, Scienceworks, Melbourne, 1992.
8. BTPS - Collection Policy - May 1992.
9. Notes on ESCo and SEC rolling stock by A.Bradley.

Abbreviations

BTPS - Ballarat Tramway Preservation Society Ltd.
 BTM - Ballarat Tramway Museum Inc, succeeded to BTPS 1995.
 BTCo - Ballarat Tramway Co. of Victoria
 ESCo - Electric Supply Co. of Victoria
 HTT - Hawthorn Tramway Trust
 Lake Goldsmith - Lake Goldsmith Steam Preservation Co-op
 M&MTB - Melbourne and Metropolitan Tramways Board
 SEC - State Electricity Commission of Victoria

Appendices

1. Museum of Victoria letter dated 25/9/95 from A.Wain, Museum Conservation unit.
2. The Only Genuine Article by G.Hill

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