W CLASS TRAM STATUS REPORT

Les Jean
Manager, Fleet, The Met

Mr. Les Jean presented a report on matters concerning W class trams. The main points in this report are summarised hereunder:

1. STATE GOVERNMENT POLICY

State Government policy is to

- retain all W class trams in Victoria;
- support cavalcades and displays of trams (tourist value);
- restore an example of every type of tramcar used on the Melbourne system;
- support the establishment of a tramway museum at Hawthorn.

It is not clear whether the policy is to retain all present W class trams in service. This is generally a very emotive issue, with most discussions, such as newspaper articles, presenting only one point of view.

Trams have been exchanged with Bendigo and Bylands under Ministerial authority.

2. FEDERAL GOVERNMENT ACT

Protection is given in terms of an export embargo.

3. STATE OPPOSITION POLICY

The Liberal Party policy is also to retain all W class trams in Victoria.

4. HISTORICAL TRAM FLEET

Vintage cars should only run if fully restored and declared safe.

5. NOW

Ninety articulated cars are now in service. There is a space problem for storage of displaced cars, currently 40, ultimately 90 to 120. Twenty-eight cars are stored on the test track at Preston workshops, others are in the workshop area. All depots and Preston are full, and there are 30 more articulated cars to come. There is no answer in sight to the storage problem.

The COTMA/PTC agreement, which supports COTMA being the coordinating body for parts, etc, is still valid.

6. INFLUENCES

Influences on policy development include the National Trust, Friends of the Ws, the Public Transport Users Association, the Unions, the media.

A fleet size study [WWR] indicated that it would cost about $400 000 to restore a W class tram, $100 000 for a Z class tram. [The restoration would include motors, compressors, etc.] Friends of W Class Trams believe these figures should be reversed.

Unions favour retaining Ws.

Probably about 120 Ws will be kept, upgraded to some degree. Zs will remain.

7. FLEET STRUCTURE AND DEPLOYMENT

A report [not yet released] has been carried out into cross-city linking, which is favoured by WWR. If this comes into effect, there would be a need for about 140 Ws to be retained in the fleet — restored to a suitable standard.

W7s are likely to be the first to go, since they have not yet had a full overhaul.

8. MAINTENANCE COSTS

It is held by some that Ws are cheaper to maintain than Zs, but in fact the costs are about the same: $12 000 per year in a large shed, $15 000 in a small one. Every motor needs overhauling every two years. Compressors are prone to failure. Braking is a problem with Ws — there are many rear-end collisions.

Upgrades on Zs are falling behind as problems with Ws mount.

Asbestos is a problem in W cars, especially in those with Clyde controllers — about 50. It would cost about $10 000 per tram to remove. Negotiations are under way to remove the asbestos over a 12 month period.

In general, tram availability is not high enough.

9. SPARE PARTS

Supplies are down.

10. TRAM UPGRADE

There is a minimal budget for this. Management wants engineering upgrades to improve reliability; passenger comfort is also a consideration.

Questions, Comments and Discussion:

1. *What can Museums do to help the problems?*

- Nothing!

2. *What is the state of the system in general?*

- Not good, but recoverable.
- Overhead replacement is due — about $500 000;
- Track is poor.

3. *What about the pantograph conversion programme?*

- Nothing is being done at the moment.
- Production of trolley poles is now a problem!

CLASS		DEPOT STOCK	AM PEAK	STOCK AVAIL	VAR	PWS REP	FOR PWS	PWS CON	PWS TFS	DEP HUP	DEP CON	DEP REP	DEP BAN	DEP FLAT
BWK	W	21	19	16	-3	2				2		1		
	Z	17		12			3			1		1		
	LRV	26	23	15	4	1		3			5			2
CAM	Z	58	37	41	4	3	7			2		1		4
	LRV													
E PT	W	37	32	28	-4	6			1			2		
	Z	29		26			2					1		
	LRV	25	37	21	10		1	1			2			
ESS	Z	94	69	65	-4	8	5		1	8		2		5
GH	W	61	50	55	6	3			1	1		1		
	Z	10	4	5		1	1		1	2				
KEW	W	4		2		2								
	A	63	58	48	-4	2	9					4		
	POLE	6		4								2		
MAL	W	83	64	66	2	8	6					3		
	Z	16	12	11	-1					1		4		
NF	LRV	10	8	10	2									
STH MEL	W	39	35	28	-7	3				3		5		
	LRV	29	11	15	4	3	6	2				1	2	
		628	459	468	9	42	40	6	4	20	7	28	2	11

@ PWS	26	14	2	10	52
FOR PWS	6	18	9	7	40
TRAM FLEET REPAIRS	18	32	4	12	66
	W	Z	A	B	TOTAL

REP =REPAIRS
CON =CONTRACTS
TFS =TRAM FLEET SUPPORT
HUP =HELD UP FOR PARTS
DEP =DEPOT
VAR =VARIANCE

AM PEAK

TRAM FLEET DEPARTMENT

27-May-92

W =	245		
LRV =	90		
A =	69		
Z =	198	FLEET=	602

DATE27-May-92

TRAMNO	TYPE	MAKE	YEAR BUILT	COMMENTS
8	M	HTT	1916	BEING REBUILT PRESTON WORKSHOPS AVAILABLE ?
104	L	MMTB	1921	HERITAGE SERVICE SUNDAYS SOUTH MELBOURNE
106	L	MMTB	1921	ZOO SERVICE SUNDAYS ESSENDON
138	P	HTT	1918	STORED THORNBURY NOT AVAILABLE
164	S	MBCTT	1916	STORED HAWTHORN AVAILABLE FOR RESTRICTED USE
180	T	MBCTT	1917	STORED HAWTHORN AVAILABLE FOR RESTRICTED USE
214	V	NMETL	1906	STORED HAWTHORN AVAILABLE FOR RESTRICTED USE
217	X	MMTB	1924	STORED HAWTHORN NOT AVAILABLE BROKEN WINDOWS
380	W	MMTB	1925	STORED HAWTHORN (?HERITAGE SERVICE SUNDAYS SOUTH MELBOURNE)
431	W1	MMTB	1927	STORED HAWTHORN (?HERITAGE SERVICE SUNDAYS SOUTH MELBOURNE)
469	Y	MMTB	1927	STORED HAWTHORN AVAILABLE FOR RESTRICTED USE
510	W2	MMTB	1928	STORED HAWTHORN (?HERITAGE SERVICE SUNDAYS SOUTH MELBOURNE)
610	Y1	MMTB	1930	STORED HAWTHORN DEFECTIVE DOORS PWS REPAIR
611	Y1	MMTB	1930	STORED HAWTHORN
612	Y1	MMTB	1930	STORED HAWTHORN DEFECTIVE DOORS PWS REPAIR
613	Y1	MMTB	1930	HERITAGE SERVICE SUNDAYS SOUTH MELBOURNE
644	W2	MMTB	1930	ON LOAN TO TMSV BYLANDS
646	W2	MMTB	1930	RUNNING IN NORMAL SERVICE IF DRIVER AVAILABLE SOUTH MELB HERITAGE SERVICE SUNDAYS SOUTH MELBOURNE
676	X2	MMTB	1930	STORED HAWTHORN AVAILABLE FOR RESTRICTED USE
774	W5	MMTB	1936	BEING REBUILT PRESTON WORKSHOPS AVAILABLE JUNE 92
782	W5	MMTB	1936	ON LOAN TO TMSV BYLANDS
902	SW6	MMTB	1945	ON LOAN TO TMSV BYLANDS
1001	W7	MMTB	1955	ON LOAN TO TMSV BYLANDS
1040	W7	MMTB	1956	REBUILT PRESTON WORKSHOPS NORMAL SERVICE GLENHUNTLY FEB 92
1041	PCC	MMTB	1973	STORED HAWTHORN NOT AVAILABLE

THE PLACE OF TRAM MUSEUMS IN THE INTERNATIONAL AND AUSTRALASIAN MUSEUM MOVEMENT

John C Radcliffe
Chairman, COTMA

The fourteen tramway museums which are federated into the Council of Tramway Museums of Australasia are but the first order of aggregation of museum organisations. These aggregated groups are important for their power in lobbying to Governments on policy issues. Governments and Ministers prefer to deal with single cohesive organisations rather than splinter groups having disparate and competing aspirations. Therefore, when making approaches either on issues of legislative change or when seeking funding support, it is desirable to do so from a position of strength achieved by bringing together museums which either have a common technical or a common geographic interest. It is therefore helpful to understand the way in which museum organisations are structured in Australia and New Zealand and how they relate to the international museum movement.

MUSEUM ORGANISATION IN AUSTRALIA

Within Australia, individual museums and museum participants are catered for by the **Museums Association of Australia (MAA).** It is a national body that includes among its members persons employed mainly in history, natural history, science and technology museums. This is the museum association which will have most immediate benefits to offer those interested in tramway conservation.

However, there are a number of other related organisations which also pertain to museums. The **Art Museums Association of Australia (AMAA)** serves all of those working in art museums and public galleries throughout Australia. It has its own formal secretariat established in Melbourne in 1986 with funds from the Australia Council.

The **Australian Institute for Conservation of Cultural Materials (AICCM)** is the national organisation of conservators whose aim is to foster the preservation of material of cultural significance in Australia. Conservators are particularly important in advising on the care and maintenance of fragile historic materials such as paper, photographs, textiles, metallic objects, and timber and synthetic artefacts. Whilst they are usually thought of in terms of small items, they can also advise on the conservation requirements of much larger exhibits including tramcars themselves.

The **Council of Australian Museum Directors (CAMD)** comprises the sixteen directors of Australia's principal State sponsored museums or museum control agencies concerned with science and history. The **Council of Australian Art Museum Directors (CAAMD)** comprises the eight directors of Australia's principal art museums of whom two from the Tasmanian and Northern Territory Government museums are also members of CAMD.

The **Museum Education Association of Australia (MEAA)** is a national association of educators working in museums, galleries, botanic and zoological gardens and similar institutions. Frequently, its members are employed by local education authorities but seconded to museum institutions. They are responsible for many of the school programmes in the major museums.

The **Australian Federation of Friends of Galleries and Museums (AFFGM)** is a national organisation with more than seventy support groups, representing 130 000 friends of museums, galleries, botanical gardens zoos and libraries in Australia. They are the "volunteers" who support the staff of the major collecting institutions. (In North America these volunteers are sometimes called "docents".)

The **Australian Heritage Parks Association (AHPA)** is the national body formed to represent the interests of outdoor museums and heritage parks in Australia, encompassing such organisations as Sovereign Hill at Ballarat. The group exchanges visitor information and has excellent statistics on visitor trends and average levels of visitor expenditure in the outdoor museums and parks.

The **Australian Museum Shops Association (AMSA)** is a national body which facilitates the free exchange of ideas and information among members about commercial activities within institutions, and encourages joint buying and/or manufacturing to maximise profit margins and aids in the promotion of museum shops to the public as educational resources as well as generating additional revenue.

These organisations are federated together in the **Council of Australian Museum Associations (CAMA).**

CAMA is increasingly responsible for the conduct of meetings and conferences among the museum community in Australia. Its next conference is scheduled to be held in Melbourne at the Royal Exhibition Buildings from November 17-21, 1992.

MUSEUM ORGANISATION IN NEW ZEALAND

The principal museum organisation in New Zealand is the **Art Galleries and Museums Association of New Zealand (AGMANZ)** . Its corporate and individual

membership has primarily been drawn from the professional museums, and it has been under stress in recent years, and virtually collapsed two years ago over the issue of Maori-Pakeha perspectives. It has now been revived to incorporate a Maori-Pakeha partnership with half of its committee representation coming from each group.

A **Museum Directors' Federation of New Zealand** operates, but is primarily driven by art gallery directors. It is likely to be expanded to include museum directors.

Other specialised museum groups in New Zealand include the **Museum Education Association of New Zealand (MEANZ)**, which conducts an annual conference for education staff, and the **New Zealand Professional Conservators' Group** which links conservators. Other rather ad hoc groups link registrars, historians etc. There is nominally a national committee for ICOM.

GOVERNMENT POLICY AND SUPPORT TO MUSEUMS IN AUSTRALIA AND NEW ZEALAND

The primary thrust of Government support to museums in Australia is through the State Ministries of Arts, or Arts & Cultural Heritage. Federal responsibility for museums is within the Department of Arts, Sport, the Environment and Territories (DASET). The Australian Federal Government also contributes through its sponsorship of the Australian National Gallery (ANG) and its intended creation of the Museum of Australia.

Since 1975, efforts have been made to encourage the Federal Government to contribute to museum development at state and regional level, though largely without success. The policy issues for museums are dealt with in the Cultural Ministers Council which is composed of the relevant State and Federal Ministers responsible for the Arts.

By contrast, support for museum activities in New Zealand is largely through local government where there is potential for rating powers to be used to support the creation of regional museums. The New Zealand Government sponsors the National Museum, formerly the Dominion Museum and has been moving towards the creation of a new Museum of New Zealand on a reclaimed site on the Wellington waterfront. Like its Australian counterpart, this proposal has also had a chequered career. The Museum of New Zealand is an independent statutory authority, though it derived from the Internal Affairs Department of the Government. Museum policies to the extent that the New Zealand Government takes any direct responsibility, lie within the Ministry of Arts & Culture.

Although there are no direct grants from the New Zealand Government to support regional and specialised museums, the government view is that it indirectly supports museums by their ability to access capital funds through the New Zealand Lottery Grants Board. This board also supports four museum liaison officers who provide an advisory service to regional and specialist museums from bases in the four principal museums in Auckland, Wellington, Christchurch and Dunedin.

MUSEUMS, INTERNATIONALLY

The international museum movement is brought together under the auspices of the **International Council of Museums (ICOM)**. Its organisational structure is based on national committees comprised of members of ICOM resident in the different countries and with an international organisational headquarters in Paris. The **Australian National Committee for ICOM** is also a constituent member of the Council of Australian Museum Associations.

ICOM also has a series of international committees and affiliated international organisations which bring together groups of museum participants with specialised interests.

The international committees, some of whose acronyms are derived from their French titles rather than their English titles as both French and English are the official languages of ICOM, include:

Applied Art (ICAA)
Archaeology and History (ICMAH)
Architecture & Museum Techniques (ICAMT)
Conservation
Costume
Documentation (CRDOC)
Educational and Cultural Action (CECA)
Ethnography (ICME)
Exhibition Exchange
Fine Art (ICFA)
Glass
Literature (ICLM)
Modern Art (CIMAM)
Museology (ICOFOM)
Musical Instruments (CIMCIM)
Natural History
Museum Public Relations (MPR)
Regional Museums (ICR)
Science and Technology (CIMUSET)
Museum Security (ICMS)
Agricultural Museums (AIMA)
Arts and Military History (IAMAN)
European Open Air Museums
International Confederation of Architectural Museums (ICAM)
International Congress of Maritime Museums(ICMM)
Performing Arts (SIBMAS)
Transport Museums (IATM)

ICOM convenes every three years, recent conferences having been held in Buenos Aires in 1986, The Hague

in 1989 and Quebec in 1992. There are proposals afoot to secure the 1998 Conference for Melbourne.

The specialist organisation within ICOM to which tramway museums are best affiliated is the International Association of Transport Museums. COTMA has been a member of this group for many years, and has been in receipt of the annual year books which the IATM has published following its own periodic conferences. The 1992 IATM Conference is being held in Ottawa from September 14–18 1992 which is the week prior to the 1992 ICOM Conference. Other IATM members include the National Tramway Museum at Crich, UK, and MOTAT is a member in its own right. Other Australian IATM members include the National Museum of Australia, the Museum of Victoria, the History Trust of South Australia, and the National Maritime Museum, Sydney.

OTHER COUNTRIES

Just as there are various museum structures within Australia and New Zealand, there are similar co-ordinating bodies in a number of other countries.

For example, in North America, railway and streetcar museums are loosely joined into the Association of Railway Museums. Within each State of the USA there is a State Historical Society, providing a role somewhat akin to that of the State Branches of the National Trust in Australia or the History Trust of South Australia. The American Association of Museums in Washington brings together the various professional associations and their role in protecting and advancing the interest of museums in the USA.

In Britain the Museums Association caters for Government-sponsored museums, while the Association of Independent Museums (AIM) serves museums outside of the Government sector including the National Tramway Museum at Crich, Derbyshire. Much of the initiative for the development of the AIM came from Dr Neil Cossens, when he was Director of the Ironbridge Gorge and later the Greenwich Maritime Museum, though he is now the Director of the Science Museum at South Kensington.

The horizons of tramway museums and their members can be broadened by participation in the wider national and international museum movement and much of the benefit can be obtained by correspondence when attendance at conferences is not financially practicable. Participation in these organisations leads to considerable credibility to individual museums in their dealings with the Government.

As Australasian tramway museums move towards greater maturity, their horizons will become broadened and their place in the greater museum movement will become increasingly important to members.

OUR CULTURAL HERITAGE

Warren Doubleday and Richard Gilbert
Ballarat Tramway Preservation Society

INTRODUCTION

The question we must ask ourselves is

"Are tramway museums part of cultural heritage?"

Street tramways have a strong cultural heritage in Australia. They were a prominent feature in the street scenes of our major cities for many years. They transported people to and from their homes for work, shopping or leisure.

Melbourne has only in recent years recognised this cultural aspect. It is now developing this around its trams, from both heritage and lifestyle viewpoints. But have we translated this cultural heritage into the way we present our collections to the public, so they may understand and appreciate their past?

SOME DEFINITIONS:

> Culture is each society's special way of perceiving and representing life in its place and time [1, p.7]

And its relevance to history?

For others, culture is learning and the intellectual achievements of society. Some place emphasis on history: as material artefacts, museums, monuments and sites; it is written and oral expression, . . .

This paper looks at the cultural heritage aspects of tramway museums and draws heavily on an article by Warren Doubleday from the December 1991 issue of Newsrail: *Culture! What relevance to Railway History?* This article was written following the announcement of the Victorian Government's cultural policy in 1991. It also drew upon two articles by Jim Longworth in the May and June 1991 issues of Railway Digest. He examined the cultural significance of preserved railways or that of the operation of heritage trains. The need for this examination grew out of the 3801 accident. I would commend these articles to all those operating preserved railways or tramways.

THE VICTORIAN GOVERNMENT'S CULTURAL POLICY

The Victorian Government announced this new policy in June 1991. Its objective is to provide a framework for developing culture in its many forms: traditional and innovative arts, recreation and sport, education and heritage. The policy booklet *Mapping our Culture* points out that culture is relevant to all Victorians, whether we place value on the Melbourne Cup, regional art galleries or our universities and schools. Victoria has often been the seedbed of new forms of culture, and the Cultural Policy aims to encourage this.

With regard to the heritage aspects of the policy, the area that the various preserved railways/tramways fall within the policy points out that:

> Conserving and enhancing Victoria's cultural heritage is a priority of the Cultural Policy. That heritage is not only the many buildings and objects of the past but also the social history of Victorians. Information collections and access to them are an essential part of developing ways of improving Victoria's future.[1, p.3]

Some of the Strategic Actions proposed by Heritage and Tradition section of the policy are [1, p.30]:

- develop appropriate legislation and infrastructure for heritage protection, including objects and artefacts;
- develop a State Cultural Heritage Strategy based on widespread public consultation;
- establish and maintain a State register of significant portable cultural heritage;
- implementation of the Museums and Historical Collections Policy of the Museums Advisory Board;
- the development of the thematic museums, based on existing collections, facilities and sites, such as a multi-location Victorian Maritime Museum and a network of Historic House museums;
- the provision of support services to encourage regional co-operation between museums and historical societies.

The policy also addresses the important aspect of social history. This would allow, for instance, the development of social history collections and research to reflect Victoria's social development through the construction of transport links and their support facilities. For example, the importance of railways in the provision of employment to local communities and the acceptance of immigrants into the railways/tramways employment.

ITS IMPORTANCE TO US!

Longworth in his paper *Tourist Railways - money trees, cultural cancers, or?* [2, p. 173] notes that:

> There is likely to be an increased requirement on private railway operators to validate their place as providers of cultural heritage, resourcing as they do, the tourist market. Those seeking government funding are especially likely to need increased explanation of why they should be supported by the overall community.

(The following comments were written for the railway viewpoint, however, many of them apply equally to the tramway aspect.)

Some railway enthusiasts in management positions of preserved railways have long recognised this need, but have often neither fully understood it, nor had a government policy on which to construct a case for funding. To gain continuing access to funding, they will need to place their project submissions into a cultural context.

Decisions about the presentation of railway objects or their lines, are too often made on expediency, simplicity or commercial points, or even on just a whim of management. There is little thinking sometimes of the heritage or cultural aspects. Longworth points out,

> Meritorious good may be seen as residing in the significance of the proposal to the region's cultural heritage: this is a particularly powerful argument given the place that railways played in developing this nation's rural and mining industries, although it should be realised that tourist developments will severely compromise the pure cultural significance of any resource used as an attraction. Denial of access to non-paying visitors, inappropriate site works, display of decontexturalised relics, hyperreal presentation and gaudy servicing of visitors all detract from the historical authenticity of the visiting experience. The visiting experience shifts from being within the social context of education to that of entertainment.

Many preserved, or "tourist", railway operators face this quandary. To overcome it, policies on the collection, its presentation and conservation will be a requirement. The formation of these acquisition and heritage policies by the railway operators will provide a framework for planning decisions. Such policies go a long way in building a case for government funding, or even just focusing people's attention on what they are doing. Government through its various "arts" or "museums" programmes will favour those who have established such policies and show that they are relevant to the culture of Victoria.

The other advantage of such polices and discussions over the cultural heritage of railways is that it allows the assessment of the attributes of the preserved train relevant to us and our society. [3, p. 194]

However, it raises other questions. Are we conserving the railway relics for future generations to enjoy, or are we selfishly consuming them now? Will R class locomotives and 1900 era carriages still be operable in 600 years time? Well, that depends on what we do now, and of course it begs the further question, will there still be tracks suitable on which to run a R class? For the point of the discussion, let's assume yes.

First we have to establish that the train or locomotive is culturally significant and that it is worthwhile to preserve it. Then we must ensure that this can be done, by recording, conserving, establishing the maintenance facilities and maintaining an understanding of the past technology.

The view of the author is that too many railway enthusiasts are pure consumers, and could not care about the future. This selfishness applies particularly to the one sided steam fanatics. They do not look at the other aspects of railway operation or to the long term preservation of equipment etc. It is a complex system, a lot of which depends upon the people who operate or maintain the railway or the piece of equipment itself. Too little work is done to understand or record the "software", ie., the personal component or the methods of maintenance.

It is hoped that the existence of a cultural policy will provide the process to enable the preservation of the relics and the provision of suitable maintenance facilities. It should foster the desire through education, and thereby knowledge, to include for example the social side of railway history.

Our Tramway Cultural Heritage

Though repeating the opening paragraph of this paper, Australian street tramways have a rich cultural heritage. They had significant influence in the ways the cities were developed up to the second world war, they provided a relatively cheap means of getting around town. A number of authors have written books and articles on the tramway hardware, with some reference to the people or the software that ran them. This later aspect is what too often we tend to ignore in our museums.

We would argue that many of these aspects have been recognised by the COTMA museums, although most of us still have a long way to go to present them properly. Most of us are undertaking good conservation and preservation work, and aiming to present our tramways in a view that would enable their cultural heritage to be understood by the visitor. Most of us suffer from the inability to present our major exhibits in their correct habitat, a street with live motor cars etc. to contend with, and stops to pick up and set down passengers at. Fortunately at Ballarat, we are able to do that, and this is an element we are able to capitalise on.

While tramways did not have the political significance that railways did, they were often influential in the local political scene throughout Australia. The people, the lines, the equipment and their facilities were all part of the tramway culture that developed over the Victorian era and extended up to the 1960's in Australia. In Ballarat for example, the street trackage has been in the Gardens Reserve for over 100 years, and its attendant overhead clutter for almost 90 years.

Tram Museums and Culture

The last 30 to 40 years have seen the development of a very extensive world wide movement for the conservation of tramway equipment, lines and facilities. This is almost entirely volunteer based, with only some professional management or workshop based personnel. Australia is no exception to this movement.

The Australasian groups have, generally, a high community acceptance of their activities. This is shown in the assistance, in the form of either equipment, facilities or money, that has been or is being provided by government or their authorities. To ensure that this continues, the various groups will have to understand what they are doing and think towards to the future.

In Victoria, government, whether state or local, has recognised by its past actions the importance of conservation of tramway culture. They have offered the opportunity, not only to enhance the preservation activities of the various groups, but also to conserve many aspects of Victorian culture for present and future generations. It is up to us to recognise and use this aspect to our advantage in the future.

Even in Victoria, we get many visitors from Melbourne who do not know much about Melbourne's tramway system, let alone use it. If you live near Dandenong, Frankston or Knox, for example, there is no need to travel to the CBD. Many of our visitors are locals bringing their grandchildren along for a ride on the tramway, to show them a past bit of Ballarat's history. This applies to all of COTMA's museums. The knowledge of trams today exists for many only within a museum environment.

This problem of lack of actual tramways operating in reality is a problem that we have to face if we are to encourage young volunteers to join and continue the operations after we pass on. It will help to promote the ongoing commitment and involvement of these volunteers if their managers, ie the elected boards, understand their position in the overall picture of what they are doing.

Our tramway heritage is not a plaything, and simple commercially expedient solutions should be avoided if it is to survive in a worthwhile form for future generations. The visitor's dollars will be the prime source of funding. However, it must be properly presented for them to undergo a culturally enriching trip, and not just be another form of entertainment.

CONCLUSIONS

Australasian Tramway Museums are a part of society's Cultural Heritage. To ensure that our tramway cultural heritage survives in an operable condition, we must all understand the cultural process and work accordingly. To continue to gain funding for our future operations, we will have to express our presentations for funding in terms of this cultural heritage. It will not be handed to us on a platter, as it has been done sometimes in the past.

If our museum operations are to stay relevant to the public, which is rapidly becoming one which never saw our trams operating in their real environment, we must tailor our presentations to explain how and where they once fitted into their past culture. This will also be essential if we are to encourage the young volunteers to join and continue the operations after we pass on.

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MANAGING ROLLINGSTOCK — THE ADELAIDE EXPERIENCE

Christopher Steele
Australian Electric Transport Museum

1. INTRODUCTION

The AETM nominally has 13 operational cars — enough for two fleets by our capacity/variety criteria. We enlarge our fleet by one car every four years on average, mainly by restoring hulks obtained over the years.

2. OPERATIONS AND DISPLAY

Since inception of operations in 1974, general opening hours have been Sundays and most Public Holidays 1 pm to 5 pm. (for a short initial period 2 pm to 5 pm) plus charters, commonly organised on Wednesdays but available any time given a fortnight's advance notice to organise the necessary staff. For a long time, mid-week operations have occurred during some school holidays. The AETM has never operated regular services on Saturdays, which have been set aside for maintenance work and restoration projects. Eight trips are generally run each Sunday.

The operating fleet is kept in the old running-shed and takes up traffic duties from the fan in front of the shed. The so-called second fleet is on display in the new tram shed. Trolley buses and a motor bus are all kept in a display shed — only the latter is operational. There is a related floor and wall display in this building. Non-operating cars awaiting restoration or repair are kept out of public view in the old main running shed. Other vehicles housed include a motor tower wagon, a rail-borne tower wagon and a weed-killer trailer hauled by the works car (an ex-MMTB W2 car).

Garford trolley bus 216 has been to a couple of events off-site as Australia's first trolley bus. A-type car 14 has been used in a minor fashion at a public ceremony at St Kilda to promote the proposed 'Century 21' appeal for funds to create a 'Bib & Bub' set.

3. FLEET ROTATION

Passenger traffic on any Sunday can be handled by any tram — small or large. Each fleet is rotated — not totally — about every twelve months. Exceptions challenging this dictum are cold/wet weather (less so hot weather) when passenger loadings decline anyway. Closed cars obviously are used for wintry conditions. The all-steel car 381 is the least affected by operating in cold or wet weather. Also it is not structurally deteriorated by the elements.

Numerous trams and trolley buses in various conditions have been acquired over the years to enable the AETM to have a representative South Australian electric traction collection. The most modern, most robust cars tend to be the work-horses of the AETM. Of the 13 operational cars these include H1 381, W2 294 and F1 264. The more special vehicles sparingly used, including No 1, are Adelaide's earlier electric trams featuring the most ornate restoration.

4. OPERATION AND MAINTENANCE RECORDS

Operating trams have trips and other running details recorded in the Dispatcher's day book for regular Sunday and charter runs. All traction poles along the 2 kilometre line are numbered for distance recording purposes. Ad hoc lineside maintenance trips, 'playtimes', and crew training are recorded by motor-persons on the casual run sheets. All the above statistics are collated for each car in a circulated operations report each month.

Compatible records are also kept on file by workshop staff and are used to determine times of 'pull-ins' for maintenance/servicing. Operating staff also have a form on which to record any deficiencies in cars requiring immediate attention. These matters should be followed up efficiently and records kept meticulously, for they could even be a useful defence in an accident case.

5. HULKS

Regarding hulks (wrecks), all vehicles but one are presently under cover. Parts to restore these hulks have been acquired or can be fabricated.

Our museum members are not jaded or demoralised by the presence of these hulks, as the AETM has a proven restoration record, and the statutory authorities recognise this by occasionally providing assistance or funding programs.

Another D-type car of reasonable condition for restoration was offered to the AETM but was declined; it went to the Canberra Tradesmen's Club instead. The first C-type car obtained was later sacrificed when a second C-type body was acquired. After being stripped of all useable parts the remains were quietly burned.

6. RESTORATION

Operation of the AETM trams is regulated by the criteria in section 3. The more ornate trams (invariably the older ones) tend to be used less due to the risk of weathering by rain or sunshine of the external paintwork and artwork. Our original restoration of A-type car 1 in 1966 was repeated in 1981-4. Our second restoration (E1 car 111) dating

back to 1972 is now undergoing its second restoration mainly due to a deteriorating subframe which we did not feel confident or competent to deal with 20 years ago. Required tools were lacking then too. Our standards of restoration are becoming higher with new expensive materials being used and a professional standard of painting being undertaken.

7. Shed Design and Disposition

AETM policy is to house all vehicles under cover and further acquisitions are determined and mandated on this premise. It is now general policy for each new large shed to be physically separate to minimise the destruction of the fleet by fire.

7.1 Fire precautions

Sheds have fire extinguishers placed near the doors for both general and electrical fires. A new mains-pressure standpipe which can be used by the fire brigade is now being installed in a strategic and accessible position. If possible, sheds should be free of any inflammable stores such as paper, deal, rags, petrol, oil, lubricants, paints or anything else likely to be used as a fire accelerant.

All AETM sheds have been built high enough for trolley-wires to be installed. Single-pole cars are 'reversed' in to enable a quick exit if necessary, but poles on bogie cars are hooked down. However, in our opinion, realistically, an electrical or deliberately lit fire in the absence of any museum members would be catastrophic. Thus the emphasis is on protection and care in housing the cars. The operating fan is sufficiently large to accommodate cars driven out if a fire broke out on a work or operations day. Set procedures and regular fire-drills are desirable for such an eventuality.

7.2 Security

Doors and cladding should be burglar and vandal resistant as far as possible and have security protection with audible and visual alarms, the visual alarm being a blue light in a prominent position. These should be sufficient to scare off intruders. Laser-triggered alarms along straight wall-lengths should also be considered.

7.3 Conservation

Sheds should be weather-proof including the exclusion of outside run-off from the shed itself. Fungus spores can develop in the damp ground near doors. For this reason it is preferable for sheds not to have any wood (including sleepers) embedded in the ground. Fungus is likely to pose a bigger threat to wood in cars than white ants!

Sheds should be clad to prevent entry by birds which foul cars with nesting materials and droppings.

7.4 Utility

The practicality of manoeuvring vehicles for any purpose is simplified by more and smaller sheds. Sheds for housing cars, trolley buses, etc., are designed to be long enough to economically use optimum space. Templates of car lengths are used to judge which vehicles can be housed on which tracks — useful in shunting manoeuvres. A couple of feet between vehicles should be allowed for the convenience of personal movement and to avoid collisions when parking the cars.

Two vehicles under restoration can be housed in the new Body Shop. Hulks are kept, basically, on two tracks in the old main shed. Operating cars also have two tracks in the old main shed, plus one track in the mechanical workshop. [The latter was the first extension to our depot in the early 1970s.]

8. Maintenance Facilities

A pit long enough to serve both bogies on our longest trams exists in the mechanical workshop. Electrical, brake and other mechanical underfloor servicing requirements can be performed in some degree of comfort. Lighting, power and compressed air ancillaries are located in the pit; also a wandering lead is available nearby for traction power if required. All maintenance areas have concrete floors for cleanliness, convenience and comfort. A couple of wheeled platforms and various ladders are available for cleaning and maintenance work on cars.

9. Summary

Our overall policy in regard to rollingstock has aimed to preserve, restore and operate the cars and trolley buses in good order to ensure that South Australians and other visitors may be aware of the important place these vehicles had in the life of Adelaide in their era. This is being achieved by:

1. providing lock-up covered accommodation;
2. having a continuing restoration and refurbishment programme;
3. displaying and operating the available cars regularly;
4. judiciously operating individual cars when conditions are satisfactory, and being selective in using older, more fragile cars;
5. keeping careful operating and maintenance records;
6. paying attention to the security of the fleet; and
7. providing adequate facilities for restoration and maintenance.

It is by the diligence and dedication of museum members that these aims are being achieved.

DRIVER TRAINING AT BENDIGO TRAMWAYS

Harold McCarthy
Bendigo Trust

1. APPLICATION FOR DRIVER TRAINING.

People who wish to be a driver of our trams must write to the tramway to be considered for training. The application then goes to the Tram Committee for approval. It is not a fait accompli — some applications are politely deferred for various reasons.

Our drivers are more then drivers. They are our shop front, so to speak, welcoming passengers, selling tickets, giving a talk about the Bendigo Trust and the trams, then selling souvenirs in the shop. It helps to have a sense of humour, too. Our drivers need to be able to answer questions about the Trust, the trams, Bendigo and other tourist attractions.

So, wanting to drive a tram and passing the tests are not the only pre-requisites for the job.

2. MEDICAL EXAMINATION.

When applicants are accepted they have to undergo a medical examination of eyesight, hearing and general fitness. They must also have held a car driver's licence for 3 years.

3. DRIVER'S MANUAL.

After passing these tests, the applicant is given a Driver's Manual containing questions and answers to various situations that can occur while operating a tram. They are required to read the manual thoroughly.

4. DRIVER TRIP JOURNAL.

When training commences, the applicant is given a Trip Journal which is a record of the number of trips, type of tram and the comments of the instructor.

5. DRIVER TRAINING.

The applicant is now ready to drive a tram, gaining experience in the various air brake systems — manual lap, self lap and Birney — and controllers — GE, Westinghouse and MMTB. Also covered are how and when to apply sand; emergency braking — first, second, third and fourth — and handbrake driving. To make it harder the driver has to learn the commentary tapes, when to actuate and stop them, and how to regulate the speed of the tram to coincide with the commentary on points of interest.

6. DRIVER EXAMINATION.

When the applicant has completed 10 trips he or she receives a Restricted Certificate which allows them to drive trams within the depot confines without supervision. After completing 30 trips the applicant is ready for the test, which comprises a written test of questions with Yes/No answers, followed by a driving test.

7. CERTIFICATES OF COMPETENCY.

The full Certificate is presented at the Tram Meeting or some special occasion by the Chairman of the Tram Committee.

8. ACCIDENT REPORTS.

We have two Accident Reports and an Incident Report:

The Yellow Tram Accident Report is for the tram driver to complete after being involved in an encounter with another tram or any other object, car, truck, trailer or member of the public likely to involve an insurance claim. The Blue Report is for the Traffic Inspector or Supervisor to complete.

The White Special Day Report is for drivers or conductors who are involved in minor accidents or anyone who may have been a witness to a minor accident.

COMMENTS, DISCUSSION AND QUESTIONS:

1. At Bendigo, the main instructor is the Tramway Superintendent. The time taken to complete the training depends on the person.
2. Bendigo has no government testing. It was noted that New Zealand has government testing.
3. There is no refresher training at Bendigo. It was noted that Adelaide has refresher training, including skid training and ensuring continued familiarity with all types of tramcar. It was suggested that drivers who have not driven for some time might need to be re-certificated.
4. It was noted that knowing theory is not always the same as being able to react appropriately in practice, and that training could therefore include coping with various deliberately induced faults and problems.
5. Bendigo has three fully-paid drivers as well as volunteer drivers. It was reported that there was felt to be no clash of interests between the two. Some paid drivers acted as volunteers on their days "off". Volunteers rarely received payment of expenses.

6. Most COTMA organisations are run by volunteers, who need to be welcomed and enjoy their hobby. It was noted that some volunteers would not be taken on as employees. Rosters may need to be juggled to cater for such.

7. **Tram conductors at Bendigo:**
   In a system similar to driver training, potential conductors are given a booklet to study, do practical training with an observer, and undergo a test. The Public Relations nature of this job is stressed; if applicants are thought not to be sufficiently outgoing they are told "thanks very much, we have enough conductors at the moment".

8. Should training include cutting out motors?

9. Should there be a regular medical review? What standards should be used for this?

TROLLEY WIRE

R. I. Merchant
Trolley Wire Editor

Does Trolley Wire have an editorial policy?

Trolley Wire does not have a set editorial policy. The Editor will publish almost any contribution received. No contributed item to date has been rejected by the present editor.

What is the News deadline for Trolley Wire?

The deadline date for Museum News is the 7th of the month prior to the month of issue. News not received in time will be held for the next issue.

The deadline dates are:
7 January for the February issue,
7 April for the May issue,
7 July for the August issue and
7 October for the November issue.

What are Trolley Wire's photographic requirements?

We can use almost anything, and have done so in the past. Photocopies, newspaper clippings and so on have been used where original photographs have not been available. Prints from colour transparencies, colour prints, black-and-white prints, copy photos, have all been used — how successfully depends on the original being used. Good black-and-white prints from original negatives still cannot be beaten for reproduction in black-and-white, however.

As a guide to budding authors, and to prevent duplication of effort, what does the Editor have in the way of articles on hand for future use?

Articles already on disk ready for photo-typesetting include Ballarat in 1906, Adelaide in the 1940s, grip cars and trailers in Melbourne (to be spread over at least two issues), a San Francisco update and a small, 500 word "Out of the Past" item on Innsbruck. These are ready to go and, thankfully, only the San Francisco item is time sensitive. An article on Geelong and one on Melbourne's tramway signalling are on hand and two papers from the 1934 Tramway Commissioners' Conference are emergency stand-bys. An article on Richard Youl's narrow gauge tramway has been submitted by a young contributor but will require some editing. The Editor does not want to discourage young contributors.... A major work on the Port Adelaide system has been promised. One article being worked on by the Editor, which is still in the planning stages, will cover the two Australian Hedley-Doyle stepless cars, Brisbane 301 and Perth 63, the only cars of their type to leave North American shores. Any assistance with information or photos, particularly with the 1920–40s doings of the Perth car, would be welcomed by the Editor.

Budding authors are encouraged to write on any Australian tramway subject, and short items of 1500 to 2500 words or so are needed to supplement the larger works. As examples, Walter Cumings' Adelaide horse car reminiscences was just under 3000 words, David Burke's Brisbane reminiscences in August 1991 was 2800 words, Dale Budd's 1950s reminiscences in our May 1992 issue ran to 2600 words, and the Athol Wharf diversion in November 1991 was just over 2000 words. The items on Adelaide's restaurant car and the reconstruction of 93U were between 750 and 1000 words. Small items such as these are also very welcome.

Can the Editor accept articles on computer disk?

Yes, the Editor will happily accept articles or news on disk if that is convenient to the contributor. The Editor uses Wordperfect which recognises some 42 different file formats (not all of which are used in the average office) and can accept Wordperfect 4.2 or higher, Wordstar 3.3 or earlier, MS Word 4.0 or higher, Multimate Advantage II, and any file in ASCII text format. Windows Notepad, for instance, saves in ASCII text. Final-form text and Revisable-form text (used by some mainframe computers) can also be accepted, as can DCA format used by IBM mainframes. It is suggested, and certainly in the first instance, that a printout of the disk's contents be provided with the disk. All disks will be returned to the sender.

COLLECTION POLICIES

Warren Doubleday and Richard Gilbert
Ballarat Tramway Preservation Society

The Ballarat Tramway Preservation Society has recently completed the preparation of a collection policy. This policy is to assist the Society in determining what it should be collecting in the future, and expressing, in a written form, a theme for our collection. The Society cannot accept everything that is offered, either free or at a price, or collect everything that is available.

A copy of the policy is attached to this paper. The first page sets out some points on the need to have a collection policy, and then discusses its aims. The policy addresses not only the major element of our collection, our trams, but equipment, spare parts, overhead, track materials, pictorial records, artefacts and Society materials. I will refer to these later, when I review the policy itself.

Many museums, not only railways and tramways, seem to be out to collect everything, and are then in a position of not being able to look after them or to house them. Many of the small country museums are often in this position, of having an item given to them, and then not knowing how to say "no thankyou". All large museums have such a policy, while it may be more general than ours. They apply various tests to the item to see whether it should be collected, using pro-forma and various decision making processes. A copy of such a pro-forma used by the Museum of Victoria is included.

The Society had an idea of its collection policy expressed through its Memorandum of Association, the various thoughts of members, Board actions, and what it had, or was seeking. The need for a written policy was perceived following discussions with museum professionals, the possibility of museum accreditation within Victoria and the question, asked on Museum Grant applications forms, whether we did have a policy or not. You can only say "in preparation" for so long. The Society has also matured in its approach to itself, and now sees the tramway as a specialist museum. It is not trying to compete with other museums, but to carve a niche in Ballarat, and be a reminder of Ballarat's rich past street tramway history.

The major collectibles in all tramway museums are the tramcars themselves. This as expected caused the most problems in the formulation of the policy, given what we have, what we see as our gaps, and possible excesses. Reasoning why it is necessary for a small operational museum such as ours, to have duplicates is given. In the big museum field, the amount of duplicates we have would probably be seen as excessive. As you will see on page 37, we have categorised our collection into three categories. This started off as five, and the various names have changed around a few times.

We have identified two major gaps in the collection, one of which we have a good possibility of filling in the future. The policy also considers trams from other systems, and other forms of Ballarat Transport. You will notice that the SEC tramcars are considered from the Ballarat viewpoint and not their originating class of tram, such as a Melbourne M, J or H class.

To assist in preparing the policy, the Board had a number of special meetings to consider the documents. It also received comments from the Museum of Victoria, which were very useful. The document will now be made available for member comment. After receipt of comments, it will then be finalised.

The Board did look at a point scoring system to try and formalise the various categories to which the trams were allocated. This attempted to allocate points on the basis of value to Ballarat, not necessarily that of Australian or Melbourne tramcar history, the tram's rarity, physical and operational condition, ownership, and value as a passenger carrying vehicle in order to earn money to enable upkeep. Such a scoring system is very hard to set up completely impartially, and is very subjective on viewpoints etc. The problems are; on what basis do you allocate points, score them, and then draw the various cut-off lines?

The Society has over the years collected a number of items which are not strictly relevant to our collection, and part of the policy is a de-acquisition section, outlining the process of disposal. You will note that for example tram No. 32 is considered as supplemental in our listing on page 37. At the time of its acquisition, the tram was acquired specifically for its mechanical equipment, for use in No. 12, which we knew was to be a future collectible.

Finally the Society would be interested in receiving comment about its policy, and hopes that it fosters other formally prepared policies within COTMA. The next policy to be prepared is a Heritage policy. This will attempt to put in writing the standards of up-keep, restoration, presentation of displays, operational aspects such as uniforms, methods of working to try and retain the cultural heritage that tramway has inherited from its past in Ballarat.

A COLLECTION POLICY FOR THE BALLARAT TRAMWAY PRESERVATION SOCIETY LTD.

1. WHY HAVE A COLLECTION POLICY?

To assist the museum in determining what it should be collecting, and what it should be trying to do. It cannot accept everything that is offered, or collect everything that is available. This is due to:

1. Space limitations
2. Duplication with other museums
3. Appropriateness
4. Worth of the object being collected

2. AIM OF A COLLECTION POLICY

A collection policy is to identify the general aim or purpose of the museum. It should be written, so that it can be referred to in the future. This provides some continuity of purpose to the museum. Each museum should clearly understand its particular purpose, its reason for existence in a community. Often this purpose is revealed in the title of the museum. The aim of the collection policy will reflect this purpose. The aim will impose limitations on what is to be collected, and these should be clearly spelt out through the expression of defined or specific objectives. These objectives may comprise:

1. A distinctive theme of the collection, which is expressed in a formal statement, and communicated through the displays of the museum.

2. Variation in the displays, and flexibility of the presentation of the theme to the public.

3. Having conditions for an object's acceptability, based on space limitation, appropriateness, worth or historical significance to the museum, history of the object (its provenance).

4. Physical characteristics and physical condition given its worth, and the ability of the museum to care for the object.

Not all items are necessarily significant, although significance does not depend on monetary value. An object's significance is enhanced by:

1. Its documented history
2. Its place in the past
3. Its physical condition

Each museum should endeavour to make every effort to accept only those objects that fit the collection policy of the museum, and for which the museum is able to care.

Reference: Willis E, and Cook P. in *Handbook for Small Museums*, pp 10–15

3. "THE MUSEUM" OF THE BTPS

In the case of the BTPS, "The Museum" is defined as the whole of the BTPS operation; its depot, the trams, track, overhead, method of operation, the display area within the depot and our collection of artefacts, drawings, photographs etc. We are an operating museum dependent largely upon visitors or tourists for our income. We are not just a tourist attraction.

4. BASIS OF BTPS COLLECTION POLICY

The basis of the collection policy for the BTPS is found in the statement of the objects for which the Society was established for, as stated in the Company Memorandum of Association:

1. To establish at Ballarat an authentic working tramway museum as a tourist, historical and educational attraction.

2. To acquire, restore, maintain, repair, preserve, exhibit and operate trams on the Ballarat tramway system and elsewhere.

3. To construct, manage, operate, maintain, alter, repair, extend and renew tramways together with all appurtenances works and conveniences necessary or desirable for any of such purposes.

4. To purchase, take under trust or otherwise acquire tramcars and any plant, machinery, rolling stock, equipment or parts to be used in connection with any such tramcars and with any tramway owned or operated by the Society.

5. 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.

6. To produce, edit, print, publish, issue, sell, circulate, and preserve such papers, periodicals, books, circulars, tickets, photographs and other items of literary or artistic worth as are conducive to the objects of the Society.

While these objectives have been set very wide by the authors of the Memorandum so as not to unduly limit the activities of the Society, these have been further defined in practice by the Society's past activities through its various actions. This is not to say that in the future the Society can not amend these objects, to extend or contract the activities of the organisation

5. SOCIETY HISTORY

As an operator of Ballarat Trams, the Society is forming its own history as an operator. As such it should collect and record its own history and that of its collection, particularly that of the tramcars.

COLLECTION OR ACQUISITION POLICY OF THE BTPS

1. AIM

To define the general purpose of the museum operated by the Ballarat Tramway Preservation Society Ltd. (BTPS) and by this identify a collection policy for the care of our current collection and future acquisitions.

2. PURPOSE

The purpose of the policy is to assist the Board in fulfilling the aims of the Society in what it collects, maintains and disposes of in the future. It is not to detail the standard of upkeep, or presentation etc., this will be purpose of a separate Heritage Policy.

3. BASIS

The policy has been prepared on the following elements, given the history of the Society, its present aims and what is seen as its future.

1. The objects expressed in the Memorandum of Association.
2. The Society's expressed aims in the early days of the Society formation which was to "preserve and operate a portion of the Ballarat system as it was done by the SECV, up to Sept. 1971".
3. The current collection of the Society.
4. The limitation on space available to house the Society's collection in the South Gardens Reserve. (The present building cannot be extended further.)
5. What is likely to become available in the future, and that is consistent with the theme of the collection.
6. What would be nice to have in our collection.
7. The history of the various Ballarat tramway operators.

4. COLLECTION THEME

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".

"Ballarat Tramways are Ballarat History" would be a short form statement of this theme.

5. COLLECTION POLICY

The Society's collection comprises a large number of items, varying in size. To prepare a combined or summary policy for all of them would not relevant. Thus the policy has been broken down into a number of headings:

1. Tramcars
2. Equipment /spare parts
3. Overhead and track materials,
4. Photographs
5. Artefacts and other collectibles
6. Society Archives

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.

Reserve

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. The classification shown in the table below, is based on the above categories, though this is somewhat subjective.

The Present Collection

The present collection of trams and their interim classification is presented in the following table:

Tram	Description	Ownership	Status	Classification
1	BTC Horse tram	BTPS	Under Restoration	Essential
11	SEC Single Truck	BTPS	Not operational	Desirable
12	ESCo Single Truck	BTPS	To be restored	Essential
13	SEC Single Truck	Goldsmith	Operational	Desirable
14	SEC Single Truck	BCC	Operational	Desirable
18	SEC Single Truck	Sebastopol	Operational	Desirable
26	SEC Single Truck	BTPS	Operational	Essential
27	SEC Single Truck	BTPS	Operational	Essential
28	SEC Single Truck	BTPS	Operational	Desirable
32	SEC Single Truck	BTPS	Restoration required	Desirable
33	SEC Single Truck	BTPS	Operational	Essential
38	SEC Bogie	BTPS	Operational	Essential
39	SEC Bogie	BTPS	Not operational/display	Supplemental
40	SEC Bogie	BTPS	Operational	Essential
661	MMTB Bogie	BTPS	Operational	Supplemental
671	MMTB Bogie	BTPS	Operational	Supplemental

Legend

BTC	Ballaarat Tramway Company
ESCo	Electric Supply Co. of Victoria
SEC	State Electricity Commission of Vic.
MMTB	Melbourne and Metropolitan Tramways Board
BCC	City of Ballaarat
Sebastopol	Borough of Sebastopol
Goldsmith	Lake Goldsmith Steam Preservation Co-Operative

Future Acquisitions

Missing from the BTPS collection are the following items:

ESCo Toastrack Car:
Built new for the Company in 1913 where its use predominated on the Sebastopol line.

SECV works car:
Used to maintain the tramway track and drainage system.

Policy Relevant to Trams from Other Systems

Trams from other systems are seen to have a low priority, particularly with respect to Ballarat History. They only should be acquired on merit. Each particular case having regard to storage space, historical relevance, condition and need.

Other forms of Ballarat transport

Other forms of transport used in Ballarat, e.g. horse drawn cabs, omnibuses, motor buses etc. are not directly relevant to the history of Ballarat Tramways. While these are relevant to the history of transport in Ballarat, it is considered that acquisition of these items is not part of the Society's aims, although the objects of the Society does allow it.

5.2 Equipment and Spare Parts

This area of collection management for an operating museum is a difficult one. It can collect everything that may be useful or very little and hope that spares will not be unduly needed. The latter practice relies on the ability to repair equipment without resorting to the needs of spare parts. On the other hand, spares are also useful for rebuilding or restoring tramcars. The other limitation of gathering equipment and spare parts is the ability to store, manage them and keep them in good order.

The BTPS has currently a reasonable collection of spare parts for tramcars that it uses, however it is generally poorly stored and not catalogued. Most of the spares held are from SECV origin. The present source of spare parts is primarily from ex Melbourne trams. Most of these parts are not directly relevant to our trams, due to their later construction date and different type of vehicle.

With regard to equipment, e.g. machine tools, the BTPS has a reasonable range of modern hand tools, with some machine tools. Some old style ex tramway hand tools are held by the BTPS, but are seldom used due to their age, size or obsolescence. The need of the BTPS for large machine tools to undertake specialist work is limited due to the availability of the tramway workshops in Melbourne, other engineering shops in Ballarat, or other preservation operators facilities who have set up relevant machines to undertake their work.

The following priorities with respect to spare parts and equipment have been established.

1. Spare parts directly relevant to our single truck or maximum traction bogie trams and in short supply to be acquired.

2. Spare parts related to Melbourne trams to be acquired only where relevant to our Ballarat trams or our two ex Melbourne trams where stocks are not at present held, or are critical to the future operation of the trams themselves.

3. Small hand tools relevant to the SEC operations are to be considered for acquisition where historically relevant, and are suitable for display or could be useful in the conservation of our present fleet.

4. Machines and machine tools to be acquired where considered to be useful, not requiring large space or specialist qualifications for their use. Consideration is to be given to other holdings or abilities of other groups at the same time.

5. Spare parts related to non Ballarat trams or Melbourne trams which are not suited to our trams, will not be acquired.

5.3 Overhead and Track Materials

The BTPS has currently a large collection of overhead equipment for use in additional construction, or in maintaining its present system. Most of the material used in the construction of this equipment is brass, and thereby has a high scrap value. Equipment coming from Melbourne is limited because of its scrap value, however it has some usefulness for use in the maintenance of our overhead.

In the aspect of track materials, the Board has not stored any significant quantity of track materials due to the difficulty of doing this with regard to space, and the location of our depot within in the park. Materials if required for renewals would have to be done with railway type profile rails as grooved tramway rails are no longer manufactured. For points etc., second hand or reconstructed plant would be satisfactory for use in Ballarat.

The collection policy for this type of operational material has been formulated as follows:

1. Overhead materials where necessary for essential spare parts or for historical displays (includes all traction power supply equipment from the switchboard, to the actual trolley wire).

2. Track materials will not be acquired unless for direct use in the track or as essential material for the maintenance of existing material.

3. Samples of track materials, or equipment may be acquired where historically relevant and suitable for display.

5.4 Pictorial Records

The policy is to acquire pictorial records, which is inclusive of photographs, video and films of trams operating in Ballarat, and of the equipment used to maintain, operate construct the system, the personnel who worked on the system, or other photographs relevant to the history of Ballarat and its tramway system. The photographs should not be only of the trams themselves, but of life and street scape aspects of Ballarat's tramway history.

In this respect the following priorities have been established, particularly where a purchase, or where the cost of storage and display are involved.

1. Photographs of 1880–1920s, of all types, including those requiring restoration.

2. Photographs of 1930–1940s: poor or lower grade photographs acceptable.

3. Photographs of the 1950–1960s should be collected where of good quality.

4. Photographs of the last years of operation — Ballarat street scapes, life and activity with the trams. Photographs of trams standing for example would not form a prime priority for acquisition, especially where a cost was involved.

The location and knowledge of other museum's collections of relevant photographs should be incorporated into the collection files for reference purposes. Where possible copies of these photographs should be obtained.

5.5 Artefacts etc.

This area is quite extensive and includes such items as; drawings, tickets, fare tokens, timetables, rule books, personal records, operational paperwork, uniforms. conductors bags, safeworking equipment, tramway street furniture — e.g. stop signs, record books, references used in the operation and maintaining the system, ancillary equipment such as tower trucks.

The BTPS has a collection of such materials although not formally catalogued. The cataloguing of the material will allow for better implementation of this section of the policy in order to find "holes" or excessive holdings of a particular type of material in the collection.

Such material should be collected on the following basis:

1. Historically significant in understanding the operation of the Ballarat tramways over its life.

2. Size of the object/s, the ability to properly store it and its condition.

3. The number of similar items in our collection already.

Material not associated with the Ballarat tramways or the operation of a tramway system should not be acquired, but should be directed to organisations where it would be more appropriate.

Parts or materials removed from tramcars, such as defective structural members should be considered for acquisition. This is where the item's failure can be shown to a part of the tram's overall life history. Examples, are parts of the Horse Tram showing deterioration of the wooden members, and a sample of the steel bolster that failed on the W3's truck due to metal fatigue. It would not be necessary to keep all failed or removed material.

5.6 Society Materials

The Society itself has operated or cared for Ballarat Trams longer than the Ballarat Tramway Company. As such our pictorial and physical records, materials, equipment and operational paperwork should be sampled and collected on a rational basis for form a collection of Society activities and its history for future reference. This should be done as a matter of course. We are today setting up the basis of future historical research into our activities.

6. De-acquisition of Collected Items

An important part of any collection policy, is a policy of de-acquisition, which outlines the process for determining the need of disposal, i.e. finding a suitable home for object in a caring manner. The Society has a number of trams which are either supplemental or surplus to our collection.

The pressure to de-acquisition a tramcar will be brought about by the pressure of space on the Society's collection, its inability to house the item, and its lower standing in the classification ranking, or a deliberate decision at the time of acquisition to acquire an item for a specific purpose and to later dispose of part of it.

The following should be taken into account when de-acquisitioning an item:

1. Its relevance to the history of Ballarat tramways.
2. The condition of the object.
3. Any determination made at the time of acquisition.
4. The need to dispose — i.e. pressure on space.
5. Any alternative use that could be made of the object by the Society.
6. Its relevance to other Museums' collections.
7. Statutory requirements.

When a item has been identified for de-acquisition, the item should be offered to other museums, either for sale, long term loan or as a donation, depending on the acquisition history of the object and its value on the open market.

For tramway items, these should be offered firstly through COTMA, and then other museums, followed by private bodies. In the case of items which are not directly related to tramways, e.g. equipment or tools which could have been used by any organisation, these should be offered firstly to museums affiliated with the Central Highland Historical Association, and then other museums, before being offered on the open market. An exception to this would be if the item was determined to be of national or state significance when priority should be given to the Museum of Victoria.

OCCUPATIONAL HEALTH & SAFETY

Craig S. Tooke
Melbourne Tramcar Preservation Association

BACKGROUND

I would like to begin my paper by firstly exploring some of the history behind occupational health and safety as we know it today.

The origins of concern for health and safety in the work place can be traced back to Britain when in 1844 the Factories Act received Royal assent and became law. The necessity for this Act was primarily due to the industrial revolution going on at that time in Britain, which saw larger and more dangerous machinery being developed and hence a need for legislative measures to protect those using these machines.

As time progressed so the sophistication of industrial processes also progressed.

AUSTRALIAN LEGISLATIVE APPROACH

Here in Australia much of our legislation is modelled on that used in Britain, and legislation in the area of occupational health and safety is no exception. As mentioned previously the first Act developed was the Factories Act of 1844. Similar legislation soon came into force throughout Australia under in some cases similar or in others slightly different names.

It is interesting to note that as early as 1917 insurance companies in America were refusing to insure people who worked with asbestos because they knew it involved high risk.

The status quo remained virtually unchanged until arguably one of the most important reports since the Factories Act was introduced, the Robbins Committee Report[1] of 1972 was handed down. This report lead to the drafting and subsequent Royal assent of the Health and Safety at Work Act of 1974[2] in Britain. This act has been used as a basis for the drafting of all of the Australian acts that deal with occupational health and safety.

It is interesting to note that in the financial year 1989-90 the cost of workers compensation claims in Australia amounted to $4·8 billion dollars or 1·3% of non-farm GDP[3], a tremendous burden on the community.

The prevention of occupational injury and disease should not rely only upon the use of the "big brother" approach; it is also a matter of education, training and commitment. These areas have been addressed to varying degrees by each of the Australian Acts. I have included the titles of the principal occupational health and safety Acts at the rear of this paper as Appendix One for further reference.

Because I am familiar with the Victorian Occupational Health and Safety Act (1985)[4] I will from now on be using this as the base act throughout this paper. Similar Acts exist in other states and these should be consulted for varying local considerations that may be applicable.

VICTORIAN OCCUPATIONAL HEALTH ACT

This Act is the principal Act dealing with occupational health and safety in Victoria. It is divided up into a number of sections each of which deals with different aspects of occupational health and safety. The operation of the Act is overseen by the Victorian Occupational Health and Safety Commission. Similar bodies exist in all of the other states and further details can be found in Appendix Two at the end of the paper.

The Act places a responsibility on all manufacturers and suppliers of equipment, employers, owners, bodies corporate and individuals to ensure that equipment, materials and processes used in the work place are safe and present no hazard when utilised.

The penalties for non-compliance with the act can be up to a fine of $250 000, two years jail or both for any offence found in breach of the act. In addition to the Act, common law provisions also apply with certain limitations to the area of occupational health and safety.

APPLICATION OF THE ACT TO MUSEUMS

Because the Act is designed primarily for situations where paid labour is employed application of the Act to museums is limited where volunteer labour is used. However, it is directly applicable where either paid employees or contractors are involved in museum activities.

This should not, in my opinion, mean that certain provisions of the Act should not be also applied where volunteer labour is involved. For example it is just as easy for a museum volunteer who is filing an asbestos electrical arc chute to breath in an asbestos fibre and develop asbestosis as it is for a person employed by the Public Transport Corporation and engaged in identical work to breath in the fibre and develop asbestosis.

Under the Occupational Health and Safety Act various Regulations and Codes of Practice have been developed for use in industry. Whilst the regulations

are mandatory the Codes of Practice are designed as a guide only. They can and have been cited in prosecutions by the Department of Labour as minimum standards. It would be wise for us, as tramway museums, to keep abreast of and implement these as minimum standards in our museum operations.

As can be seen by viewing the information contained in Appendix Three, a great variety of areas are covered by these Codes of Practice. Various standards published by the Standards Association of Australia are also applicable to certain situations in which museums are likely to be involved. There is also large range of commercial literature available in the area of occupational health and safety and I have listed some useful and relevant titles in Appendix Four.

Assistance and information on many aspects and occupational health and safety problems can also be obtained from the various authorities that oversee the occupational health and safety acts in each state.

PRACTICAL CONSIDERATIONS FOR MUSEUMS

As museums we are attempting to preserve our trams in first class operating conditions so that future generations will be able to ride and view them just as we have had the opportunity to do. We should however not be attempting to use ancient and dangerous practices in the preservation of the trams.

An example to illustrate what I am talking about is the electric cables used to control the power within a tram. No one in their right mind would use the original vulcanised india rubber insulated cable when rebuilding or restoring a tram in this day and age when far more modern and safer cables are available.

The first and most important occupational health and safety consideration by a museum, therefore, should be a commitment by the Board of Management to creating a safe and efficient working environment for all members and others who are involved in museum activities. Accidents and injury do not just happen. They are the result of the actions of people and a given set of circumstances. Just as a fire needs both fuel and oxygen to continue to burn so does it take both a person and a given circumstance for an accident or injury to occur.

Having made this commitment, questions such as the following should be asked:

1. Do we have a person who looks after safety matters at our museum?
2. Do we have a reporting system in place to record and follow up any accidents or near miss incidents?
3. Do we have written procedures in place for activities that our members undertake on behalf of our museum?
4. Do we have adequate first aid facilities at the museum?
5. Is our fire protection equipment adequate?
6. How do we store our flammable material such as oils, paints and solvents?
7. Do we store our spare parts and equipment in an accessible manner?
8. How often do we review our procedures?
9. Do we have a list of emergency phone numbers available?
10. Are all of our machines fitted with correct guards?
11. Do we have any necessary personal protective equipment available for use at our museum?
12. Do we carry out regular safety audits of our museum site ?
13. Do we have copies of the material safety data sheets for each of the chemicals, solvents and paints used at our museum?

Whilst you may think that dealing with matters of occupational health and safety are time consuming and an added expense on museums, this is not the case.

Imagine the situation where one of your museum's historic or newly restored tramcars burns to the ground through lack of proper fire protection; or a situation where a museum member injures themselves and inadequate first aid facilities are available.

What would you say, or more importantly how would you feel, being in the situation yourself? What would you say to defend your museum in a common law court case where a member was suing your society for an obvious case of negligence ?

Proper care and planning can also lead to improvements in productivity and in cost savings which will assist all involved in your museum.

CONCLUSION

I have attempted to illustrate that as museums we are involved in a highly industrial environment and therefore the occupational health and safety of both members and our paying visitors should be of prime importance to us all.

Occupational health and safety should be yet another area in which, as museums, we strive for excellence. Through commitment, careful planning, critical analysis of what we are striving for and the way we are going about achieving our goals, we can achieve this excellence.

Observance of the legislative framework that is in place together with use of the Codes of Practice and appropriate Australian Standards will go a long way to ensuring that we reach this very important goal, allowing our museums to be run effectively, safely and efficiently.

REFERENCES

1. Robbins Committee Report 1972, H.M.S.O. London 1972.
2. Health and Safety at Work Act 1974, H.M.S.O. London 1974.
3. The Review of Occupational Health and Safety in Australia, Australian Government Publishing Service 1990.
4. The Occupational Health and Safety Act 1985, Victorian Government Printer.

APPENDIX 1

The principal Occupational Health & Safety Acts correct to December 1991 are:

New South Wales

The Occupational Health & Safety Act 1983

Victoria

The Occupational Health & Safety Act 1985

Queensland

The Workplace Health & Safety Act

South Australia

The Occupational Health, Safety & Welfare Act 1986

Western Australia

The Occupational Health, Safety & Welfare Act 1984

Tasmania

The Industrial Safety, Health & Welfare Act 1977

Australian Capital Territory

The Occupational Health & Safety Act 1989

Northern Territory

The Work Health Act 1986

APPENDIX 2

The Government authorities responsible for occupational health & safety within Australia correct to December 1991 are;

New South Wales

WorkCover Authority
1 Rosebery Ave
Rosebery 2018 Ph. 697 8333

Victoria

Victorian Occupational Health & Safety Commission
80 Collins St
Melbourne 3000 Ph. 655 6444

Queensland

Division of Accident Prevention
Department of Education, Vocational Education, Training & Industrial Relations
State Law Building
50 Ann St
Brisbane 4000 Ph. 239 3111

South Australia

South Australian Occupational Health & Safety Commission
Henry Waymouth Building
100 Waymouth St
Adelaide 5000 Ph. 226 3120

Western Australia

Department of Occupational Health, Safety & Welfare
"Westcentre"
1260 Hay St
Perth 6000 Ph. 327 8777

Tasmania

Department of Labour & Industry
81 - 89 Brisbane St
Hobart 7000 Ph. 33 7657

Australian Capital Territory

Private Sector Occupational Health & Safety Section
Industrial Relations Branch
A.C.T. Administration
(Address Unknown)

Northern Territory

Work Health Authority
66 The Esplanade
Darwin 0800 Ph. 89 5511

APPENDIX 3

The following Codes of Practice are in use current to October 1991;

National Codes

- Prevention and Management of Occupational Overuse Syndrome
- Safe Removal of Asbestos
- Safe Handling of Timber Preservatives & Treated Timber
- Safe Use of Vinyl Chloride
- Manual Handling
- Safe Use of Synthetic Mineral Fibres
- Control of Workplace Hazardous Substances

New South Wales

- Garbage Compactors
- Tunnel Construction
- Manual Handling
- Farm Silos & Field Bins

Victoria

- Workplaces
- First Aid in the Workplace
- Foundries
- Lead Control
- Manual Handling
- Manual Handling in the Furniture Removal Industry
- Manual Handling (Occupational Overuse Syndrome)
- Safety Precautions in Trenching Operations
- Temporary Electrical Installations on Building & Construction Sites Tilt-up Constructions
- Safe Work on Roofs (Excluding Vila Constructions)
- Safe Use of Cranes in the Building & Construction Industry
- Safety in Forest Operations
- Building & Construction Workplaces
- Demolition

Queensland

- Manual Handling
- Manual Handling (Building)
- Workplace Amenities
- Project Amenities Safe Design & Operation of Tractors
- Personal Protective Equipment
- Steel Construction (High Rise)

South Australia

- Safe Removal of Asbestos
- Manual Handling
- Safe Use of Synthetic Mineral Fibres
- Safe Handling of Timber Preservatives & Treated Timber
- Safe Erection of Structural Steelwork
- First Aid in the Workplace
- Logging Stanchions & Bulkheads
- Chainsaw - Safety Requirements
- Brush Cutters - Safety Requirements

Western Australia

- Safe Work on Roofs
- Hepatitis B & HIV/AIDS
- Prevention & Control of Legionnaires Disease
- Styrene in the Fibreglass Industry Noise Control in the Workplace
- Manual Handling

Australian Capital Territory

- Manual Handling

Northern Territory

- First Aid in the Workplace

APPENDIX 4

The following selected references would prove useful in the field of occupational health & safety:

Accident Prevention
International Labour Organisation 1986

Health & Safety at Work
John Mathews
Pluto Press 1985

Work Health Makes Work Sense
Damien J. Smith
Enterprisecare 1989

Planning Occupational Safety & Health
CCH Australia
3rd Edition 1991

Guidebook to Australian Occupational Health & Safety Laws
Adrian Brooks
CCH Australia
3rd Edition 1988

Managing Occupational Health & Safety in Australia
Quinlan & Boyle
MacMillan Australia 1991

Australia Standard A.S. 1470 - 1986 Health & Safety at Work - Principles & Practises
Standards Association of Australia 1986

Manual of Industrial Personal Protection
Standards Association of Australia 1986

Australian Standard A.S. 1885.1 - 1990
Work Place Injury & Disease Recording Standard
Standards Association of Australia 1990

RELATIONSHIPS WITH GOVERNMENT AUTHORITIES

THE ADELAIDE EXPERIENCE

Christopher Andrews
Australian Electric Transport Museum

The AETM has had on-going relationships with a number of Government Authorities over the period of its existence.

The following is an outline of some of these experiences:-

A. SALISBURY COUNCIL

Salisbury was the only local government authority that was prepared to permit a tramway museum to be established in its area.

1. The construction of the two kilometre track was a Council initiative under the auspices and efforts of an unorthodox and dynamic City Engineer. The project was financed by funding under the State Unemployment Relief Scheme (SURS).

1.1 There has been no legal agreement drawn up regarding:-

(i) ownership of the line
(ii) operating times
(iii) major renewals ie: capital replacement

There is an unwritten understanding that the Council has legal possession of the track (outside of the Museum site boundary) and periodic negotiations occur in regard to the maintenance of the line.

The AETM is essentially self regulating in the absence of any attempts by authorities to institute regulatory control, eg: the State Transport Authority or the Department of Labour.

1.2 Salisbury Council finance has been forthcoming only for work on the track although it has hinted at support for particular schemes such as improvement of the line in St Kilda township or the foreshore area.

1.3 Council works employees were employed on track construction when AETM member, Chris Steele, was recruited as the project co-ordinator.

1.4 During construction of the line, AETM members acted as virtual subcontractors in supplying specialist hardware. This left very little in the way of labour resources for other museum projects and activities.

A similar situation arose when AETM cars operated on the Glenelg line in 1978-9 and members were rostered on vehicles.

1.5 The Council-administered RED Scheme project in 1973 gave the AETM a great boost and set a precedent for this type of museum in relation to capital-infrastructure input by government agencies. A significant spin-off was that this boost in activity evinced greater effort from museum members.

2. In more recent times there have been negotiations with the Council when it was necessary to close roads for track renewal. This has sometimes involved restricting access to the properties of local residents.

A grant from Council has also been provided to improve the playground stop.

3. Salisbury Council has incorporated the tramline into landscaping activities for the foreshore area. When the Mangrove street crossing was renewed Council provided staff, equipment and material eg: the rock fill and the tar dressing.

Council makes an annual visit to the Museum to acquaint Council members and staff with the current operating situation. There is also minor publicity support (possibly a blessing in view of potential vandalism dangers).

Council also expressed some concern when approaches were made by the Port Adelaide heritage authorities regarding a possible move there. Perhaps more advantage could be taken of these concerns to encourage additional Council support.

4. The AETM determines its own long-term policies and day-to-day activities with no demands being made by Council.

B. TOURISM IN SOUTH AUSTRALIA

Tourism SA (The South Australian Tourist Bureau) has printed several runs of the St Kilda Tramway brochure as well as a poster in past years.

Occasionally the information they provide is not accurate and requires correction.

C. HISTORY TRUST OF SOUTH AUSTRALIA

This is the pre-eminent statutory body in South Australia acting as an umbrella organisation for the disbursement of government funding assistance to museums using a system based on standards for accreditation. An office bearer and trustee of the AETM has also been Chairperson of the History Trust. In turn experience has been imparted to the History Trust with a number of recommendations now embodied in administrative and liaison practices.

D. South Australian Department for the Arts and Cultural Heritage.

Funds were recently allocated by this Department towards the fitting out of the new body shop.

E. Commonwealth Department for the Arts.

An attempt has been made to access a new source of Commonwealth funding for several projects up to a value of $50 000.

It is hoped to make the Bib and Bub project a recipient of "Century 21" funding.

F. State Transport Authority (STA)

In 1978 and 1979, the STA under the impetus of a dynamic public relations officer took the initiative of celebrating the centenary of Adelaide street public transport and the golden jubilee of the Glenelg tramway. This entailed the operation and display of vehicles selected from the museum collection and included trolley buses as well as tramcars. The STA bore all the costs.

More recently in 1990 a mutual commercial venture was suggested for AETM tram operation on the Glenelg line. This proposal was, however, rejected by the AETM as it was seen to be too time-consuming with little publicity or financial advantage.

The STA has recently produced a poster, promoting the Museum, which is displayed in the Glenelg tramcars. The STA transport map also includes the St Kilda tramway.

The STA was a joint sponsor for the restoration of car 264, a state sponsored "Jubilee 150" project. The original agreed conditions for the joint annual use of this car, however, have lapsed with the STA no longer pursuing heritage matters.

Another example of co-operation between the STA and the Museum was the housing of two surplus H cars at St Kilda. The STA paid for and also constructed track alterations to facilitate the loading and unloading of theses cars. Immediate and full ownership of these two trams is currently an "issue" as under the present arrangements the AETM may be legally and financially liable should anything untoward occur if they are operated.

G. Future directions.

There are other Local, State and Commonwealth government and semi-government agencies that may be potential sources of financial and material assistance.
More recently, and aided by a member who is a lecturer with a local TAFE college, the Museum has been assisted by TAFE on vehicle restoration and building construction work. As part of their on-the-job training activities, staff and students from this college have carried out such tasks as spray painting buildings on the site, formwork for concreting, carpet laying, shopfitting and various elements of timber machining and construction. This work has been of considerable assistance to the Museum.

In addition, offenders under the Community Service Order Scheme of the Department of Correctional Services have been engaged in overhead pole painting and track maintenance.

State and Commonwealth labour market programs have in the past been of considerable benefit to non-profit organisations such as the AETM. However policy changes over the past 3-5 years have seen a major shift in emphasis away from the capital intensity of job-creation programs such as the former Community Employment Program (CEP). The major emphasis is now on training and short term "KickStart" type activities.

Notwithstanding this, if museum organisations are willing to make available their facilities, which are often of an constructional and engineering nature, there is scope for integration of these training activities into museum operations. The use by the AETM of TAFE assistance is but one example.

H. Summary

As can be seen, the Museum has generally benefited from its dealings with external government agencies, although there are potential drawbacks which need careful consideration before becoming involved. A great deal will depend on the personnel willing to participate and the general economic and financial conditions pertaining at the time. Opportunities will nonetheless be available and should be positively considered.

Discussion and Comments:

Community Service Order workers:

1. AETM reported mixed experiences with CSO workers. Some of them are satisfactory, especially the more mature ones; others do not do any useful work. Some museum members will not work with them.

2. Different workers come each week, which can be a problem.

3. Supervision is also an issue. The best solution is to work with them in a work team.

CORROSION: ELECTROLYSIS

John Lambert
Brisbane Tramway Museum Society

The aim of this paper is to give COTMA delegates (as traction system owners and operators) a brief introduction into the nature and control of electrolysis caused by stray current from DC traction systems.

The testing of interference, the design and installation of mitigation, plus the correlation of all results is a highly specialised technical area and well beyond the scope of this paper. The State Electrolysis Committee, where it exists, is the appropriate technical body for coordination and consultation regarding stray current problems and mitigation systems.

STRUCTURE

This term is used to describe any underground metallic structures that may be influenced by stray current. Examples of structures are telephone cables, gas mains, oil lines, water mains, electricity cables and the electricity earth (MEN) system.

INTERFERENCE

Interference occurs when stray traction currents influence metallic structures so that their potential to soil is altered. Interference may be either *cathodic* or *anodic*. Where cathodic, the potential of the structure is made more negative and where anodic, the potential of the structure is moved in the positive direction. At points where stray traction current is collected by the structure, the potential changes in the cathodic direction. Where it is discharged the potential changes in the anodic direction and if conditions are right corrosion (electrolysis) will take place. The zones where this occurs may be significantly remote from the traction system. (See Fig. 1)

LIMITS

The tolerable limits of interference vary from state to state. However, it is recommended that anodic interference should be controlled to less than a change of 20 millivolts positive, while cathodic interference is not normally controlled except where the potential change is considered excessive.

TESTING

Testing is performed over a 24 hour period using chart recorders at several strategic locations. At the substation the following items are monitored:

1. Substation load
2. Rail to earth potential.
3. Drain current.
4. TDU output.

At the drainage point on the structure the following items are monitored:

1. Potential to soil.
2. Drainage current.

At several other locations on the structure, known as test points, potential to soil charts may also be taken to assess the function of the drainage bond. (See Fig. 2)

Initial interference testing in a Tramway Museum environment would most likely consist of 24 hour charts on the following items:

1. Substation load
2. Rail to earth potential at the substation.
3. Several test points on the structure.

These charts would then be correlated and the results would indicate what effect the operation of the traction system has on the structure. Should adverse results be indicated then corrosion mitigation would have to be designed and installed. Interference may be reduced (possibly to acceptable levels) by minimisation of track leakage by the following methods:

1. Obtaining maximum conductance in the rail return by ensuring that the rails form an electrically continuous conductor. Bonding should be installed across all rail joints (fishplates) and between rails (across the track) at intervals of approximately 50 metres. Bonding should also be made to and around special work as manganese steel is of higher resistance than carbon steel.

2. The installation of negative feeders from remote parts of the track to the substation.

Special note: Track in mass concrete is notoriously bad for current leakage as concrete is hygroscopic, thereby becoming a conductor under certain conditions. Good bonding is therefore essential during track construction.

MITIGATION (DRAINAGE BONDS)

These drainage bonds are installed so that they "drain" the stray current off the structure and return it to the traction system. There are a number of different types of drainage bonds in Australia; some of these are:

TDU: Thyristor Drainage Unit
VCDB: Variable Conductance Drainage Bond
TRAD: Transformer Rectifier Assisted Drainage

(See Fig. 3)

It is preferable to return stray current to the substation negative busbar via "Electrolysis Feeders" as this gives greater control over the drainage bond than if the stray current is returned to the rail. (See Fig. 4)

CONCLUSION

Operators of tramway museums should be aware of what underground metallic structures exist in the vicinity of their traction systems and appropriate testing should be performed to ascertain if any adverse effects have been created. Consultation and cooperation with the owners of these structures is of great importance in these matters.

ACKNOWLEDGMENTS

I wish to acknowledge Mr Bill Attard and staff of the Victorian Electrolysis Committee for their assistance in gaining information on Traction Electrolysis, Mr Brian Byrne of Telecom Australia who made the initial contact with Mr Attard and Mr Jim McMonagle of Telecom Australia who supplied information on electrolysis in New South Wales.

REFERENCES

1. Australian Standard 2832.1 Guide to the cathodic protection of metals.
2. Information from the Victorian Electrolysis Commission
3. *An Introduction to Corrosion Technology* (Australian Corrosion Association)
4. Information from the NSW Electrolysis Committee.

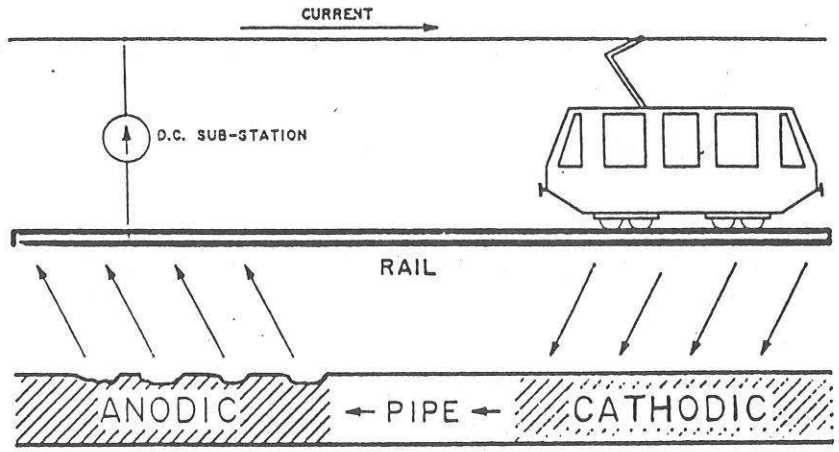


FIGURE 1 : CORROSION DUE TO STRAY TRACTION CURRENT

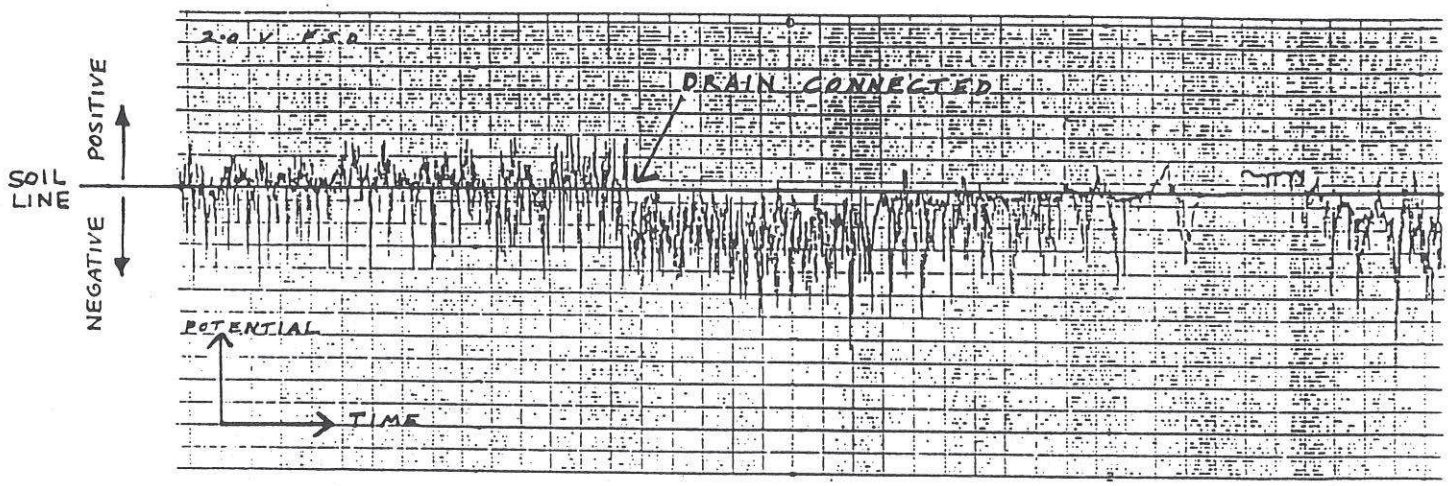


FIGURE 2 : 24-HOUR PIPE TO SOIL POTENTIAL RECORDING SHOWING EFFECT OF STRAY CURRENT DRAINAGE

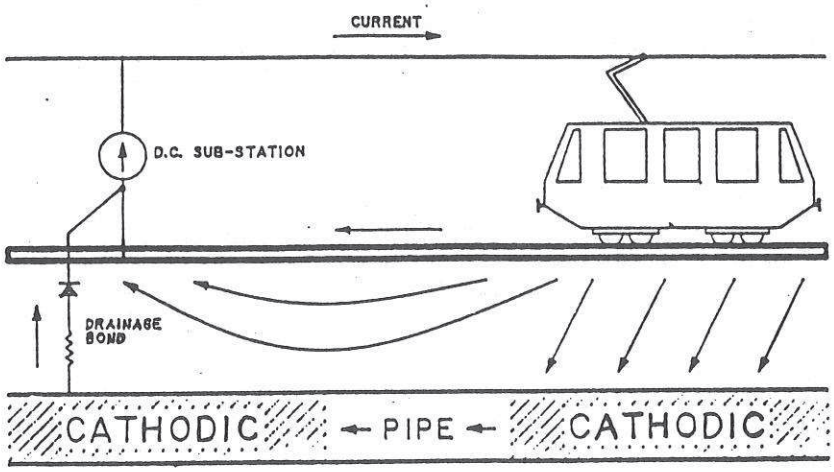


FIGURE 3 : DIODE CONTROLLED DRAINAGE BOND

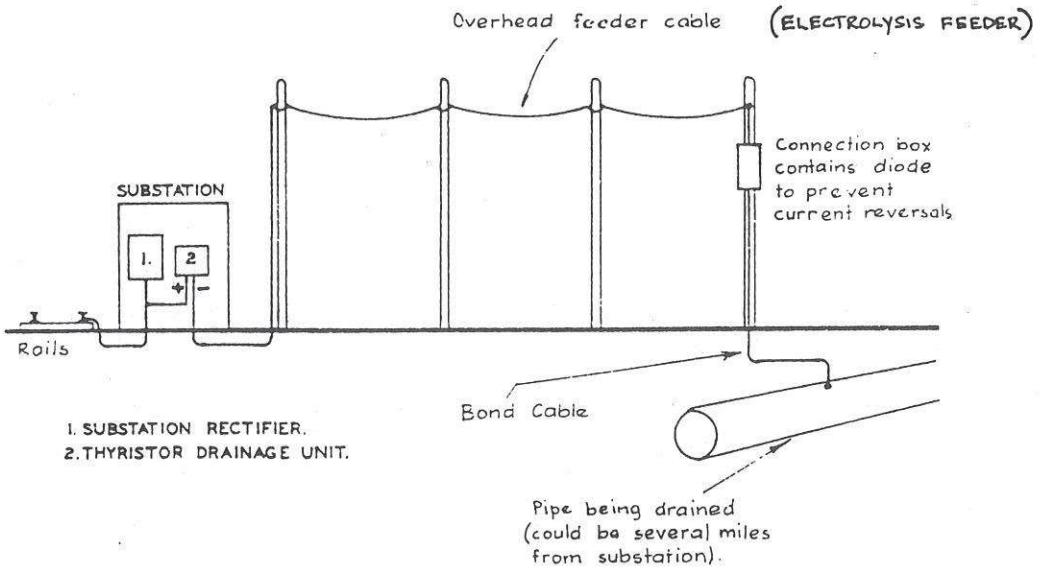


Fig. 4 : Schematic Diagram of Electrolysis Drainage

PROMOTION

Graeme Vellacott
Senior Vice President
Hotham Valley Tourist Railway Inc.

Mr. Graeme Vellacott presented a paper on marketing, advertising and promotion strategies for a volunteer-based operating rail preservation group, as suggested by the Hotham Valley's Tourist Railway's experiences. The main points in this paper are summarised hereunder:

1. BACKGROUND

- Hotham Valley Railway was established in 1974 as operator of a 24 kilometre line from Pinjarra to Dwellingup.
- It now carries 47 000 passengers per year and has an annual turnover of $1·3 million.
- As an example, a recent tour carried 81 passengers at $390 each. The train had a crew of 36 — 6 to run the train, 30 devoted to passenger care.
- How has this come about?

2. UNDERSTANDING AND IDENTIFYING YOUR INDUSTRY AND TRUE COMPETITION

- HVR had to broaden its revenue base on the 24 km line.
- The rail enthusiast market is too small to allow success — the aim had to be at members of the general public.
- HVR decided it was in the tourism industry (not rail preservation), competing for visitors and the leisure dollar with other organisations such as Sea World.
- It was decided to run rail tours to other places, giving people a good time.
- Mr and Mrs Average with two kids are the clients. *What do they want?* Give it to *them* to satisfy *your* hobby.

3. CREATING THE PRODUCT

- HVR had to create something unique and credible.
- Need to cater for tourists.
- Need a trading name.
- Strong Corporate Image needed
  - logo
  - slogan *The Railway run by Volunteers*
- HVR has a full-time equivalent staff of $5\frac{1}{4}$.
- Need a balance of commercial operation versus enthusiast organisation.

4. CREATING PUBLIC AWARENESS

- Advertising needs to be long term to build up a profile.
- HVR – 10% of budget is for advertising.
- Find creative persons in the membership to do it.
- News items in local community newspapers
- Write to all Rotary/Lions/Apex who can't find speakers.

5. CONVERTING PUBLIC AWARENESS TO DOLLARS VIA BOTTOMS ON SEATS

- $\frac{1}{2}$ million leaflets, half paid for by Macdonald's, printed "in-house".
- Free ride for family of hotel concierges to encourage promotion.
- HVR has its own booking centre — bookings are listed by postcode and by how clients found out about HVR. Advertising can be channelled to where it is most effective.
- Only use radio and TV for awareness and image. For specific sales — use press.

6. HELPFUL HINTS

- Produce a "Bid Pack", for potential sponsors showing achievements and aspirations, with glossy pictures. [About $600] Leave this with managers for a week.
- Be ruthless on "front-of-house" people and their behaviour.
- HVR does surveys constantly –
  - by phone;
  - by coach captains on each trip.

ACCREDITATION AND ITS EFFECT ON TRAMWAY MUSEUMS IN NSW

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Accreditation is defined as:

- certified as being of a prescribed quality;
- being declared as meeting official requirements.

BACKGROUND

On Sunday May 6, 1990, an historic train trip, hauled by locomotive 3801, was climbing Cowan Bank heading home after a trip to Newcastle.

For various reasons 3801 could not lift the train up the grade and, after several attempts, had come to a halt. Without warning an Intercity express ploughed into the rear of the train, resulting in several fatalities.

As a result, the State Rail Authority imposed an immediate and total ban on all steam-hauled train trips in NSW. This ban applied to main line and branch line operators. Operators on private lines were not affected.

At the following coronial inquiry, the NSW Deputy Coroner, Derrick Hand, handed down a finding "that the accident did happen because of that 'million to one chance'". Basically the evidence presented at the inquiry led him to believe that due to excessive sand on the rails the whole train was effectively insulated from the signalling system which allowed the following train to proceed. The overall actions of the Society running the trip did not contribute to the accident.

For reasons unclear, the Transport Minister had formed the opinion that as steam train operations were not all that popular the ban should remain. Within a couple of weeks he had changed his mind, perhaps due to the volume of correspondence he had received regarding the social importance of steam-hauled train trips. These letters had come not only from the well-organised enthusiast lobby, but from many councils and shires throughout the state as well as community groups, all expressing the feeling of fondness for steam trains held by the public at large.

The Minister then set up a meeting early in January 1991, between the historical societies, the State Rail Authority and the Department of Transport to discuss a proposal for the accreditation of historical train operations on SRA main lines. The major thrust was for main line operations and branch lines connected to the main system, whether used by SRA for normal services or not. Two working parties were established to consider two key issues: Accreditation Standards and Public Liability Insurance.

All historical societies were invited to present submissions detailing their respective group's views. Our [ie SPER's] major point of issue was that we were an electric tramway and not a railway, and as such we should not be considered in the same category as rail tour operators. We operate on purpose built, private tramway right of way with no common workings with other operators, travelling at relatively low speeds with light passenger loadings. We are a long term operator with no operation related incidents during 26 years of running the trams.

On March 11, 1991, the Minister announced the resumption of heritage train operations. Along with this announcement the SRA released the Accreditation document for main line operations. The document was basically non-negotiable. The NSW Rail Transport Museum and 3801 Limited prepared their accreditation submissions to the Authority and following extensive and detailed questioning the Accreditation Panel gave in-principle support to the proposals. These two organisations eventually received full approval, followed shortly afterwards by ARHS (ACT Division).

One outcome from the accreditation steering committee was a proposal that the SRA not be responsible for operations on non-SRA lines and that the private line operators come under control of the Workcover Authority (formerly the DLI). The Workcover code in force at that time regulated industries only where there was a demonstrated public safety need. The Workcover Authority did not regulate private railways over 650 mm gauge and would require internal changes if it were to set and monitor accreditation standards. The WCA decided that it would continue its current policy of non-active involvement until a change of incident/accident record justified otherwise.

SOCIETY'S ACTION ON SELF REGULATION

At this point it is relevant to return to the early days of the Museum in the Royal National Park.

As the Museum developed after 1961, plans were also undertaken to ensure the project would stand official scrutiny, more so since the enthusiast group had been subject to public ridicule from various quarters. For that reason, an early official act was the publication, by the Board of Directors in 1963, of a set of "Regulations for the Conduct of Traffic and Guidance of Members and Employees". (The Grey Book)

As the time for trial electric operations approached during the latter part of 1964, the museum executive appointed a member, who had been a tram driver, to the position of Chief Driving Instructor. He was in control of all driver training for the next 5 years. The early operation was supported by the first issue of

"Tramway Working Orders" based on the documents previously used by the Department of Government Transport.

After 4 years of operations, the Directors were faced with a number of problems. The initial power supply had such a limited power output that trams were restricted to slow speed operation. This was about to change as approval had been given to boost power supply. The number of trams being readied for traffic was increasing. as was the number of members seeking approval to drive.

These factors forced the implementation of the next stage of development. It became necessary to form a committee of experienced members to establish a training programme for traffic staff and to expand the Rules and Regulations to include Working Orders and other instructions due to the increasing number of new members who had not had previous contact with trams in their normal operating environment.

The Crew Training Course Committee reported back to the Directors in 1970 with outline proposals for training to be implemented as soon as details could be finalised. A number of senior members were appointed to the Committee to establish a practical training programme, based on the outline proposals. These members became the Society's first "Instructors".

In 1972, the first review of drivers resulting from this Committee's training programme was held. This took the form of lectures based on the Handbook, which contained Working Orders and Equipment and Operation sections. Following the lecture, each member was asked to demonstrate his capability in driving. For the first time he was instructed on the methods of operation of electrical emergency procedures. Those who showed reasonable competency had their previous authorisation renewed. Those who did not attend this review had to undertake any new training programme from the beginning. Concurrently, a similar programme was instituted for the conductors.

The final stage was to invite other members to undertake training. It was stressed that all new trainees would have to be approved as a conductor before driving instruction could commence.

The programme continued until 1980, being altered and adapted as the Instructors gained experience in teaching and the peculiarities of the system and the tramcars became evident. At that stage a number of changes took place to further improve the training programme situation.

In 1980, the Crew Training Committee suggested that the next stage of training should be implemented. This was a written examination for previously authorised drivers. The examination consisted of 20 questions which covered the topics of museum philosophy, working orders, electric operation and mechanical operation. Three instructors marked the papers independently and the marks were aggregated, with the pass mark being set at 45. The Crew Training Committee would discuss any major difference in the marking of any particular answer at their next meeting.

With the plans drawn up for the new tramway at Loftus, it became apparent that the new line would present totally different operating situations with which we had no experience, including the crossing of a side street and several property access crossings. A new training programme was devised and once again the traffic staff had to be retrained.

Prior to this training, the then Chief Training Officer was able, with the co-operation of the Melbourne tramway authorities, to attend the Hawthorn Training School as an observer and to have lengthy discussions on training with their staff. This co-operation has continued through the years.

In view of the new accreditation procedures being implemented by the government, we are in the fortunate position of having in place a well structured training course for our traffic staff, which has been based on our many years of experience.

Other Events Affecting the Museum

Until mid-1991 the Museum was prepared to sit and wait until the relevant authority approached us. However the State Rail Authority ceased electric train services on the Royal National Park Branch Railway line. This was an opportunity which the Museum could not afford to miss, so when invitations for Expressions of Interest for the disused Branch Line were called, the Museum lodged a proposal. The format of the Expression of Interest was based heavily on accreditation procedures. This gave us an insight into the new requirements. The Authority accepted our proposal "in principle", subject to further negotiations including accreditation.

So, in a relatively short space of time the situation had changed from the Workcover Authority's "let well enough alone" to one where, for the first time in our 40 year history, an outside authority was to regulate our operational procedures.

Prior to the SRA letting out the Expression of Interest documents, the SRA Accreditation Officer, Keith Audet, sought an unofficial visit by a number of SRA representatives from the Special Trains Unit and their legal department.

Apart from Keith Audet, none of the SRA group had visited the Museum previously. The only knowledge of the Museum was, quote, "a few trams in a tin shed". In fact prior information hinted that one of the group was indifferent to visiting the Museum at all. It was therefore an eyeopener for them to see the facilities that existed.

During the mandatory tour of the display hall it became evident that the visit was more than a sightseeing trip. Questions on our history, formation

and legal standing were the first raised followed by those dealing with financing of the enterprise and its long term viability. As the party passed into the "works" side of the Museum, the thrust of the questions centred around maintenance procedures, planned maintenance, the qualifications of those involved in tramcar maintenance and the keeping of records. Although impressed with the workshop facilities and our workmanship in general, the discussions inevitably returned to accountability of personnel. The fact that our Chief Engineer is a professional electrical and mechanical engineer and those responsible for maintenance have the appropriate trade qualifications appeared to alleviate the earlier concerns.

On the subject of the Operations staff, especially the tram crews, it was stressed by the Museum that the Directors had initiated the training of our tram crews and the publishing of the Rules and Regulations early in our public operations. The current set of Rules and Regulations were shown to the visitors, along with the earlier documentation to illustrate our long term commitment to safe public operations.

The visit was beneficial to both the Authority and the Museum as it changed the visitors' preconceived ideas of the museum consisting of "little boys playing trams" to a dedicated group of "professional amateurs".

The visit by representatives from the Department of Transport was almost a carbon copy of the SRA visit. Apart from operations safety, which included maintenance standards and conformity to those standards, their concern was one of management stability and financial ability.

As the Museum has been established for over 40 years and the majority of the current Directors have been on the Board for over 10 years, the officials believed we had satisfied the management criteria. They commented that the Museum had shown great innovation over the years and had been prepared to accept responsibility for its actions. This would hold the Museum in good stead with the authorities.

Both groups of visitors who viewed our Operations Handbook expressed surprise that such an authoritative document had been produced by a volunteer group and requested a copy for their files. We have been led to believe that other groups have been shown the documents as a guide to what is desirable.

The only shortcoming for the Museum to receive full accreditation approval is in the area of records. Although maintenance for trams, track, overhead wiring and buildings is being carried out, the new accreditation conditions require documented proof that such maintenance is carried out in accordance with predetermined standards.

ACCREDITATION CRITERIA REQUIREMENTS

The accreditation document forms part of the Operating Deed between the SRA and the operating organisation. There are two types of Deed: a "Main Line Operating Deed", where only the equipment requires registration, and a "Disused Lines Deed", where the SRA infrastructure as well as the private infrastructure requires registration.

Managerial Capacity

1. **Incorporation**

- the group must be incorporated.

2. **Operational History**

- a heavy reliance is placed on this aspect.

3. **Organisational Structure**

- must be appropriate for the operations.

4. **Management Personnel**

- Directors:
  looking for managerial experience
- Engineers:
  must have qualifications and relevant experience
- Operations Staff:
  training, qualification and/or authorisation, experience
- Maintenance personnel:
  qualifications and experience

5. **Financial requirements**

6. **Statement of Assets and Liabilities**

7. **Profit and Loss Statements**

8. **Statement of Opinion**

- by bank or financial institution

9. **Insurance:**

- minimum of $10 million

Certification of Equipment and Infrastructure

1. **List of equipment to be used**

- Engineering drawings — especially any modifications
- Certificates
- Results of tests and inspections

2. List of Private Infrastructure to be used

- Engineering drawings
- Certificates
- Results of tests and inspections

3. Engineering and Safety Standards to be developed by Engineers

- these standards should be based upon relevant existing standards (SRA standards in the case of mainline operators). The standards have to be approved by the authority.

Safety and Maintenance Plans

1. Safety Operation Plan

- Identification of any hazards
- Safety Facilities and Procedures: based on these hazards
- Safeworking procedures

2. Safety Monitoring Plan

- to monitor the above Plan

3. Maintenance Plan

- formal mechanisms to ensure adherence
- Inspection facilities, procedures and checklists
- Records to be kept and history to be developed

4. Regular review of Plans to be undertaken

Part of the accreditation procedure is the inspection by the Authority of the vehicles to be registered for operation on the line. Each annual inspection will incur a cost of $200 per vehicle.

The deed for the disused line can be for any period up to five years. A permit to carry out operations will be issued, but this permit must be renewed each six months. This requires the lodgement of certificates from both the Mechanical and Civil engineers, at least 14 days prior to the end of the period.

SUMMARY

The main theme of accreditation is "Self Regulation"

The group seeking accreditation must display:

- sound management and financial control
- adequate insurance and legal responsibility
- registration of equipment
- operational and maintenance standards
- qualified personnel
- safety and maintenance plans
- ongoing monitoring and reporting
- continual improvement

CONCLUSION

Although accreditation of enthusiast groups, or for that matter commercial organisations, wishing to use steam engines and historic carriages for tours was invested with the SRA, they are also the accrediting authority for all organisations wishing to operate any form of rail based activity. Within 18 months, however, the Department of Transport will take over the responsibility for accreditation for all groups, including the SRA itself we believe, and that will be interesting.

The accreditation criteria is demanding on all aspects of Museum operations. It will increase costs in the form of insurance and inspection charges. The accreditation criteria will be enforced and compliance will be mandatory to keep operating. Survival requires that a culture change in the Museum's attitude is necessary. Once accredited, "playing trams" will be gone. Only through responsibility and accountability as demanded by accreditation will the Museum continue to attract the support it requires to continue into the future as a viable force.