

SYDNEY TRAMWAY MUSEUM

RAIL SAFETY MANAGEMENT PLAN

| **FEBRUARY** MAY 2015

Document Control Record

1. Document Details:

Name: STM Rail Safety Management Plan

Number: STM6042

Version Number: 2.~~16~~17

Document Status: Working Draft

Approved for Issue

Archived

Next Scheduled Review Date: 1st December 2016~~5~~

2. Version History:

Version Number	Date	Reason/Comments
1.0	31/12/2006	Initial issue
1.1	12/04/2007	Various changes to wording
2.0	25/01/2008	Review of Procedure with major changes
2.1	31/12/2008	Added Drug and Alcohol testing and other changes
2.2	31/05/2009	Various changes
2.3	30/11/2009	Updated the Risk matrix with the new one issued by ITSR and changed the names of STM6007, STM6009-6011 and STM6041.
2.4	16/01/2010	Updated the section 2.9.2 to explain the scheduling of Operational Audits.
2.5	30/03/2010	Correct the error in the Risk Matrix (change E to D)
2.6	31/07/2010	Added sect. 2.8.3 to satisfy Finding 18 and 2.7.3 for Finding 19 of Nov.09 audit. Also ATHRA Alert #48-section 5.2.4.
2.7	31/08/2010	Changed Incident Report to Occurrence Report
2.8	31/05/2011	Changes to Competencies, etc.
2.9	31/10/2011	Minor changes to procedures and complaint handling
2.10	29/2/2012	Minor changes to procedures
2.11	31/12/2012	Amended the document to show the D&A testing organisation
2.12	31/12/2013	Change ITSR to ONRSR, updated to reflect the changes in Risk Matrix and auditing of Operational Staff
2.13	28/02/2014	Changed details for Operational Performance Audit
2.14	30/06/2014	Added details about UHF communications
2.15	31/12/2014	Amended the Track and Structure inspection and maintenance reporting and other minor changes.
2.16	17/02/2015	Amended the procedure for Safety performance Audits
2.17	25/05/2015	<u>Added reference to STM6141 – tow tram across RNP crossing and updating medical exam details</u>

Approved by Signature & Date

Document Control Record

3. Distribution List

Position	Date	Copy Issued (Yes/No)	Copy No.	Received
Rail Safety Manager		Y	1	
OIC Reference Book		Y	2	

SYDNEY TRAMWAY MUSEUM

Table of Contents

1.	General.....	6
1.1	Introduction.....	6
1.2	Organisation Objectives.....	6
1.3	Definitions.....	6
1.4	References.....	7
2.	Safety Management System.....	8
2.1	Rail Safety Policy.....	8
2.2	Management and Governance.....	8
2.2.1	Management Structure.....	8
2.2.2	Governance Arrangements.....	9
2.2.3	Safety Audit.....	9
2.3	Responsibilities and Accountabilities.....	9
2.4	Resource Management.....	12
2.4.1	General Information.....	12
2.4.2	Insurance Policies.....	12
2.4.3	Financial Capacity.....	12
2.5	Regulatory Compliance.....	12
2.6	Document and Data Control.....	13
2.6.1	Scope.....	13
2.6.2	Document Identification.....	13
2.6.3	Document Register & Storage.....	13
2.6.4	Accuracy, Clarity and Language.....	13
2.6.5	Document and Data Approval and Issue.....	13
2.6.6	Document Changes.....	14
2.6.7	Storage and Retention of Safety Records.....	14
2.7	Safety performance targets and performance measures.....	15
2.7.1	Performance goals.....	15
2.7.2	KPIs.....	15
2.7.3	KPI's to be reported each Quarter.....	15
2.7.4	Data collection.....	16
2.8	Safety Management System Review.....	16
2.8.1	Annual Review.....	16
2.8.2	Record of Annual Review.....	16
2.8.3	Record of Six Monthly Review.....	16
2.9	Operational Performance Audit.....	17
2.9.1	Operational Performance Audit Program.....	17
2.9.2	Safety Performance Audit Program.....	17
2.9.3	Safety Performance Audit Scheduling.....	17
2.10	Change Management.....	18
2.11	Human Factors.....	18
2.12	Security Management.....	19
2.13	Safety Culture.....	19
2.14	Consultation.....	20
2.15	Communication.....	20
3.	Risk Management.....	21
3.1	Hazard Identification.....	22
3.2	Risk Assessment.....	22
3.3	Risk Control.....	23
3.4	Monitor and Review.....	23
3.5	Risk Register.....	23
3.6	Risk Management Plan.....	24

SYDNEY TRAMWAY MUSEUM

4.	Personnel Management.....	25
4.1	Workers' Competence.....	25
4.2	Health and Fitness.....	25
4.3	Drugs and Alcohol.....	26
4.4	Fatigue Management.....	27
4.5	Privacy Policy.....	27
4.6	Worker Injuries.....	27
5.	Goods and Services Procurement.....	28
5.1	Goods & services procurement.....	28
5.2	Procurement.....	28
5.2.1	Off the shelf items.....	28
5.2.2	Specially Manufactured Items.....	28
5.2.3	Second Hand Items.....	28
5.2.4	Replacement Parts.....	28
5.3	Tender documentation.....	29
5.4	Contract Management.....	29
5.5	Records.....	29
6.	Engineering and Operational Systems Safety.....	30
6.1	General.....	30
6.1.1.	Track and Infrastructure.....	30
6.1.2	Rolling Stock.....	30
6.1.3	Signalling and Telecommunications Systems and Equipment.....	30
6.1.4	Operations and Tram Control Systems.....	30
6.1.5	Interface with Other Transport Modes.....	31
6.2	Process Control.....	31
6.2.1	Track and Infrastructure.....	31
6.2.2	Rolling Stock.....	32
6.2.3	Communications.....	33
6.2.4	Operations Systems.....	33
6.3	Design and Development.....	34
6.4	Inspection and Testing.....	34
6.4.1	General.....	34
6.4.2	Inspection Frequency.....	36
6.4.3	Inspection and Test Records.....	36
6.4.4	Inspection and Test Status.....	36
6.4.5	Corrective Actions.....	37
7.	Interface Management - to be developed in future.....	38
8.	Occurrence Management.....	38
8.1	Occurrence Notification and Management.....	38
8.1.1	Procedure for notification of occurrences.....	38
8.1.2	Recording and Analysis.....	38
8.1.3	Investigations.....	38
8.1.4	Review and Rectification Process.....	39
8.1.5	Occupational Health and Safety Incidents and Investigations.....	39
8.2	Emergency Response.....	39
8.2.1	Preservation of Evidence.....	39
8.3	Complaints.....	39
	Appendix 1.....	40

1. General

1.1 Introduction

South Pacific Electric Railway Co-Operative Society Limited (SPER), under the trading name 'Sydney Tramway Museum' (STM), restores and operates heritage tramway rolling stock to provide a tourist attraction for people visiting the Loftus museum which is located in the Sutherland Shire of New South Wales.

SPER has full responsibility for all activities undertaken by STM and any reference to STM applies to SPER.

Sydney Tramway Museum (STM) operates the Museum and tourist tram services, using heritage tram rolling stock, over a 3.3 kilometre of 1435 gauge of an exclusive tramline between Sutherland and the Royal National Park, providing a tourist attraction for people visiting the Sutherland district. STM is operated by its members on a voluntary, not-for-profit basis. The tramline section comprises of single line track, operating under the museum's Staff & Ticket Safeworking.

STM services operate out of the Sydney Tramway Museum located at Loftus.

Trams are staffed by STM volunteers. All staff involved in tramway operations, have the mandatory qualifications and experience required for all tram operations on the tramlines.

1.2 Organisation Objectives

STM aims to provide tourists with a heritage tram travel experience and is committed to meeting all internal and regulatory safety requirements in order to create a safe environment for STM passengers and personnel.

1.3 Definitions

Act	Rail Safety National Law National Regulations 2012 and Rail Safety (Adoption of National Law) Act 2012 No 82
AS4292.1	Australian Standard 4292.1:2006 Railway safety management - general requirements
HAM	Health Assessment Manager
ONRSR	Office of National Rail Safety Regulator
Museum	Refers to the Sydney Tramway Museum located on the corner of Rawson Avenue and Pitt Street, Loftus The Museum complex includes the Museum and the tramlines to Sutherland and Royal National Park.
NAP	National Accreditation Package
OIC	Officer in Charge
RNP	Royal National Park
RSM	Rail Safety Manager
RSMP	Rail Safety Management Plan
RSMT	Rail Safety Management Team
SMS	Safety Management System
SPER	South Pacific Electric Railway Co-Operative Society Limited
Staff	includes employed staff, contractors and volunteers

SYDNEY TRAMWAY MUSEUM

STM Sydney Tramway Museum: the trading name of South Pacific Electric Railway Co-Operative Society Limited for tram activities, therefore references to STM apply to SPER

1.4 References

National Occurrence Standard for Rail Incident Classification (NOS1)

Australian Standard 4292.1:2006 Rail safety management - general requirements

National Accreditation Package

2. Safety Management System

2.1 Rail Safety Policy

Sydney Tramway Museum recognised that Safety is most important and as such it has a Corporate and Rail Safety Policy (STM6005) that defines the safety aims and objectives of the organisation and expresses STM's commitment to risk management and the development of a positive safety culture. The Policy conforms to the requirements set out in Appendix A of AS 4292.1-2006 and was developed in consultation with STM members and non-member volunteers. It has been approved by the SPER Board.

The Corporate and Rail Safety Policy is reviewed every year, or as need arises. The review involves consultation with STM members and non-member volunteers, while any changes to the Policy are submitted to the SPER Board for approval.

The Corporate and Rail Safety Policy is a controlled document. It requires the signature of the Chairman to take effect.

The Corporate and Rail Safety Policy is displayed at various prominent locations around the Sydney Tramway Museum so it is available to members, volunteers, passengers and the public.

Resource: Corporate and Rail Safety Policy (STM6005)

2.2 Management and Governance

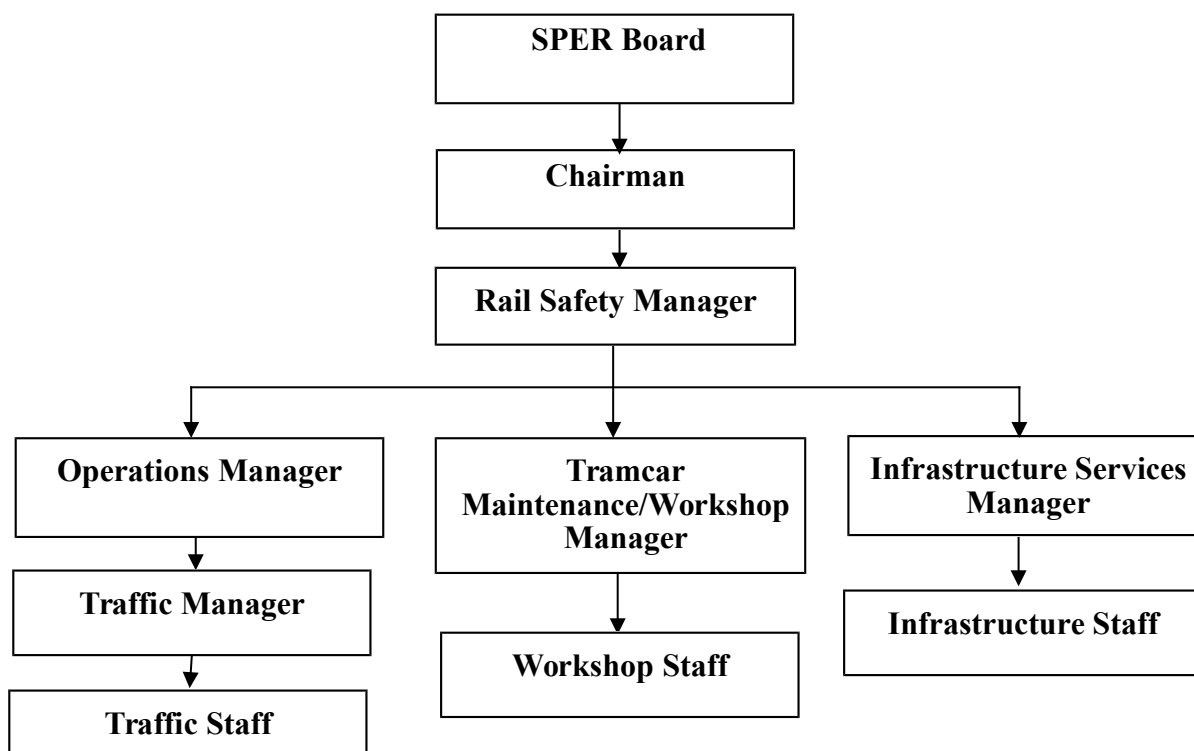
2.2.1 Management Structure

The STM organisational structure is shown in the chart below.

Position responsibilities and accountabilities can be found in the table at Section 2.3.

The Rail Safety Manager of STM has the responsibility and authority to ensure appropriate rail safety standards and procedures are developed, implemented and their effectiveness monitored.

The Rail Safety Manager ensures document control processes are in place to ensure all safety documentation is accurate and up to date. When the Rail Safety Manager is on approved absences responsibilities under this section are delegated to the Chairman.



SYDNEY TRAMWAY MUSEUM

2.2.2 Governance Arrangements

For the names of the current positions on the Organisation Chart - see Appendix 1.

The Board reviews the standards and procedures as an agenda item at its meetings in order to monitor the effectiveness of the Safety System.

The Rail Safety Manager provides the Chairman and Board with appropriate safety information to assist them in their decision making.

2.2.3 Safety Audit

The safety audit includes compliance with STM procedures, Acts, and the safety audits are conducted according to the Safety Performance Audit Schedule STM6041 (see section 2.9).

Resource:

Safety Performance Audit Schedule (STM6041)

2.3 Responsibilities and Accountabilities

Responsibility for implementing and maintaining the Safety Management System at STM has been given to the Rail Safety Manager.

Management of operational safety is the responsibility of the Tramcar Maintenance/Workshop Manager and the Infrastructure Services Manager. The Rail Safety Management Team has responsibility for applying risk management processes to maintain a safe operational and work environment.

The major safety responsibilities and accountabilities within STM are listed in the table below.

Position	Responsibilities	Accountabilities
Board	<p>The Board recognises that safety is most important.</p> <p>The Board ensures the effectiveness of the Safety Management System.</p> <p>The Board of Directors reviews periodic health assessments provided by the Health Assessment Manager for the following twelve months</p> <p>The Board must set out the responsibilities for approving changes at STM.</p>	<p>The Board fosters a positive safety culture.</p> <p>The Board of Directors is responsible for ensuring that the security plan and associated security programs are implemented.</p> <p>The Board has “review of standards and procedures” as an agenda item at its meetings.</p> <p>The Board monitors the progress of health assessments of the workers.</p> <p>Approves budgets, including allocation for safety expenditure</p> <p>The Board will collectively and as individuals ensure that no changes to STM infrastructure and rolling stock are made without approval.</p> <p>The Board will approve all major changes to procedures, processes, systems, organisational structure, job roles and responsibilities.</p>

SYDNEY TRAMWAY MUSEUM

Position	Responsibilities	Accountabilities
Rail Safety Manager	<p>Ensuring the safe operation of STM.</p> <p>Compliance with relevant acts and regulations.</p> <p>Provision of safety information and advice to the Chairman.</p> <p>Demonstrating leadership on issues of safety including participation in compliance inspections.</p> <p>Maintaining the Safety Management System.</p>	<p>Approval of safe working systems.</p> <p>Initiating independent risk assessments or validation of risk assessments, where appropriate.</p> <p>Initiating compliance and safety audits.</p> <p>Initiating corrective action where breaches of safety requirements are detected.</p> <p>Identification, assessment and rectification of workplace hazards.</p> <p>Safety certification of operating arrangements including personnel management issues and operations procedures and protocols.</p> <p>Certification of accuracy and completeness of information in the annual safety reports for area of responsibility.</p> <p>Disseminates any changes to legislation and similar reference documents including ensuring that the SMS and other policies reflect these changes</p> <p>Implements and manages the SMS</p>
Operations Manager	<p>Day to day management of tram operations.</p> <p>Fleet management.</p> <p>Compliance with relevant SMS provisions and related standards and procedures.</p>	<p>Rostering tram crews.</p> <p>Allocation of resources, including resources for safety actions.</p> <p>Carrying out compliance inspections.</p>
Infrastructure Services Manager	<p>Construction and / or maintenance and safety certification of rail infrastructure owned or managed by STM.</p> <p>Compliance with relevant SMS provisions and related standards and procedures.</p> <p>Infrastructure maintenance.</p>	<p>Input into identification and assessment of workplace hazards.</p> <p>Setting maintenance schedules.</p> <p>Certification of accuracy and completeness of information in annual safety reports for area of responsibility.</p>

SYDNEY TRAMWAY MUSEUM

Position	Responsibilities	Accountabilities
Tramcar Maintenance/ Workshop Manager	<p>Fleet maintenance of trams.</p> <p>Compliance with rolling stock standards and safety requirements and procedures.</p>	<p>Setting maintenance schedules.</p> <p>Tram examination.</p> <p>Recommending rolling stock for major overhaul.</p> <p>Input into identification and assessment of workplace hazards.</p> <p>Safety certification of rolling stock and related equipment and procedures.</p> <p>Certification of accuracy and completeness of information in annual safety reports for area of responsibility.</p> <p>Removing the “DO NOT MOVE” stick after authorising the tram can put back into traffic after fixing any faults identified.</p>
Chief Engineer	<p>Compliance with rolling stock standards and safety requirements and procedures.</p>	<p>Safety certification of rail infrastructure and related equipment and procedures.</p>
Health Assessment Manager	<p>Ensuring workers have their medicals when required and engaging suitable health professionals to carry out the health assessments.</p>	<p>Each year the HAM sets out a timetable of periodic health assessment due dates for presentation to the Board of Directors.</p> <p>Ensuring that all personnel health records including medical records are to be held in a secure place and that any access to that record is in compliance with the Museum’s Privacy Policy and the Health Records and Information Privacy Act 2002.</p>
Employee and Volunteer Workers	<p>Adherence to the rail safety policies.</p> <p>Performing allotted duties in accordance with STM documented procedures, instructions.</p> <p>Constructive participation in development and review of safety systems as required.</p>	<p>Reporting of safety issues and suggestions for solutions in accordance with STM’s reporting protocols.</p> <p>Adhering to the communication policy of reporting concerns, hazard identification and the effectiveness of the SMS to the Manager or Supervisor</p>

STM has also developed position descriptions for the following tasks:

- a) STM6053 - Position Description – Conductor
- b) STM6199 - Position Description – Induction officer
- c) STM6102 - Position Description - Museum Guide
- d) STM6101 - Position Description - Non-traffic tram driver
- e) STM6188 – Position Description – Office Manager
- f) STM6060 - Position Description - Officer-in-Charge
- g) STM6118 - Position Description - Operations Manager
- h) STM6117 - Position Description - Rail Safety Manager
- i) STM6103 - Position Description – Salesperson
- j) STM6119 - Position Description - Traffic Manager
- k) STM6058 - Position Description - Tram driver
- l) STM6190 –Position Description - Ticket Seller

2.4 Resource Management

2.4.1 General Information

STM is a trading arm of SPER and as such the funding for STM operations is the responsibility of SPER.

2.4.2 Insurance Policies

STM maintains full insurance cover for its operations. The types of insurance cover held are listed in the Insurance Policy Register (STM6068). The Insurance Policy Register and the Certificates of Currency are held at the STM office in the Museum.

2.4.3 Financial Capacity

SPER allocates sufficient budget resources to STM for the safe conduct of the business.

The Museum had various financial control systems in place that follow the general accounting practices with the production of a written Annual Report, Financial Statements and Auditor's Reports. The Secretary is able to make available a copy of the latest Annual Report upon request.

The process for banking the takings. From the Museum's operations is described in the Banking Guidelines (STM6140).

Resource:

Banking Guidelines (STM6140)
Insurance Policy Register (STM6068)
Position Description – Conductor (STM6053)
Position Description - Induction Officer (STM6199)
Position Description - Museum Guide (STM6102)
Position Description - Non-traffic tram driver (STM6101)
Position Description – Office Manager (STM6188)
Position Description - Officer-in-Charge (STM6060)
Position Description - Operations Manager (STM6118)
Position Description - Rail Safety Manager (STM6117)
Position Description – Salesperson (STM6103)
Position Description – Ticket Seller (STM6190)
Position Description - Traffic Manager (STM6119)
Position Description - Tram driver (STM6058)

2.5 Regulatory Compliance

STM complies with all Acts and Regulations relevant to its operations and ensures its staff and volunteers are aware of their legal responsibilities.

The Rail Safety Manager has responsibility for keeping current copies of relevant Acts and Regulations according to STM document and data control procedures described in section 2.6.

The Rail Safety Manager reviews or organises the reviews of copies of Acts and Regulations to make sure they are up to date. Some Acts and Regulations relevant to STM operations include:

- National Rail Safety Act and Regulations;
- Occupational Health and Safety Act and Regulations.

Details of all relevant Acts and Regulations monitored and held by STM are provided in the Document Register (STM6001)

When company policies and procedures are developed, or existing policies and procedures are reviewed, a check is made of relevant Acts and Regulations to ensure the company's policies and procedures are legally compliant.

2.6 Document and Data Control

2.6.1 Scope

STM has a document and data control system (STM6061) to ensure all documents and data that may affect rail safety are identified, controlled, reviewed, authorised, retained and distributed to staff and volunteers who need them.

Documents and data that are controlled by this process include:

- STM policies, procedures and forms;
- Drawing and design documents;
- Agreements (e.g., Interface Coordination Plan); and
- Technical standards and manuals.

2.6.2 Document Identification

Controlled documents are allocated a unique identification number. Where there is more than one copy of a controlled document they are numbered in sequence.

STM applies the following numbering system to documents developed within STM and those obtained externally. Documents and data are controlled through insertion of a control page (Document Control Form STM6002) in the front of each copy.

The document and data control numbering protocol is:

- | | |
|-----------------------|------------------------------------|
| a) Organisation Name: | STM |
| b) Number: | 4 digits (e.g. 6001) |
| d) Revision status | Version 1.0 |
| e) Copy Number | when more than one copy is issued. |

2.6.3 Document Register & Storage

A Document Control Issue Register (STM6036) is kept at the STM office in the Museum.

The Document Control Issue Register includes the following minimum information:

- Unique identification number
- Document, standard, procedure or form title
- Document status (e.g. draft, revision number, superseded or obsolete)
- Date Issued
- Comments
- Date Withdrawn.

2.6.4 Accuracy, Clarity and Language

All safety documents are written in English.

Rail Safety Manager checks the accuracy and clarity of all safety documents prepared or amended by STM before they are issued.

2.6.5 Document and Data Approval and Issue

The Rail Safety Manager reviews and approves all new and amended rail safety documents before they are issued.

The Rail Safety Manager records that review and approval has taken place by signing the relevant column of the Document Control Form (STM6002) at the front of each master control document.

The identity of individual holders of manuals and procedures are recorded on the Document Control Form at the front of each controlled master copy.

The Rail Safety Manager distributes controlled documents by hand to each person on the document distribution list for storage in agreed locations (e.g. Museum office). The Rail Safety Manager removes obsolete documents, clearly labelling them 'OBSOLETE' along with his signature and date.

SYDNEY TRAMWAY MUSEUM

The Rail Safety Manager then updates the Document Control Issue Register (STM6036) to indicate the Version Level and the Issue Date.

The period that STM keeps obsolete documents is specified in the Safety Records Retention Schedule (STM6006), after which they are reviewed and either discarded or retained in accordance with the Safety Records Retention Schedule (STM6006).

2.6.6 Document Changes

The Rail Safety Manager is responsible for issuing any amendments to the documents for which he has responsibility.

Minor amendments to documents (indicated by a change in the document number after the decimal point) are identified by the inclusion of a vertical line in the margin against each paragraph containing current changes in the revised version. When subsequent amendments are required the vertical lines against the previous amendments are deleted and new vertical lines included against the current changes.

Major changes (indicated by a change in the version number BEFORE the decimal point) will not highlight the changes made.

All change details (version number and date) are updated in the Document Control Record - Issue Register (STM6036) on sheet called "*Documents*". See the Change Management Procedure (STM6012) – section 6.9 - *Checklist for Updating Procedures and Documents – for the process*.

Amendments to rail safety documents are reviewed and approved by the Rail Safety Manager.

2.6.7 Storage and Retention of Safety Records

STM makes safety records available for inspection by authorised parties, as required.

The Safety Records Retention Schedule (STM6006) lists the records to be retained, how long they are to be retained and the responsible manager.

Hard copy of current records are kept at the STM office at the Museum for the required period and then either retained or destroyed (and the Safety Records Retention Schedule updated accordingly). Documents are securely stored to guard against the risk of loss through deterioration or damage. All obsolete procedures, forms, etc are kept in electronic form only.

Electronic records are backed-up at regular intervals. Back-up records are kept secure at a location remote from the main office where the master records and computers are kept.

Currently both hard copy and electronic copy of most documents are held off site as there is insufficient secure storage to file the documents and the Museum's computer system is inadequate to store all of the electronic data.

Refer to Change Management Procedure (STM6012) – section 6.10 *Procedure for Regularly Creating Various CD copies of Updated SMS Files-* for the regular backup procedure of SMS files for distribution to various people and ONRSR.

Resources:

Change Management Procedure (STM6012)

Document and Data Control (STM6061)

Document Control Form (STM6002)

Document Register (STM6001)

Document Control Issue Register (STM6036)

Safety Records Retention Schedule (STM6006)

Insurance Policy Register (STM6068)

2.7 Safety performance targets and performance measures

2.7.1 Performance goals

The Board sets goals each year for the improvement of STM's safety performance. STM assesses its performance against these goals by monitoring and analysing the numbers and types of:

- notifiable occurrences per passenger journey;
- injuries;
- Occurrence Reports (STM6033);
- Faults;
- customer complaints;

2.7.2 KPIs

Key performance indicators which measure safety performance and determine whether the SMS is effective include:

- corrective actions resulting from the annual review implemented within agreed timeframes; and
- directions from the safety regulator implemented within the required timeframe.

2.7.3 KPI's to be reported each Quarter

The following KPI's are to be reported to the Board and reviewed by the RSMT each quarter.

	KPI	Number Reported	Target (To Be Fixed)	Trigger Required
1	Near Misses at Level Crossings	✓	N/A	Yes
2	Collisions at Level Crossings	✓	N/A	Yes
3	Tram collisions (incl. with Infrastructure)	✓	Yes	Yes
4	Derailments	✓	Yes	Yes
5	Defects Reported on Tramcars	✓	Yes	Yes
6	Defects Closed on Tramcars	✓	Yes	Yes
7	Defects Reported on Infrastructure	✓	Yes	Yes
8	Defects Closed on Infrastructure	✓	Yes	Yes
9	Defects Reported on Overhead	✓	Yes	Yes
10	Defects Closed on Overhead	✓	Yes	Yes
11	Misalignments detected	✓	Yes	Yes
12	Inspections Completed - Tramcars	✓	Yes	N/A
13	Inspections Completed - Track	✓	Yes	N/A
14	Inspections Completed - Overhead	✓	Yes	N/A
15	Dewirements	✓	Yes	Yes
16	Passenger Injuries	✓	Yes	Yes
17	Staff /member Injuries	✓	Yes	Yes
18	Customer Complaints	✓	Yes	Yes
19	RNP Level Crossing failures	✓	Yes	Yes
20	Safety Safety Audits completed	✓	Yes	Yes

'Trigger Required' - Need to develop triggers for actions to be taken once a couple of years of data is collected.

2.7.4 Data collection

STM collects data to show how it is meeting its safety performance objectives, including the following:

- risk register (STM6003);
- injury register (STM6069);
- agenda items and or minutes from Rail Safety Management Team or relevant safety meetings;
- Notifiable Occurrence Forms;
- Occurrence Reports (STM6033); and
- Analysis of causes of accidents and incidents — this helps to develop strategies to prevent future occurrences.

Accident and incident data are categorised according to the National Occurrence Standard for Rail Incident Classification (ON-S1). Reports of key safety performance data are provided to the Management Committee and safety performance for the year is presented in each annual report.

Resources: Occurrence Report (STM6033)

2.8 Safety Management System Review

2.8.1 Annual Review

A review of the safety management system is conducted annually. The review is undertaken by the Rail Safety Management Team

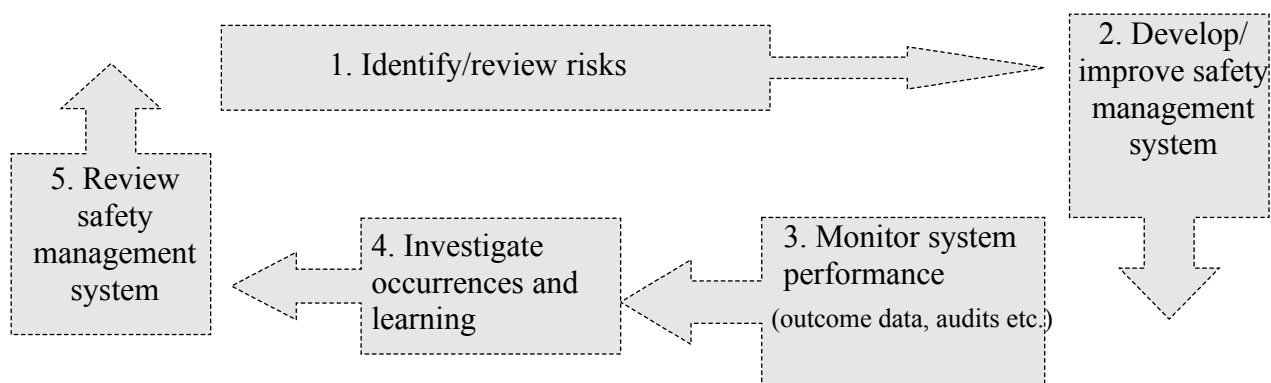
The objectives of the review are to:

- Consider the effectiveness of the SMS and decide whether changes are needed. Changes could be required as a result of:
 - Safety directions or prohibition notices received from the regulator since last review;
 - Recommendations or issues arising from safety audits, occurrence investigations or commissioned reports; and
 - Safety issues and suggestions for improvement provided by staff.

2.8.2 Record of Annual Review

Full records are kept of the annual review process and its outcomes.

The annual safety management system review is a key part of STM's continuous improvement cycle. The cycle is shown in the figure below:



2.8.3 Record of Six Monthly Review

The Rail Safety Management Team is to review all Occurrence Reports (STM6033) and Inspection Reports every 6 months to identify any repetitive or persistent defects and to access steps required to address them.

2.9 Performance Audits

2.9.1 Operational Performance Audit Program

Operations Manager or his delegate is responsible for performing the STM Operational Performance Audit (STM6114). The two actions of auditing to be undertaken are to:

- Complete the Operational Performance Audit Report (STM6115) for each audit of the Operations staff as per the audit schedule.
- To record any serious deficiencies on the Non-Conformance Report

Resources:

Non Conformance Report (STM6008)

Operational Performance Audit Procedure (STM6114)

Operational Performance Audit Report Form (STM6115)

2.9.2 Safety Performance Audit Program

Rail Safety Manager is responsible for establishing and managing the STM Safety Performance audit program. Two levels of performance auditing may be undertaken:

- STM employees (members, non-member volunteers, contractors) with relevant experience and knowledge of position responsibilities, but independent of the position being audited, carry out internal safety audits to make sure people assigned rail safety responsibilities are effectively carrying out their responsibilities;
- Where appropriate, external auditors with relevant experience (e.g. managers from other heritage rail operators) may carry out operational performance audits of specific Safety Management System policies and procedures.

Safety audits are conducted according to the Operational Performance Audit Procedure (STM6007).

2.9.3 Safety Performance Audit Scheduling

The Rail Safety Manager prioritises the Safety Performance audit program. The priority of the activities to be audited is based on the review of the Risk Register and the activities associated with the risks which are rated as high or medium.

This program is run on a two year basis, according to a prepared Safety Performance Audit Schedule (STM6041). The Rail Safety Manager prepares the Safety Performance Audit Log (STM6011) from the Safety Performance Audit Schedule (STM6041).

Before the Safety Performance Audit commences, the auditor shall prepare a Safety Performance Audit Checklist (STM6009) for the selected audit area.

The auditor completes the Safety Performance Audit Log (STM6011) during the audits.

2.9.4 Safety Performance Audit Reporting

Safety performance audit findings are documented on the Safety Performance Audit Summary Report (STM6010), with Non-Conformance Report Forms (STM6008) completed, as necessary.

Safety Performance Audit reports are given to the Rail Safety Manager and are reviewed at Rail Safety Management Team meetings until all corrective action items have been completed.

Where findings from safety audits require urgent attention the Rail Safety Manager can assign corrective action items for the attention of relevant staff or arrange to convene a Rail Safety Management Team meeting to review the findings and assign action.

Resources:

Non Conformance Report (STM6008)

Occurrence Report (STM6033)

Safety Performance Audit Checklist (STM6009)

Safety Performance **Audit Procedure (STM6007)**

Safety Performance Audit Status (STM6011)

Safety Performance Audit Schedule (STM6041)

Safety Performance Audit Summary Report (STM6010)

2.10 Change Management

STM has a Change Management procedure (STM6012) to ensure that the risks are identified, assessed and controlled during the implementation of all significant changes to equipment, infrastructure, operational procedures and safety systems.

Changes that affect safety may arise from a number of sources, including:

- Modifications to infrastructure and rolling stock;
- Changes to procedures, processes and systems;
- Changes to organisational structure and position roles and responsibilities; and
 - The general operating environment and interfaces.

All changes that may affect safety are carried out in accordance with the change management procedure. A Change Request form (STM6169) is raised for each change. The procedure requires a risk assessment to identify safety implications of the change, including the consequences or impacts of the proposed change on related operations and procedures.

Where required by legislation, an application for variation of SPER's accreditation is prepared and lodged with the rail safety regulator.

Provision is made in the change management plan to maintain existing risk response strategies while changes are introduced and to respond to any new hazards that may be created by the change.

Change management planning involves people who have qualifications, knowledge and skills in the areas affected by the proposed change.

All changes are recorded on the Change Register (STM6170).

The change management procedure is authorised by the Rail Safety Manager, while the Board reviews progress in implementing changes by reviewing the Change Register (STM6170) at each Board meeting.

Resources:

Change Management Procedure (STM6012)

Change Request form (STM6169)

Change Register (STM6170)

2.11 Human Factors

STM recognises that the design of work and the working environment influence the way people behave. STM recognises that human factors are a significant contributor to the occurrence of incidents, and that the safety systems and procedures need to be designed to recognise and provide for human error.

STM is committed to ensuring that human factors are considered during:

- Risk assessments and the identification and implementation of risk controls;

SYDNEY TRAMWAY MUSEUM

- The development of operational procedures;
- Reviews of occurrences; and
- The change management process.

To assist the effective consideration of human factors in safety systems and procedures, staff are encouraged to report problems experienced during operations, including difficulties in applying systems and procedures and personal errors, without prejudice to themselves.

Reported human factor-related problems and errors are examined to determine the cause and to develop appropriate responses, where necessary. All operational staff are informed about reported problems and errors so they can learn from the experience of others.

2.12 Security Management

STM has both a Security Policy (STM6013) and a Security Plan (STM6020) to protect the unique rail assets operated by the museum and to prevent damage to operational infrastructure as a result of crimes to property including vandalism, sabotage or terrorism.

The Plan also covers the security of staff, volunteers and members of the public, and on the prevention of crimes to people. The Operations Manager is responsible for the implementation and maintenance of security arrangements under the Plan.

The Security Plan is based upon a thorough risk assessment which attempted to identify all security risks arising from the museum's operations.

The Rail Safety Management Team reviews the Security Plan as part of its general review of the Society's operations.

Resources:

Security Policy (STM6013)

Security Plan (STM6020)

2.13 Safety Culture

STM recognises the importance of developing and maintaining a positive safety culture and that this can be achieved through:

- Strong leadership;
- Consultation and communication with staff;
- Encouraging staff to watch for and report safety issues; and
- Acknowledging staff who take action to ensure safety outcomes are met.

The Board fosters a positive safety culture by:

- Communicating to all personnel, through newsletters, meetings and social gatherings, the importance of good safety performance in ensuring the continuing operation and community support for STM's heritage tramway operations;
- Ensuring all relevant personnel are actively involved and consulted during risk assessments, the development of operational procedures and the review of procedures and systems (see section 2.14);
- Promoting open communication between all members, no matter what role they play (see section 2.15);
- Ensuring personnel are encouraged to report safety problems, errors and occurrences without fear of personal blame (see section 8.1); and
- Ensuring personnel who demonstrate initiative in identifying and promoting safety improvements are openly thanked and recognised.

2.14 Consultation

STM recognises the importance of effective consultation with personnel and other stakeholders in developing and maintaining the safety management system.

Structures and processes to facilitate effective consultation include:

- Notices are placed on Notice Boards as required;
- Formal discussions are held at Traffic meetings to ensure personnel are informed about recent changes to procedures or operating conditions, and have opportunity to provide comments and suggestions;
- Informal discussions are held on “work” days to ensure personnel are informed about recent changes to procedures or operating conditions, and have opportunity to provide comments and suggestions;
- Informal discussions are held on “Traffic” days when a member of the Rail Safety Management Team is rostered on tramway operations to ensure personnel are informed about recent changes to procedures or operating conditions, and have opportunity to provide comments and suggestions; and
- Ensuring relevant personnel are actively involved in risk assessments and the development and review of systems and procedures.

2.15 Communication

STM recognises the importance of ensuring all personnel are provided with the necessary information to enable them to effectively discharge their responsibilities in relation to safety.

Processes to ensure the timely and effective communication of safety related information include:

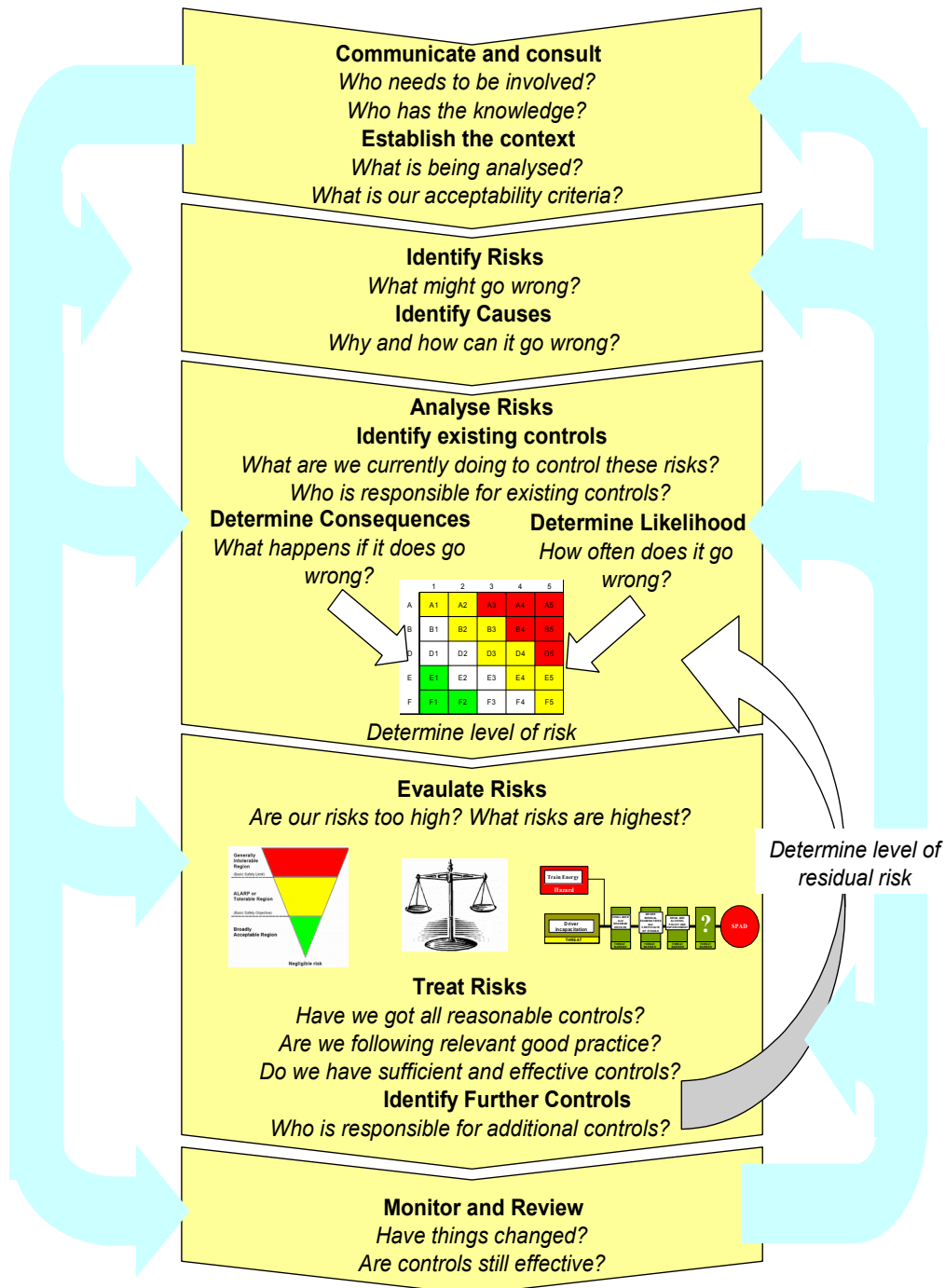
- Regular Board meetings;
- Ensuring the Safety Management System and all related standards and procedures are available for inspection at the STM office at the Museum;
- Processes and forms for reporting safety occurrences;
- A periodic members' newsletter (e.g. SPER NEWS) which may carry safety related information as required;
- Safety bulletins are circulated to all operational staff and members when particular safety issues are identified and displayed on noticeboards in the workshop and Traffic office of the Museum;
- An item on each Traffic Meeting agenda which discusses safety related information and issues as required; and
- A Web Site containing all of the SMS documents is maintained by the STM Web Master all members can access these documents through the normal Sydney Tramway Museum web site- www.sydneytramwaymuseum.com.au/.

3. Risk Management

STM recognises that a high level of safety management is essential to its future as a heritage tramway operator. All areas of its operations are be subject to rigorous analysis to detect and counter hazards in order to protect its members and staff and to protect members of the public who support its operations. The obligations of operational safety and of occupational health and safety can only be met through the application of effective and consistent risk management activities.

The STM approach to risk management is illustrated in the STM Risk Management Process Flowchart below

STM Risk Management Process Flowchart



3.1 Hazard Identification

STM uses various sources of information to identify hazards in its operating environment. These sources include:

- Analysing records of incidents and injuries: this analysis is used to uncover incidence patterns that may point to particular hazardous situations, or uncover limitations in training, communications, maintenance, etc;
- Error and incident investigation: these investigations are used to highlight previously undetected hazards and uncover problems in operating procedures, staff knowledge and understanding and communication of safety critical information;
- Inspections: inspections of the operating environment are undertaken to detect hazards, the process is supported by a formal checklist to ensure consistency and to record outcomes; and

Reporting hazards: staff and members are encouraged to report any safety concerns to people in management positions. This could be on an Occurrence Report Form (STM6033), a Tramcar Pre-Operation and Stabling Inspection Checklist (STM6031) or a Hazard Reporting Form (STM6030) that allows these safety concerns to be formally documented.

All hazards are recorded in the Hazard Register (STM6112).

The Rail Safety Manager is responsible for the following actions:

- ensuring that the Hazard forms boxes, located in the Traffic Office and Workshop, are replenished with blank forms;
- clearing out the completed the forms from these boxes;
- recording them in the Hazard Register (STM6112);
- filing the Hazard forms; and
- organising a review, by the RSMT, of the hazards on a regular basis.
- The Hazard Register, which is kept in the STM Office, is updated with the details from the Hazard Reporting form and the RSM allocates a Hazard Number when updating the Hazard Register. The format for the Hazard number is Hyyynn where yy is the year and nnn is a sequential number starting from 1 at the beginning of each year.

Resource:

Occurrence Report Form (STM6033)

Hazard Register (STM6112)

Hazard Reporting Form (STM6030)

Tramcar Pre-Operating and Stabling Inspection Checklist (STM6031)

3.2 Risk Assessment

Once hazards have been identified, the associated risks are assessed to determine the level of threat they pose. The assessment considers the likelihood of a safety incident happening against the possible severity of the outcome.

Risk assessments are carried out in consultation with qualified and knowledgeable staff and members. These are people who bring extensive industry experience to the risk assessment process.

Risk assessments are performed with the help of the matrix below that allows incident likelihood and consequences to be quantified. The matrix used by STM has been adapted from the latest Australian Standard Risk Management.

Risk Analysis Matrix

Criteria for Sydney Tramway Museum (STM) Operations			Likelihood				
			Extremely rare event	Rare event	Not Likely to occur	Likely to occur	Almost certain to occur
Phrase	Consequence		1	2	3	4	5
Catastrophic	1 or more fatality and/or more than 10 serious injuries	A	A1	A2	A3	A4	A5
Critical	2-10 serious injuries	B	B1	B2	B3	B4	B5
Major	1 serious injury	C	C1	C2	C3	C4	C5
Minor	1 or more minor injuries (<i>no treatment required</i>)	D	D1	D2	D3	D4	D5

High level (intolerable)
 Mid Level (control)
 Low Level (acceptable)

3.3 Risk Control

Once hazards have been identified and their level of risk assessed, steps are taken to either eliminate the hazards or to control the risks they pose to a level which is 'As Low As Reasonably Practicable' (ALARP).

STM develops its risk response strategies in terms of the standard hierarchy of risk control. The hierarchy of risk control as applied in STM is reproduced below.

Hierarchy Of Risk Control
1. Eliminate the hazard and so eliminate any risks
2. Substitute a less hazardous alternative
3. Isolate the hazard
4. Use engineering controls
5. Use administrative controls
6. Use personal protective equipment (PPE) and clothing. PPE is only to be used when other controls cannot be implemented

3.4 Monitor and Review

STM recognises that risk management activity is not concluded when risk controls are introduced. The operating environment is always subject to change and risk controls are monitored and are reviewed to make sure they continue to work. Any changes required may then be implemented as part of the annual review of the Safety Management System (see section 2.8).

3.5 Risk Register

The outcomes from the regular risk management activities have been used to develop the STM Risk Register (STM6003).

The Risk Register records all of the hazards that have been identified in the operating environment, along with the associated risks. It records how STM goes about controlling these risks and the staff who have oversight for risk control activity.

Each September the Risk Register is reviewed by the RSMT.

3.6 Risk Management Plan

STM operates its risk management activities according to an annual Risk Management Plan (STM6064).

This Plan includes:

- A risk register which includes an analysis of identified risks.
- Risk Action Plans (STM6004) which set out how risks, which have Levels of Risks identified in the Risk Register as being unacceptable, will be managed.
- A schedule for regular inspections of the operating environment; including all buildings, offices, workshops, rolling stock, track infrastructure etc.
- Plans for regular and one-off occurrences, such as special event operations, regular track and overhead maintenance, introduction of change and innovation etc.

The Risk Management Plan is reviewed at meetings of the Rail Safety Management Team.

Resources:

Risk Register (STM6003)

Risk Action Plans (STM6004)

Hazard Reporting Form (STM6030)

Risk Management Plan (STM6064)

4. Personnel Management

STM is a heritage tramway operation managed and staffed by its volunteer members. All members meet rail safety competency standards for the duties they carry out.

When a new staff member joins the work force or traffic staff, he/she is given the General Safety Induction (STM6017) and Orientation Program (STM6018) documents by the Rail Safety Manager, the Operations Manager or the Induction Officer. The General Safety Induction is discussed with the new staff member to ensure that he/she understands the safety rules, etc. Once inducted the Rail Safety Manager, Operations Manager or Induction Officer must complete the Induction Register (STM6147) and notify the Rail Safety Manager of the details so that the Members Database (STM6159) can be updated. Also if a member is to be trained for traffic operations or is to work on the infrastructure, then he/she must first attend and pass the Rail Safety Watcher and Track Awareness course.

4.1 Workers' Competence

The Rail Safety Manager develops and regularly reviews position descriptions for all positions identified as involving rail safety work (see section 2.3). From these, the competencies necessary to ensure that the person undertaking the duties has the knowledge, skills and experience to carry out the duties in a safe manner are identified.

All workers including operational staff, members working on site, visitors visiting non-public areas and contractors undergo a General Safety Induction (STM6017). Again the Induction Register (STM6147) must be completed.

All STM personnel hold appropriate rail safety qualifications and are regularly assessed for necessary competencies related to their work responsibilities.

Competency assessments for operating tramcars are organised by the Operations Manager and are carried out by people with qualifications and experience in the field of expertise being assessed. The Chief Engineer, Workshop Manager, Infrastructure Manager, RSMT or other people with qualifications and experience in the field of expertise being assessed, assesses other competencies.

A document, Maintaining Certificates of Competencies, has been developed to explain the procedure for maintaining the existing Certificates of Competencies of STM members or creating new Certificates of Competencies for new STM members who need to have such a document (STM6164).

All staff must carry, on their person, their Identification Card (ID Card) which must be produced if requested by an officer from the Office of National Rail Safety Regulator (ONRSR), the Officer-in-Charge or the Rail Safety Manager. If the ID Card is lost it must be immediately reported to the Rail Safety Manager so that a new ID Card can be prepared.

Relevant records of qualifications and competency assessments are held at the STM office at the Museum.

Resource:

Competency Data Collection Form (STM6175)

General Safety Induction (STM6017)

Induction Register (STM6147)

Maintaining Certificates of Competencies (STM6164)

Orientation Program (STM6018)

Assessment Form for Rail Safety Watcher and Track Awareness (STM6181)

4.2 Health and Fitness

STM has a Health Policy (STM6040) that defines the health aims and objectives of the organisation.

SYDNEY TRAMWAY MUSEUM

STM complies with the requirements of the National Health Assessment Standard for Rail Safety Workers (NHAS) in managing the health and fitness of its rail safety workers.

The duties and medical requirements for all positions have been documented. Each position has been assessed for risk and categorised according to the NHAS.

Relevant staff have been medically assessed in accordance with the Procedure for Managing Rail Safety Worker Health Assessments (STM6015) and copies of health assessments are held at the STM office. STM either arranges for a staff member to have a medical assessment or reviews an assessment conducted on behalf of another railway or tramway operator, using the Portability of Health Assessment Form (STM6021), to ensure that the level of health assessment performed by the original rail/tram organisation is equal to or greater than that required for the tasks performed by the staff member at STM.

No one is allowed to carry out rail safety work unless they have been certified fit for the work according to the NHAS.

Where a health assessment indicates a temporary or permanent medical impairment that prevents a person carrying out Category 2 work, STM examines whether the person is fit for Category 3 or 4 work, or other alternative duties. STM tries to involve members and non-member volunteers as far as their health and fitness safely allows.

Health risk assessments have been completed for all of the positions at the museum. The assessments are shown in the Health Risk Assessments procedure (STM6016).

The Health Assessment Manager is responsible to ensure that all personnel records including medical records are to be held in a secure place as per the RSW Health Records Management Procedure (STM6035). Under the Museum's Privacy Policy any member has a right to obtain a copy of his/her personal health records which may be held by the Museum.

The HAM will notify both the RSM and all OIC's by email, regarding the new medical due date and if the members have passed/failed their medical. The RSM will issue a revised Competency list on a regular basis and post it on the noticeboard in the Traffic Office for the OIC's to reference.

Resources:

Health Policy (STM6040)

Health Risk Assessments procedure (STM6016).

Procedure for Managing Rail Safety Worker Health Assessments (STM6015)

Portability of Health Assessment Form (STM6021)

RSW Health Records Management Procedure (STM6035)

4.3 Drugs and Alcohol

STM policy prohibits any person who is affected by drugs and alcohol from taking any part in its operations. Personnel are required to advise their supervisor if they are taking any medication which may affect their performance. It has developed an Alcohol and Other Drugs Policy (STM6130) and a Drug and Alcohol Program (STM6066) to ensure that all members and contractors are fully aware of their responsibilities. It is expected that all staff will have a zero blood alcohol level.

STM managers rely on visual and verbal assessments to form a reasonable impression as to whether a person's behaviour is affected by drugs or alcohol.

ONRSR can undertake random drug and alcohol testing of STM staff at their convenience.

The Rail Safety Manager is designated as the Drug & Alcohol Officer.

Resources:

Alcohol and Other Drugs Policy (STM6130)

Drug And Alcohol Program (STM6066)

4.4 Fatigue Management

STM is aware that fatigue may be an issue for its staff and as such has developed a Fatigue Policy (STM6039). In particular, this could arise during peak summer operations when a large number of services are run each day and services are operated 7 days per week. To support these services some staff start work at 8.30am to check trams, while the need to stable trams after a day's operations may require some staff to work until 5.30 pm. STM rosters its staff to ensure no one works for extended periods and to ensure staff have appropriate rest breaks. The STM's operations are managed as per the Fatigue Management Procedure (STM6120)

STM is also aware that staff could become fatigued mixing their normal working hours with work for STM. Staff are required to have a suitable break between completing their paid work duties and taking up duty with STM.

Supervisors rely on visual assessment to ensure staff are sufficiently rested and alert to perform their duties. Staff are encouraged to report any feelings of fatigue so they can be given the opportunity to rest.

Resources:

Fatigue Management Procedure (STM6120)

Fatigue Policy (STM6039)

4.5 Privacy Policy

The STM collects, manages and uses personal information in accordance with all relevant legislation and standards. The National Privacy Principles in the Privacy Act 1988 (Cth) will underpin all matters related to personal information.

STM has a Privacy Policy (STM6014) that states that the STM will take all reasonable steps to protect personal information from loss, misuse, unauthorised disclosure or destruction.

Resources:

Privacy Policy (STM6014)

4.6 Worker Injuries

The details of any worker injured on site must be recorded in the *Register of Worker Injury (STM6069)*. The incident that resulted in the injuries must be recorded on an *Occurrence Report form (STM6033)* and the *Register of Worker Injury (STM6069)* must be attached to an *Occurrence Report form (STM6033)*.

Both forms must be given to the RSM who will include the details in his monthly report to the Board.

The *Safety Records Retention Schedule (STM6006)* records the archiving details of the *Register of Worker Injury (STM6069)*.

Resources:

Occurrence Report Form (STM6033)

Register of Worker Injury (STM6069)

5. Goods and Services Procurement

5.1 Goods & services procurement

All purchases above \$500 must have the consent of the Board (although this amount may be varied from time to time as the Board sees fit). All goods purchased from any business with whom STM holds an account must be accompanied by an order slip, the signature of the relevant Manager, and an outline (of what the goods are going to be used for).

Purchasing records for materials are held with the financial records of the Museum. It is proposed that the format for a purchase order (STM6143) be used in future major purchases.

5.2 Procurement

5.2.1 Off the shelf items

Goods and services for rolling stock or infrastructure are specified and ordered by personnel, taking into account any specifications available, and after first consulting the Preferred Suppliers List (STM6142) maintained by the Rail Safety Manager. This list also records suppliers who have failed to meet requirements.

In the case of everyday items such as general timber, wood glue, tacks, standard screws, cable and timber finishes, these are always known products and brands that are supplied 'off the shelf'.

For smaller products such as light globes, electric cable, and insulating material, the specifications are provided to the supplier (usually verbally), the suitable products acquired and then checked by personnel before use

5.2.2 Specially Manufactured Items

All major component items such as wheels or axles are obtained from a reputable industry supplier but should first consult the Preferred Suppliers List (STM6142) maintained by the Rail Safety Manager. For rail safety purposes all such items are to be individually marked to enable traceability. In the event of failure, the purchase, supply and manufacture date and, if applicable, batch number can be traced for subsequent inquiry.

Should STM personnel be in any doubt concerning a relevant supplier for any component destined for tramway use, other tramway operations are contacted for advice?

5.2.3 Second Hand Items

Many items purchased for the restoration and operation of heritage rolling stock operated by STM, and for the maintenance of rail infrastructure are second-hand items, so do not have the usual quality guarantees that come with the purchase of new materials and equipment. Purchasing of such materials requires special care in terms of judging quality, serviceability and safety. All second hand items must be checked for suitability, condition and tolerances/wear prior to use.

5.2.4 Replacement Parts

It is critical that replacement parts are:

- a) Manufactured to match the original specifications; or
- b) Carefully assessed with any change in performance that may be introduced by a part of a different specification; and
- c) All replacement parts are checked on receipt to ensure they have been made to specification.

5.3 Tender documentation

Where STM tenders for the supply of an item or service, the tender stipulates that the tenderer must comply with STM's SMS policies and procedures, and meet the obligations under Safety Duties as a Contractor. Where necessary, interface coordination plans are established between STM and the tenderer to ensure that both parties understand their responsibilities.

5.4 Contract Management

When engaging contractors STM requires that they provide appropriate safety documentation for the work to be carried out. These documents are assessed before work commences to make sure they are relevant to the work environment at STM.

Contract workers are also required to prove that they hold any necessary certification for particular work tasks or to operate particular plant and equipment.

Contract workers are given an induction to the STM worksite before they start work. Where necessary, interface coordination plans are developed between STM and the contractor so that responsibilities are identified. The Induction Register (STM6147) must also be completed.

A STM representative monitors the quality and safety of the work while contractors are carrying out their duties. This is by general observation and also by audit against the requirements of the contract. Where audits identify areas of concern, these will be reviewed by the Board and where necessary a revision of the contract will be made.

5.5 Records

Purchasing records for materials are held with the financial records of the Museum.

Resources:

Preferred Suppliers List (STM6142)

Purchase Order Form (STM6143)

6. Engineering and Operational Systems Safety

6.1 General

STM has the responsibility to maintain engineering and operational safety as manager of the Museum and as operator of tram services within the Museum and over part of the tram lines.

6.1.1. Track and Infrastructure

STM has responsibility for managing the track and infrastructure within the Museum and the tramlines to Sutherland and the Royal National Park. The Royal National Park line and infrastructure was constructed by Government Railways to its standards. The care and maintenance of the track and infrastructure of the Royal National Park line is now the responsibility of SPER.

The track is maintained to the requirements of the Track Standard (STM6024) and the overhead is maintained to the requirements of the Overhead Traction Wire Standard (STM6025). Both are maintained in accordance with procedures described in this Safety Management System.

6.1.2 Rolling Stock

Rolling stock used in STM operations, such as trams and wagons, were built to operation standards set by relevant Tramway systems (i.e. Sydney trams to the NSW Department of Government Transport standards). They were used by the relevant Tramway systems for many years after being commissioned and have since been acquired by STM (by way of donation, purchase, lease and loan) to operate tourist tram services.

All operating rolling stock is certified as being fit for intended purpose in accordance with the provisions of this Safety Management System.

Rolling stock is frequently inspected in accordance with Safety Management System procedures to ensure its safety while in service.

Details of all STM rolling stock, whether owned, leased or on loan, are recorded in the Rolling Stock Register (STM6065).

6.1.3 Signalling and Telecommunications Systems and Equipment

Signalling infrastructure (i.e. the Princes Highway level crossing) within the Museum complex is maintained according to relevant standards.

STM presently uses mobile phones and hand held and fixed base radio communication systems for its operations. Details about the use of UHF radio communications is explained in STM UHF Radio Communications Procedure (STM6116).

These systems comply with mandatory communications industry standards. Management and maintenance of communication equipment is carried out according to the provisions of this Safety Management System.

6.1.4 Operations and Tram Control Systems

Tram operations within the Museum complex are conducted according to STM rules and procedures which can be found in:

- relevant Traffic notices which are displayed in the Traffic Office and old copies are kept in the Museum's office;
 - Instructions for various Trams within the Museum – Tramway Operating Handbook (STM6062); and
 - STM's Tramway Operation Handbook (STM6062)

Where relevant, personnel comply with:

- The Procedure for Safety in Tramcar Cabs (STM6022)

SYDNEY TRAMWAY MUSEUM

- The Procedure for 'Driver for a Day' (STM6023).

There are severe financial and criminal penalties for anyone who interferes with a tram which has a Safety Interlocking system installed.

6.1.5 Interface with Other Transport Modes

Interface with other modes of transport occurs on the tramlines and the museum has responsibility for the level crossing equipment standards.

STM has established standards for the level crossings on both the tram line from the Museum to the Royal National Park and Sutherland in conjunction with relevant authorities. These standards cover condition of the track, overhead, road surface, approach roads, fencing and warning signs.

STM has prepared a manual (Level Crossing Operation Manual STM6110) to explain the operation of the level crossing lights and other equipment.

Other provisions for level crossing protection can be found at section 6.2.

Resources:

Level Crossing Operation Manual (STM6110)
Overhead Traction Wire Standard (STM6025)
Procedure for 'Driver for a Day' (STM6023) – *to be developed*
Rolling Stock Register (STM6065)
Safety in Tramcar Cabs (STM6022)
STM's Tramway Operation Handbook (STM6062)
STM UHF Radio Communications Procedure (STM6116)
Track Standard (STM6024)
Traffic Notices.

6.2 Process Control

STM has a series of operational and engineering procedures to ensure the safe operation of its tram services. These procedures set out processes for identifying and responding to risks in tram operations, responding to emergencies, managing changing circumstances and making sure the procedures are understood and effectively applied to allow STM to operate with safety.

6.2.1 Track and Infrastructure

Maintenance work, inspection and testing of track within the Museum complex is undertaken to maintain it in accordance with the Track Standard (STM6024) and Overhead Traction Wire Standard (STM6025). The maintenance of the track is undertaken following the Track Maintenance Procedures. Rolling stock axle load must not exceed **16 tonne** and a speed limit of 6 km/hr is applied within the Museum.

STM track and overhead at the Museum are inspected and certified as fit for purpose, before accreditation, by appropriately qualified and competent persons. Where the inspection uncovers matters needing attention, or restrictions are imposed on operations, STM complies with the conditions of the engineering certification and considers whether an upgrade is required to meet normal operating parameters. When an upgrade is carried out, the inspecting engineer re-inspects the track and overhead may change the conditions of certification, where appropriate.

Post-certification track inspection is the responsibility of the Infrastructure Services Manager who conducts regular track inspections at intervals no longer than twelve (12) months while the track is in regular use and a pre-start inspection where the track has been unused for an extended time. Post-certification overhead inspection is the responsibility of the Overhead Supervisor who conducts regular overhead inspections at intervals no longer than twelve (12) months while the overhead is in regular use and a pre-start inspection where the overhead has been unused for an extended time.

Inspections are carried out twelve monthly by walking the length of the track as per the Track Inspection Procedure (STM6028) and Overhead Traction Wire Inspection Procedure (STM6029).

SYDNEY TRAMWAY MUSEUM

Regular operational maintenance is carried out at least monthly to make sure all moving parts, such as point blades and levers, are appropriately lubricated and functioning in a correct and safe manner.

Unscheduled maintenance is carried out on a needs basis as determined by inspection and to maintain the track and overhead to the standard set out in the Track Standard (STM6024) and Overhead Traction Wire Standard (STM6025).

6.2.2 Rolling Stock

A list of all STM rolling stock available is recorded on both the Tramcar Availability Report (STM6104) It shows, along with much detail, the operating status of the trams.

6.2.2.1 Rolling Stock Certification

Any work, inspection or testing on STM rolling stock is undertaken to ensure the rolling stock meets the Rolling Stock Mechanical Standards (STM6026).

STM uses suitably qualified and competent persons to inspect its rolling stock. The persons conducting inspections certify that, at the time of inspection, the rolling stock meets the Rolling Stock Mechanical Standards (STM6026) and is in a structural and mechanical condition that is safe for its intended use.

Tramcar Certificates of Safety (STM6084) are issued when a tram first arrives on site or after a major overhaul.

Each year, Tramcar Registration Compliance Audit Records (STM6076) are issued and signed by the person conducting the inspection. Rolling stock not certified in accordance with these conditions is never used for operational purposes.

Rolling stock that fail either the engineering or operational mechanical inspection process are not used on STM tram services or moved on track outside the Museum boundaries. This rolling stock is not used until all matters requiring attention have been completed, re-inspection carried out and certification issued.

Only rolling stock listed in the Rolling Stock Inspections folder as approved and certified is used on STM tram services. The Rolling Stock Inspections folder also indicates the certification status of all rolling stock held by STM.

Additional rolling stock acquired by STM for operational requirements is examined and certified as fit for purpose, in accordance with this section, and a request for variation to SPER's accreditation submitted to the rail safety regulator for approval before the rolling stock is used on STM lines.

Tramcar Certificates of Safety (STM6084) signed and issued by the Chief Engineer are retained on files at the Museum's office. The Tramcar Registration of Compliance Audit Records (STM6076) signed and issued by the Tramcar Maintenance/Workshop Manager and are retained on files at the Museum's office. The old records are held in the Archived Tramcar Registration folder, which is kept in the STM Office.

6.2.2.2 Rolling Stock Operating Standards

Rolling stock operating standards are documented in the Rolling Stock Mechanical Standards (STM6026). The Historical Tram Operations (STM6146) describes the activities, working conditions and the health attributes for the various operating tramcars.

Approved track speed on the section of line for which track access has been approved is a maximum of **40km/ph** (generally below the rolling stock approved standard). Movement within the STM complex is limited to **6km/ph**. Approval to exceed this speed restriction for test purposes must be obtained in writing from the Operations Manager.

6.2.2.3 Rolling Stock Maintenance

Rolling stock operated by STM, whether owned or on loan, is maintained in accordance with the Maintenance Manual (STM6074) and the Lubrication Manual (STM6075) to make sure it meets the standards detailed in the Rolling Stock Mechanical Standards (STM6026).

6.2.3 Communications

The Operations Manager is responsible for the safe storage, testing and maintenance of all mobile telephones. Telephones are tested and their batteries recharged before being issued.

Tram crews must test telephone equipment at the beginning of each shift and this must be done before the tram leave the Museum on operating days.

Tram crews are not to take phone calls, talk, text or receive text messages whilst the trams are in motion. They must wait until the tram arrives at the terminus. Unless in emergency situations they can make an emergency phone call to the OIC or emergency services when the tram stops. However the conductor may answer a call only on the Museum's mobile phone whilst the tram is moving.

Staff are required to report all telephone faults to the OIC.

STM maintains only two mobile phones, one for the Sutherland line and the other for the Royal National Park line. The phone numbers for these phones are recorded in the STM Contacts which is held in the Display Hall entrance and/or the Starter's Box.

6.2.4 Operations Systems

6.2.4.1 STM Complex

Operations within the Museum complex are performed in accordance with:

- Traffic Notices;
- Instructions for various Trams within the Museum – Tramway Operating Handbook (STM6062);
- PCC car 1014 Manual (STM6091);
- NET car 1054 Manual (STM6092);
- Berlin cars Manual (STM6093);
- Munich cars Manual (STM6094);
- Birney car 11 Manual (STM6095);
- Z2 class car 111Manual (STM6096);
- H class cars 357,358 cars Manual (STM6097); and
- The STM Tramway Handbook (STM6062).

Staff have been trained in these operational systems.

6.2.4.2 Level Crossing Protection

At level crossings where fixed level crossing equipment has become degraded, the following safety system is implemented:

- For services operating between the Museum and the Royal National Park station the tram operations cease until the equipment is fixed; ~~and~~
- Refer to level crossing manual (STM6110) about getting a tram back from RNP tramway if the crossing lights are out; and-
- Refer to “Towing a Tram Across the RNP Level Crossing“ procedure (STM6141) to get a tram back from RNP tramway if the overhead wires have been damaged.

When the Level crossing equipment fails or has intermittent faults (e.g. does not turn off after passing the loop), an Occurrence Report (STM6033) must be completed by the OIC or tram crew.

Resources:

Berlin cars Manual (STM6093)
Birney car 11 Manual (STM6095)
Tramcar Certificate of Safety (STM6084)
H class cars 357,358 cars Manual (STM6097)
Historical Tram Operations (STM6146)
Occurrence Report (STM6033)
Level Crossing Manual (STM6110)
Lubrication Manual (STM6075)
Maintenance Manual (STM6074)
Munich cars Manual (STM6094)
NET car 1054 Manual (STM6092)
Overhead Traction Wire Inspection Procedure (STM6029)
Overhead Traction Wire Standard (STM6025)
PCC car 1014 Manual (STM6091)
Rolling Stock Mechanical Standards (STM6026)
[Towing a Tram Across the TNP Level Crossing \(STM6141\)](#)
Track Inspection Procedure (STM6028)
Track Standard (STM6024)
Tramcar Availability Report (STM6104)
Tramway Operation Handbook (STM6062)
Tramcar Registration Compliance Audit Record (STM6076)
Z2 class car 111Manual (STM6096)

6.3 Design and Development

Because of the heritage nature of its operations STM does not ordinarily design and develop new equipment.

However, repair and maintenance of STM rolling stock and equipment does require modification of second hand materials and equipment. When this is required a risk assessment is carried out on the planned modification to identify safety implications.

Any available manufacturer's manuals or directions relevant to the second hand materials and equipment are considered as part of these risk assessments.

STM does have some drawings from the various previous transport operators and these are recorded in the STM Drawing Register (STM6151). However the actual numbers of detailed drawings of the trams in the Museum's fleet are a very small percentage of the total number of drawings produced. This was due to the Sydney Department of Transport destroying all drawings when the trams ceased running in Sydney. Microfilms of the drawings held by the Museum are held by the Tramcar Maintenance/Workshop Manager at his house for safe keeping. The actual drawings are currently dispersed around the Museum in filing cabinets or at members' homes as there is currently no single place available to safely store the drawings.

6.4 Inspection and Testing

6.4.1 General

Inspection and testing is conducted by persons who are experienced in the relevant activity.

6.4.1.1 Track and Infrastructure

Pre Accreditation Inspection and Testing

Track and overhead owned and managed by SPER is inspected by appropriately qualified people and certified as being fit for STM operations before commencement of tram operations under rail safety accreditation.

SYDNEY TRAMWAY MUSEUM

Ongoing Inspection and Maintenance

Ongoing track and overhead inspections and maintenance are the responsibility of the Infrastructure Services Manager and Overhead Supervisor respectively.

The tramway track shall be visually examined at intervals from the tram driver's view point and tram drivers are to report after each trip to the Officer-in-Charge any apparent defect in the track or any line-side structure to allow any such defect to be examined as soon as possible. The checklist of items to be checked on the first trip of the day is shown in the Track Inspection procedure (STM6028).

During the track inspections the "inspectors" should note any clearance of vegetation required to be done, which is encroaching on the rail corridor. The details of the clearances required are noted in the *Vegetation Control Procedure* (STM6063).

Regular track and overhead inspections are carried out annually when the tram lines are in regular use. The inspections are conducted according to the Track Inspection Procedure (STM6028) and Overhead Traction Wire Inspection Procedure (STM6029).

The Infrastructure Services Manager also inspects the track after completion of any major maintenance or upgrade work and informs the Operations Manager when the track is fit to resume operations. All track inspections are recorded in the Track and Structure Inspection and Maintenance Report (STM6027). The Overhead Supervisor also inspects the overhead after completion of any major maintenance or upgrade work and informs the Operations Manager when the overhead is fit to resume operations.

Track inspections by the Infrastructure Services Manager are for the purpose of ensuring that the track is maintained in accordance with the Track Standard (STM6024).

Overhead inspections by the Overhead Supervisor are for the purpose of ensuring that the overhead is maintained in accordance with the Overhead Traction Wire Standard (STM6025). All inspections are recorded in the following reports:

- Track and Structure Inspection and Maintenance Report (STM6027);
- Pole Inspection Report (STM6107); and
- Overhead Mtce. – Tramway Overhead Wiring Inspection Check Sheets (STM6109).

Signalling equipment under STM control is regularly inspected by the Infrastructure Services Manager while carrying out track inspections.

Operational personnel conduct ongoing and overhead inspections when moving around the museum complex and its running lines and inform the OIC of any matters that require attention.

A Track and Structure Inspection and Maintenance Report (STM6027) is kept as a record of track inspections.

An Overhead Maintenance Log (STM6086) is kept as a record of overhead inspections. The Log records:

- Dates of overhead inspection
- Who carried out the overhead inspection
- Details of matters requiring attention
- Recommended corrective actions and
- Completion date for each corrective action.

6.4.1.2 Rolling Stock

Inspection and Testing

All rolling stock used for operational purposes is certified by a suitably qualified member, as:

- Having no modifications to the rolling stock that degrades operational or passenger safety;

SYDNEY TRAMWAY MUSEUM

- Being structurally sound, at the time of the inspection, for the intended use and operating standards specified by STM; and
- Being maintained to the operational mechanical standard required by STM.

Signed certifications are stored at the Museum's office.

Tram Examination

Tram examination is conducted in accordance with the Tramcar Pre-Operation and Stabling Inspection Checklist (STM6031) prior to the departure of the first trip of the day.

Operations

The Operations Manager conducts regular safeworking compliance inspections within the Museum and takes necessary corrective action where rail safety requirements have not been observed.

Compliance safety audits are conducted in accordance with the process set out at section 2.9.

The Operations Manager keeps records of all instances where rail safety requirements have not been observed and major incidents are reported to Board meetings along with any corrective actions.

Electrical Appliances and Electrical Leads

The examination and testing of all electrical appliances and leads is conducted in accordance with the electrical standards. All testing and inspections are recorded on the relevant sheet in the Electrical Equipment Register (STM6132).

6.4.2 Inspection Frequency

The inspection frequency for essential processes such as track and overhead inspections and rolling stock inspections are detailed in section 6.4.1. The frequency of inspection and testing for each process system has been established by taking into account the following:

- Traffic volume, operational speed and load limits;
- Known or estimated rate of deterioration of critical elements;
- Consequence of failure of any part of the system;
- Adverse environmental factors; and
 - Incident or accident experience.

6.4.3 Inspection and Test Records

Records of all certifications, inspection and tests of the track, overhead, rolling stock and equipment are verified on forms attached to the relevant procedures and are maintained as safety records in accordance with provisions of this Rail Safety Management Plan.

6.4.4 Inspection and Test Status

The inspection and test status of:

- Track within the Museum is maintained and recorded in the Track and Structure Inspection and Maintenance Report (STM6027);
- Overhead within the Museum is maintained in the Overhead Maintenance Log (STM6086);
 - Rolling stock certifications are kept in a folder in the STM office;
 - Operational performance audits are maintained on the Operational Performance Audit Log Form (STM6011);
 - Fire extinguishers are maintained on the Fire Extinguisher Register (STM6111); and
 - STM Emergency / Evacuation Procedure (STM6034) tests - communication equipment is tested in accordance with section 6.2.3.

6.4.5 Corrective Actions

Corrective actions for non-conformances are documented on the Non-Conformance Report Form (STM6008) and all corrective actions are checked by the Rail Safety Manager. After implementation of the corrective action the Rail Safety Manager reviews the response to the corrective action to make sure it has been effective.

Resources:

Electrical Equipment Register (STM6132)
Fire Extinguisher Register (STM6111)
Non-Conformance Report (STM6008)
Overhead Maintenance Log (STM6086)
Overhead Wiring Inspection Check Sheets
Overhead Traction Wire Standard (STM6025)
Overhead Traction Wire Inspection Procedure (STM6029)
Pole Inspection Report (STM6107)
Operational Performance Audit Log Form (STM6011)
STM Drawing Register (STM6151)
STM Emergency / Evacuation Procedure (STM6034)
Tram Examination Procedure (STM6030)
Track Inspection Procedure (STM6028)
Track and Structure Inspection and Maintenance Report (STM6027)
Vegetation Control Procedure (STM6063)
Track Standard (STM6024)
Tramway Overhead Inspection/Maintenance Report (STM6109)
Tramcar Pre-Operating and Stabling Inspection Checklist (STM6031)

7. Interface Management - to be developed in future

Resource: Template Interface Coordination Plan (STM6032)

8. Occurrence Management

8.1 Occurrence Notification and Management

8.1.1 Procedure for notification of occurrences

Staff must report all incidents to OIC's using the Occurrence Report Form (STM6033). This includes any complaints made by any of our customers or museum members. The process for this type of incidents is defined in Section 8.3 Complaints

The Rail Safety Manager is responsible for investigating all occurrences and for notifying occurrences to the rail safety regulator (ONRSR) in accordance with relevant legal requirements.

8.1.2 Recording and Analysis

All reported rail safety occurrences are recorded on the appropriate form (Occurrence Report form STM6033). Depending on the severity of the occurrence, ONRSR may have to be notified as required by the rail safety regulator and reports must be prepared for ONRSR. The procedure Incident/Accident Management Notification Investigation and Reporting Procedure (STM6077) outlines the process.

Occurrence notifications are numbered in sequence as each occurrence is reported. Investigation reports are allocated an individual file reference and cross-referenced to the ONRSR Notification of Occurrences form. Records are kept at the office of STM.

Records of occurrences are analysed to detect any pattern in safety performance and to assess performance against safety goals. Records are also examined to identify any safety issues not previously dealt with.

8.1.3 Investigations

STM facilitates the involvement of authorised authorities in the investigation of any occurrence involving STM tram operations.

STM conducts its own investigations within the Museum complex and the STM tramlines.

When an occurrence happens at the Museum, staff report the occurrence on the relevant form to the OIC (Occurrence Report form STM6033), or in his absence to the Operations Manager.

Staff are required to provide the following details about the occurrence:

- Where the occurrence happened;
- When the occurrence happened (date and time);
- A list of witnesses, with their addresses and telephone numbers;
- Details of damage;
- Action taken in response;
- Tram crew names; and
- Any other relevant and appropriate information.

The Board investigates occurrences to determine what happened and to discover all contributing factors. When an occurrence is a Category A event as listed in Appendix C of AS4292.1 (2006) and

SYDNEY TRAMWAY MUSEUM

the investigation requires specialist knowledge not available from the membership of STM, the Operations Manager arranges for an external person with the necessary knowledge to participate in the investigation after consultation with the Board.

Any recommendations made in an investigation report are considered promptly and implemented as necessary.

8.1.4 Review and Rectification Process

The Board reviews occurrence notifications and investigation reports, considers any recommendations and oversees the implementation of the necessary corrective action (as specified in the Corrective Action Report STM6078) to fix rail safety problems. The Board monitors progress on implementing corrective action until the action has been finalised and its effectiveness determined. The Board also reviews occurrence data to detect any trends that may require corrective action.

8.1.5 Occupational Health and Safety Incidents and Investigations

Workplace accidents are recorded, notified and investigated according to legal requirements set out in relevant occupational health and safety legislation.

Resource:

Corrective Action Report STM6078)

**Incident/Accident Mgmt Notification Investigation and Reporting Procedure (STM6077)
Occurrence Report Form (STM6033)**

Notification of Occurrences

OTSI's 72 Hour Investigation Report

8.2 Emergency Response

STM Board has responsibility for the Museum and the tram lines and an emergency procedure has been developed (STM Emergency / Evacuation Procedure STM6034).

8.2.1 Preservation of Evidence

Under the emergency response procedure for the STM, the OIC and the Operations Manager are responsible for preserving any evidence related to an emergency. This could involve preserving relevant records, rolling stock and plant and securing the site where the emergency took place.

Preservation of evidence may be for an extended period depending on the nature of the emergency and the needs of the resulting investigation. The Operations Manager is responsible for making available relevant evidence to those carrying out any inquiries.

8.3 Complaints

If the occurrence is a result of a complaint, then the only action to be taken is that the Occurrence Report (STM6033) must be completed and the form passed to the STM Secretary, with copies to the Rail Safety Manager and any other relevant manager.

The Secretary will then table the customer complaint at the next Board meeting for a decision on the action to be taken.

Resource:

STM Emergency/Evacuation Plan (STM6034)

Appendix 1

The following persons are the holders of current positions:

- Chairman - Howard Clark
- Chief Engineer - Richard Clarke
- Infrastructure Services Manager - Danny Adamopoulos
- Operations Manager - Hayden Holmes
- Workshop Manager - Bill Parkinson
- Overhead Supervisor - Glen Killham
- Rail Safety Manager - Ian Saxon
- Deputy Rail Safety Manager - Matthew Geier
- Traffic Manager - Martin Pinches
- Training & Assessment Committee (Chairman) - Ian Saxon
- Tramcar Maintenance/Workshop Manager - Bill Parkinson
- Rail Safety Mgt. Team - Matthew Geier, Geoff Graham, Richard Clarke and Ian Saxon