



**Special Commission of Inquiry into the  
Waterfall Rail Accident**

**Final Report**

**Volume 2**

**January 2005**

**The Honourable Peter Aloysius McInerney QC**



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**Special Commission of Inquiry into the  
Waterfall Rail Accident**

**SAFETY MANAGEMENT SYSTEMS  
EXPERT PANEL REPORT**

**Safety Management Systems review of RailCorp and  
the NSW Independent Transport Safety and  
Reliability Regulatory (ITSRR)**

**July 2004**





**PREPARED BY**

**Dr Chris Darling**

**Dr Graham Edkins (Chair)**

**Dr Ian Glendon**

**Dr Rob Lee**

**Mr Ken Lewis (Lead Auditor)**

**Mr Norman Thompson**

**FOR**

**The Honourable Peter Aloysius McInerney QC**

**July 2004**





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## Purpose of the Report

The purpose of this report is to provide evidentiary material regarding the safety management systems applicable to the circumstances of the Waterfall rail accident. More specifically this report describes a safety management systems review that was undertaken of RailCorp and the Independent Transport Safety and Reliability Regulator (ITSRR) to determine:

1. Whether the parties with a role in managing the safety of the NSW railway system have effective and comprehensive safety management systems that reflect contemporary thinking;
2. How well the different safety management systems 'dovetailed' to provide a seamless and coherent approach to the provision of safe rail services; and
3. Whether safety management systems adopted by the parties were applied in practice.

While the fundamental objective of this report is to present data driven findings arising from the safety management systems review, an equally important task is to identify key areas for safety improvement based upon a contemporary change management framework.

At the time of the Waterfall accident, the Sydney metropolitan network was managed and operated by StateRail and Rail Infrastructure Corporation (RIC). At the time the system safety review commenced, the State government had created RailCorp to reintegrate elements of StateRail and RIC into a single suburban rail entity responsible for rolling stock, operations, infrastructure and maintenance. Where this report refers to StateRail or RIC, the reference is in the context of the organisations operating at the time of the Waterfall accident. A reference to RailCorp is in the context of the entity operating as a vertically integrated railway and includes the remaining StateRail and RIC elements that had not been transferred at the time of the review.

## StateRail Findings – Applicability to RailCorp

Several challenges faced the review team in investigating the adequacy of the safety management systems applicable to the circumstances of the Waterfall accident. ITSRR and RailCorp (an amalgamation of Rail Infrastructure Corporation and StateRail) were respectively incorporated on *1 January 2004*; thus, whilst the previous performance of StateRail could be assessed, the current performance of both RailCorp and ITSRR required evaluation of many activities that were in the initial planning stages and thus could not be fully assessed due to the level of maturity in process and implementation. Therefore, RailCorp was in its formative stage but was responsible for direction of StateRail and RIC operations at the time of the safety review. Accordingly, any findings with *respect to StateRail operations and safety management should generally be considered applicable to RailCorp until such time as RailCorp becomes a fully accredited and mature rail authority.*



## List of Abbreviations and Terms

(#) – A numeral in parenthesis is a reference to supporting material listed in a table at the end of each section

**ANSTO** - Australian Nuclear Science and Testing Organisation

**APTA** - American Public Transit Association

**ART** - Australian Rail Training (based at Petersham)

**AS4292** - Australian Standard 4292 Railway Safety Management.

**ATRICS** - Advanced Train Running Information Control System: A train management system that allows an operator (signaller) to view the state of signalling equipment, locate and identify trains and to issue commands necessary to control the passage of a train through the network. The system notifies the operator of alarms that are raised by equipment faults and certain signalling conditions.

**CASA** - Civil Aviation Safety Authority

**Co-Regulation** – a process by which Track Managers and Operators are held responsible for the assessment and control of the risks associated with their proposed railway operations and then establish a safety management system (SMS) to ensure the identified risks are controlled in a manner, which is based on the needs of their organisations and accountability to shareholders through their SMS. (Definition taken from: *Rail Safety Co-Regulation*, published in 2001 by the National Rail Accreditation Authorities Group)

**Crew Resource Management (CRM)** - the application of human factors knowledge within the working environment. The utilisation of all available human, informational, and equipment resources toward the goal of safe and efficient operations. CRM deals directly with the avoidance of human errors and the management and mitigation of the consequences of those errors that do occur. (Civil Aviation Safety Authority, Advisory Circular: AC 121A-09(0) - *Human Factors and Crew Resource Management (CRM)*, April 2002).

**FAID – Fatigue Audit Interdyne**

**Governance** – the intelligent combination of management processes and structural controls that enables leadership to leverage resources safely and effectively whilst executing a strategic agenda.

**Hazard** – a physical entity, condition, activity, substance, or behaviour, which is capable of causing harm.

**Human Factors** - a developing and dynamic multi-disciplinary activity that aims to optimise the relationship between people and their activities by the systematic application of human sciences, integrated within the framework of systems engineering. Human Factors involves the study of the human's capabilities, limitations, and behaviours, and the integration of that knowledge into the design of systems to enhance the safety, performance and the general well being of the operators of the systems. (Civil Aviation Safety Authority, Advisory Circular: AC 121A-09(0) - *Human Factors and Crew Resource Management (CRM)*, April 2002).

**IATA** – International Air Transport Association

**ICAO** - International Civil Aviation Organisation

**IIMS** – Incident Information Management System

**IOSA** - IATA Operational Safety Audit

**ISMS** - Integrated Safety Management System

**ITSRR** - Independent Transport Safety and Reliability Regulator

**KPI** – Key Performance Indicator

**Latent hazard** – A ‘dormant’ organisational feature that does not immediately result in an accident or incident, but which could be a contributory factor at some future time.

**Material Change** – A Material Change is a significant variation to an accredited safety management system (SMS) that requires notification of the regulator. These are variations that affect the fundamental structure or elements of the SMS that will have a direct impact on the safety of activities, how they are managed or how risk is controlled. (Derived from ITSRR *draft* guidance material for accreditation 19 Jan 04).

**METRE** – Making Electric Trains Run Easier

**MIMS** – Major Incident Management System

**MoT** - Ministry of Transport

**NTC** - National Transport Commission

**OH&S** – Occupational Health and Safety

**OSM** – Operations Standards Manager

**OTR** – On-time running

**OTSI** - Office of Transport Safety Investigation

**PFM** – Passenger Fleet Maintenance

**QMS** - Quality Management System

Many organisations that work in high-risk environments require process-based management systems to ensure safe and effective operations. Such organisations usually specify AS/NZS ISP 9001:2000, Quality management systems- Requirements as the applicable standard to define the elements of an acceptable quality management system. In short, a quality management system should:

- identify key processes and their application throughout an organisation,
- determine the interfaces and sequences of processes in performing operations,
- define criteria and methods for ensuring effectiveness of the processes including accountability for control,
- describe the resources necessary to support the operation and monitoring of the processes and
- define actions necessary to ensure achievement of plans and to improve processes.

**Residual Risk** – the remaining level of risk after risk treatment measures have been taken (AS/NZ 4360:1999)

**RailCorp** – Rail Corporation, a NSW State owned corporation, which is a vertically integrated rail operator responsible for operation, maintenance and renewal of passenger services, rolling stock and infrastructure after 1 Jan 04.



**Rail Infrastructure Corporation (RIC)** - A state owned corporation that was responsible for managing and maintaining the infrastructure of the railway e.g., track, power and signalling equipment prior to 1 Jan 04.

**Risk** – the chance of something happening that will have an impact upon objectives. It is measured in terms of consequence or likelihood (AS/NZ 4360:1999).

**Risk Management** – the culture, process and structures that are directed towards the effective management of potential and adverse effects (AS/NZ 4360:1999).

**RMC** – Rail Management Centre

**SAD** – Safety Audit Database

**SAFE Notices** – notices of short or long term duration that promulgate information on altered or special safeworking requirements for train operations.

**Safety Accreditation** – a process by which a rail organisation seeking to manage rail infrastructure or to provide or operate rolling stock must apply to the Safety Regulator for accreditation. Before accrediting a rail organisation, the Regulator must be satisfied that the rail organisation has the competency and capacity to meet the relevant safety standards and that appropriate safety arrangements are made in access and like arrangements.

**Safety Case** – A reasoned argument that a railway operator has undertaken adequate risk assessment for all operations, has identified measures which need to be taken to control risks to health, and safety of workers and the public, and has systems in place to ensure that those measures will be implemented and maintained and that the railway operator has or will implement an effective safety management system that will exercise effective control over routine and non-routine operations (including emergencies) in a manner that complies with all relevant statutory provisions (UK Rail Assessment Criteria for Railway Safety Cases: Issue 1 April 2001)

**Safety Climate** - the particular aspects of an organisation's safety culture that are visible or measurable

**Safety Critical** – a term applied to a condition, event, operation, process or item of whose proper recognition, control, performance or tolerance is essential to safe system operation or use (MIL-STD\_882C 19 Jan 1993).

**Safety Culture** – the aggregate of behaviours attitudes, meanings, values, aims and beliefs that reflect safety with an organisation

**Safety Integrity** – the likelihood of a safety critical system achieving its required safety features under all the stated conditions within a stated measure of use (DEF-STD-00-56)

**Safety Integrity Level (SIL)**- an indicator of the required level of safety integrity (DEF-STD-00-56).

**Safety Management System** – (1) A safety management system is an explicit element of the corporate management responsibility that sets out an operator's safety policy, and defines how it intends to manage safety as an integral part of its overall business. (Civil Aviation Safety Authority (2002), *Safety Management: An operators guide*, page 2); (2) A structured systematic means for ensuring that an organisation or a defined part of it, is capable of achieving and maintaining high standards of health and safety (Waring, A. E., & Glendon, A. I. (1998). *Managing risk: critical issues for survival and success into the 21<sup>st</sup> century*. London: ITBP)

**SCOI** - Special Commission of Inquiry into the Waterfall Rail Accident

**SMSEP** - Safety Management Systems Expert Panel

**SPAD** – Signal passed at danger

**System Safety Engineering** – A compilation of engineering analyses and management practices that control designated situations, specifically: identifies the hazards in the system; determines the underlying causes of those hazards; develops engineering or management controls to either eliminate the hazards or mitigate their outcomes; verifies the controls are adequate and in place; and monitors the system after it has been changed or modified further as needed. (Bahr, N.J. (1997). *Safety systems engineering and risk assessment: A practical approach*).

**State Rail Authority** (StateRail) - A statutory authority of the New South Wales Government that reported to the Minister for Transport. StateRail was responsible for operating passenger rail services throughout New South Wales prior to 1 Jan 04.

**System** – an integrated composite of people, products and processes that provide a capability to satisfy a stated need or objective (EIA/IS 632 : 1994)

**Sub-culture** – the behaviours, attitudes, meanings, values ? and beliefs that reflect safety of a particular group within an organisation.

**Triangulation** - using multiple sources to focus upon a particular problem or issue

**TSSIP** – Train Services Safety Improvement Program

## **EXECUTIVE SUMMARY**

### **1. Introduction**

This report has been prepared for the Special Commission of Inquiry (SCOI) into the Waterfall rail accident and describes the background, methodology and results of a safety management system (SMS) review conducted between 19 January and 19 March 2004 on RailCorp and the Independent Transport Safety and Reliability Regulator (ITSRR).

The purpose of this review was to assist the SCOI in addressing Terms of Reference 2 and 3 of the Inquiry:

1. To determine the adequacy of the safety management systems applicable to the circumstances of the railway accident.
2. To recommend any safety improvements to rail operations that the Commissioner considers necessary.

RailCorp is responsible for nearly 1,000,000 passenger journeys daily in a rail system that has both passenger and freight services, and is considered to be the most complex rail-operating environment in Australia. ITSRR is a new statutory authority, independent of the Ministry of Transport that was established on 1 January 2004 to facilitate the safe operation of transport services in New South Wales.

A Safety Management Systems Expert Panel (SMSEP) of six people with extensive experience of safety management systems, across a wide variety of regulatory and high reliability organisations, was formed in October 2003 to plan and oversee the SMS review.

The safety review team comprised 11 people with extensive experience in audit in a variety of areas including railway operations, safety management and human factors.

The time taken to conduct the review, approximately 3836 man-hours, resulted in an outcome that extended across many areas and provided detailed findings in several of these areas. This breadth and detail resulted in one of the most extensive examinations ever conducted on a railway system within Australia, and perhaps worldwide. The review was unique in that it focused on both the regulator and a railway at the same time.

### **2. Overall Review Context**

To effectively manage the safe running of a railway system it is essential to have in place both a system of managing safety and actions to develop and maintain a positive safety culture. This is usually achieved by implementing an integrated safety management system with all the elements required to identify, assess, control and manage the wide range of hazards and attendant risks in a complex socio-technical environment. The system must have clear and focused leadership and must be effective in achieving the desired outcomes, used by all parts of the organisation and supported by clear line accountability for safety with open communications and an established “just culture” with regard to reporting safety breaches.

SMS elements must be integrated both with each other and with other management activities to ensure that they become embedded throughout the organisation. This ensures that management will be aligned, will continue to be effective in the presence of ongoing change, and can proactively identify and control hazards to an acceptable level of risk. Integration

must be verified through an audit process that regularly verifies the appropriateness and implementation of the programs and activities relevant to safety.

The review sought to identify, assess and analyse the SMS for RailCorp and used a contemporary 29-element SMS as the basis for comparison. Schedule constraints required the scope to be limited and focused. The following eight themes were used to focus the review:

1. Governance and Accountability
2. Train Operations
3. Human Factors
4. Emergency Preparedness
5. Training Systems
6. Asset Management and Maintenance
7. The RailCorp Safety Reform Agenda
8. Safety Climate Review

The review of the regulatory authority focused on how well the regulator met its statutory obligations of providing safety oversight at the time of the Waterfall accident. Additionally, it considered whether ITSRR was implementing adequate policies, procedures and processes to ensure effective oversight of the NSW rail industry. Specifically the review of ITSRR focused on:

1. Regulatory Independence
2. Safety Enforcement over the rail industry
3. Accident and Incident Investigation functions
4. Audit Systems
5. Safety Accreditation

The results of the analysis informed the review outcomes and the formulation of findings and conclusions.

There was a high level of acceptance of the review process and assistance by staff in both organisations with a willingness to share documents, data and ideas. This acceptance contributed to the thoroughness of the review and assisted in developing recommendations.

The review commenced after the initial findings from the Special Commission of Inquiry were presented on 15 January 2004. Thus, the review was undertaken with the recognition that StateRail had been subjected to considerable examination over many years including the Glenbrook Inquiry, internal governmental inquiries, previous internal and external audits, reports from a number of consultants, and the SCOI inquiry.

### **3. Summary of Findings**

#### **3.1 StateRail Specific Findings**

While the audit was carried out on RailCorp the audit team was able to identify StateRail specific findings at the time of the accident. For clarity, findings for the historical StateRail are identified separately from today's RailCorp. Many of the StateRail issues as discussed throughout this report remain applicable to RailCorp.

Major deficiencies in StateRail's SMS at the time of the Waterfall accident that may have influenced the causal factors associated with the accident, included:

1. The SMS was ineffective and not fully implemented or integrated.
2. The SMS was missing elements essential to ensure the safe running of a railway including:
  - Requirements assurance in design and development (renewal programs)
  - Management of change
  - System safety engineering
3. Elements that were in place did not give adequate direction and guidance to ensure the safe running of a railway. For example, major deficiencies were identified in:
  - Hazard Identification
  - Risk Assessment
  - Risk Management
  - Training
  - Internal and External Assurance

Specific systemic safety issues within StateRail at the time of the Waterfall accident that may have influenced the causal factors associated with the accident include:

1. A poorly defined process for managing requirements of assets, safety validation of procurement contracts and budgetary control for train safety improvement initiatives.
4. No defined process for identifying and managing safety-critical systems and processes.
5. No strategic approach to training within the organisation, including little if any training needs analysis, limited or no identification of critical staff safety competencies, and no organisation-wide effective and systematic process identified for evaluating training.

### **3.2 RailCorp Specific Findings**

Throughout RailCorp the following deficiencies were identified:

1. No effective formal performance management system that incorporated measurable safety accountabilities and responsibilities.
2. Inadequately defined safety accountability and responsibilities for senior management.
3. No effective means of reviewing and acting upon audit, investigation and review findings.
4. No effective management information system for managing audit and investigation findings in a closed loop fashion to ensure closure.
5. No effective means for identifying system hazards.
6. No effective system for tracking and reviewing identified safety risks and monitoring the effectiveness of controls.

7. The SMS had a strong bias towards Occupational Health and Safety (OH&S) with very little influence from a proactive system safety engineering approach.
8. Lack of strategic direction with regard to management systems, including safety, due to continual instability and transient nature of senior management positions.
9. Lack of readiness for emergencies due to inadequate system safety analysis, training and poorly defined, implemented and managed policies and plans.
10. RailCorp, like many other railways, has a focus on making and following rules rather than adopting a 'problem-solving' approach by identifying and reviewing hazards. While rules are essential to running an efficient railway system, RailCorp can only become a learning 'problem-solving' organisation once it accepts that to implement an SMS it must be able to transcend a rule-based approach to system safety.
11. Underlying the ability to deliver an effective SMS is the quality of the human resources management (HRM) systems. All components of RailCorp's HRM systems must be clearly aligned with the development of an effective SMS. Management reward policies and structures – including promotion criteria, selection and recruitment should be aligned with the organisation's stated objectives with respect to risk and safety management.
12. Inadequate procedures for staff selection for senior management positions and responsibilities and accountability for rail safety.

There has been substantial senior management instability with five CEOs and five Corporate Safety Managers since the Glenbrook accident in December 1999. This has resulted in a lack of a clearly defined, well articulated and consistent management safety agenda. Without strong, consistent leadership:

1. The organisation became reactive to safety issues rather than identifying and examining hazards proactively and systemically.
2. The organisation was internally focused and did not effectively learn from incidents that occurred in other rail organisations or from safety lessons learned by other high reliability industries.
3. There was a perception amongst some management and staff that union management became a de facto leadership and was a significant distraction and occasionally an obstacle to management implementing safety improvements.
4. Ideas and concepts for improvement were either suppressed by management or were not even raised for fear of reproach from an uninformed and constant changing senior management.

### **3.2 RailCorp**

Most day-to-day activities by staff occur without adverse impact upon passengers, equipment or assets. The major safety focus throughout RailCorp appears to be on compliance with the NSW Occupational Health & Safety Act and Regulations to the detriment of ensuring a safe outcome for all, and particularly more complex, activities in the organisation.

There was little recognition of the critical importance of ensuring that railway equipment and processes are fit for purpose. Consequently, the organisation had not adopted many of the principles and practices employed by other organisations operating in high reliability

environments such as airlines, petrochemical companies and major manufacturing organisations. This would involve development of strategies to identify, review and ensuring the management of both high probability, low consequence hazards such as passengers falling in platform gap, as well as low probability, high consequence hazards such as a high speed train rollover.

RailCorp has made a concerted effort to develop a more strategic approach to safety management. The new Safety Reform Agenda adopts a 5–10 year timeframe and has identified some of the major strategies required to improve safety management. However, there are serious concerns with RailCorp’s capacity to achieve the goals outlined in its agenda as well as the scope of the agenda, specifically:

1. Issues identified in the agenda are not based on whole-of-organisation risk analysis, but rather have been created on the basis of previous incident data and the accreditation processes.
2. There is little recognition of the requirements to be proactive in identifying all hazards in the system.
3. Timeframes for some programs appear to be unrealistic.
4. Many significant change programs are being implemented at the same time.
5. A lack of internal capability and knowledge to drive the changes needed.
6. The agenda highlights deficiencies in key system safety competencies but does not recognise that such deficiencies bring the validity of the scope of the agenda into question.
7. There isn’t a defined program to establish a systems engineering and assurance approach to safety management.

There is a general willingness of staff to acknowledge long standing problems and inefficiencies and to commence a broad range of improvement activities to address these. Unless there is a comprehensive upgrading of skills of persons in key safety positions such problems and inefficiencies will continue.

Effective leadership on a number of safety issues in StateRail and RailCorp was found to be deficient.

Particular safety deficiencies identified in RailCorp include:

1. Lack of a formal and consistent approach to hazard identification, risk assessment and management.
2. Lack of a formal and sophisticated information system for identifying, assessing and managing safety risk including controls.
3. No formal and consistent approaches to reviewing and ensuring that risk controls are valid and effective.
4. Lack of a formalised approach to change management, and particularly organisational change, to ensure a safe outcome.
5. Inconsistent approach to investigating safety occurrences.
6. Persistence of a “blame culture” in some elements of the organisation.

In addition, there is a concern as to a lack of focus of RailCorp to build on the few sound organisational safety competencies of the previous two organisations, particularly RIC's change management policies and engineering management structures.

This situation has been exacerbated by having to integrate two disparate safety cultures.

### **3.3 Regulator - MoT**

The review found that some systemic safety issues within the Ministry of Transport at the time of Waterfall might have influenced causal factors associated with the accident, specifically:

1. Key individuals within the regulatory body lacked essential qualifications, training and experience in system safety fields such as risk management, human factors and systems engineering.
2. No processes were in place to measure the effectiveness of the regulatory function.
3. Insufficient key resources to carry out regulatory responsibilities effectively.
4. No detailed policy documents and document control processes to ensure consistency in safety accreditation, audit and investigation functions.
5. No overarching policy and guidance material to frame regulations under the co-regulatory model and provide guidance to railways.

### **3.4 Regulator - ITSRR**

The review acknowledged that there has been significant change since the Waterfall accident starting with the newly created ITSRR, to ensure greater independence from the Ministry of Transport and the creation of a separate Office of Transport Safety Investigation(s) (OTSI). Resources have been made available to support this process.

Despite these changes the following factors, if left unattended, will continue to limit the effectiveness of the rail safety regulator in overseeing rail safety:

1. Unfounded confidence in accreditation baselines established by previous regulators.
2. Insufficient qualifications, training and experience in system safety and risk assessment fields.
3. Structural arrangements that give rise to perceived and potential conflicts of interest between resources.
4. Lack of formal and detailed processes to verify compliance with accreditation conditions.

## **4. Conclusions**

### **4.1 Context**

In relation to RailCorp, the findings of the safety review suggest that any conclusions made about required changes need to account for the following organisational issues:

1. A lack of capacity to effectively implement integrated corrective actions.
2. Poor track record of effective project management.



3. Lack of organisational competence in contemporary safety management system practices.
4. Insular/non-learning organisation.
5. Over-emphasis on Rail Operations expertise to the detriment of system safety expertise.
6. Lack of formally defined management accountability.
7. Still evolving approach to Human Resource (HR) management eg, selection, promotion, reward, performance management and personnel development.
8. Lack of consistent approach to line supervision.
9. Poor appreciation of current practices in organisational development and change management.
10. Unwillingness for critical self-examination.

In relation to broader issues that have an influence on the capacity of both RailCorp and ITSRR to address the findings detailed in this report, various industry, government and national interface issues need to be considered, for example:

1. Harmonisation with the National Agenda on rail safety in regard to co-regulation and Rail Safety Regulator Key Business Processes.
2. Short-term goals to improve safety versus long-term strategic improvement.
3. Independence of the regulator.

## 4.2 RailCorp

There are two key findings in relation to RailCorp:

1. There is a lack of a fully integrated safety management system.
2. The processes for accreditation are deficient.

### *Lack of integrated SMS*

1. There is a need to develop and implement a system safety program that fully integrates risk management practices, and involves the following actions:
  - Employ and consult with qualified safety professionals.
  - Develop proactive approach to risk management that includes:
    - \* A system-wide approach to hazard identification; in particular, low probability/high consequence events.
    - \* Hazard analysis.
    - \* Risk analysis.
    - \* Development of controls to mitigate risk.
    - \* A system for monitoring risk and providing feedback to validate controls.
2. Develop a culture that is focused on safety:
  - Address findings identified during the SCOI review.

- Specifically address current disparities in safety views between groups as indicated by the SCOI safety climate assessment.
  - Develop a continuing program to enhance safety culture.
  - Regularly evaluate safety culture.
3. Develop processes to ensure management visibility and accountability for safety from Board level to supervisors:
- Targeted key performance indicators (KPIs) for safety and regular performance reviews at all levels.
  - Managers to be made responsible and accountable for leading safety improvement programs.
  - Regular internal auditing to ensure there are adequate systems for accountability.
4. Develop an integrated safety information system, which includes:
- Capture of all hazards, OH&S incidents, audit results, non-compliance findings, near miss reports, etc.
  - The system should be capable of systemic analysis to focus finite resources on priority areas.
  - Decisions should be supported by data and trend analysis.
  - The system should be capable of sharing with other safety information systems.
5. Develop and implement a human systems integration program that incorporates Human Factors principles, such as error tolerance/error management, “just culture” concepts, etc:
- Design and implementation of communication protocols that include standard phraseology and emergency language.
  - Customised human factors training for rail safety workers and management/supervisory level staff based on contemporary Crew Resource Management (CRM) principles.
  - Incorporating Human Factors into standards development systems & workplace design, evaluation and acceptance e.g., ATRICS, vigilance, cab design, signals.
6. Ensure that training is designed to meet the strategic safety needs of the total organisation:
- Formal approach to *training needs analysis* throughout entire organisation (not just ART).
  - Develop a comprehensive approach to competency-based training that includes:
    - \* Task analysis.
    - \* Delivery skills.
    - \* Assessment and certification of effectiveness.

7. Develop and implement an engineering management system that includes:
  - Employment of a Chief Engineer position or equivalent.
  - An approved Quality Management System (QMS).
  - Defined and approved standards.
  - Acceptance into service processes that ensure fitness for purpose.
  - Processes to ensure the continuing technical integrity of in-service equipment, especially safety-critical systems.
8. Change management process.

Develop a formal documented process for change management that includes:

  - Document control.
  - Configuration management system.
  - Material control.
  - Critical Personnel succession planning and change management.
9. Further develop Emergency Preparedness procedures through improved:
  - Document control.
  - Real time site Emergency Preparedness exercises.
  - Co-ordination with NSW DISPLAN.
  - Appointment of section co-ordinators.
  - Development and implementation of immediate response checklists.
  - Improved coordination and communication with first response agencies.
10. Develop a clear and consistent corporate communications policy that specifies responsibilities at all organisational levels.
11. Safety Reform Agenda.
  - Review Safety Reform Agenda objectives, accountabilities, and priorities in light of SCOI Stage 2 findings—especially re: system safety.
  - Identify “SMART” criteria for Safety Reform Agenda.
    - S**pecific
    - M**easurable
    - A**chievable
    - R**easonable
    - T**imely

### *Accreditation*

Establish a valid basis for accreditation by:

1. Using information from the SCOI audit/review.
2. Taking into account external audits/reviews.
3. Accessing expertise relevant to application of system safety program or safety case methodology.
4. Acting in conjunction with ITSRR.

### **4.3 ITSRR**

The findings for ITSRR can be categorised into two key areas:

1. Issues relating to a lack of perceived independence and a proper allocation of resources between compliance, accreditation and policy functions.
2. Inadequate approach to the safety accreditation of RailCorp.

#### *Independence and Resources*

1. Achieve sufficient autonomy for effective operation of OTSI including a Chief Investigation Officer that reports directly to the Minister.
2. Ensure that adequate resources are available within the regulatory function to enable compliance and accreditation activities to be effectively achieved.
3. Ensure clear, concise definitions of accountabilities between CEO and Executive Director of TSR.
4. Urgently increase the number and depth of surveillance audits of RailCorp to ensure that TSR has an increased level of oversight of RailCorp as it develops its internal SMS capability; this will be necessary for at least the next 24 months.
5. Accident investigation responsibilities:
  - Ensure that adequate resources are available for TSR to undertake audit and compliance investigations.
  - Ensure adequate internal procedures for managing potential conflicts between ITSRR and OTSI.

#### *Safety Accreditation*

1. The milestones for RailCorp's provisional accreditation need to be reassessed and redefined with better defined accountabilities and measures of effectiveness.
2. Develop and publish contingency plans for the case of accreditation milestones not being achieved, including adequate measures to address non-compliance.
3. Review the accreditation model in conjunction with national developments, and adopt a more contemporary approach, such as the *safety case methodology* used by a number of high reliability organisations.

## **5. Overarching Issues**

### *RailCorp specific*

1. The Board should report back publicly within 3 months on the actions that have been identified to respond to the SCOI recommendations.

2. The Board and CEO should appoint a small group of external safety professionals with expertise in high reliability organisations and oversight of SMS implementation to develop and drive safety improvement strategies throughout the organisation.
3. RailCorp should appoint internal safety professionals with experience in high reliability organisations and safety management systems implementation, who will take over from the external professionals (see number 2) within a 12-24 month timeframe.

*Broader issues*

1. Establish a standing body to ensure that the recommendations from the SCOI are implemented for the NSW rail industry.
2. The safety review undertaken by the SCOI should be repeated in 12 months to ensure that strategies and improvement activities are well focused.
3. A safety review process should be repeated every 12 months for a minimum of 3 years.
4. Ensure an appropriate level of authority, expertise, and independent reporting ability to the government for the organisation charged with managing the safety reviews.



## CHAPTER 1 INTRODUCTION

### 1.1 Terms of Reference 2 and 3

A Special Commission of Inquiry (SCOI) was convened following the Waterfall rail accident on 31 January 2003, with Terms of Reference to inquire into and report upon to the NSW Governor on the following matters:

1. *The causes of the railway accident at Waterfall on 31 January 2003 and factors that contributed to it.*
2. *The adequacy of the safety management systems applicable to the circumstances of the railway accident.*
3. *Any safety improvements to rail operations which the Commissioner considers necessary as a result of his findings under matters (1) and (2).*

The Interim Report of the SCOI addressing the matters contained within the first Term of Reference was presented to the NSW Governor on 15 January 2004. The Interim Report identified a number of safety issues that led to the derailment of the train, and the subsequent loss of seven lives. The matters contained in the interim Report are summarised below under the heading *Causes and Contributing Factors Arising from the Interim Report*.

### 1.2 The Appointment of Safety Management System Experts

To address the second and third Terms of Reference, the SCOI sought advice from suitably qualified and experienced safety management system experts as to a strategic approach for determining the adequacy of the safety management systems of the relevant rail entities. The SCOI in August 2003 appointed Dr Graham Edkins and Dr Rob Lee, two internationally recognised safety management systems experts, to assist with Stage 2 of the Inquiry. On 24 September 2003, a desktop review of StateRail's safety management system was undertaken by Drs Edkins and Lee. The results of that review are summarised in Section 3 of this report.

To further assist the Commission with meeting Terms of Reference 2 and 3, Drs Edkins and Lee recommended that a systemic safety review of the Ministry of Transport (MoT), the State Rail Authority (StateRail) and the Rail Infrastructure Corporation (RIC) be conducted. Drs Edkins and Lee further recommended that a Safety Management Systems Expert Panel (SMSEP) be created to oversee the work of a team of experienced safety auditors who would conduct the safety review.

### 1.3 Terms of Reference of the Safety Audit

The SCOI accepted this advice, and the following Terms of Reference for the proposed review were developed:

*Under the direction of the Expert Panel, the role of the audit team is to comprehensively review the safety management systems applicable to the circumstances of the Waterfall rail accident, and specifically in relation to the relevant parties:*

1. Gather documented evidence that the safety system elements are complied with at various operational levels.

2. Determine the adequacy of the safety system elements in comparison to organisations with recognised mature 'best practice' safety systems.
3. Identify specific actions, such as poor documentation, failure to address documented safety concerns, actions reflective of an immature or non-integrated safety system that may have contributed to the circumstances surrounding the Waterfall Rail Incident.
4. Identify more recent actions and or initiatives, both prior to and post Waterfall that reflect of their current safety cultures.

#### **1.4 Matters Arising from the First Term of Reference - Causes and Contributing Factors of the Waterfall Rail Accident**

The SCOI's Interim report specifically identified the following safety issues that led to the derailment of the train, and the subsequent loss of seven lives, namely:

1. *Deficiencies in medical assessment guidelines and procedures with respect to train crew.*
2. *Inadequacies in crew training in emergency procedures.*
3. *Inadequacies in the management of risk, particularly in relation to known safety deficiencies with the operation of the deadman system.*
4. *Inadequacies in team work between drivers and guards.*
5. *Fatigue rostering issues potentially affecting drivers and guards.*

In the hearings of the Commission, a number of systemic safety issues have arisen requiring further examination under the second and third Terms of Reference, and therein provide a framework for consideration in the systemic safety review. At the highest level, these issues represent a number of overarching systems, organisational and management failures that represented latent systemic deficiencies awaiting the trigger events that led to the accident. These latent systemic deficiencies existed in the railway operator (StateRail) and the regulator (MoT).

Accordingly, in defining the scope of the system safety review, the audit team was instructed to pay particular attention to human systems integration, risk management practices, and training systems.



## CHAPTER 2 BACKGROUND

### 2.1 The NSW Rail Industry

#### 2.1.1 Organisation of the NSW Rail Industry at time of Waterfall Accident

The NSW rail industry is complex and diverse, comprising both passenger and freight rail operators, infrastructure owners and maintainers. Over 15,000 people are directly employed in the NSW rail sector. At the time of the Waterfall accident, the NSW government rail infrastructure was owned and maintained by the Rail Infrastructure Corporation (RIC). The State Rail Authority (StateRail) provided passenger services, both in the metropolitan area (CityRail) and in the country regions (CountryLink).

Each day CityRail carries 930,000 customers on over 3000 services. Freight traffic is not as dense, but continues to grow in NSW. While much of the freight traffic tends to be in the Hunter Valley and on interstate rail network freight, freight trains also share the metropolitan network with passenger trains. From both safety and operational perspectives, this creates formidable challenges for operational management and is one of the main reasons why the NSW rail system is considered to be the most complex rail operating environment in Australia.

Prior to 1 January 2004, the NSW government's governance of rail involved three primary entities, namely:

1. **StateRail Authority** (StateRail) - A statutory authority of the New South Wales Government that reported to the Minister for Transport. StateRail was responsible for operating passenger rail services throughout New South Wales.
2. **Rail Infrastructure Corporation** (RIC) - A state owned corporation that was responsible for managing and maintaining the infrastructure of the railway e.g., track, power and signalling equipment.
3. **Ministry of Transport** (MoT) - A division of this organisation, the Transport Safety and Rail Safety Regulator, was responsible for regulating the safety of all railways operating in New South Wales through an accreditation regime established under the *Rail Safety Act 2002*.

#### 2.1.2 Post-Waterfall Changes to the NSW Rail Industry

At the time of the Waterfall rail accident, Transport NSW was responsible for the regulation of all State public transport modes. The Transport Safety and Rail Safety Regulation (TSRSR) division of Transport NSW was responsible for rail regulation. In addition, the Director General of Transport was also the Coordinator General of Rail, creating the potential for conflict of interest between operations and regulation.

In April 2003, the Minister for Transport Services announced a transport restructure, which included a number of key reforms. These were:

1. Replacement of Transport NSW with the NSW Ministry of Transport to provide focused transport policy advice to the Minister (effective 1 July 2003).
2. Establishment of an Independent Transport Safety and Reliability Regulator (ITSRR), an organisation independent of the MoT, with a CEO answering directly to the Minister (effective 1 January 2004).

3. Separation of the roles of Director General of Transport NSW and the Coordinator General of Rail.
4. Integration of the greater metropolitan region functions of RIC and StateRail to form RailCorp NSW, a statutory State-owned corporation (effective 1 January 2004).
5. Establishment of a “country RIC”, pending consideration of the Australian Rail Track Corporation (“ARTC”) proposal to lease the NSW interstate rail lines and the Hunter Valley network.
6. Establishment of the Transport Infrastructure Development Corporation, a statutory State owned corporation (effective 1 January 2004). The principal objectives of Transport Infrastructure Development Corporation are to develop major railway systems, and to develop other major transport projects.

## 2.2 NSW Rail Safety Regulation

Consistent with all other Australian jurisdictions, the regulation of railways in NSW is based on a *co-regulatory model*. Under co-regulation, the regulatory framework comprises:

1. Legislation.
2. Any prescriptive regulations and standards established by the regulator.
3. Safety Management Systems including standards and rules developed by the rail entities and accepted by the regulator (the rail entity retains responsibility for validity and applicability of the SMS and rules).

This is a substantive and important distinction from other industries such as road transport and aviation, where the regulator is responsible for the whole regulatory framework, and the industry is required to abide by the regulations.

Co-regulation generally refers to a situation in which government shares regulatory authorities with one or more industry representative groupings. The extent of this sharing of regulatory power and the question of what specific powers are shared can vary considerably. However, co-regulation is usually effected through legislative referencing or endorsing one or more codes of practice, and the granting of some regulatory responsibility to an industry body.

In a booklet titled *Rail Safety Co-Regulation*, published in 2001 by the National Rail Accreditation Authorities Group, co-regulation is defined as:

*a process by which Track Managers and Operators are held responsible for the assessment and control of the risks associated with their proposed railway operations and then establish a safety management system (SMS) to ensure the identified risks are controlled in a manner which is based on the needs of their organisations and accountability to shareholders through their SMS.*

Under a co-regulatory model the key elements of rail safety regulation are largely focused on ensuring that the rail organisation can demonstrate the existence of an appropriate integrated SMS. The role of the regulator is described as setting the minimum acceptable requirements for the scope and content of safety management systems, to recognise national codes of practice developed by industry, and to monitor safety performance through compliance audits rather than the enforcement of prescriptive standards, or a methods based approach.

In general, co-regulation presents an opportunity for a co-operative approach to regulation. There may be enhanced regulatory credibility, arising from the involvement of a respected industry association as an active participant in the regulatory regime and, by extension, endorsing its validity. This, in turn, can improve compliance levels. Involving industry and other interested parties in the regulatory process allows “leveraging” of resources provided at little or no cost, by making these parties participants in regulatory monitoring and, in some cases, enforcement activity.

However, the risks of co-regulation are also well established. The close industry/government relationships required in a co-regulatory environment can heighten substantially the ever-present risks of ‘regulatory capture’ a situation in which an industry can impose its will on a regulator. In such cases, the resulting regulatory system can lack credibility and trust with consumers or the wider public who are the intended beneficiaries of the regulatory system. This can be particularly problematic in the transport industry if public perceptions of a conflict of interest persist in regard to ongoing issues of safety and reliability.

An additional risk attached to co-regulatory systems is that the industry groups with which regulatory power is shared may have limited capacities to exercise those powers. Organisations may have limited resources and/or expertise upon which to draw in carrying out their role. In addition, they may have limited “reach” and authority over practitioners, and consequently possess limited powers to change behaviours and to ensure and enforce appropriate standards of conduct.

The Regulator must be ever cautious of not applying a ‘one size fits all’ philosophy. From a safety management perspective, a co-regulatory system places an over reliance on the parties being regulated, having mature safety management systems. If this is not the case, the Regulator must be prepared to step in and provide assistance. This becomes particularly important in operations where more than one track manager is involved with several rail operators.

Rail safety in NSW is regulated under the *Rail Safety Act 2002*. This Act was passed by Parliament in late 2002, and significantly enhanced the powers conferred by the previous *Rail Safety Act 1993*. In particular, the system for accrediting rail operators has been strengthened and supported by new powers of enforcement and compliance, which provide the regulator with escalating levels of sanctions to support enforcement.

### **2.2.1 Audit and Compliance**

The *Rail Safety Act 2002* provides the regulator with enhanced powers to audit, monitor and review operations against accreditation baselines. Audits are used initially to validate the acceptability of an organisation’s SMS as a basis for accreditation, and then to verify that accredited organisations conduct operations in compliance with their accredited SMS. Inspections are used to investigate known, or suspected, hazards that have, or could, result in an unsafe condition or failure of the SMS to validate or improve the basis of accreditation.

A compliance inspection is a detailed examination of specific elements of a railway’s operations. For example, random compliance inspections are conducted on rolling stock and generally focus on “defects management” and the pre-departure condition of rolling stock.

The NSW Regulator’s audit program is a three-year cyclic program with all accredited operators audited during that period. In recognition of the scope and complexity of their systems, larger operators, such as StateRail, RIC and Pacific National are audited on an annually..

In the period from June 2002 to May 2003, the NSW Rail Safety Regulator conducted 12 audits, including audits of StateRail, RIC and Pacific National, as well as 15 compliance inspections. The number of compliance inspections conducted was less than that for the previous year as a result of resources being allocated to investigations such as Glenbrook, Hexham, Waterfall and Menangle.

In 2002, the focus of the audit plan for the major rail entities (RIC, StateRail, Pacific National) was a compliance audit that aimed to assess specific issues that adversely impact on safety, and to evaluate the findings of previous audits; particularly safety-critical elements that may not have been corrected. One significant problem identified from previous audits of RIC and StateRail is that frequent organisational changes have occurred in the absence of adequate change management principles being implemented, resulting in misalignment of organisation structures and break down in communication chains.

## **2.2.2 The Independent Transport Safety and Reliability Regulator (ITSRR)**

From 1 January 2004 the *Transport Legislation Amendment (Safety and Reliability) Act 2003* (the Act) came into effect and established the *Independent Transport Safety and Reliability Regulator* (ITSRR) as a statutory authority, independent of the Ministry of Transport and transport agencies and operators. The principal objective of ITSRR is to facilitate the safe operation of transport services in New South Wales, including rail, bus and ferry passenger services, and rail freight services. ITSRR reports to the Minister for Transport Services subject to legislative restrictions to preserve its independence. An organisational chart illustrating the structure of ITSRR is provided at Appendix A.

## **2.2.3 Legislative and Regulatory Environment**

NSW Rail Safety Regulation under the *Rail Safety Act 2002* involves both Accreditation and Compliance functions. Accreditation sets out the elements of a safety management system that ITSRR deems essential to managing railway operations safely. Once accreditation has been granted, ITSRR monitors compliance of the operator with the terms of accreditation and the requirements of the *Rail Safety Act 2002*. The *Rail Safety Act 2002* provides for provisional accreditation with accompanying special conditions where the applicant has not fully satisfied ITSRR. Provisional accreditation must be for a specified period not exceeding 12 months and may be renewed only once.

Under the provisions of the legislation, ITSRR may develop policies, guidance, standards and procedures to assist in regulating safety and reliability of NSW transport services. ITSRR is in the process of developing protocols to:

1. Detail the minimum expected elements required of an applicant's safety management system for it to be considered effective.
2. Define accreditation criteria against which an applicant's safety management system will be judged, together with information explaining how the accreditation process is managed by ITSRR.
3. Define a new incident data set and database for effective collation and analysis of transport safety incidents reported by operators and managers.
4. Describe a Compliance and Enforcement Policy that outlines the circumstances and general escalation principles under which ITSRR will issue improvement and

prohibition notices, penalty notices, commence prosecution proceedings or limit or withdraw accreditation.

5. Develop a complementary training program for rail safety officers to provide officers with confidence and competency to fulfil their appointed roles under the Act. This program will be competency-based and in line with national public sector competencies specified in Certificate 4 in Government (Statutory Investigation and Enforcement). Delivery was scheduled over February and March 2004.

To further support implementation of the *Rail Safety Act 2002*, a clear regulatory framework for rail safety will be adopted and implemented. This framework consists of:

1. Principal law, the Rail Safety Act 2002, which sets out the objectives for rail safety, being implementation of a systematic approach to the management of safety that includes safety management systems and is risk management based.
2. Supporting regulations that identify and define standards or methodologies for identifying, assessing and controlling specific hazards and managing the attendant risks.
3. Guidance material consisting of handbooks, codes of practice and/or guidelines that provide operators with supporting information as to how their obligations under regulation may be discharged. This may include rail industry codes of practice.

## 2.3 National Rail Regulation

There is current debate in Australia about rail safety regulation. As a general principle, rail safety regulation has evolved reactively and piecemeal, in response to the recommendations of accident investigation reports. The most recent comprehensive policy statement was provided by the Inter-Governmental Agreement (IGA) made in 1996 between the Australian Transport Ministers. This Agreement, to which NSW is a signatory, states that to achieve a cost effective, nationally consistent and non-restrictive approach to rail safety in Australia the following principles must apply:

1. Safety accreditation of railway owners and operators.
2. Mutual recognition between accreditation authorities.
3. Development and implementation of performance based standards.
4. Greater accountability and transparency.
5. Facilitation of competition and technical and commercial innovation consistent with safe practice.

A significant result of the IGA was the adoption by all jurisdictions of a consistent approach to accreditation enshrined in a majority of cases in stand-alone Rail Safety Acts. The IGA also provided for adoption of the mutual recognition principle for rail organisations requiring accreditation given in one jurisdiction to be recognised to allow accreditation in another, provided the original accreditation is consistent with Australian Standard AS4292 Rail Safety Management.

In January 2004, as part of its Work Program to progress the national rail reform program endorsed by the Australian Transport Council of Ministers (ATC), the National Transport

Commission (NTC) commissioned an issues paper outlining best practice principles for national rail safety regulation

The Issues Paper, written by Jaguar Consulting (2004), aims to provide an overview of the concept of regulatory policy and the need for governments to work systematically toward optimising regulatory quality. It then discusses key elements of such a systematic approach.

The purpose of the NTC Issues Paper is to inform a process of stakeholder consultation that commenced in December 2003, and which will continue during 2004. The Issues Paper in draft form has been considered as part of the present review of ITSRR.

At national level, the Australian rail industry is also undergoing fundamental changes to its structure, ownership and competitive position. This is associated with an increase in the number of interstate operators and a trend towards multimodal integration of rail, road and shipping operations. These changes are in turn reflected in increasing industry demands for a national rail reform agenda and for safety regulators to reaffirm a commitment to mutual recognition and to a more coordinated, or “one-stop-shop” approach to accreditation processes.

## **Summary**

The recent restructuring within the NSW rail industry involving formation of the safety regulator, ITSRR and the principal passenger service operator, RailCorp, has been significant. The nature of this restructuring and whether it will address sufficiently the systemic safety matters identified in the Waterfall accident, and represents a more contemporary approach to the management of safety was one of the main focal points of the safety system review. Furthermore, the relative merits of how rail safety was regulated in NSW at the time of the Waterfall accident as well as the more recent regulatory arrangements will be considered in the light of the current national debate on rail regulatory reform.

## **2.4 Safety Management Systems (SMS)**

### **2.4.1 What is a Safety Management System (SMS)**

In recent years much effort has been devoted to understanding how accidents happen in various high-risk industries, including the public transport, petrochemical, mining and energy sectors. It is now generally accepted that human factors play a dominant role in all accidents and incidents. However, it is also recognised that accidents and incidents are outcomes of complex interactions of many contributing factors, only one of which is the performance of personnel at the ‘sharp end’ –such as train drivers, pilots, air-traffic controllers and maintenance personnel.

The term ‘organisational accident’ has been increasingly used since the early 1990s in recognition of the reality that most of the factors that contribute to accidents are under the control of the upper management levels of the organisation, and are usually the consequence of low or inappropriate organisational competency. Due to the efforts and theories of professionals like Professor James Reason, safety is viewed as a system characteristic that must be understood and controlled from a total system perspective rather than just as a function of ‘front line’ operators and managers. Consequently, many safety regulatory and investigation agencies, as well as international organisations and corporations have adopted and promoted a systems approach to safety management as a means of achieving greater operational safety, efficiency and profitability.

The contemporary concept of a ‘safety management system’ is a manifestation of the approach to safety that involves the entire organisation. This systemic approach to safety is reflected in the Terms of Reference governing the Special Commission of Inquiry into the Waterfall rail accident.

#### **2.4.2 Definition of System Safety**

System safety is a specialty within system engineering that supports organisational risk management. It is the application of engineering and management principles, criteria and techniques to optimise safety and requires hazards to be identified and risks to be eliminated or residual risk controlled to an acceptable level. System safety requirements must be consistent with other program requirements. A balanced organisation attempts to optimise safety, performance and cost.

#### **2.4.3 Definition of a Safe System**

A system can only be considered safe to the degree that its risks are understood and that residual risk is considered acceptable. There is no such thing as absolute safety. Therefore it is an extremely important responsibility of the body that determines what is acceptable to make known all risks that exceed acceptability to those who may suffer their consequences.

#### **2.4.4 Defining a Safety Management System (SMS)**

An SMS is an integrated set of work practices, beliefs and procedures for monitoring and improving the safety of all aspects of an organisation’s operation. An effective SMS acknowledges that in complex systems involving humans, there is potential for errors and violations. It will provide for effective measures to reduce the probability of errors and violations, and will provide robust and effective controls and defences to ensure that when errors and violations do occur, the risk of or exposure to incidents or accidents is acceptable.

Australia’s Civil Aviation Safety Authority (CASA) will be the first aviation regulatory authority to mandate the adoption of safety management systems for all passenger carrying operators. CASA provides the following definition:

*A safety management system is an explicit element of the corporate management responsibility that sets out an operator’s safety policy, and defines how it intends to manage safety as an integral part of its overall business. (CASA, 2002, p.2)*

As with all management systems, such as a financial management system, a good SMS involves goal setting, planning, documentation, and measuring performance and achievement against goals. An SMS becomes a reflection of an organisation’s safety culture, and should become a defining characteristic of the way people go about conducting their work. It should not be an ‘add-on’ component to the business process; rather, it should be an integral element of it.

An SMS provides an organisation with the capacity to anticipate, address, and rectify safety risks before they result in a safety occurrence, and to cope effectively when they do. A key principle of contemporary safety management systems is that they provide the management of an organisation with the ability to deal effectively with accidents and near misses, so that valuable lessons are captured and applied to improve safety and efficiency.

The safety management systems of different organisations may differ in detail; for example, in the specific number of individual components of the system. However, all successful safety management systems include the following five basic elements:

1. Top-level management is committed to safety and communicates this effectively.
2. Systems are in place to ensure that hazards are identified, assessed and reported in a timely manner.
3. Action is taken to manage risk.
4. Accidents and incidents are investigated systemically, and the resulting information is fed back into the organisation and used for process improvement.
5. Effects of safety actions are evaluated.

A fundamental characteristic of a successful SMS is that these core elements are integrated. This requires that the diverse processes of an organisation all use the same protocols for defining interfaces and communication across the organisation.

If the SMS is not integrated, but is stand-alone and fragmented, it will function independently of other management systems. This usually results in hazards, errors, violations and safety deficiencies being overlooked, or not communicated throughout the organisation. The result is that the organisation does not learn or improve its ability to manage the safety of its operations.

## 2.5 Safety Culture

The recent focus on the influential role of management in accident causation has led to considerable interest in the concept of *safety culture*. A positive safety culture is central to the success of an SMS. Experience in many industries has shown that the dominant factor in many accidents is the lack of a positive safety culture within the organisation.

The term “Safety Culture” appears at least ten times in the Special Commission of Inquiry Interim Report (McInerney, 2004), at least 19 times in the Ministry of Transport report into the Waterfall accident (Ministry of Transport, 2003) and 70 times in the Glenbrook Rail Accident report (McInerney, 2001), which includes a chapter devoted to this topic. The term “culture” in some other context, for example relating to the organisation, its management, its workforce or “blame”, arises at least five times in McInerney (2004), at least 12 times in Ministry of Transport (2003) and 37 times in McInerney (2001). The authors of these reports clearly considered the “culture” of the then State Rail Authority, and particularly its “safety culture”, to be highly relevant to both the Waterfall and Glenbrook rail accidents. In this Stage Two Report, it is pertinent to explore something of the nature of this concept, and to elaborate upon the related concept of “safety climate”.

First use of the term “safety culture” is generally ascribed to the report on the Chernobyl nuclear disaster in 1986, in which cause was attributed to a breakdown in the organisation’s safety culture (International Atomic Energy Agency, 1986). The concept was a substantive issue in the reports of the inquiries into the Kings Cross underground station fire in London in 1987 (Fennell, 1988), the Clapham Junction rail accident in 1988 (Hidden, 1989), and the North Sea platform Piper Alpha disaster in 1988 (Cullen, 1990).



### 2.5.1 Defining Safety Culture

As used by social scientists, *culture* refers to a group's ways of thinking (beliefs, values and other assumptions about their environment) and doing (common patterns of behaviour, including communication and other interactions). Leadership is critical to maintaining or creating work culture and good leaders accomplish it through what they do, and what they say.

Consistent with this notion of organisational culture, many definitions of safety culture make reference to a shared system of meaning, such as values, norms or beliefs, relating to organisational safety. For example, Turner, Pidgeon, Blockley, and Toft (1989) define safety culture as:

*The set of beliefs, norms, attitudes, roles, and social and technical practices which are concerned with minimising the exposure of individuals, within and beyond an organisation, to conditions considered dangerous or injurious. (p. 686)*

The UK Institution of Occupational Safety and Health maintains that organisations with a “positive safety culture” have competent people who are strongly committed to safety and who put those values into practice. They summarize three meanings for safety culture (IOSH, 1994):

1. Aspects of culture that affect safety (cf. Waring & Glendon, 1998).
2. Shared attitudes, values, beliefs and practices concerning safety and the necessity for effective controls.
3. The product of individual and group values, attitudes, competencies and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organisation's safety programs (cf. Health & Safety Commission, 1993; p. 23).

The HSC (1993) argued that organisations with a positive safety culture are characterized by communications founded on mutual trust, shared perceptions of the importance of safety and confidence in the efficacy of preventive measures. They concluded that *effective health and safety provision depends as much on organisational culture as upon specific attention to health and safety matters*.

Reason (1997) noted that the notion of culture is essential to understanding the nature of major accidents within organisations and systems. Reason (1998) argued that a safe culture is one that is informed and just, being based upon problem solving rather than indiscriminate blame apportionment, and includes reporting as an essential element. Reporting of mistakes and violations is likely to be encouraged when people feel that the organisation trusts them and shows evidence of responding in a problem-solving manner that rewards their behaviour. These various definitions are consistent with a view that in order to create and maintain a *good safety culture*, strong management commitment is required, and that a *positive safety culture* should be part of an *informed organisational culture*.

Glendon (2000) describes safety culture as an ‘enigma with several variations’. This is due to the complexities of large organisations and the larger overlapping systems within which they operate. However, a central paradox of safety culture is that if it is used as a rigid functional means to control hazards to health, safety and organisational integrity, then more serious outcome scenarios that result from multiple but comparatively rare combinations of events that require more flexible organisational responses, may be overlooked. Safety culture is not so much an end in itself, rather it is one means of helping to achieve a healthy and safe

workplace, and to encourage a level of awareness that can lead to measures that will reduce risks in the wider domain – for example, to an organisation’s customers.

In summary, there is general agreement within the literature that in order to create and maintain a *positive safety culture*, strong management commitment is required. Furthermore, a *positive safety culture* must be an informed culture and be an integral part of the organisations *work culture*. Central to achieving this objective is an effective safety information system. Such systems are crucial to the success of any SMS.

## 2.5.2 Culture and the Change Process

To understand change, an organisation must first understand its status quo, or current baseline. Once this is fully understood, the only change that should be focused on is change that will produce results superior to the status quo, or improve the baseline of the organisation.

So as to better understand some likely problems associated with seeking to effect culture change, including attempts to change safety culture, it is useful to distinguish between what may be simply characterised as *top down* and *bottom up* approaches.

A *top down* approach views culture change as a strategic managerial tool, by which management seeks to impose a particular view of the world, for example in respect of safety, upon the organisation. In contrast, a *bottom up* view considers culture (safety culture, etc) to be rooted within the organisation, particularly its operational staff.

The top down model of (safety) culture is based on an assumption that culture is readily amenable to change, and that if a management with sufficient resources is determined enough, then it can effect a culture change. However, the bottom up model is based on an assumption that (safety) culture is a relatively enduring feature of organisational life, and is therefore relatively resistant to change from senior management. As a result, while management may influence safety or some other aspect of culture using a *bottom up* approach, radical change from this approach alone is very unlikely.

An effective change manager will employ both *top down* and *bottom up* practices to lead as well as bring the organisation along on the journey. Most enterprises as large and complex as RailCorp operate in a *functional work culture* that stems from the nineteenth century industrial model that was driven by an emphasis on control, conformity and continuity. This hierarchical model often results in competition amongst functional groups resulting in functional silos, sub-cultures, overlap, redundancy, confusion, and fragmentation. The twentieth century reaction to this was to split up the hierarchy into *manageable segments* so they could become effective through competition. Unfortunately, this was attempting to fix the symptoms and not remedy the causes. RailCorp is a product of such models, displaying many sub-cultures, poor internal communication, confusion, poor organisational alignment, constrained flexibility and loss of confidence in leadership.

The numerous sub-cultures within RailCorp are based among other things, upon history (an important cultural driver), traditional rivalries, operational division of tasks and roles, as well as organisational mergers and other changes. To understand the culture of an organisation, it is essential to understand its sub-cultures and their inter-relationships. While the present Stage 2 review attempts to uncover some of these inter-relationships, it must be left to later study to unravel their complexity, implications of the rivalries and tensions that exist between them, and how this can critically impact not only upon safety within the organisation, but also upon many other facets of organisational life, including industrial relations. It is the

responsibility of RailCorp management, with assistance from appropriate external expertise, to explore organisational sub-cultures with a view to appreciating their inter-relationships. Such explanation is a necessary precursor to reducing to an absolute minimum any adverse impact that these have upon system safety.

Complex systems that involve human system integration require an integrated approach to culture, leadership and its organisational alignment in order to promote effective change and improvement.

### **2.5.3 The Relationship Between Safety Culture and Safety Climate**

There is some agreement that certain particular aspects of an organisation's safety culture that are visible or measurable, are referred to as the *safety climate*. Safety culture is generally taken to be more embracing than safety climate. Culture implies a notion of belonging to an organisation. Climate has more passive connotations, reflecting attitudes and perceptions of the organisation and is open to both internal (e.g., management actions) and external (e.g., economic) influences.

Lord Cullen concurred with this concept of a distinction between safety culture and safety climate as reflected in his investigation report arising from the Ladbroke Grove Rail Inquiry.

*A distinction can be drawn between culture and climate. Climate is the observable, tangible part of culture. Culture is the understanding of people's fundamental values with respect to say, risk and safety. (2001;p. 2).*

Therefore, it appears reasonable to conclude that safety climate is an aspect of safety culture that lends itself to the measurement of safety attitudes and perceptions within an organisation.

## **2.6 Contemporary Approaches to Developing an SMS**

A selection of regulatory bodies and high reliability industries were reviewed by the SCOI's expert panel to gauge attitudes and approaches to the development of an SMS. They included:

1. International Civil Aviation Organisation (ICAO)
2. Australian Civil Aviation Safety Authority (CASA)
3. Australian Nuclear Science and Technology Organisation (ANSTO)
4. Airbus Industrie
5. Emirates Airline
6. Qantas Airways Limited
7. BlueScope Steel

An extract from the report of this analysis is at Appendix B.

In summary, successful safety management systems provide a systematic process for managing risk, and are integrated within the various levels of an organisation. Various core SMS elements are common to high reliability organisations, and safety culture is viewed as a "fabric" that links these elements in a coordinated manner. Safety climate comprises a more easily measurable aspect of safety culture.

These factors discussed above must be taken into account in determining the approach of the SCOI to Stage 2 of the Inquiry.

## 2.7 Rail Industry Safety Management Systems

In the rail industry, there are various guidance documents available on safety management systems, reflective of the characteristics of their different source agencies. For example, the Railway Safety Acts, or equivalents, within each jurisdiction and administered by each State Safety Regulator and associated Regulations provide some broad, non-detailed, information about safety management systems.

Consistent with the 1998 Inter Governmental Agreement (IGA), the basis for mutual recognition is that all Safety Regulators require that the rail organisation seeking safety accreditation must demonstrate that their operations are safe and conform to the *Australian Standard AS4292 Railway Safety Management*. This is the primary source of guidance to the rail industry for implementing a safety program.

AS 4292 is limited as a guide to developing and managing an SMS. According to a recent review commissioned by the National Transport Commission, the standard has been described as being “essentially a set of headings, covering (the) actions to be taken by rail industry participants in the interests of safety...” (ACIL, 2003, p 1). The limitations of the standard, specifically in relation to a lack of detail on change management, is widely recognised by the industry, and a national review of this standard is expected to commence in April 2004.

### Summary

Compared with aviation, the rail industry has a less integrated approach to management systems, as evident by the absence of “holistic” guidance material that promotes an integrated approach to safety, quality and risk management systems. Current guidance material in the rail industry on safety, such as AS4292, is not based on a more contemporary approach as outlined in the above discussion of the safety management systems adopted by high reliability organisations. Consequently, the SMS framework for which RailCorp was assessed in Stage 2 of the Waterfall inquiry came from outside the Australian rail industry.

## **CHAPTER 3      PRELIMINARY ANALYSIS AND RECOMMENDED STRATEGY FOR SMS REVIEW**

The SCOI undertook:

1. A preliminary analysis of the safety management systems of StateRail;
2. A comprehensive analysis of the safety management systems of RailCorp and an assessment of ITSRR's competence and capacity to regulate rail safety in New South Wales.

This section then addresses the preliminary analysis of State Rail undertaken by Dr Graham Edkins and Dr Rob Lee which also outlines the rationale in due course adopted for the comprehensive analysis referred to in points 2 and 3 above.

### **3.1 Preliminary Analysis of Safety System Elements within The State Rail Authority (StateRail)**

In September 2003 a desktop review was completed by Dr Graham Edkins and Dr Rob Lee of the safety management systems of StateRail, and comparisons were made with other safety management systems used both within aviation and rail.

The intention of the review was:

1. To evaluate StateRail's safety management system based on the July 2001 StateRail publication "Safety System Elements"
2. To compare StateRail's safety management system to that of three organisations Qantas, Emirates and Pacific National, as well as the elements specified by the Civil Aviation Safety Authority (CASA) through Civil Aviation Safety Regulation (CASR) 119.05 (refer Appendix B).
3. To suggest a way forward for the SCOI to evaluate the effectiveness of StateRail's safety system.

#### **3.1.1 Overall Comparison**

From a simple comparison of StateRail's safety system elements against other organisations, and those recommended by CASA, it appeared that many of the individual safety elements detailed in StateRail's system were consistent with those contained in the aviation industry, and those specified by Pacific National.

Appendix B contains a table comparing StateRail's 15 part Safety System Elements with those of various high performing organisations. RailCorp's SMS currently has 17 elements. As indicated in the table, the Qantas safety system contains 23 elements that are indicative of an integrated approach to safety, quality and risk systems. QANTAS' safety system exceeds the proposed CASR 119.05 requirements. The Qantas system focuses on the identification, monitoring and management of safety data from multiple sources (incident, accident, audits, compliance inspections, observations) as a means of proactively identifying emerging risks within the system. Management Review, Hazard Identification and Risk Management, Safety Committee and Analysis and Monitoring are key elements. The Qantas focus on capturing

and continually reviewing safety information is a data driven approach to safety management. Such a focus does not appear to be a characteristic of the StateRail safety system.

The Pacific National system while containing more generic system elements in comparison to StateRail appears to have a much stronger focus on risk management. The development and consistent use of a standard risk management methodology, including a risk register, is a major strength of the Pacific National system, compared to StateRail's.

A key feature of the Emirates integrated safety management system is the way in which the system is managed, to ensure that there is overall control, monitoring, and evaluation of all elements of the system. Emirates' integrated safety management system is structured to ensure that all (of the different) components communicate with each other using the same safety paradigms. Thus system elements such as risk management, safety investigation, safety information systems, and incident and accident reporting all share the same core theoretical structure. Information from all the different elements can be rapidly and readily exchanged, because of the common language that underlies the system. The system also covers the full range of risks faced by the organisation. Occupational health and safety elements are part of an overall spectrum of risk that includes operational incidents and accidents. These elements have traditionally been regarded as separate.

### **3.1.2 Strengths of StateRail's Safety System Elements in Comparison to Contemporary SMS**

The following conclusions were made about StateRail's safety system, which are indicative of a contemporary approach:

1. The StateRail document incorporated more of a focus on Occupational Health and Safety elements, compared with aviation, with Element 12: 'Health and Wellness' specifying health and wellness programs not contained or specified in the comparative organisations.
2. A commitment by management to improving safety and health was stated up front and communicated in the form of Element 1: 'Commitment and Policy'. This is consistent with any recognised contemporary safety system.
3. As specified in Element 3: 'Objectives, Targets and Key Performance Indicators (KPIs)', safety plans and performance indicators are the responsibility of individual business units within StateRail, not a corporate safety group. This implied that safety was owned by line management and not by a non-operational corporate group. While an embedded safety system is a key feature of a good safety culture, it is difficult to determine whether this principle was put into practice or whether it was simply part of a glossy document. To determine whether this principle was demonstrated in practice, evidence would need to be identified that at StateRail safety was indeed managed by various operational areas.
4. Overall, the StateRail safety system elements represented a good start to incorporation of a number of different source guidelines into a broadly focused publication accounting for OH&S regulations, rail safety legislation, risk management standards, and Australian standards on Railway Safety Management.

### 3.1.3 Apparent Limitations of StateRail's Safety System Elements in Comparison to Contemporary SMS

Perhaps the most serious deficiency of StateRail's SMS was its overall management and integration within StateRail's business operations. *While it was commendable that line management was responsible for safety, without an overall organisational structure to facilitate ongoing operational functioning and development of StateRail's SMS, its potential effectiveness in respect of the safety management was severely compromised.* Thus, while it appears that many SMS elements were in place within StateRail, *there did not appear to be any provision for overall management of the system.* Without this, the key element of communication between the different SMS elements was missing.

*In other words, the StateRail SMS was fragmented not integrated.* There did not appear to be clear lines of communication between the different elements of the system, and effective lines of accountability for the overall operation of the SMS. For example, if the risk management components of the SMS were not structured in the same way as the safety investigation process, and the safety information system, barriers to communication would be built into the system from the outset.

The consequences were that critical safety information may not be disseminated and transferred rapidly throughout parts of the organisation. It is therefore possible that critical safety deficiencies may be identified by individual elements within the safety management system, but this information would not be communicated effectively to the other components, and to the organisation as a whole. Effective and uninhibited communication is critical to the success of any safety management system.

*The StateRail system appeared to lack effective overall strategic management. This was further inhibited by the lack of structural integration of the safety management process across the entire organisation.*

Compared with the Qantas and Emirates systems, and, to a lesser extent, the proposed CASR 119.05 requirements, the *StateRail document fell short in regard to change management and quality based elements for ensuring fitness for purpose.* Change management includes strategic planning for change, the identification of hazards and risks associated with proposed changes, and the implementation and monitoring of change. More specifically, by failing to have a clearly documented policy on change management, it is likely that StateRail would have been unaware of emerging risks, or would have been unprepared to deal with the pace of change in a dynamic environment. For example, when reviewing current technology (deadman systems) or introducing new technology, (Millennium train) both human and technical risks associated with the implementation need to be identified, assessed and managed.

Quality management is used to ensure fitness for purpose and involves an organisation demonstrating competency to consistently provide services that meet both customer and regulatory requirements. A quality-based system also includes a clearly documented process for ensuring a highly consistent and standard method for the delivery of products and services, based on customer and employee expectations. The safety system elements specified by StateRail did not appear to recognise quality based elements. For example, there did not appear to be a focus on meeting customer expectations of safety standards, or for receiving customer feedback about system breakdowns or failures.

*An organisation that does not have a focus on quality management tends to respond poorly to feedback about emerging risks from both internal and external stakeholders.* In addition, such

feedback may be inhibited. Employees may be reluctant to report safety deficiencies because of the lack of a reporting culture. Similarly, customers may not report on safety matters because they perceive that no action will take place as a result. There is no real scope for process improvement without valid quality-based information systems.

### **3.1.4 Specific Comments Relating to the July 2001 StateRail Publication *Safety System Elements***

The StateRail safety system elements appeared to be deficient in the following areas:

1. While management commitment to safety was contained in Element 1, it is unclear whether the same level of commitment was reinforced in practice by line management in daily operations. Line managers are the more visible champions of safety, given their greater level of interaction with operational staff.
2. Element 4: 'Hazard Identification, Risk Assessment and Control'. This element outlined risk management principles, but there was no focus on the use of a standard risk assessment methodology, such as those widely used in other high-technology industries and the Australian Defence Force, and for which there is an Australian Standard (AS/NZS 4360:1999). This standardisation is crucial for ensuring a consistent approach to identifying hazards, assessing and mitigating risk, and as noted above, is a strength of the Pacific National program. There was also no clear differentiation between hazards and risks, this would result in confusion throughout an organisation with respect to systems safety practice.
3. Element 7: 'Incident Reporting and Investigation' did not specify a recommended model or methodology for conducting safety investigations. Consistent application of a standard approach for investigations is crucial to ensure that individual, technical and organisational contributing factors are identified in a systematic manner, and that appropriate lessons are identified and communicated. This is integral to the Qantas and Emirates safety elements.
4. While, Element 15: 'Audits, Review and Accreditation' specified a review process for identifying safety achievements, it remains unclear whether there was a systematic and strategic systemic approach to continuously identifying needed safety improvements.
5. The StateRail document also did not specify a clear approach to managing staff who commit errors or violations. A well-documented policy that specifies an open or just approach to reporting errors is crucial for capturing good quality data on safety deficiencies, and ensuring that staff will become stakeholders in the safety outcomes arising from reports and investigations. For example, the Qantas document specifies an "open policy" in regard to safety reporting on the basis of a non-punitive approach.

### **3.1.5 Conclusions Concerning StateRail's Safety System Elements**

StateRail's 15 safety system elements appeared to represent a sound safety system program on paper, however, a thorough assessment would require the document to be tested in practice. *To do this, an examination of how the system had been implemented and reflected in daily operational practice throughout the organisation was required.* A glossy publication on safety remains just that, unless it is implemented and reinforced in a systematic way within all levels of an organisation.



Compared to a number of other organisations certain apparent weaknesses in StateRail's safety system were discerned, these were reflected in:

1. The *lack of properly focused overall strategic management* of StateRail's safety management system.
2. The *lack of integration of safety management* into the business processes of the organisation.
3. The *lack of focus on capturing critical safety data* and the *integration of this information* for continual improvement purposes.
4. The apparent *non-integrated and fragmented approach to safety, quality and risk management systems*.
6. The *lack of specificity* with respect to *consistent/standard approaches to safety investigation, hazard identification, and risk management*.

## Summary

The apparent weaknesses in StateRail's safety management system which were highlighted by the desktop review indicated that a formal SMS audit was required. This would enable the nature and scope of such apparent deficiencies and, in particular, the relevance of these matters to the circumstances of the Waterfall accident to be properly examined and assessed.

## 3.2 Recommended Strategy for the SMS Review

In the light of the circumstances of the Waterfall accident and the desktop review conducted by Drs Edkins and Lee, the Commissioner recommended that a comprehensive safety management systems review of the relevant parties involved in the Waterfall accident be conducted

The specific objectives of the SMS review were:

1. To determine whether the safety management systems within the relevant entities were adequate in terms of recognised 'best practice'.
2. To determine whether any deficiencies in the relevant entities' safety management systems contributed to the accident
3. To assess the safety culture and resultant safety climate of the relevant entities that may have influenced the circumstances of the Waterfall rail accident.
4. To identify areas in which the relevant entities' systems for safety management require improvement to prevent future incidents, and to establish a basis for continuous improvement.

### 3.2.1 Recommended Resources Required for this Task

The recommended strategy required specific resources defined as follows:

1. Formation of a Safety Management Systems Expert Panel (Expert Panel) to advise and guide an audit process, and to author a final report on the SMS review to assist the Commissioner in formulating a report on Stage 2 of the Inquiry.
2. A suitably qualified team with recognised expertise in system safety practices and human factors, and with specific experience in conducting audits.

3. A suitably qualified project manager to coordinate the administrative requirements, including the appointment of the audit team, development of a project plan and maintenance of regular contact with the relevant parties to be reviewed.
4. Sourcing and appointment of an internationally recognised safety systems expert with previous experience in conducting large-scale audits of rail entities. The role of this expert was to advise the Expert Panel on the most effective approach and methodology to be adopted for the SMS review.

The independence of the above resources selected for this process was paramount. To ensure that contemporary knowledge of safety systems management across various high risk industries was used, it was recommended that candidates be sourced both from within and outside the rail industry.

### **3.2.2 Suggested SMS Review Objectives**

The rail entities safety management systems review had four broad objectives.

**Objective 1:** *To determine whether the safety management systems were adequate in terms of what is recognised as ‘best practice’ at the time of the Waterfall accident*

The tasks involved in addressing this objective were:

1. To select a representative model of a ‘best practice’ safety management system.
2. To assess which components of a safety management system exist within the relevant rail entities.
3. To evaluate these components against the benchmark of the ‘best practice’ model.

Following a review of various safety systems, the Qantas 23-element safety systems review checklist was recommended as the primary reference in relation to this objective. The Qantas material has been based on extensive research, analysis and consultation and incorporates all of the recommended elements from CASA, ISO 9000, Occupational Health and Safety and from the mining industry.

Furthermore, because it is based largely on the CASR 119.05 safety regulations, it forms the basis for compliance with the proposed regulatory action. Also, the principles outlined in the Qantas document are not specific to aviation. They are generic, and apply to any organisation involved in the management of safety.

The SCOI decided that this task, which was in effect, a systemic audit of the relevant entities safety management systems against a ‘best practice’ reference, should be carried out by consultants. The consultants chosen were to be suitably qualified in both systems safety and human factors. They were to be fully conversant with the latest concepts, theories, procedures and practices used in developing and using contemporary integrated safety management systems.

**Objective 2:** *To determine whether any deficiencies in the relevant entities’ safety management systems contributed to the Waterfall accident*

The tasks involved in meeting this objective included an assessment and interpretation of evidence presented to the SCOI, from the perspective of the information gathered in Objective (1).

For example, if it were to be found that the safety information system of StateRail had been constructed and managed in such a way that it was not possible to undertake systemic analyses to identify safety deficiencies in StateRail's operations, then the evidence presented to the SCOI would need to be analysed to determine whether this deficiency contributed in any way to the rail accident.

Similarly, if it was determined that StateRail did not have a systematic process of hazard identification and risk management, then the evidence presented to the SCOI would need to be analysed to determine whether this deficiency played any part in the accident.

**Objective 3:** *To assess the safety climate that existed at the time of the Waterfall rail accident*

As discussed earlier in this report, safety culture and the reflected safety climate are dominant factors in determining the effectiveness of safety management systems. An organisation's safety climate is typically assessed by means of a questionnaire survey of samples of personnel within the organisation.

The SCOI decided that this task should be undertaken by an expert in the field of safety climate assessment, who would provide the best advice on how this task could be integrated into the overall SMS review process.

**Objective 4:** *To identify areas in which the RailCorp and ITSRR systems for safety management require improvement to mitigate risk of future accidents.*

The tasks involved in meeting this objective would be dependent upon, and flow from, the outcome of the three previous objectives. The scope of this task was to become clearer once the work for the first three objectives had been completed.

### **3.2.3 Establishment of Safety Management Systems Expert Panel (Expert Panel)**

On 9 October 2003 the SCOI established a Safety Management Systems Expert Panel (Expert Panel) from both within and outside the rail industry to assist with the formulation of a strategy to address Terms of Reference 2 and 3.

The membership of the Expert Panel is in Appendix C.

The role of the Expert Panel was to:

1. Provide expert advice on the review of the safety management systems applicable to the circumstances of the Waterfall railway incident
2. Direct the activities of consultants engaged as auditors to undertake a detailed review of the relevant safety management systems of the rail entities.
3. To review the SMS review outcomes and accompanying auditor's reports to synthesise a comprehensive report for the Commissioner.
4. Make suggestions/recommendations on action that is required to address perceived deficiencies identified in the Expert Panel's report.

Between October 2003 and January 2003 the Expert Panel, in consultation with the SCOI undertook three key tasks:

1. Selecting a project manager to manage the administrative requirements of the audit process.
2. Selecting an appropriately skilled audit team and lead auditor.
3. Selecting an internationally recognised safety systems audit specialist to develop the audit planning, methodology and scope.

### **3.2.4 Appointment of Project Manager**

In November 2003 the SCOI produced a brief for the selection of potential consulting firms to provide management services to conduct the safety review. The SCOI Brief for potential auditors is in Appendix D.

A number of organisations provided expressions of interest and in late November 2003 Booz Allen Hamilton (Booz Allen) was selected to provide project management capabilities for the safety review and to assist the Expert Panel in appointing a suitably qualified team of auditors. Mr Peter Olsen, Associate from the Booz Allen Sydney office was appointed project manager soon after and continued in this role until 18 February 2004. Mr Len Neist, Senior Associate and Director of the Booz Allen Canberra office, continued in this role thereafter.

The role of the project manager was to:

1. Assist the Expert Panel in identifying and selecting suitably qualified auditors.
2. Maintain a review program to identify and plan review activity, coordinate auditor activity and keep the Expert Panel and SCOI informed on progress.
3. Maintain close contact with nominated representatives of the rail entities to be reviewed to facilitate auditor access and provide feedback on issues as they were identified.
4. Coordinate the interface between the audit team and the Expert Panel and SCOI.
5. Schedule and coordinate audit team meetings to ensure efficient and effective use of resources in conduct of the review.

### **3.2.5 Appointment of Safety Systems Audit Specialist**

In November 2003 Mr Nicholas Bahr, Senior Associate from the Booz Allen office in McClean Virginia, United States, was appointed to assist the Expert Panel with the development of the audit methodology and scope. Mr Bahr was appointed based on his extensive background in safety, having worked in the field of safety management systems for over 20 years. Mr Bahr is well published in the field and has written books on System Safety Engineering and Risk Assessment. He has worked for various transportation authorities, including rail, in New York and Washington DC, and for NASA on a safety and reliability program. He also has specific experience in Australia having being involved in system safety audits and development of safety systems following accidents, and establishing recovery programs for transit systems.

The role of the Safety Systems Audit specialist was to:

1. Define a suitable model for application in the SMS review that will enable evaluation of the existence, effectiveness and maturity of the SMS for various rail entities including the regulator.

2. Construct the underlying SMS framework to be used as the template for the review against which the auditors defined their activity.
3. Provide training and guidance to the auditors in the purpose, intent and use of the review model.
4. Provide independent review and validation of the review process in support of the Lead Auditor, the review team and the Expert Panel (both remotely and on-site).
5. Provide a documented analysis of the methodology and underlying model.
6. Provide a summary report of the findings against the model with reference to best practice where feasible.

### **3.2.6 Selection of Consultants to the Audit Team**

During December 2003 and January 2004 the Project Manager and the Expert Panel selected a team of highly qualified auditors with expertise in the following fields:

1. Safety Management Systems.
2. Rail Operations.
3. Regulatory Systems.
4. Human Factors.
5. Occupational Health and Safety Systems.
6. Quality Assurance Systems.
7. Risk Management.
8. System Safety Engineering.
9. Audit of high reliability organisations.

The auditors were intentionally selected from a variety of industries including aviation, mining, rail, manufacturing and transport systems. The inclusion of a team of auditors with both non-rail and rail backgrounds ensured that the contemporary safety systems framework on which the safety review was planned, was complemented by a group of diverse audit team members. Appendix E contains a list of the auditors selected to conduct the SMS review, indicating their broad areas of expertise.

**NOTE: A full description of the safety review methodology can be found at Appendix F which contains a copy of a report prepared by Nicholas Bahr dated 12 May 2004 and copies of the Safety Management System Review Elements devised for the Safety Review of both RailCorp and ITSRR can be found in Appendix G.**



## CHAPTER 4 RAILCORP FINDINGS

The following findings are largely based upon an analysis of the evidence gathered by the safety review team through site visits, document reviews and staff interviews. An edited version of the document where this evidence was collated by the project manager forms a separate attachment to this report and is titled '*SRA/RailCorp: Safety Audit Document*'. The document has been edited so that the identity of individuals remains confidential.

### 4.1 Findings against the 29 SMS Elements

In Chapters 4 and 5 bracketed figures refer to sources of evidence listed in Appendix J.

#### Element 1. Management Commitment

*Management commitment and active participation is the cornerstone to all effective safety management systems.* If senior management do not actively participate, communicate, and re-enforce the commitment to a safe outcome, it is unlikely that management processes and staff will promote and maintain good safety practice. Findings included:

1. RailCorp senior managers did not demonstrate how to drive and lead safety performance improvement.
2. There was little evidence of senior managers consistently and actively participating in achieving a safe outcome.
3. Little evidence was found for a safety vision and its practical implementation being communicated to staff.
4. Performance management systems for holding managers accountable for safety performance were either ineffective or non-existent.
5. Safety responsibilities and accountabilities were either poorly defined, or not defined at all.
6. Senior managers were not trained on the operation of the SMS. Nor were the individual requirements of them identified.

#### Element 2. Policy and Objectives

Policies and objectives set out the intentions, the what and how, of the Board and Management for the organisation. They form the cornerstone of the requirements for an effective safety management systems. *If policies and objectives are unclear then the implementation of the safety management system may be ineffective.* Findings included:

7. StateRail and RailCorp did have a published Safety Policy and Statement of Objectives, signed by the CEO.
8. However, there was little evidence of an effective process to communicate this policy to all staff, suppliers, contractors and visitors.
9. Written objectives were not closely aligned to key risk management strategies to improve effectiveness of the organisations safety management performance.

#### Element 3. Safety Representative and Personnel

For complex high hazard operations like those of a railway, *it is important that sufficient and competent staff resources be dedicated to the safety management function.* A good safety

management system will also give *key safety managers access to senior leaders* in the organisation. Findings included:

10. StateRail and RailCorp did have a senior manager for overall safety, as well as middle managers in each Division dedicated to safety.
11. The safety manager and staff roles were defined, though not as thoroughly as they should be for such a high hazard environment.
12. Evidence indicated that the organisational structure for safety management and responsibilities was not well documented and communicated to staff.

#### **Element 4. Safety Committee**

Safety Committees are usually structured to consider safety issues at each level and across the organisation. *In this way, oversight of the whole safety management function can be both 'bottom up and top down'.* Committees usually exist at the Board, Executive, senior management and front-line staff levels. Safety professionals are usually invited to these committees to address specific issues as required. Front line staff are usually more concerned with OH&S issues. Findings included:

13. StateRail had a board safety committee with an employee representative but RailCorp does not. The audit review of the minutes of the meetings of these committees found that the safety committees were not providing strong leadership, initiating strategies or undertaking critical reviews of the materials presented by senior management. Nor did the committees keep adequate records of issues they considered or the finalisation of these.
14. StateRail had an Executive safety committee of senior managers including safety managers. The audit review of the minutes of the meetings found that the safety committee was not providing strong leadership or initiating critical reviews. This appeared to be the only meeting addressing rail safety issues as well as other safety issues.
15. StateRail had a Joint Consultative Committee, which provided a forum for the service unions and their representative to comment on and be informed on safety issues. This committee appears to be the peak OH&S committee for the many department and regional safety committees. This Committee met too infrequently to be effective.
16. StateRail safety committees have a strong OH&S focus. The local committees did not have a broader system safety focus, and as a result they did not identify safety issues of a more systemic nature.
17. Most safety committee findings and corrective actions were not adequately communicated to the relevant senior management, and therefore the necessary remedial action was frequently not completed or effective.

#### **Element 5. Management Review**

To ensure appropriate safety validation and assurance of policy, procedures and actions at all levels of the organisation it is imperative that the organisation arrange *effective management reviews of audits, reports and investigations.* Findings included:

18. The management review process of the SMS was incomplete particularly with respect to its implementation and effectiveness.



19. The system in place focused on OH&S issues, and did not address broader system safety fundamentals.

#### **Element 6. Training and Education**

The training program is a basis to ensure that *staff are competent and adequately skilled to manage safety issues*. Findings included:

20. StateRail had a sophisticated training facility that is accredited by NSW educational groups.
21. There was an unstructured and inconsistent approach to curriculum development, indicated by a failure to apply Training Needs Analysis and Task Analysis processes across the organisation.
22. Training policies and procedures provided little guidance on risk management and course evaluation.
23. Safety training did not adequately align with key system hazards.

#### **Element 7. Hazard Identification and Risk Management**

*A thorough hazard identification and risk management process is vital to ensuring system safety*. Ineffective hazard identification will lead to untreated risks. Findings included:

24. StateRail has identified the top ten prioritised hazards for the organisation. However, because the hazard identification and risk management process was inadequate, this hazard list did not necessarily reflect the actual risk profile for StateRail.
25. StateRail and RIC did perform numerous safety analyses. However, the majority of these were overly focused on OH&S, and not on broader system safety issues. Almost no evidence could be found of system safety engineering analysis.
26. System safety analyses were performed using a limited range of hazard identification techniques such as fault tree analysis, which were not necessarily correctly applied with the consequence that they only provided limited hazard identification.
27. Safety analyses were reactive, usually applied after an incident, and there was no evidence to suggest a proactive approach to hazard identification.

#### **Element 8. Document Control**

*A strong document control process that clearly indicates the status, purpose and scope of a document is required in an organisation where new procedures, system modifications and new procurements can effect a safe outcome*. Findings included:

28. There was evidence that there were safety critical operational documents in use that were not adequately controlled and failed to include management review and approval processes e.g. Network Incident Management Plan held in RMC.
29. Safety documents such as those addressing configuration control of safety critical systems and subsystems, were not effectively controlled.

### **Element 9. Record Control**

*Control of key safety records covering equipment, people and processes is essential to ensuring the effectiveness of current and previous processes.* Findings included:

- 30. Review results indicated that there was an inadequate process for the control of records. For example inaccurate training records.

### **Element 10. Internal Audit**

*Internal audits provide the board and management the feedback on the performance of the SMS. Internal audits should be structured to address key safety hazards across the organisation and be conducted on a periodic basis.* The identification of clear corrective actions must be part of the audit outcome. Findings included:

- 31. RailCorp has an internal audit process that defines not only the audit scope but also the periodicity.
- 32. RailCorp did follow their audit process. However, the audit process predominantly focused on OH&S and not the broader system safety considerations such as organisation, people, processes and engineering.
- 33. The process to assure that corrective action is implemented in an appropriate and timely fashion was inadequate.
- 34. Some internal auditors were not appropriately trained to effectively carry out their duties.

### **Element 11. Incident/Accident Reporting System**

*A clear and transparent safety incident reporting system is important in promoting continuous safety improvement.* This system should not only report incidents, but should also allow analysis, identify trends and monitor the effectiveness of controls. Findings included:

- 35. RailCorp has systems and formal processes for reporting, and recording incidents and accidents.
- 36. Audit findings indicated that the feedback process to staff who reported hazards or incidents was ineffective.
- 37. The reporting systems in place did not adequately protect confidentiality.

### **Element 12. Incident and Accident Investigation**

*Systemic safety investigation of accidents and incidents is part of a thorough safety management system.* An organisation should learn from incident investigations, and their results enhance safety. Findings included:

- 38. Audit results indicated that the investigation process was not sufficiently formalised and documented.
- 39. It did not adequately address causal analysis and risk assessment.
- 40. Follow-up of corrective actions were not adequately tracked and finalised.

### **Element 13. Analysis and Monitoring**

*Understanding safety trends is an important measure of a safety management system's effectiveness.* Statistical data analysis and trend monitoring can lead to improvements of the safety management system. Findings included:

- 41. RailCorp monitors some hazards in a monthly trend report.
- 42. Due to the weaknesses previously identified in RailCorp's hazard identification process, the validity of the judgements made based on the monthly trend report is questionable.
- 43. Little evidence was found to indicate that safety performance of contracted goods and services were monitored.
- 44. Results indicated that the process for monitoring safety related trends were inadequate, in particular on safety critical activities and equipment, and with respect to comparative analysis over a period of years.

### **Element 14. Emergency Response Procedures**

*A proactive safety management system prepares emergency response processes to minimise the impact of incidents.* These procedures are important for minimising loss of life and property and injuries in the event of an emergency. The review found that:

- 45. Emergency response planning was ineffective.
- 46. There was no evidence of planned, periodic testing of the emergency response plan and equipment particularly in high risk locations such as tunnels.
- 47. Responsibilities were not clearly defined or effectively communicated.
- 48. The plan did not sufficiently identify critical response personnel from outside the railway organisation.

### **Element 15. Change Management**

*Change Management policy and procedures ensures safety is considered when changes to processes, personnel, equipment and the organisation are planned.* The review found that:

- 49. StateRail and RailCorp do not have a policy or process of safety validation of change with respect to organisational, people, process or engineering. RIC previously had a process for safety validation of organisational change.
- 50. Review results indicated that there were few processes in place to manage change.
- 51. The program for monitoring and measuring the effectiveness of changes was inadequate.
- 52. There was no clear indication of change leadership.
- 53. Employees were not appropriately notified of changes (or trained with regards the consequences of the changes).
- 54. Key safety process changes and deviations were not adequately assessed for risk or documented.

## **Element 16. System for Managing Requirements and Changes**

*Identifying and managing safety requirements and changes to requirements is important to ensure key safety controls are kept in place and remain effective.* Findings included:

- 55. Review results indicated that there was no policy or procedures requiring the identification of safety requirements for organisations, people, processes or engineering. Nor were there processes for monitoring changes to requirements.
- 56. Process, people, engineering and organisational changes are not safety validated. A process that seeks a hierarchy of sign offs and acceptance or transfer of hazards and risk as a result of change was not identified.

## **Element 17. Customer Feedback**

*Customer feedback is important to identifying key safety issues from their unique perspective.* Findings included:

- 57. The review did not identify a consistent or well documented process to incorporate key system safety issues suggested by customers.

## **Element 18. Contracted Goods and Services**

*Contracted Goods and Services must have as part of the procurement and contract management process identification of safety requirements.* If procurements are not adequately reviewed then additional unidentified hazards may be introduced into the rail system. Review findings included:

- 58. An adequate processes requiring risk assessment of contracted goods and services was not identified.
- 59. The process to ensure that contractors were made aware of safety management system goals, processes, and requirements was inadequate.
- 60. There was no evidence of appropriate safety oversight of these goods and services.
- 61. Safety performance and compliance of suppliers of goods and services was not closely monitored, reported, or enforced.

## **Element 19. Traceability of Goods and Services**

*Knowing the source and supplier of goods and services is particularly important in respect of safety critical equipment.* If goods and services do not meet appropriate safety standards, or are not adequately controlled for quality, then a railway may be introducing unknown new hazards to the network. Findings included:

- 62. Results of the PFM site audits indicated that there was insufficient identification, traceability, and control of goods and services through the component life cycle.
- 63. The suppliers and supplies of safety critical goods and services have not been adequately assessed. It is difficult for the railway to mitigate safety hazards without these assessments.

## **Element 20. Measuring Equipment and Calibration System**

Not assessed due to time constraints.

### **Element 21. Procurement of Goods and Services**

*System safety requirements must be an integral part of the procurement process, from the earliest stages of concept definition, through to equipment acquisition, operations, and finally disposal.* Findings included:

- 64. The processes to ensure appropriate levels of quality, identification of safety requirements, and risk assessments of procurements, were inadequate.
- 65. Little evidence was found that purchases were adequately reviewed and approved against safety requirements.

### **Element 22. Equipment Maintenance**

*Safety-critical equipment must be identified, properly maintained and tested.* If this equipment is not maintained in a fit for purpose condition then important risk controls may not operate as required. Findings included:

- 66. Equipment maintenance requirements were well documented and there were maintenance schedules in place. However, these had not been effectively reviewed for some years.
- 67. Interviews indicated that rolling stock subsystem and component maintenance procedures and work instructions were incomplete and had not been reviewed for some years.
- 68. Use of unauthorised rolling stock work instructions for safety critical equipment was identified (eg outer suburban vigilance modification).

### **Element 23. Design and Development**

*Safety analyses and oversight processes as part of the design and development of equipment and systems ensure safety requirements are considered and effective.* This process should also include procurement of new systems or modifications to current systems. Safety review findings included:

- 69. Safety requirements were not adequately considered in the design and development process (e.g. the deadman system and the outer suburban vigilance system modification).
- 70. The control of design and development changes was not sufficient.
- 71. Little evidence was found of adequate safety analyses performed during the design and development process.

### **Element 24. Management and Staff Recruitment**

*The recruitment of Management and Staff must adequately assess the safety attitudes, qualifications, training and experience requirements of potential applicants.* Audit findings included:

- 72. Recruitment processes for senior management did not sufficiently identify safety requirements (qualifications, training and experience) for positions and hence could not assess the suitability of applicants in this regard.

## Element 25. Medical Issues

*The ability to perform safety critical tasks efficiently and effectively may depend on staff physical and mental abilities and medical condition. These need to be identified and assessed at recruitment and then assessed periodically to ensure continued ability and capability, especially for safety-critical roles. Audit results indicated that:*

- 73. The new Fatigue management program was considered acceptable and of a high standard, yet to be fully implemented and proven in service.
- 74. Alcohol and drug testing programs were not fully effective especially with regards to random testing.
- 75. Medical assessment of train crews did not assure timely assessment.

## Element 26. Human Factors

Human Factors has been summarised as influences relating to; human attention and perception; human information processing and decision making on the basis of information presented e.g. computer human-machine-interface design requirements and functionality; the potential for issues of habituation and/or driver fatigue; infrastructure and information design and the extent to which signals and infrastructure contributed to safe operations in terms of design, location, orientation and noticability. *If human factors are not taken into consideration when determining the safety requirements then it is likely that processes will not be error tolerant.* Audit findings included:

- 76. There was no human factors policy and the human factors specialists. The human factors staff position was vacant at the time of the safety review.
- 77. While there was an awareness of human factors issues the requirements for review and validation of human factors in design and change management had not been documented e.g. the deadman system.

## Element 27. Safety Organisation

*The management requirements for safety are achieved by identifying the responsibilities, authorities and accountabilities for all aspects of safety management including engineering, people, process and organisational management at all levels of the organisation. It is important that the organisation has provision for the necessary capacity to implement an effective system safety program. Review findings included:*

- 78. The responsibilities, authorities and accountabilities for key safety outcomes were not defined or identified.
- 79. There was no system safety program to define how safety management and operating management would be integrated to deliver the organisations operations safely.
- 80. The safety organisation had an imbalance towards work place safety and lacked depth or substance with regards to system safety.
- 81. Key safety managers lacked qualifications, training and experience in organisational safety systems, human factors, risk management and system safety engineering.
- 82. The organisation lacked sufficient numbers of safety experts with appropriate qualifications, training and experience.

### **Element 28. Safety Awareness**

*The safety management system should continually reinforce safety awareness in all staff and empowers them to effect change.* Review findings included:

- 83. Employees had a good awareness of workplace hazards but little awareness of system safety hazards.
- 84. Employees felt that a “blame culture” existed and that it was difficult to communicate safety concerns to management.
- 85. Meetings such as safety forums to communicate safety initiatives and concerns to management were not identified.
- 86. At the workplace Toolbox Talks did occur to inform employees of safety issues.
- 87. There was little evidence of safety leadership and personal involvement as a sustainable management program

### **Element 29. System Safety Program Plan**

*A system safety program is normally documented and controlled using a detailed system safety program plan supported by dedicated project resources and an effective communications strategy.* It should be comprehensive and touch upon all aspects of railway management and operations. Review findings included:

- 88. A system safety program plan was not identified.
- 89. A safety management system framework was identified.
- 90. Sufficient, dedicated system safety project resources and an effective communications strategy were not identified.

## 4.2 Overview of Findings

The expert panel identified the following six themes derived from the analysis and findings in relation to the 29 SMS elements referred to in section 4.1:

- Governance and Accountability
- Train Operations
- Human Factors
- Training Systems
- Emergency Preparedness; and
- Asset Management and Maintenance.

In addition this section of the report deals with the analysis of the Safety Reform Agenda of RailCorp and the results of the Safety Climate Survey conducted on behalf of the SCOI.

### 4.2.1 Governance and Accountability

*Governance refers to management systems that are designed to ensure that safety systems within organisations are implemented, effective, of high quality and ensure fit for purpose outcomes.*

1. *Within StateRail risk management was conducted as a reactive process, and was focused on incident reporting to identify hazards. There is a need to develop proactive risk management practices to anticipate rather than react to hazards. There was little evidence of the acceptance of risk by senior management by way of a formal 'sign off' or 'authorisation' process for critical functions.*
2. *Change management processes are ad hoc, and important changes in regard to operations, equipment and procedures are not communicated effectively throughout the organisation. In particular, there is not a clear understanding of what constitutes a change that requires the initiation of a Material Change Notice to the regulator.*
3. *Internal auditing initiated by StateRail to ensure implementation of, and compliance with, the internal safety management system requirements was insufficient, ineffective and fragmented with a focus on compliance with NSW OH&S Regulations rather than system integration and integrity.*
4. *Most senior managers (Level 2, 3 and 4) interviewed displayed a lack of awareness of contemporary safety management principles and practice. They lacked relevant technical safety qualifications in system safety, risk management or human factors and/or experience in other high reliability organisations. They therefore lack the capability to provide safety leadership within the areas for which they are accountable, as well as sufficient knowledge on how to successfully implement safety programs.*
5. *Systems in place within StateRail for allocating and holding managers at all levels accountable for safety performance were ineffective and fragmented. Specifically, there was a lack of clearly defined, measurable, safety key performance indicators (KPIs) for senior management levels as well as front line supervisor level.*
6. *There is a lack of an overall disciplined document control process across the organisation. Whilst there is a systematic and structured process to distribute safety critical information there is no equivalent process to ensure that these*



documents have been read and signed for those who need to be aware of the information contained therein. Some areas of RailCorp practise good document control; however it is non-existent in other areas. This results in draft documents, and several versions of the same document being used in the field as reference material by people in different parts of the organisation.

7. At an organisational level, *there is a lack of appreciation of the need to learn from incidents and accidents*. Existing procedures following a safety incident focus on individuals and their actions in an attempt to attribute culpability, rather than the establishment and reinforcement of a “just culture”, with consequent system improvement. This drives behaviours where the focus is on avoiding blame rather than on an open examination of all the issues contributing to an incident.

#### 4.2.2 Train Operations

Train operations refer to the activity of moving and controlling trains safely and reliably between points on the network.

1. *Among front-line staff such as train crew, station staff, train control and signal box personnel, safety awareness is strong and vibrant*. The safety review determined that these individuals took safety seriously and understood the importance of following safe working and occupational health and safety rules. *However, their training and safety focus was on occupational health and safety, not broader system safety*.
2. *Industrial relations between management and employees appear to be particularly strained*. The review found that neither managers, nor front-line staff, nor industrial unions seemed to be working closely together. This is a significant risk and will continue to be an important challenge for RailCorp managers and employees to overcome. *Without a more positive working relationship, it is unlikely that effective change can take place, since change relies on effective and open communication*.
3. *A strong “blame culture” exists which focuses on disciplinary action for staff who are involved in safety incidents*. A strong blame culture encourages employees to hide problems and do everything possible not to identify system failures. This is counterproductive to ensuring a safe operating environment.
4. *On-time running requirements are overly ambitious and induce drivers to violate rules and procedures and contribute to hazardous situations*. Because of the blame culture, the management systems may influence drivers to operate trains in an unsafe manner just to meet the timetables. The blame culture makes it difficult for drivers to raise safety concerns to management.

#### 4.2.3 Human Factors

*Consideration of humans as an element of a complex system requires analysis and study of human capabilities, limitations, and behaviors*. Integrating this knowledge into the design of systems to enhance the safety, performance and general well being of system operators is critical for effective system safety.

1. Despite the critical role of human factors in every element of an integrated safety management system, *RailCorp does not have a documented human factors policy*. Also, the term ‘human factors’ does not appear in the RailCorp Safety Reform Agenda.

2. While StateRail employed a highly qualified and experienced Manager Human Factors in early 2003, this Manager left RailCorp in March 2004, and there remains a major deficiency in the organisation's capacity to implement a modern safety management system.
3. Investigations of rail accidents such as those at Glenbrook, Bargo, Hexham and Waterfall have highlighted the value of Crew Resource Management (CRM) training. Despite some attempts to develop a comprehensive CRM training program for StateRail, to date these attempts have not been successfully implemented.
4. RailCorp's approach to error and violation management is still governed by the traditional 'blame and train' paradigm. While RailCorp have produced a "no blame" policy for safety investigations, there was no evidence that RailCorp personnel across the organisation were generally aware of the policy.
5. The review team found that commendable progress has been made in introducing a fatigue management program into RailCorp. The *StateRail Fatigue Management Strategic Plan*, although still in draft form, was considered to be comprehensive, and equal to best practice in aviation.

#### 4.2.4 Training Systems

*Training involves carefully targeted educative programs to ensure that individuals are competent and qualified to conduct specific tasks. Effective training programs are an essential component of an integrated safety management system.*

1. With the exception of minor variations in the content of Safety Management Systems (SMS) training, the safety review found that no significant changes have occurred in the way training is designed or delivered since the Waterfall accident.
2. Some training systems have evolved without the benefit of a recognised training needs analysis (TNA), which is a formal, structured, and integrated process to identify training requirements of an organisation and its people, both at system and individual levels.
3. *Task analyses are not being conducted to serve as the basic input for developing training regimes.* A task analysis would include identifying specific tasks performed by individuals in particular operations so that training programs can be developed to address the safety risks inherent in performing these tasks.
4. The RailCorp Training Policy and Procedures Manual provides limited guidance, particularly in relation to Training Needs Analysis, Course Evaluation and Risk Management.
5. *Safety Management Systems (SMS) training is strongly focussed on Occupational Health and Safety and safe working procedures, rather than on broader elements of a contemporary SMS.*
6. Passenger Fleet Maintenance (PFM) did not have an overall training program and there was *little system safety engineering or human factors training* evident at depots.
7. *There were no safety management system training or professional development programs focused on safety and risk management, for management personnel.* This is of concern because many middle and senior managers do not have the requisite safety management competencies or experience.

8. *Quality control of competency assessment documentation within the organisation is poor.*
9. Documented evidence that the purchase of the virtual reality equipment at Australian Rail Training was established as a result of a comprehensive training needs analysis or substantive business case was not identified.
10. Operations Standards Managers (OSMs), who have the task of assessing the performance of train drivers and guards, are not conducting the required number of assessments on drivers. Given the numbers of train crew and OSMs in particular regions, it is not possible for the required numbers of annual assessments to be completed within the 12-month time frame. In addition, the present actual ratio of one OSM to approximately 100 crew, rather than the recommended ratio of 30:1 is seriously impacting upon the ability of the system to achieve the required number of training interventions.

#### **4.2.5 Emergency Preparedness**

Emergency preparedness is concerned with the capacity of an organisation to respond in an efficient and timely manner to all foreseeable emergencies.

1. Emergency response planning is inadequate. Although emergency response plans exist, there was little evidence of regular periodic testing, or of appropriate training for key positions.
2. There are multiple versions of the RailCorp/StateRail Network Incident Plan and confusion amongst staff as to which version was current.
3. RailCorp has not effectively coordinated its emergency response plan with the New South Wales Emergency Services. RailCorp's emergency preparedness plan was not successfully integrated with the New South Wales Emergency Services Disaster Plan (DISPLAN).
4. Whilst RailCorp/StateRail has conducted some "desk top" exercises, there have been few on-site emergency exercises conducted during the past 12 months.

#### **4.2.6 Asset Management and Maintenance**

This refers to the ongoing management and *maintenance of critical equipment within an organisation to ensure that it is fit for purpose.*

1. When new equipment is purchased, or there are significant changes to existing equipment, there is *no comprehensive process of acceptance into service to ensure fitness for purpose or design integrity.*
2. Fleet safety critical items had not been identified. Condition standards for some safety critical items, e.g. the deadman system, were either not present, were deficient or not complied with.
3. Fleet maintenance plans have not been revised since 1995 and maintenance plans are too theoretical in nature. This situation results in a disconnect between the formal requirements in Technical Maintenance Plans and standard practice on the shop floor. The safety review found evidence of unauthorised maintenance activity on initial safety systems (vigilance and deadman systems).
4. Whilst some passenger fleet maintenance sections have an adequate level of document control other sections have not e.g. vigilance system maintenance procedure.

5. There is *no process for assessment or assignment of responsibility and accountability with respect to significant change decisions* with regards organisation, people, processes and engineering e.g. Chief Engineer.
6. Little evidence was found of a systematic or methodical safety analysis approach. Hazard identification was primarily based on previous incidents and accidents and therefore was not sufficiently forward-looking. The StateRail Corporate Safety Handbook described hazard identification as a reactive process.
7. There was *no evidence of appropriate application of safety analysis tools in the design of new systems or the modification of current systems*. A thorough safety analysis of the driver safety systems during the design and acceptance of the Tangara train would have identified failings in the deadman pedal design and human factors issues that contributed to the Waterfall accident.
8. The review determined that StateRail had not performed safety analyses to understand and validate the operational and technical risks associated with the introduction of the Advanced Train Running Information Control System (ATRICS). ATRICS is a new train management system that interfaces with vital systems, and changes the interface for area controller. The safety analyses performed on ATRICS focused on its internal integrity but failed to consider rail operational risks.
9. There have been several significant changes to the functionality of ATRICS to implement vital functions however, there was no evidence of StateRail conducting a comprehensive hazard and risk analysis to identify and control operational risk. There is a significant concern that StateRail had never submitted an application to vary its accreditation or undertook a risk assessment for material change to network operations.

#### **4.2.7 Safety Reform Agenda**

RailCorp has developed a Safety Reform Agenda in recognition of the need for a major systemic change in the management of safety throughout the organisation. The agenda confirms that many of the findings identified by the SCOI review are recognised by senior RailCorp management as requiring improvement.

The Agenda provides a framework on which to base improvement programs, specifically:

1. It identifies critical elements of systems safety management that need urgent attention.
2. It has established a reporting structure with the project manager accountable directly to the CEO and Board.
3. The safety accountability statements provide a good, tiered outline of generic accountabilities.

However, the safety review determined that *the capability of RailCorp to achieve the goals set out in the agenda is limited. Specifically:*

1. The previous lack of success within StateRail over a long period to implement an integrated safety management system.
2. The timeframes outlined in the Safety Reform Agenda are unrealistic. Experience from other organisations is that the timeframes to fully implement effective systems across a complex organisation are lengthy.

3. The number of programs being implemented over the same time period. Every organisation has a finite capacity to fully implement change, as effective implementation requires time and effort. Attempts to implement too many programs over too short a time period may result in ineffective implementation.
4. A perceived lack of internal capacity, capability and knowledge within RailCorp to drive the changes needed to develop a SMS suitable for high reliability organisations.
5. The lack of an identified involved “champion” who can act as the corporate leader to ensure that the SMS is fully integrated across all organisational interfaces.
6. A continuing focus on tactical issues including accident and incident investigation, safe working and OH&S to the detriment of attention on strategic issues including high-level systemic risk and technical vulnerability.
7. The capability and effectiveness of the committee driving the process.

#### **4.2.8 Safety Climate Review**

Safety climate refers to certain measurable aspects of an organisation’s safety culture. Safety culture can be defined as the aggregate of behaviours, attitudes, meanings, values, norms and beliefs that reflect safety within an organisation.

*An important finding of the safety climate review was that, overall, there were no particular positive signs in any category of employee with regards to their perception of safety management*

1. For the whole sample of 459 RailCorp employees, mean scores on the survey were barely above the scale mid-points (approximately 3.1) on a five-point scale ranging from “1: Strongly Disagree” to “5: Strongly Agree”, while some group scores were well below the scale mid-points. (A score of “3” indicates “Neutral”). The higher the score the greater the agreement with the statement.
2. Major differences between occupational groups within RailCorp exist in respect of their perceptions of the organisation’s safety climate. For example, drivers scored the lowest of any group, with their score being significantly different from those of other respondent groups. This finding indicates that, although individual drivers undoubtedly do their best to operate safely, as a group they do not have a very positive perception of the safety climate within RailCorp.
3. On the important issue of RailCorp operational safety in the 12 months since the Waterfall accident:
  - Drivers, Guards, and Maintenance Staff views were essentially the same – that rail operations safety within RailCorp over the previous 12 months was little better than “Neutral”.
  - However, none of the groups held the view that rail operations over the previous 12 months could be considered “Safe”.
  - The overall view was that rail operations safety was only just above a “Neutral” position, falling well short of being “Safe”.
4. In respect of perceptions as to whether the safety of RailCorp rail operations had improved in the 12 months since the Waterfall accident:

- The overall view was that rail operations safety had barely improved since the Waterfall accident.
  - The overall view of the sample of guards was that rail operational safety had slightly deteriorated during this period.
  - The Management and Supervisory group, which had the highest mean value of all the groups (3.68), still fell short of unambiguously rating rail operational safety as having improved.
5. On the issue of shiftwork and tiredness: Drivers and Guards considered that work shifts were too long and that tiredness resulted from RailCorp's shift pattern. All other groups held near "Neutral" positions on shiftwork and tiredness, differing significantly from Drivers and Guards on this issue.
  6. A wide range of topics was mentioned in response to the open-ended question inviting respondents to express any further views on safety matters. A summary of these comments is in the Safety Climate Review section of this report.

Each of the above themes is discussed in more detail below, and where relevant, referenced by documentary evidence supporting the finding.

## 4.3 Detailed Discussion of the Key Themes

### 4.3.1 Governance and Accountability

*The primary objective of any governance system is to strengthen organisational leadership and establish effective organisational structures and controls. If successful, governance leads to organisational alignment and focus. For the purpose of this review of safety management systems, the Expert Panel defined governance, as “management systems designed to ensure that the safety systems within organisations are implemented, effective, of high quality and ensure fit for purpose outcomes.” Two major components should be considered when reviewing safety management systems:*

1. The organisation does what it intends to do.

*When strategies, plans, activities, or corrective actions are identified, are they implemented within the defined timeframe across the complete target audience in a manner that ensures their effectiveness?*

2. What the organisation is doing is adequate.

*Safety systems are adequate to ensure that:*

- Legal obligations are met.
- High quality solutions have been put into practice.
- Operations are fit for purpose.
- Outcomes are consistent with other similar high reliability organisations.
- Organisational system safety risks are identified and controlled to an acceptable level.

Accountability was defined for this review as “A situation where an individual can be called to account for his or her actions by another individual or body authorised both to do so and to give recognition to the individual for those actions”. This is similar to the approach used by StateRail in the document Safety Standard 2.001 Safety Responsibilities and Authorities (1), which defines accountability as “Action, function or event which must be completed or managed by the person to whom that accountability is assigned”.

It is not possible to comprehensively review the effectiveness of safety management systems without also assessing the systems that provide governance and define and allocate accountabilities. The safety review included elements that relate to governance and accountability including Element 1 (Management commitment), Element 5 (Management Review), Element 7 (Hazard Identification and Risk Management), Element 10 (Internal Audit) and Element 15 (Change Management).

*Each layer of an organisation, from the Executive Board to front-line employees should have both clearly defined accountabilities and systems in place to ensure that activities for which they are accountable are undertaken safely and include appropriate risk analyses. At Board level this should include ensuring processes to identify major risks (especially low probability, high consequence events) are established and adequate control strategies are in place. For front-line employees this would include fit for purpose work instructions and*

activities such as job safety analysis. Accountabilities and safety systems should be clearly described to allow independent validation and verification through the governance process.

## 1. Key Findings – Governance & Accountability

Evidence, observations, statements provided in interviews to review team members and analysis of documents by the review team were all used in the development of these findings. Analysis of whether systems were implemented and effective relied upon responses to specific questions, requests for documentation and site visits.

*Corporate Governance.* Corporate governance is directed to ensuring that all aspects of the business enterprise are under control while the business goes about meeting its customers' expectations. At the time of the Waterfall rail accident, the Transport Administration Act 1988 contained the following provisions with regard to SRA's corporate governance:

- Section 10(1) "the State Rail Authority Board has the function of determining the policies of the State Rail Authority".
- Section 12(1) "the affairs of the State Rail Authority shall be managed and controlled by the Chief Executive of that Authority in accordance with the policies of the State Rail Authority Board".
- Section 13 "the State Rail Authority (and its Board and Chief Executive) are, in the exercise of their functions, subject to the control and direction of the Minister".
- Section 3 and 7 of Schedule 1 gave the Minister power to remove the Chairman and any appointed member of the SRA Board from office at any time.

This shows that the legislative framework allowed the Minister to direct the Board with regards to policy and to give direct instructions to the Chief Executive that may or may not be consistent with the policy framework. Such a provision is not consistent with effective corporate governance and clear accountability.

## 2. Specific Findings

### (1) A Lack of Management Systems

*Due to a lack of systems specifically designed to ensure effective governance StateRail was unable to verify that actions undertaken to improve safety had:*

- *Been successfully implemented.*
- *Resulted in an overall reduction of risk with a consequent improvement in the ability to manage organisational safety.*

### (2) A Lack of Process to Ensure Verification of Information

The StateRail Board Safety Sub-Committee received a number of presentations on the safety activities occurring throughout StateRail over the period August 2002 to October 2003. The review could not establish whether the Board had requested any independent (non Regulatory) verification of either:

- The information contained in the *accreditation application*.



- The effectiveness of the *safety management system* throughout StateRail.
- The significant risks for safety and operational integrity within the organisation and the effectiveness of the control measures in place.

(3) *Undue Reliance Upon the Regulator*

StateRail relied upon the external regulatory agencies (both TSRSR and WorkCover) undertaking compliance auditing to identify and correct system safety deficiencies, rather than establishing an independent external review process.

(4) *Ineffective Internal Auditing Systems*

*Internal auditing initiated by StateRail to ensure implementation of, and compliance with, the internal safety management system requirements was insufficient, ineffective and fragmented with a focus on compliance with the NSW OH&S Regulations rather than system integration and integrity.*

(5) *A Lack of Accountability to Ensure Effective Action*

*“Closed loop” systems, to ensure effective implementation of strategies, plans and activities, were poorly deployed throughout the organisation. This included failing to ensure accountability for the timely and effective close-out of actions was clearly allocated.*

(6) *A Lack of knowledge in Senior Management*

Most senior managers (Levels 2, 3 and 4) interviewed *displayed a lack of awareness of current safety management principles and practice discussed in this report as essential.* They therefore lack the *capability* to provide safety leadership within the areas for which they are accountable or knowledge on how to successfully implement safety programs.

(7) *A Lack of Qualification, Knowledge and Practical Experience in Modern Safety Management Systems*

Many safety professionals within RailCorp *lack relevant technical safety qualifications, knowledge and practical experience in system safety, risk management or human factors and/or experience in other high reliability organisations.* The skills they possess have generally been developed within the NSW Rail system, with a *consequent lack of exposure to modern safety management principles and practice.* Their competence and capability to provide line management with leadership and guidance on modern approaches to managing safety is less than optimal.

(8) *Ineffective Accountabilities*

*Systems in place within StateRail for allocating and holding managers, at all levels of the organisation, accountable for safety performance were ineffective and fragmented. Specific examples are:*

- A lack of clearly defined, measurable, safety key performance indicators (KPIs) down to front line supervisor level.
- A lack of performance feedback, both positive and negative.
- An inability to define and manage poor performance.
- No clearly defined levels for “acceptable risk” (35).

(9) *Fragmented Supervision*

A number of different functional areas, each with differing accountabilities, oversee work activities of drivers and guards, resulting in *supervision* of their performance being fragmented and ineffective.

(10) *An Absence of Integrated Document Control*

Whilst document control procedures exist in some local areas, there was *no effective, integrated document control policy for StateRail and document control was not practised within the organisation at any disciplined level*. In contrast the document control within RIC was based upon well-defined standards and appeared to have been well used. Whilst the need for document control is accepted within certain areas, a plan to develop a RailCorp document control procedure based upon current quality management system practices has not been identified.

(11) *The Need to Integrate Management, Engineering and Human Factors*

Across the organisation there was a lack of understanding that to be effective a system safety program requires *integrating management overview* with engineering and human factors analysis to provide a comprehensive, integrated, systematic approach to managing system risks.

(12) *Absence of Modern Hazard and Risk Management*

*Hazard and risk management systems are sub-optimal* with an emphasis on frequency of an occurrence rather than potential consequences. Whilst hazard identification occurs at divisional level, there is *no evidence of an effective overall approach at organisational level*. *The focus on hazards is reactive rather than proactive; hence very little attention is given to low probability, high consequence events*, including asset integrity and potential failures. There is very poor understanding of the concepts of probability and consequence and their interrelationships, particularly in identifying and managing risk.

(13) *Inadequate Validation of Risk Controls*

*The importance of effective controls in mitigating risks is not well understood. Regular auditing of controls to ensure that they remain effective is therefore inadequate.*

(14) *An Absence of Design/Procurement, Control Systems*

There is *no effective system to accredit as “fit for purpose” newly designed and implemented systems*, including the technical integrity of assets. There is no means of addressing the human factors dimension of these activities.

(15) *An Absence of A “Just Culture” Approach*

*At an organisational level there is a lack of appreciation of the need to learn from incidents and accidents* (50). A prime reason for this are existing procedures that, once incidents occur, focus on individuals and their actions in an attempt to attribute culpability, rather than focus on establishing a “just culture” with consequent system improvement. This drives behaviours where the focus is on avoiding blame rather than an open examination of all the issues contributing to an incident (24, 46).

(16) *Scope of Committees Are Too Narrow*

*Safety committees* exist at many levels of the organisation and function well although their focus is *primarily on day-to-day OH&S issues and/or industrial concerns related to safety*.

### 3. Analysis and Examples

3.1 Briefings provided by senior RailCorp managers acknowledged that many of the key findings on governance and accountability had been recognised and the Safety Reform Agenda (2) outlines the key strategy areas identified by RailCorp to address some of these issues. Key findings 5, 6, 7, 9, 11, and 13 will be corrected if the Safety Reform Agenda is effectively implemented. The success of these strategies cannot be assessed at this time due to the limited period they have been in place.

#### 3.2 Control - Effectiveness

Review of Board Safety Committee minutes from November 2002 until October 2003 (25) identifies many presentations on the ongoing safety activities within StateRail and information sessions on the priority hazards (16). *These sessions focused mainly on the hazards themselves and not on the controls in place to mitigate or minimise the risk from those hazards or the effectiveness of the controls (38). Priority hazards are important in ongoing attempts to prevent harm to people and RailCorp property and need to be managed.* They are not, however, issues that will seriously degrade the capability of the rail system to undertake its core business.

#### 3.3 Board Level Focus

*At Board level the focus should be on systems in place to ensure that operations are fit for purpose, including ensuring that high-level systemic risks that can impact upon the safe running of the railway are identified and managed.* There were some information sessions on high-level risks including fire in the underground rail system and derailments damaging key structures. These sessions lacked an evaluation of control measures in place for those risks and an examination of the effectiveness of the controls. Further, some major risk areas have not yet been discussed at Board level.

#### 3.4 Verification – Required by the Board of RailCorp

*No evidence could be found of the Board requesting, or being shown, external verification of the information provided by StateRail staff or requesting independent verification of the adequacy of measures being developed (25).* The only exception being the WorkCover audit, which was OH&S focused. The review did not identify:

1. An informed discussion on risks associated with the introduction of ATRICS.
2. An independent verification to assure the accuracy of information contained in previous accreditation applications.
3. Independent verification that control measures to mitigate the risk of fire in the underground rail system were effective and sufficient.
4. Critical examination of the ability to respond to a significant emergency, including terrorism.

#### 3.5 Board Accountability and Assistance

*The topic of Board accountability and the availability of external assistance to the Board was discussed at a meeting of the SRA/RIC Transition (Safety Validation Board) on 1 October 2003 (17).*

*“The Chairman reminded the meeting that the Safety Validation Protocol document reflects the desire of the Rail Safety Regulator to see (among other issues) that the Board and CEO of the new entity will be able to seek*

*advice from suitably qualified and experienced safety and risk professionals. It was suggested that this might comprise some form of safety advisory panel that could work with the Board Safety Sub-Committee as required.”*

If acted upon, this statement would ensure that the Board had the capability to verify information presented to it as valid and would ensure that the Board had access to suitably qualified people to assist the Board in undertaking its high-level governance activities.

### 3.6 The Accountability of Managers

The RailCorp CEO initiated the development of Generic Management Safety Accountabilities, which will apply to level 2, 3, and 4 managers across the organisation (3). In February 2004 the Group General Managers signed specific safety accountability statements relevant to their area of accountability (4). It is intended that each management level will undertake a similar activity. It was not possible to evaluate the effectiveness of these specific improvement activities due to the short period of time they have been in place.

*The specific accountability statements do not have clearly defined, measurable, safety targets and KPIs (26).* This was acknowledged in the response to a specific question after a RailCorp presentation on 5 March 2004 (5) where it was stated “*Performance standards are yet to be developed*”. While there are plans to develop safety performance standards, because their format is yet to be determined, no assessment can be made about whether the targets and KPIs will be specific and detailed enough to allow effective, regular performance evaluation.

Safety KPIs are one tool to assist in driving and measuring improved safety outcomes. *To be effective they need to be supported by other management systems dealing with performance management and development.* In StateRail this was the Performance Development Scheme (6), which was reviewed by the StateRail Human Resources Group in 2003 (7). Specific comments from this review included:

*“There is little evidence that Performance Agreements are being used as intended, that is, to identify training needs, identify or plan work tasks related to broad organisational goals, nor to measure outcomes or performance and reward them as appropriate.” (8) and “The survey of agreements undertaken thus indicates that very few managers do specify tasks or required standards sufficiently” (9).*

*Performance management systems should contain clearly defined KPIs, assessment of effectiveness of activities to achieve those KPIs, open, honest feedback on performance and different consequences for both excellent and sub-optimal performance.* Without any of these components performance improvement from people at all levels of an organisation becomes problematic.

### 3.7 Systems for Monitoring SMS

*Questions on the systems available to monitor effective implementation of SMS improvement activities was closely examined by team members. Most responses indicated that within StateRail these systems were non-existent, with reliance upon the compliance auditing undertaken by external regulatory agencies such as WorkCover. When responses indicated that systems existed, additional questioning on the*

effectiveness and integration of those systems were asked, enabling assessments of whether those systems were effective and integrated throughout the organisation (37).

*Internal audit systems did exist within StateRail but they did not focus on the most important risk areas; much of the emphasis was on OH&S issues based on workplace safety incident frequencies. Because of this, the audit program did not focus on key risk areas, but rather, focused on high frequency risks* (which in many cases had a small overall risk impact). A recent example is the Occupational Health Safety and Safety Management System Audits currently being undertaken within RailCorp (10). The overall audit plan has a good risk evaluation matrix to ensure high risk areas are audited more frequently than low risk areas. Analysis of a January 2004 audit report (11) indicates that the audit was:

1. OH&S focused
2. Lacking detail
3. Provided no indication of which SMS elements were audited
4. Findings were not related to SMS components

### 3.8 *Reliance on the Regulator*

StateRail's reliance upon the regulatory agencies to monitor compliance with its safety management system does not meet the governance standards practised by other high reliability organisations. *Many organisations use independent third party organisations to audit their safety management systems.* For example, Qantas, BHP Billiton, BlueScope Steel and MTR Corporation (Hong Kong).

### 3.9 *External Auditing*

StateRail Safety Standard 2.001 Safety Responsibilities and Authorities, Attachment 4 titled "Safety Assurance Activities and Responsibilities" specifically mentions external independent audits focused on AS4292, AS4360 and AS4804-AS4801 (12). Despite this, when RailCorp was asked in March 2004 to "Please provide copies of most recent external audits conducted by all organisations mentioned" (13) the only external response they provided for StateRail was an MoT audit.

In March 2004 RailCorp was asked to "Please provide evidence that progressive safety validation audits have taken place"(14). In response to this request RailCorp produced a Special Audit report undertaken by SAI Global during February and March 2004 (15). This report detailed an audit requested by the Customer Service Group – Stations Operations. The scope of works requested by the group was:

"Proceed with the audit of the actions taken to close the items on the document titled "Safety Validation Action Point Tracker, specifically items (10 items listed)..... as tabled at the meeting.

*Your report should confirm that the actions taken have in fact occurred based on citing objective evidence. Note that for items where action depended upon proposed restructure, which was subsequently not implemented, no action is required.*

*You are not required to comment on the appropriateness of the "Issues" or the "Actions" shown in the document."*

The SAI Global audit comprised a desktop review of a number of documents presented by RailCorp and concluded that:

*“Based upon the objective evidence presented by RailCorp team, during the desktop audit SAI Global reports that action items (10 actions listed), have been verified to have a satisfactory close-out.*

*It needs to be noted that where actions have been transferred to other departments, these are followed up for successful close out. SAI Global, though, in this report has deemed such actions valid for proposed close out for Customer Service group – Station Operations”.*

Whilst the SAI Global audit provided evidence of action close out, the audit team was specifically tasked not to review the effectiveness of those actions. Documents provided by RailCorp provided the only means of verification. SAI Global undertook no other verification, such as on-site checking of document availability or on-site checking for implementation, at the direction of RailCorp. *Of particular note is that this audit was undertaken in February/March 2004 indicating that despite ongoing investigations such as the Waterfall inquiry, there remains an absence of critical self-examination of the effectiveness of improvement actions within the organisation.*

### 3.10 Change Management Risks

The SAI Global audit was not required to validate whether actions transferred to other departments had been accepted, noted and actioned by those departments. This could have been audited to ensure effective change management practices in the transfer of actions and accountabilities between departments. *The SCOI review team found that change management procedures and practices were non-effective within StateRail and that there was a general lack of understanding of the criticality of change management in the identifying and managing of risks brought about by change.*

### 3.11 Lack of Document Control

The SAI Global audit also reported

*“Some documents listed have been noted as ‘Uncontrolled Document’.*

These documents did not have version control/issue number and/or date of issue. This example of the lack of document control is consistent with the SCOI review team’s findings.

### 3.12 Risk Management: Reactive v Proactive

*The current risk management process is inadequate. It predominantly uses reactive accident/incident data rather than proactive hazard identification tools (33). While staff believe that they use risk assessment as part of their normal processes, analysis of documents reveals that they do not. Partly this is because the processes are not integrated and partly because staff have a poor understanding of hazard assessment. Hazard registers are often not adequate for assessment and mitigation of risk and formal risk matrix methodology is not followed to assess risk (34).*

*Risk management processes were inadequate to determine which key operations and activities should be monitored for safety performance. The risk profile that was developed was inadequate to effectively manage the risk of rail operations. Incident monitoring was the dominant monitoring system throughout StateRail. Because incident monitoring is an “after-the-fact” activity it is reactive and limits*

*organisational response to those incidents that have historically occurred. It was not forward looking nor proactive nor pre-emptive of key safety risks.*

### 3.13 *Prioritising Risks: A Necessary Process*

*Safety analysis results were not prioritised and ranked according to importance. Because of this, all hazards listed in the safety analyses became equal. Without systems in place to prioritise these risks, StateRail could not focus on the highest risk areas and could not create effective monitoring systems to ensure that those risks were appropriately mitigated.*

While there were systems to communicate safety issues to management, the weaknesses in the risk management and deficiencies in incident and fault reporting limited the effectiveness of these systems. *There appeared to be little communication of safety information between divisions within the organisation.* This is critical because many safety risks tend to reside at organisational and operational interfaces.

The RailCorp Safety Reform Agenda has an action “Development and documentation of risk framework – Risk Management Manual” (18) with an implementation date of fourth quarter 2004. *The requirement to develop and document a manual indicates that a systematic approach to risk management does not exist within RailCorp.* The RailCorp Accreditation 2004 Safety Milestones specified by the Ministry of Transport have extensive requirements for risk management including, “Within six months the Corporation shall demonstrate an ongoing process whereby all incidents with safety implications are analysed in accordance with the principles set out in AS5022, or demonstrated equivalent” (19). This milestone indicates that the Ministry of Transport requires improvement in the ability of RailCorp to manage risks.

### 3.14 *Modern Safety System Experience and Qualifications*

Interviews with senior line managers included questions on individual qualifications and their experience to lead and manage safety change within their areas of accountabilities. *Most line managers were unable to demonstrate any qualifications or training in modern system safety.* When asked specific questions to indicate how broad safety topics such as risk management or incident/accident investigation and analysis were managed within their areas, *the responses did not show a level of knowledge that would be expected from similar levels of management in high reliability organisations.* The majority of responses focused on the railways experience of individuals, with an explanation of how this then qualified them to either be accountable for safety leadership or be accountable for safety advice.

*The review team’s findings indicated that some StateRail senior managers responsible for safety did not demonstrate how to drive and lead safety performance improvement (52).* Interviews and document reviews illustrated that these *managers did not understand some of the fundamental concepts in a systems approach to safety management (35).* This was further supported by a senior manager who stated that the organisation did not have the required capability at middle and lower levels in terms of intellectual capacity and physical resources (51).

There was also *little evidence that specifically focused training was available for managers (30).* This was especially so for risk management training at all levels. Some risk management training is provided as part of the SMS recurrent training, however, it is inadequate for the purpose and not all people within the organisation attend this training (29).

Interviews with senior safety staff included questions on individual qualifications and their experience to lead and manage safety change within their areas of accountabilities. Many safety professionals do possess OH&S qualifications, but these tend to be of a general OH&S *nature and qualifications in system safety, human factors and risk management are lacking*. Many of the safety professionals have not worked in industries other than NSW railways (31, 32, 44).

The lack of technical safety knowledge, particularly in the senior safety professionals, together with a lack of experience in other industries is unacceptable and should not be allowed to continue. The change process facing RailCorp in improving its system safety processes is considerable and the safety professionals leading this process should possess *current, high quality system safety knowledge, especially in human factors and risk management, which can be integrated with the cultural and practical knowledge of the organisation. Safety skills and knowledge should be valued as much as rail experience, as the safety capability of the organisation needs to be improved*.

### 3.15 *Supervision Ratios*

Within RailCorp, accountabilities for supervision of train crew are shared by a number of different roles. Operations Standards Managers (OSM) are accountable for ensuring that drivers and guards are competent to undertake their normal train crewing duties. The ratio of OSMs to drivers and guards is, in some places was greater than 1:100 (20), despite Recommendation 14 from the Glenbrook Inquiry requiring a ratio of 1 OSM to 30 drivers. The current large ratio makes it very difficult for OSMs to achieve their accountabilities. Compounding this, many crews do not recognise the OSM as their supervisor and the OSMs are not accountable for many other activities involving train crew. The capability of the OSMs to undertake their role was also thought to be deficient (28).

### 3.16 *Communicating Effectively with Staff*

Many current work practices impact upon the ability of train crews to undertake their normal work activities safely. *Safety critical information is handed to drivers and guards at sign-on, or placed in their pigeonholes at work or, in some instances mailed to their home address. There is no system to ensure that the information is read, understood or included in the driver's Network Rules (47). There is often no face-to-face assessment of fitness to work on a daily basis (45)*. No single person has an understanding of why individuals are absent from work. Individuals with very little personal knowledge of the drivers or guards usually undertake investigation of incidents and discipline is generally provided through a committee discussion.

All these issues result in the *supervision of train crew being fragmented, ineffective and incapable of ensuring fit for purpose employees on a daily basis*.

This finding is reinforced by comments in the 16 March 2004 Safety Reform Agenda minutes (41). The entry in the minutes is "How can we expect the agenda to work when the underlying support is not there for our employees, gaps in support of train crewing – relying on other groups for facilities, supervision and support e.g. sign-in".

### 3.17 *Safety Committees – Comprehensive v Narrow Focus*

Occupational health and safety (OH&S) committees were prevalent throughout StateRail and now RailCorp. These OH&S committees were very effective in educating front-line staff in worker safety. Committees were well respected and have effected



change within depots to enhance worker safety. The OH&S program was very well developed and managed, and especially effective with the use of these committees to assure that corrective actions were implemented and validated. Front-line staff had a fairly good understanding of workplace hazards and how to prevent workplace accidents. The safe working program had been effective as an institutional device to ensure workplace safety. *However, very little attention is given to managing risks and the effectiveness of control measures.* Feedback on actions taken to improve safety is not done well, with concerns expressed by many people interviewed as to the lack of timely feedback (53).

## Discussion

### 1. Designing a System Safety Process

The overall purpose of the *system safety process* is to identify hazards, eliminate or control them, and mitigate residual risks.<sup>1</sup> *An effective system safety program requires the integration of management oversight with engineering and human factors analysis to provide a comprehensive, integrated, systematic approach to managing risks.* This would provide the basis for ensuring that both technical and operational activities within RailCorp are effectively managed to ensure that the railway, its employees and operations are always fit for purpose, thereby ensuring the safety and effectiveness of the railway.

Planning and implementing design, construction, maintenance and operational activities should be conducted through the use of quality systems as defined in the definitions to this report. This framework would require RailCorp to be able to substantiate that all work was done to approved standards (set by RailCorp or ITSRR); by competent and authorised people; who are part of a competent organisation (judged by ITSRR through accreditation); whose work was able to be certified as correct and accepted by RailCorp and that the work undertaken ensured the risks across the organisation were controlled to acceptable levels.

Implementation and ongoing operation of such a framework requires advanced skills in system safety engineering and risk assessment overlayed with quality management skills. This capability appears to be lacking within RailCorp.

There is a large difference between the risk management skills of StateRail and those of RIC. The RIC Risk Management (AM 0014 MM) is a sound document on which to base risk practices. In contrast, the risk focus of StateRail appears to be very OH&S centric and very basic in its understanding of vulnerability assessment (32).

### 2. Implementing a System Safety Process

High reliability organisations will also have robust systems to ensure that safety systems are fully implemented and effective at all levels of the organisation.

#### (a) A need for an effective document control system

*Document control is not well practised throughout RailCorp, with a consistent review finding being the lack of a formal, well-used system for document control.* While a Safety Standard on Document Control exists (21), the review team found many examples where this standard was not effectively or uniformly applied across the organisation (36).

Many documents marked “Draft”, without any form of version number or print date, were provided to the review team. One reason for the presence of some draft documents is the level of policy and procedure development currently underway within RailCorp. It appears,

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<sup>1</sup> System Safety Engineering and Risk Assessment, Nicholas Bahr, Taylor & Francis 1997

*however, to be accepted practice that documents would remain in draft form, even when fully implemented throughout the organisation. Thus, many documents produced to the review team as evidence of a formal procedure had the StateRail title and logo but were still in draft form. Many of these documents did not have any evidence of authorisation (40).*

Documents need to be developed and discussed as part of the necessary consultation around any improvement plan and this requires circulating a number of differing draft versions. Version control of draft documents is important. It is only when a document is in its final format that it should be authorised, distributed and implemented throughout the organisation. The lack of any defined system outlining who is accountable for authorising procedures at organisational and business unit level contributes to the lack of good document control.

There was also a lack of document hierarchy for many procedures, despite Safety Standard 9.002 (22) specifying the document hierarchy to apply within StateRail. There was good document hierarchy in some areas, such as PFM, although other areas did not apply this standard uniformly. Policy and procedure documents developed at corporate level are generally too broad and non-specific to be applied at the operational level. They provide a basis for the development of local procedures and work practices that are specific to local safeworking requirements.

*The review team noted that different versions of a draft document were occasionally used in different parts of the organisation as a justification for the actions being implemented. One particular activity where this occurs is in the development of local emergency response actions that are being developed to different versions of the Network Incident Response Plan. No actions should be initiated in any area on the receipt of a draft document (39).*

It is good practice to ensure that any new or major revisions to policy and procedural documents are accompanied by an implementation plan that includes a definition of the timeframe to implement the document, information on why the document change has been undertaken and an audit plan.

#### **(b) The need for an effective implementation strategy**

Implementation of change, including the introduction of the safety management system, new policy or practices is not undertaken well across StateRail or RailCorp (27, 42, 49). *Implementation of any change within an organisation as complex and with as many organisational levels as RailCorp requires a comprehensive plan that includes time for consultation with employees, an appreciation of the context and purpose of the change, details of exactly what should be implemented, a date by which implementation is to be completed, consideration of the social and industrial impacts of the change and an audit plan to ensure both close out and effectiveness of the change. Prior to the change being implemented there should be a risk assessment of the change including a potential probability analysis. There is a real risk that RailCorp will be ineffective in implementing safety improvement due to poor implementation strategies.*

Effective implementation requires considerable time and effort throughout an organisation and implementation strategies must be prioritised and staggered over time to ensure effectiveness. This impacts upon the number of programs that can be implemented over a given time period. Attempts to implement too many programs over too short a time period will result in ineffective implementation.

Effective implementation strategies allow front line leaders to be given time to implement the change and to then to be held accountable for the success or otherwise of that change within their area of accountability.

**(c) The need to define supervisor accountabilities**

Effective supervision requires that a supervisor is held accountable for the work output of a number of employees over whom the supervisor has appropriate levels of authority. The number of individuals a supervisor can manage depends upon many factors including the geographical and technical nature of the work. Supervisor accountabilities should include:

1. Communicating directly about safety critical issues and to assess individual understanding of those issues.
2. Communicating information relevant to organisational and departmental issues directly to employees.
3. Monitoring performance, including rewarding and recognising positive and negative outcomes.
4. Daily assessment of fitness to work through face-to-face sign-on procedures.
5. Investigation of incidents involving employees.
6. Coaching employees.
7. Disciplinary interventions.

*Supervisors also require a clear understanding of whom they are accountable for, a clear definition of the output required from their work teams, management support, regular performance reviews against defined targets, coaching and a training plan to ensure they have a broad range of people management skills.*

**(d) The need for a clear definition and understanding of terminology**

The review found that *although modern system safety terminology was widely used across StateRail and RailCorp, implementation of many of the systems designed to manage safety was inappropriate and ineffective.* One reason for this is inadequate understanding of the meaning and intent of this terminology. One example of this is use of the term “Safety Management System Training” for training that is not about the safety management system but is concerned with very selected elements of such a system and is targeted towards safeworking qualified staff who comprise approximately 30% of all RailCorp staff. A second example is the term “Risk Management” when the focus is predominantly on reactive hazard identification and frequency of events rather than a complete integrated approach to risk management involving system safety and integrity with consequence and analysis of high and low probability events.

A specific element of terminology is the term “Safety Critical”, which has many uses throughout RailCorp - e.g., safety critical workers, safety critical information, and safety critical systems. A concise definition, uniformly applied across the organisation could not be found. Employees, especially train crews, are provided with large amounts of “safety critical information” even though that information may not impact upon their ability to undertake their duties safely. The term “Safety Critical” should have a clear definition with well-defined consequences for not either applying the term accurately or not following Safety Critical advice (42, 43, 48).

## Conclusions

### 1. Current Systems are Inadequate

Systems currently in place to assure governance of system safety, at all levels of the organisation including the Executive Board, are ineffective and incomplete. Only limited activities are underway to correct this deficiency, especially at a whole of organisation level.

### 2. The Need for Proper Accountabilities

Systems to allocate and monitor accountabilities have been ineffective and incomplete. While improvement activities to correct this deficiency have been commenced, it is not possible to evaluate their effectiveness due to the limited time that they have been in place.

### 3. The Need for an Overarching Management System

RailCorp lacks an overall, strategic and integrated management system that addresses safety, risk, engineering and operational authority. Whether it is called a *Quality Management System*, an *Engineering Management System*, a *Systems Engineering Management System* or *System Safety and Risk Management System*, there is a critical need for an overarching management system that assigns authority and accountability and manages responsibility based on competence to ensure fitness for purpose.

Such systems would recognize the necessity for the organization to manage itself in a similar manner to other high reliability organizations with a strong risk management capability incorporating consideration of risk mitigation strategies and would include elements or policies such as:

1. Human Factors.
2. Acceptance into Service (equipment and support).
3. Design Change Control (review, approval, acceptance).
4. Configuration Management.
5. Documentation Control (validation and verification of content, review and approval, distribution control, version control).
6. Project Management.

The most important factor is that all elements are part of a fully integrated framework since there are risks and dependency associated with all elements. There was no evidence to suggest that RailCorp has such an integrated framework.

## 4.3.2 Train Operations

### Introduction

The term 'train operations' is highly generic and is frequently used in different contexts and with varying meanings. Consequently, it is worth defining the term for the purposes of this report, prior to examining the findings arising from the safety review.

*Train operations* is about moving trains safely and reliably between points on the network. To achieve this, three overarching components must be effectively managed, namely:

1. Physical elements. Availability of a train and necessary infrastructure in good working order, along with the necessary vacant space on the infrastructure, or path, along which the train can travel.

2. Safeworking systems. Defined rules and procedures governing the manner in which the people involved in the movement of the train will behave so that there is consistent understanding and practice among those people.
3. The human element. Availability of properly trained and competent people to undertake the movement in accordance with the safeworking system and rules.

A. *Findings - The Physical Elements*

In terms of the physical elements of the railway, the review examined the following specific elements associated with train operations:

1. Implementation of the Advanced Train Running Information Control System (ATRICS).
2. Capital works division of RailCorp and, in particular, the Vigilance Project.
3. Passenger Fleet Maintenance division, which is responsible for maintaining the entire RailCorp fleet of trains.

1. ***Key review findings in relation to these areas are:***

*ATRICS*

- 1.1 ATRICS is a new train management system used by signallers to manage and control the passage of trains through the network. While a type certificate was issued for the design of ATRICS, no evidence was provided to indicate that a valid risk analysis was performed by StateRail prior to implementing ATRICS in several control areas.
- 1.2 ATRICS changes the way in which signallers interact with the signalling system and the interlocking. As the safety analyses undertaken as part of the introduction of ATRICS focused on the technical operation of the system, consideration was not given to the broader, network-wide risks. For example, as detailed training was not given to signallers of the manner in which ATRICS processes instructions that a signaller might give to the system, signallers do not have sufficient awareness of how ATRICS might respond to certain commands they give to the system.
- 1.3 At the time of the review, the regulator could not identify a formal variation to the accreditation of StateRail for the introduction, or subsequent significant modification, of ATRICS. Several significant safety critical changes have been implemented in ATRICS without the initialisation of a formal notification to vary the basis of accreditation, for example with respect to the Stop and Block function or the modifications to the Automatic Route Setting to prevent setting of conflicting moves when a SPAD is authorised. Significant or material changes that result in a variation to the basis of accreditation require formal communication to the regulator to ensure that significant changes to vital operational equipment are subject to a thorough risk analysis and that any risks that might be introduced as a result of proposed changes are effectively controlled prior to the system becoming operational. This situation points to a lack of clear understanding between the regulator and the operators, of the circumstances in which there is a requirement for the operator to advise the regulator of an intention to vary the basis of accreditation.

- 1.4 ATRICS should be considered a latent hazard of considerable concern, not because of the quality of the product, but because it is not fully understood, at a system level, and because the risk is not being managed at the operational level.

## 2. ***Procurement Process***

- 2.1 The capital works procurement manual only describes processes from a business perspective and contains no detailed guidance on specialist areas such as systems safety programs or human engineering programs that may be required to be conducted as part of the *design and development activities* undertaken as part of the procurement process (54, 55).
- 2.2 Robust safety analysis tools were frequently not used in the design of new systems or in the modification of current systems. RailCorp did not produce evidence to indicate that a robust safety analysis was part of the design review and approval process. A robust safety analysis during the design and acceptance processes of the Tangara safety systems may have identified the deadman pedal design flaws and operational hazards that contributed to the Waterfall accident.
- 2.3 Examination of the project to install vigilance systems in the train fleet identified these weaknesses in the procurement processes:
  - Specification for the new vigilance systems fails to adequately cover reliability requirements for the system, including what measure is to be used to assess reliability and the level of confidence required for reliability assessments (56, 57).
  - There is no evidence that specialist human engineering and systems safety engineering skills have been engaged to assist in the vigilance systems project (58, 59).
  - The test plan for the new vigilance systems does not explicitly link testing activities to the requirements of the specification (60, 61).
- 2.4 When new equipment is purchased, or there are significant changes to existing equipment, there is no formal process of acceptance into service to ensure fitness for purpose or design integrity.
- 2.5 Fleet safety critical items are not identified, and there are no condition standards for safety critical items (62, 63).

## 3. ***Maintenance***

- 3.1 Fleet maintenance plans have not been revised since 1995 and maintenance plans are too theoretical in nature. This situation results in a disconnect between the formal requirements in Technical Maintenance Plans and standard practice on the shop floor. Also, maintenance plans are not fully implemented at depots and the SCOI review found evidence of unauthorised procedures being used for maintenance activity on critical safety systems (vigilance and deadman systems) (64, 65, 66, 67).
- 3.2 Whilst several sections within passenger fleet maintenance have an adequate level of document control other sections have not.

- 3.3 The maintenance information systems currently used, METRE and MIMS, are inadequate and need to be enhanced to ensure that maintenance activities are fully documented. In particular, the MIMS system should incorporate a work order system as, currently, there are no individual sign-offs on maintenance which has been undertaken (68, 69).

#### **4. Training**

- 4.1 Training provided by ART is not meeting the needs of maintenance personnel. Additionally, there is no overall training plan covering PFM, and there is currently a backlog of personnel who require safety and technical training (70, 71, 72, 73).

#### **5. Passenger Fleet Maintenance Issues**

- 5.1 Fatigue management has not been introduced into PFM (74, 75).
- 5.2 There is a lack of integration between PFM and capital works with the result that, when fleet modifications are made to the configuration, PFM may not necessarily have the required technical documentation, training, special facilities and tools and spare parts, among other things, to properly maintain the fleet (76, 77).
- 5.3 Emergency preparedness within passenger fleet maintenance is unsatisfactory (78, 79).
- 5.4 Random drug and alcohol testing is not conducted within passenger fleet maintenance (80, 81).
- 5.5 There is no identified individual responsible for judgement of significance such as a Chief Engineer or similar technical integrity authority.

#### **B. Findings - The Safeworking Systems**

The content of the safeworking systems was not examined in detail by the review. There were two reasons for this. First, the safeworking systems were not identified as a significant contributory factor to the Waterfall rail accident. Secondly, the safeworking systems had been subject to a comprehensive rewrite in the aftermath of the Glenbrook rail accident.

Consistent with the recommendations contained in the final report of the Special Commission of Inquiry into the Glenbrook rail accident, the project to rewrite the safeworking units paid special attention to eliminating conflicting material, repetition and ambiguities in the safeworking units. It also focused on ensuring that the new Network Rules and Procedures were drafted in simple language, to a predefined literacy standard and that they were independently validated.

The foundation for the review was AS4292, the Australian Standard for Railway Safety Management, AS4360, the Australian Standard for Risk Management and the National Codes of Practice for Defined Interstate Rail Network. In addition each individual rule was subjected to independent risk assessment. The new Network Rules and Procedures covering work on track were implemented on 4 November 2001, and the remaining rules and procedures were implemented on 1 December 2002.

The review team considered the Network Rules and Procedures to be reasonably well designed and managed. (82)

At this stage, amendments to the safeworking system, which can result from feedback from operational personnel, are issued in the form of SAFE notices. Regular review and update of

the Network Rules and Procedures occurs at intervals of between three and six months, at which point the amendments made through SAFE notices are incorporated.

In general, the review found that RIC had a sound document control system for its Network Rules and Procedures, with appropriate control procedures. However, there were some reports that weaknesses in the system for distribution emanate from the delivery of documents in bulk to a StateRail distribution officer, for example a Crew Area Manager, who is then responsible for distributing the documents to train crew. This creates a situation where it is not possible to confirm that all personnel have the most recent information (83).

### *C. Findings – Human Systems Integration*

Four broad groups of personnel are involved in train operations:

1. **Train Control** – These personnel operate from the Rail Management Centre and manage train paths for the safe and efficient movement of trains within a defined, but extended, geographical area such as from Bondi station to Waterfall station. There are four modes of train operations, namely normal, degraded, maintenance and emergency. When train operations are normal, the train controller does not intervene significantly in train operations. However, in all the other modes, the train controller assumes responsibility for planning, prioritising, co-ordinating and managing activities to restore services safely and promptly.
2. **Signaller** – Signallers are responsible for setting routes to enable the safe, efficient movement of trains in a restricted geographical area such as Engadine to Waterfall. They have authority to divert rail traffic to avoid unnecessary delays, but must keep train controllers and other signallers informed about delayed train movements (84).
3. **Train Crews** – Train crews (drivers and guards) are responsible for operating trains in a safe and efficient manner as well as the safety of other crew and passengers (84).
4. **Station Staff** – Station staff are responsible for facilitating the movement of passengers on and off trains at stations. In addition, certain station staff are qualified in safeworking, which enables them to perform duties relating to the safe movement of trains such as providing hand signals to the train guard that all passengers are clear of the train and it is clear to close the train doors and for the train to depart the station.

Significant findings from the review in each of these four areas are outlined below.

### **Train Control**

1. Systems for assessing the performance of senior personnel are not rigorous, with position descriptions for personnel only having general statements regarding safety accountabilities. This absence of formal safety measures or key performance indicators renders it difficult to ensure that personnel are meeting their safety accountabilities (85, 86).
2. A system for monitoring the performance of some train controllers exists, with train graphs signed by controllers and reviewed by supervisors. Train controllers are subject to workbook assessments every two months (87).



3. There was a general lack of awareness of existing safety management plans, such as the Safety Management Plan 2002-2005, among senior management responsible for train control. Part of the reason for this lack of awareness appeared to derive from the fact that the personnel in the Rail Management Centre had had little direct involvement in preparation of the plan, leading to a lack of ownership of safety plans in the Centre. Furthermore, personnel in the RMC had a poor understanding of what a safety management system was. They also lacked an understanding of the criticality of risk controls, that is the prioritisation of safety risks over which they had a direct controlling influence, with the possible result that significant risks may not be given sufficient attention.
4. Two different versions of the StateRail Network Incident Management Manual were available in the RMC. One was dated December 2002 and another was in draft form and dated September 2003. It was not clear to the review team which plan was being invoked by the RMC to deal with network incidents. This can lead to confusion and inconsistent response to network incidents, with the resultant possibility of introducing safety risks into incident response. Furthermore, while the Incident Management Plan nominates the Chief Operations Officer as the co-ordinator in emergencies, there was confusion as to who exactly undertook this role within RMC.
5. There was an inconsistency between the documented roles of personnel and the actual duties they performed. For example, on more than one occasion roles assigned in documentation to positions within the RMC were not actually being performed by the incumbent of that position and were in fact being performed by staff in a different position within the RMC. This situation can increase safety related risk through confusion and inconsistency in the performance of specific roles.
6. Training provided by Australian Rail Training at Petersham is generally regarded within the RMC as not meeting its needs. RMC has had to organise its own specific training to ensure that its needs are met. Such training may not be developed in accordance with the State Rail Authority Training Policy and Procedures leading to inconsistency in approach to safety training.
7. There are insufficient personnel within the RMC to ensure that fatigue management requirements can be met.
8. RMC specific procedures and protocols are not well documented. The protocols manual is merely a collection of presentations given to personnel when the RMC was established, which have subsequently been collated into a manual.

### *Signallers*

1. Supervision, performance management and performance assessment for signallers requires improvement. This, coupled with the fact that at least one major facility had not undergone re-certification of signaller competency, could lead to a situation where there are personnel performing signalling duties without the necessary skills or knowledge to do so safely. It is understood that a performance management process for signallers is currently under development.
2. There is a lack of position descriptions for some management positions within signalling leading to a poor understanding of roles and accountability within supervisory positions in this area.

3. Training for signallers does not focus on capacity to perform their safety critical functions but appears to be more based on ensuring that they have the necessary knowledge of the rules and procedures.
4. Fitness for duty assessments appear to be locally managed, rather than being the product of clear network-wide policies and procedures. This raises the possibility of inconsistent application of fitness for duty assessment in different signal boxes.
5. Insufficient attention has been given to ensuring that there is an appropriate method of shift handover in signal boxes. This introduces risks associated with the failure of the outgoing shift to fully inform the incoming shift of the exact state of the area managed by that signal box.
6. The current system for communicating safety critical documentation to signallers is reasonable as far as the network rules and procedures are concerned, but is less than reasonable for other information such as general orders and special train notices. Specifically, there is no system to ensure that signallers have received, read and understood documents such as special train notices.
7. Significant concerns were identified with the introduction and management of ATRICS by StateRail as part of the metropolitan network. These are covered in a separate section of this report dealing with the ATRICS system.

#### *Train Crew (Drivers and Guards)*

1. Physical and administrative barriers, particularly in the case of suburban train crew, inhibit train drivers and train guards from recognising themselves as part of a team. For example, they are covered by different awards and consequently work different shifts, they sign on at different locations and they have different meal rooms. These barriers need to be removed as part of any move to promote train crew teamwork.
2. While train crew believe that they are properly trained and certified for their roles, it was clear that they had very little understanding of what constituted a safety management system and were generally only capable of assessing risks relative to their understanding of their tasks. Additionally, evidence was gathered to indicate that emergency preparedness training for train crew was poor.
3. A consistent focus on service reliability and business systems within StateRail reinforces a focus on on-time running, for example, the IIMS system, which allocates responsibility for all delays on the system without recognising whether delays are safety related or not. A further example is the Train Crewing Business Plan, which establishes a priority of providing adequate numbers of train crew to meet business needs.
4. Supervision of train drivers is inadequate, with some drivers unable to identify their supervisor. The current ratio of Operational Standards Managers (OSMs) to drivers fails to meet the Glenbrook recommendation of a ratio of 1 OSM to 30 drivers. For example, there are 850 drivers based in Sydney and only 8 OSMs. The Train Crewing Business Plan October 2003 does not include a specific action to improve the ratio of OSMs to train drivers.
5. The role of OSMs in assessing the practical competency of train crew is not being effectively performed, as the OSMs do not have sufficient time to undertake this task properly.

6. Establishment of the OSM positions has not been effectively managed, particularly with the change from an inspectorial role to a team leader role. Selection and training of OSMs appears to have failed to properly equip them with the skills needed to perform an effective team leader role.
7. There is a lack of clarity throughout the train crewing area in clearly defining the accountabilities, responsibilities and authorities of managerial staff.
8. Procedures for attesting crew fitness for duty are inconsistently applied, with the availability of 'joiner rights' to crew defeating the purpose of attestment. 'Joiner rights' also enables train crew to avoid random drug and alcohol testing regime.
9. Fatigue management is based on master roster and not on actual hours worked. Given the practices within train operations involving crew swapping shifts and working overtime, the current approach to fatigue management is ineffective. Action is underway to implement a system that will enable the application of FAID scores to actual shifts worked; however, this action is behind schedule (system was supposed to have been implemented by February 2004).
10. While there is currently a Train Crewing Business Plan that addresses safety issues as well as a Train Services Safety Improvement Program (TSSIP), some areas of train crewing are not aware of this program. Furthermore, while these programs focus on improvements, they fail to give adequate recognition to the importance of maintaining the effectiveness of existing controls through activities such as audits and inspections. The TSSIP is also reactive in that it has been built upon findings from previous accidents. A true system safety program approach has not been taken in its development.
11. The approach to investigating and dealing with safety related incidents involving train crew is inconsistent. This response can vary from disciplinary action, to psychometric testing at Petersham, to no action being taken. There is a continued language of 'blame and discipline' being used, which is defeating some efforts within the organisation to adopt more error tolerant management approaches. One middle level manager referred to it as a belligerence culture. (Audit Interview LN08BM04 held on 6 Feb 2004)
12. The management of OH&S issues relating to train crews is reasonably effective, with train crew indicating that they saw tangible improvements as a result of these safety committees' activities. Safety targets are set in the OH&S area and monthly meetings are held with staff.
13. Communication and control of the delivery of safety critical information to train crew is poorly managed and there is no process to ensure that train crew understand information that is provided to them in documentary form.
14. Mechanisms in place to enable train crew to report defects identified with rolling stock are not working effectively, with train crew expressing their frustration with reported defects failing to be rectified and not receiving any form of feedback.

### *Stations*

1. In general, there was a higher degree of safety awareness and management at stations than other divisions of RailCorp. However, this was stronger in relation to OH&S and emergency preparedness, than it was in regard to the safety of train operations.

2. OH&S appears to be well managed at stations, with hazard identification and safety signage of a high standard and staff awareness also high. However, the return to work system sometimes leads managers to place workers in inappropriate roles.
3. The SMS training conducted by ART at Petersham was not considered to be very relevant to activities undertaken by station staff.
4. There is no specific rail related Disaster Plan (Displan) to identify the risks to emergency services responding to a rail incident and which clearly defines methods for controlling these risks.
5. All stations had detailed local emergency plans that had been formulated in accordance with the State Rail Safety Plan 2002-2005. These plans were distributed around stations and listed specific individual responsibilities. However, individual authorities were not identified. Furthermore, the plans failed to adequately address re-entry and return to normal operations procedures.
6. There are regular emergency drills and desk top exercises at stations but ensuring that all staff are properly prepared for an emergency is inhibited by the high turnover of station staff. However, the low frequency of exercises involving all emergency services personnel also inhibits the preparedness of station staff to deal with actual emergencies.
7. Two separate emergency response plans exist for Central Station. One appears to be OH&S driven and focuses on the evacuation of station staff, while the other is based on the standard template that exists at all stations and is more aligned with the Network Incident Response Plan. The existence of two separate plans could create confusion with the resultant introduction of risk in an emergency.
8. A process is in place for identifying, reporting and recording incidents and accidents that occur within station precincts. While this information is recorded in the IIMS and SAD databases, station masters report that they do not have access to these systems and are therefore unable to review the performance of their station.
9. While position descriptions for station staff identify their accountabilities for safety and station staff are aware of their safety responsibilities, the limits of authority are not clearly defined. For example, the authority to close a station is not clearly defined.
10. Some stations are understaffed with excessive levels of overtime being worked. This affects safeworking positions involved in the flagging of trains.
11. There was a mismatch between priorities identified by the corporate area of RailCorp in regard to major hazards and those that station staff identified as their major hazards.
12. There was a lack of document control, particularly in regard to information being sent to stations by corporate RailCorp. Consequently, station staff felt that they were swamped with unnecessary paper. This means that station staff could fail to pay proper attention to key documents and thereby not be aware of important safety related information.
13. Basic first and second party audit regimes exist for station operations, based on the 15 elements of the State Rail Authority safety management system. However,

it was noted that the audit checklists only verify that there is a system in place and do not necessarily verify compliance with or the effectiveness of that system.

### 4.3.3 Human Factors

#### *Introduction*

The physical hazards of rail operations are well known. However, as in industries involving systems made up of people and technology, it is human factors that constitute the greatest area of risk. Such systems, epitomised by rail, aviation, nuclear, petrochemical, and marine, are often referred to as 'socio-technical systems'.

To achieve progress in safety, every accident and incident, no matter how minor, should be considered as a failure of the system, and not simply as the failure of a person, or people, even though human errors or violations will almost certainly have been involved at some stage in the occurrence.

Because of the central role of human factors in the safety of such systems, a detailed and comprehensive knowledge and understanding of human factors is essential to the effectiveness of any safety management system.

#### *The Human Contribution to Systems Safety*

**The negative dimension.** Considered systemically, the human factors contribution to accidents and incidents is close to 100%, for most well defended, sociotechnical systems. It is almost impossible to find an accident or serious incident in which human factors have not played a major part, from initial design stage, through to production, operation, procedures, maintenance, financing and regulation.

**The positive dimension.** People also play the primary role in maintaining and enhancing the safety of sociotechnical systems by detecting and rectifying problems before they escalate into accidents, for example, by the application of emergency procedures.

#### *Systems Safety*

For almost every accident or incident in complex sociotechnical systems, the subsequent investigation has shown that: The main contributing factors were present before it happened.

2. In some cases they were common knowledge, and few people were surprised by what occurred.
3. In all cases, they could have and should have been identified and rectified before the accident or incident.

#### *Human Factors - Definitions*

The term 'human factors' refers to the study of humans as components of sociotechnical systems. The field of human factors is concerned with understanding the performance capabilities and limitations of the individual human operator, as well as the collective role of all the people in the system who contribute to its output, aspects such as 'organisational culture'.

Human factors covers many areas, including:

- Perception
- Memory
- Learning and motivation

- Human information processing
- Fatigue
- Ergonomics
- Personality – interpersonal relations
- Communications
- Human–computer interaction
- Error
- Culture – national, professional, organisational
- Anthropometrics

The consideration and analysis of human factors in the safety of a sociotechnical system, such as a railway, is not an attempt to minimise the responsibility and accountability of individuals in the system. Its objective is to understand human performance in the context of the systems in which the people concerned are components, and to consider all the factors that may influence their behaviour.

Systemic factors that influence the performance of people in a system include: personnel selection policies and methods, training, procedures, equipment design, working conditions, and culture.

To illustrate: when considering the systemic dimension of human factors in an accident investigation, there is a need to determine whether any errors or violations committed by the people involved may have involved organisational factors, such as: poor training, badly written procedures, inadequate documentation, information overload, lack of recent experience on a task, deficient equipment design, poor supervision, the organisation's failure to take action on previous errors or violations, commercial, management or political pressures to take short cuts, and so on.

In addition, with regard to the individual dimension of human factors, the investigation needs to consider whether the immediate demands of an emergency or crisis situation placed demands upon the people involved that were outside their human performance capabilities and limitations. For example, if a driver failed to see an object on the track, the investigation needs to determine whether it was because his visual system was incapable of detecting the object at the distance, lighting and background conditions involved in sufficient time to react and to take emergency action to stop the train.

### *Human Error and Systems Safety*

Human error is involved in many accidents and incidents. Error is a normal characteristic of human behaviour, and that while its occurrence can be moderated, it can never be entirely eliminated.

To emphasise this point, in many accidents, it has been found that some of the 'best' people make the 'worst' errors. In other words, mistakes with catastrophic outcomes are sometimes made by people whom, because of their outstanding abilities, would be the ones least expected to make such errors. Consequently, socio-technical systems must be designed to be error tolerant, so that when the inevitable human errors do occur they are 'trapped', and do not lead to failures of the system. An example of error tolerant design is that, if a driver passes a signal at danger, there is a mechanical device that stops the train, and prevents the driver's error from contributing to an accident.

The nature of human error is now well understood. The basic characteristics of how humans process information are well known. The kinds of systemic conditions that increase the probability of operator error have been identified. Consequently, while human error can never be eliminated, it can be managed within an integrated safety management system that implements controls for circumstances in which errors occur.

### *Violations*

‘Violations’ by people in a system involve persons deliberately not adhering to established rules and procedures, for example, drivers deliberately exceeding speed board limits. It is important to emphasise that most violations do not have a malicious intent: they are usually the result of well-intentioned employees doing their best to ‘get the job done’ or simply following ‘accepted practice’. For example, one predictor of the occurrence of violations in a system is a belief among operators that the rules have to be bent to get the job done. In the example above there may be a genuine belief among drivers that one has to exceed the speed board limits occasionally to achieve on time running.

Because much is known about the factors that increase the likelihood of violations in a sociotechnical system, as is the case with errors, violations can also be managed, as can the associated risks.

### *Human Factors in Safety Management Systems*

As noted earlier, human factors at the individual and systemic levels are critical to the safety of sociotechnical systems such as railways. Therefore, an effective integrated safety management system must contain provision for the incorporation of human factors concepts and knowledge across the system. This point is made strongly by Mavor and Wickens in the *Handbook of Human Systems Integration* (Booher, 2003)

*‘An effective human factors program presumes the activity of knowledgeable human factors specialists. In addition, it is important that researchers, system developers, and developers of policies, procedures, and regulations share appreciation of the importance of human factors activities and understanding of fundamental human factors principles’. (p. 872).*

The human factors aspects of StateRail, and now RailCorp, identified by the review team will be considered in the context of the matters discussed above.

### *Key Findings - Human Factors Policy*

*Despite the critical role of human factors in every element of an integrated safety management system, neither StateRail nor RailCorp has a documented human factors policy. (88)*

An example of an excellent human factors policy is that of the US Federal Aviation Administration. Their policy is as follows:

**8. *POLICY.*** *Human factors shall be systematically integrated into the planning and execution of the functions of all FAA elements and activities associated with system acquisitions and system operations. FAA endeavours shall emphasise human factors considerations to enhance system performance and capitalise upon the relative strengths of people and machines. These considerations shall be integrated at the earliest phases of FAA projects.*

**9. OBJECTIVES.** *The human factors-oriented approach is to:*

- a. Conduct the planning, reviewing, prioritisation, coordination, generation, and updating of valid and timely human factors information to support agency needs;*
- b. Develop and institutionalise formal procedures that systematically incorporate human factors considerations into agency activities; and,*
- c. Establish and maintain the organisational infrastructure that provides the necessary human factors expertise to agency programs.*

**10. RESPONSIBILITIES.** *To ensure that human factors are systematically included in FAA endeavours, executive directors and assistant and associate administrators shall, as appropriate within their organisational purview, establish and assign responsibilities to accomplish the policy and objectives cited in paragraphs 8 and 9.*

1. In early 2003 StateRail appointed a highly academically qualified and experienced human factors specialist from Europe to a newly created position of Manager Human Factors. (89) The objective of creating this position was to establish a human factors resource and capability within StateRail to enhance the effectiveness of the organisation's management of system safety.

This appointment was a positive step, and was a credit to the senior managers involved. During her subsequent tenure of approximately 12 months, the Manager, Human Factors, was able to make a significant contribution to the organisation - for example, in developing and successfully trialling a basic CRM course for train crews, with the support and active cooperation of both drivers and guards, several of whom appeared in the training videos (90).

However, some key senior managers in StateRail and RailCorp did not understand or recognise the benefits of having a human factors specialist in the organisation, and full use was not made of this specialist resource by integrating human factors into the organisation (91).

The Manager Human Factors left RailCorp in March 2004. Fortunately, her expertise will not be lost to the rail industry in NSW, as she has joined ITSRR, where it is hoped that the maximum use will be made of her knowledge and expertise.

Apart from the Manager, Human Factors, there were no other personnel within StateRail and RailCorp who possessed appropriate tertiary qualifications in human factors (92). Now that this specialist has left RailCorp, there is a major deficiency in the organisation's capability to implement a modern safety management system.

2. In order to ensure that key personnel, ranging from the CEO and Board to frontline operators, have a basic knowledge of human factors, an organisation-wide human factors awareness program is required. Such a program has not been implemented within StateRail or RailCorp, and there was no indication that RailCorp intends to fill the vacant Manager Human Factors position (93).
3. This situation indicates that, as an organisation, RailCorp does not have an understanding and awareness of human factors, and the critical role of human factors in safety management systems. This remains the case as evidenced by the fact that there is no human factors policy in the RailCorp Safety Reform Agenda. The term 'human factors' does not appear in the agenda (94).



4. *However, a positive sign is that there has been a recent initiative to establish a Crew Resource Management (CRM) program in RailCorp, and to improve the use of simulators in driver training.* Originally developed in the aviation industry, CRM is an example of the application of human factors concepts and knowledge to a training program. This issue is discussed further in this report in the section on training.

A contract has been let with Air New Zealand to provide CRM and human factors training, together with improved simulator training. The consultant involved was a member of the same research team in Europe as the former Manager, Human Factors in RailCorp. The program has been implemented in the German rail system, and was the subject of a presentation in December 2003 at the Rail Day of the conference of the Australian Association for Aviation Psychology.

*While this is a positive and laudable step, it is essential that the new program is integrated with the RailCorp training program as a whole, and that it is allocated the necessary time and resources to implement it as effectively as has been the case in the German rail system. This important initiative must be followed through and sustained to be fully effective in the long term.*

#### *Key Findings - Organisational Approach to Human Error and Violations*

As noted earlier, contemporary safety management practice recognises that, while the probability of errors and violations can be reduced by measures such as improved training, they must be managed. *To achieve this, there is a need to develop policies to manage errors and violations when they do inevitably occur in the system.*

1. The review found that, despite some attempts at reform, in reality, StateRail/RailCorp's *approach to error and violation management is still governed by the traditional 'blame and train' paradigm* (95).
2. Two significant documents identified by the review team that related to error and violation management were the *No Blame Investigation Procedure* and the *Safeworking Policy* (96). *The No Blame policy document does contain a clear statement of purpose.* Its content is in accordance with the current consideration of the nature of errors and violations. It is therefore an admirable initiative.
3. However, while this policy existed, there was *no evidence that StateRail/RailCorp personnel across the organisation were generally aware of the 'no blame' policy*, and it proved difficult for the review team to locate a copy of the policy document (97).

An important component of the 'No Blame' investigation policy was the establishment of a 'No Blame Hotline', by means of which people could voluntarily and confidentially report incidents or unsafe practices that would not have been reported otherwise, without fear of retribution. This is in accordance with good safety management practice. Such systems have proved extremely valuable in other industries, such as aviation. They can act as an early warning of emerging safety issues, which can then be addressed before they contribute to accidents. *The hotline is a good initiative, and should be strongly promoted through awareness programs, and providing feedback on safety outcomes arising from hotline reports.*

*As noted earlier, systems must be designed to be error tolerant. This is an essential attribute of contemporary safety management systems. However, the review found no evidence that State Rail or RailCorp had an adequate understanding of the concept, or the philosophy of error tolerance* (98).

## *Key Findings – Communication*

### **1. Communication Problems**

Investigations of rail accidents such as those at Glenbrook, Bargo, Hexham and Waterfall have identified communication problems as critical factors in each of these accidents, and the emergency response to the accidents. The rail industry is not alone in this respect, and communications have been identified as critical factors in accidents in many other industries, such as aviation, marine, nuclear and petrochemical.

In response to this problem, the aviation industry developed a program of training known today as CRM. The objective of CRM training is to achieve the most effective use of all available resources by an individual or a crew to safely and successfully accomplish a mission. CRM training programs represent a practical application of human factors principles and knowledge.

CRM programs have been progressively developed and improved since their original introduction in the 1980s, and are now in their ‘sixth generation’. Principles of CRM training have been implemented in other industries, such as medicine, and marine.

Communications training is a key element of CRM programs. The use of standard phraseology, or communication protocols, is a critical factor in effective communication.

*As noted earlier, significant attempts were made to develop a comprehensive CRM training program for StateRail, but to date these attempts have not been wholly successful. For example, in August/September 2000, work was carried out prior to the opening of the Rail Management Centre to develop a CRM program for the centre, as it was considered that effective communications would be essential to the functioning of the RMC. The state-of-the-art CRM program developed for the Australian Defence Force was used as a model, and elements were tailored to the perceived requirements of StateRail.*

As part of the assessment of the application of CRM concepts to rail, two key safety personnel from StateRail attended a Navy CRM training course at HMAS Albatross to familiarise themselves with CRM concepts, application and training methods.

*The review team did not find mechanisms in place to review and continuously improve communication protocols with StateRail*

### *Key Findings - Fatigue Management*

In recent years it has been recognised that fatigue cannot be eliminated within a workforce, and therefore fatigue must be managed. *Fatigue is a complex issue, not amenable to one-dimensional solutions, such as the rigid specification of crew duty times.*

*The review team found that commendable progress has been made in introducing a fatigue management program into StateRail/RailCorp. The draft StateRail Fatigue Management Strategic Plan (99) was considered to be comprehensive, and equal to best practice in aviation.*

1. The *Plan* addresses the most important issues associated with the development and implementation of a contemporary fatigue management program. It is complemented by a number of other high quality documents, although these are also still in draft form. These include *Fatigue Management Policy*, *Safety Standard 12.023 Fatigue Management*, and *Fatigue Rostering Principles and Workplace Guidelines* (99). However, the review team highlighted two major human factors weaknesses in the *Plan*.

2. *With reference to the policy concerning personnel who report themselves as fatigued, if a person identifies him or herself as fatigued, they are required to take sick leave. If that person has no sick leave remaining, he or she could be required to take leave without pay. This situation can therefore create a financial penalty for reporting that one is fatigued. It is likely to discourage people who are fatigued from speaking up. They will continue to operate in a fatigued state, thereby reducing the safety of the operation. The net effect of this policy is to shift the responsibility for fatigue management from the organisation to the individuals at the 'sharp end'.*
3. *The Plan does not address the need to collect feedback from individuals or teams concerning fatigue. It relies entirely upon the process of investigation of accidents and incidents to obtain such information. As a result, the true incidence of fatigue across the organisation is unknown.*

### *Key Findings - Ergonomics*

The interim report of the inquiry into the Waterfall accident highlights the deficiencies in StateRail's design review and acceptance processes, especially to do with human factors integration. *Ergonomics issues associated with the deadman pedal and other driver safety devices clearly indicate that no task analysis or human-in-the-loop analysis was conducted to verify the fitness for purpose of the Tangara driver safety systems.*

The first European rail conference on human factors was held in November 2003, in York, UK. It was organised by the Rail Safety Standards Board of the UK, the University of Nottingham and Network Rail. The delegates were made up of human factors specialists from universities, research institutions and consultancies, as well as representatives from the regulator and various operators. The majority of participants were from the UK, with single source representatives from the Netherlands, Germany, Belgian, Sweden, USA and Australia.

Recognising the importance of this conference, StateRail sent two delegates, one of whom was the Manager, Human Factors. They returned with a substantial amount of human factors information, of significant potential benefit to the operational safety of StateRail (100).

The topics of the conference presentations included:

- Human Factors Integration
- Reporting
- Signals, Signs and SPADs
- Control room designs
- Driver vision
- Workload assessment
- Models of driving and driver behaviour
- Safety culture
- Employees and the public
- Fatigue
- Work of signallers, controllers and planners

All these topics are relevant to human systems as part of an integrated safety management system. Some have been raised in the Waterfall Interim Report, and were raised in the Glenbrook report.

A briefing presentation on the UK conference, and the key lessons learned for RailCorp arising from it, was prepared for RailCorp senior management (100). The report made the following recommendations:

1. Establish and maintain formal contacts - establish an information network
2. DSS Formally observe ERTMS development - gain further learning before making key decisions
3. Emergency egress - evaluate standards recently developed by RSSB and implement where adequate
4. Implement similar safety standards to the RSSB where not presently provided e.g. crashworthiness standards, passenger preparedness signage etc
5. Follow-up on current topics from research, new developments and experiences from other operators.

The review could not determine whether senior management acted on the basis of this report.

#### *Analysis and Discussion*

Many analytical comments have been included in the discussion of the key findings outlined above. As a result, the following is a summary overview of the material obtained with regard to human factors in StateRail/RailCorp.

*Overall, while the organisation has taken some steps to obtain in house expertise in human factors, senior management has demonstrated little understanding and willingness to support the incorporation of contemporary human factors and systems safety concepts into RailCorp.*

*This is a serious organisational deficiency as human factors at the individual and organisational levels constitute the greatest risk to rail operations. This has been shown in rail accident investigations in Australia and overseas. Informed considerations of human factors are central to effective safety management systems.*

Integration of human factors concepts into safety management is normal practice in other transportation systems, such as aviation.

Situations, policies and practices concerning human factors that are now routine in other industries simply did not exist in StateRail, nor do they exist in RailCorp at the time of the review. The insular and fragmented nature of the organisation, together with the lack of awareness of human factors and systems safety concepts makes it difficult to engage in dialogue in these areas.

*Consequently, rectification of the human factors deficiencies will not be a matter of fine-tuning what is already in place, nor of addressing deficiencies in one part of the organisation. Rather, the situation with regard to human factors in RailCorp represents a significant systems issue across the entire organisation. The present review has also shown there is a major challenge to rectify the problems. Meeting such a challenge will require in-depth human factors knowledge, education, awareness, resources, a positive safety culture, and, most of all, organisational commitment at all levels from the Board and CEO to front line personnel.*

## Summary

*If the basic elements of human factors and system safety can be put in place within RailCorp, it will provide a firm foundation upon which to build an integrated safety management system. Until this happens, a fully effective integrated safety management system within RailCorp will not be achievable.*

### 4.3.4 Training Systems

#### Introduction

*Training that is effective, carefully targeted at the needs of the organisation, and continuously monitored, evaluated and updated, is an essential component of an integrated safety management system.*

CASA, the Australian aviation safety regulator, in its SMS educational material (CASA, 2002) states:

*“The commitment to provide both induction and ongoing refresher training and checking to all staff is an essential element of any Safety Management System”.*

*Induction training should be conducted by the safety officer and customised to suit staff members’ areas of specialty. It should include information about the Safety Management System, the safety officer, safety group or committee and the responsibilities of all employees to participate in the Safety Management System. Records of participation should be maintained.*

*Existing employees and new staff must be trained in the operation of the Safety Management System, and encouraged to adopt the safety practices of your organisation. Customising training allows you to impress your operational practices of safe behaviour, risk management decision making and quality control processes on all staff.*

*When you introduce new technology or equipment, or make changes to your operations, training should be provided. There are also regulatory requirements for specific training and checks, and ongoing technical training for your employees.*

*Evaluation of the training effectiveness can include review of staff abilities, knowledge of processes and practices used in the workplace and any specific competencies that are required in your operation. Keeping staff informed and educated about current safety issues through providing relevant, safety related literature, sending them to safety related courses and seminars improves the safety health of your organisation’.*

#### Checklist

- Staff understand how the Safety Management System operates.
- Staff are aware of the role they play in the Safety Management
- System.
- Staff understand that the aim of the Safety Management System is to improve safety – not to attribute blame.
- All personnel attend induction and ongoing safety related training’.

Although the above material was prepared for the aviation industry, the principles are generic, and apply equally to other high technology industries, such as rail.

### *Training in RailCorp*

StateRail training and RIC training was provided by two separate entities at the time of Waterfall. At the time of the review, RailCorp was still operating two training systems, the Australian Rail Training (ART) centre at Petersham and an infrastructure training organisation. However, in the context of the Waterfall accident, the review concentrated on ART, an internal training and development unit (101).

At the outset it should be stated that the review of training was constrained by the following factors:

1. The analysis was largely based on document reviews, backed up by interviews with key personnel. Unfortunately, some documents that had been requested from key training management personnel at ART early in the review process were not received within a reasonable time.
2. RailCorp is a large organisation. Given the time constraints, the audit concentrated on SMS training for drivers, guards and other safeworking personnel. Accordingly, the report findings are predominantly concerned with the development and delivery of training by the ART.
3. The review findings were based on the data available. Based on the interviews conducted, the review team does not have a high level of confidence that the StateRail/RailCorp training system fully understands its own processes and requirements (102). Accordingly, under the time constraints, the review team could only make objective findings based on the correctness and completeness of information presented to it.

*The review team found that generally, StateRail and RIC have a legitimate basis for conducting training. Both organisations are accredited by the NSW Vocational Education and Training Accreditation Board (VETAB) and as such satisfy the Vocational Education and Training Accreditation (VETA) Act 1990 (103).*

In the context of the Interim Report, the review of the StateRail/RailCorp training system was focused on:

1. Whether the policies and procedures guiding the delivery and development of training, and in particular SMS training were appropriate.
2. How the policies and procedures were implemented.
3. How the training system has changed since the Waterfall accident.

### *Key Findings*

*The review team found a number of high-level training issues that require attention including:*

1. *The Training Policy and Procedures Manual (104) provides limited guidance, and requires review.*
2. *Because some key staff do not recognise the ART Policy and Procedures Manual, various personnel within SRA (both within ART and in the field) are not complying with the Training Policy and Procedures Manual.*

3. Although SMS training represents the ongoing effort to improve safety training for Safe Working personnel, there is *no evidence to suggest that the training development process has improved since Waterfall*. Note: Finding made through process of deduction – validating would require extensive efforts to compare the training system at the time of Waterfall to that currently being utilised. However, it is supported by results from the safety climate survey, where respondents perceived no improvement in the safety of rail operations since the Waterfall accident.

Documents reviewed in detail included:

- Certificates (or letters) of Accreditation
- Policy and Procedures Manual
- Organization Charts
- Position Descriptions
- Previous internal and external audit reports
- SCOI Interim Report
- MoT Waterfall Report
- Various documents associated with courseware design, development and review

#### *Findings -Accreditation and Internal Audits*

**VETAB Audit.** As noted earlier, both StateRail and RIC training organisations are Registered Training Organisations (RTOs). Accreditation is awarded by the NSW Vocational Education and Training Accreditation Board (VETAB). As accredited training providers, both StateRail/RailCorp and RIC training organisations undergo regular internal and external independent audits to retain their accreditation. In so doing, they satisfy the requirements of the Australian Quality Training Framework (105).

*In the most recent compliance audit conducted on State Rail Authority NSW in 2003, ART satisfied the audit to a 100% level of compliance with stated requirements (106).*

**Internal SRA Audit into Network Operations.** A late deliverable to the audit team was the Interim Draft Report of the Network Operations Training and Safety Standards Validation Project (107). This internal audit was conducted to assist the Network Operations Unit in meeting its legislated compliance objectives as outlined in the SMS.

The draft report highlights the current SMS system vulnerabilities as a result of training deficiencies within StateRail – in the report these are linked to the elements of the StateRail SMS. *The draft report also validates the initial assessment of the SCOI SMS review team, namely that there is a systemic lack of training structure, particularly ‘in the field’.*

Key findings highlighted in the Draft Report at Reference 7 include:

1. For Rail Management Centre (RMC):
  - Various sections of Assessment Record Books (Rail operations Train Control) are not duly signed and attested by workplace trainers – train controllers claim they are performing tasks which they are not qualified to carry out.
  - Preference for train controllers to receive role specific, training rather than the current SMS training delivered by ART.

- Training for train controllers in Network Incident Management – the review team was unable to establish a link with the assessment instrument and competencies.
- Data logger, touch screen, Illawarra train describer and fire warden – competencies underpinning training could not be validated, and assessment processes were non-existent.

2. For Network Operations:

- Localised training manuals have not been updated for most signal boxes.
- Training is unstructured.
- Evidence trail for the delivery of competency based training was deemed to be marginal throughout various sectors.
- Fire evacuation training is not linked to competencies, with a lack of formal assessment, and competency attestation processes.

*Findings - Policy and Procedures*

The StateRail Training and Development Unit has an overarching Policy and Procedures Manual (108). This manual is a significant step toward providing authoritative guidance to all personnel associated with the training regime. (RIC also has an overarching Policy and Procedures Manual; however time constraints prevented the audit team from conducting a review of this document).

**StateRail Training and Development Policy and Procedures Manual.** *The existence of a StateRail Training Policy and Procedures Manual is, in itself, a positive attribute of the training system. However, the review found that the document requires improvement in various areas, namely:*

1. There was no structured link between it and a hierarchy of RailCorp documents. The Training and Development Policy and Procedures Manual exists in isolation. It should be integrated within a suite of Policy and Procedures Manuals for RailCorp.
2. The guidance provided is very 'high level'. For example, Section 2, Course Design and Development, does not discuss the practical processes required to fulfil a Training Needs Analysis – the recognised basis for course development.
3. The document was not recognised by key training design and development staff.
4. Important sections were missing (eg: Section 5 Course Evaluation).
5. The manual is fundamentally aimed at what should be done, rather than how it should be done. To illustrate, Section 2 states that evaluation will be conducted, but a description of the evaluation procedure (i.e., Section 5) was not identified or provided by RailCorp.

Although ART has a Policy and Procedures manual, the review team found that key personnel responsible for courseware development did not recognise it, and were not using the manual in their work (102 and 108). The review team therefore considered that those training personnel were possibly conducting training development tasks in accordance with a set of local unapproved practices.

The Training Development Handbook (109) states that 'All ART staff should read and be familiar with Training and Development's Policy and Procedures Manual....' However, on the



basis of information obtained through interviews (102 and 108), the audit team believed that this was not always the case.

### *Findings - Training Design and Development Process*

**General.** *Although degrees of structure are evident in the training design and development process, there is a focus on 'consultation' by various groups and committees.* Consultation is an important and necessary part of the process. However, *the audit team believes a more structured and data driven approach to training development, including the formalisation of risk assessment, training needs analysis, and course evaluation would be beneficial.* The current training process for SMS is best summarised by viewing the SMS Training Management Flowchart (110) and the Australian Rail Training Course Designer Checklist (104 Section 2).

**Risk Analysis.** *A formal risk assessment process should be essential to developing training programs.* The review team found that 'risk' was determined through a meeting of the relevant Course Committee. The output of such a meeting was a minute detailing perceived risks of the particular area of operations concerned (111). These perceived risks were then incorporated into the relevant training courses by the curriculum developer.

While the opinions of subject matter experts make an important contribution to training course development, *the risk aspect of course development should be driven primarily by objective empirical data obtained through a formal process of risk management, the latter being an essential component of an integrated safety management system.*

*The level of awareness and application of contemporary risk management practices within RailCorp needs to be substantially upgraded.*

To illustrate this point, in the MoT Report into the Waterfall accident (112), it was stated that SRA's risk based approach to training was ineffective because it should have addressed the authority gradient between driver and guard.

The term 'authority gradient' is a way of describing the relative status of crewmembers, in this case, the driver and the guard. For example, a very senior or experienced driver operating with a junior and less experienced guard would represent a steep authority gradient between the two. In such cases, there is typically a reluctance of the 'junior' crewmember to speak up, even if he or she perceives an unsafe situation. Such a failure could contribute to an accident. The MoT report indicates that such a steep authority gradient may have been a factor in the Waterfall accident.

The minutes of an Intercity Guards Course Risk Workshop (111) *obtained by the review team, demonstrate that hazard assessment is relatively informal, and that risk is not being defined in terms of probability, consequence, or priority. The minutes in this case do not identify well-documented risk issues such as authority gradient, but rather state that 'the crew need to work well together as a team'.* While this assertion is true, it does not provide detailed analysis of the group dynamics involved in team performance. This finding confirms the statement in the MoT report.

The ART Policy and Procedures Manual (104) has a one-page statement on Risk Management (Section 11). However, the content does not provide curriculum developers with any guidance on the significance of, and procedure for, assessing risk in courseware development. Nor is there clear guidance on the mandatory qualifications of risk assessors involved in course development.

### *Findings - Training Needs Analysis (TNA)*

*TNA is a formal, structured, and integrated process to identify the training requirements of an organisation and its people, both at the systemic and individual level. It involves determining the requisite skills and competencies required of all personnel, including anticipating future training needs associated with organisational and technical changes. It also considers how the training function in an organisation is integrated with operational activities and systems.*

The Training Policy and Procedures Manual (104), does not provide guidance on how a TNA should be conducted. Rather, at Section 2, it prescribes a series of consultations at course committee level, together with a subsequent curriculum development phase.

Although the reviewers were advised that sometimes TNA is *conducted sometimes* (113), other evidence suggests no formal TNA process is undertaken within RailCorp. This situation was acknowledged through interview (114 and 115) and the lack of a suitable level of detail in the Policy and Procedures Manual (104). From a review perspective it appears that the current course committee and curriculum development arrangements constitute an ART TNA, but that a 'text book' or suitably tailored TNA does not occur.

*Under the present arrangements, a useful basis for a TNA procedure exists. However, it requires further work to develop this basis into a mature process to ensure that training efforts meet present and future needs of the organisation.*

*The procedure for addressing and formalising TNA should be incorporated into the Policy and Procedures Manual. Typically the TNA must be broad enough to formally identify the problem and ascertain whether there is a performance, process or equipment deficiency. It must also consider instructional strategy alternatives, and the consequences of doing nothing. It should identify possible barriers to program success - such as organisational culture - logistics support requirements, opponents and proponents of the program, risks, and learning outcomes.*

*The review team believes that an expert consultant in TNA should be employed in order to further develop what is already in place and provide additional guidance on how to transform the existing tasks into a more robust TNA process.*

**Task Analysis.** *Both a physical and cognitive task analysis should form the basis for any competency-based assessment. Without such analyses, the steps involved in a competency based procedure, and the decision-making processes involved in performing the task, cannot be properly understood. According to the curriculum developer, task analyses are not being conducted.*

The current procedure involves an informal meeting between the curriculum developer and a subject matter expert (SME) (115). This approach is probably both efficient and acceptable for non-safety critical tasks; however, a formal task analysis should be undertaken and documented for safety critical tasks, such as 'pulling the tail'.

An illustrative example of some of the deficiencies in the training system involves the training of station operations staff as supplementary crewmembers. The aim of this brief training course was to allow station operations staff to apply emergency braking if a driver becomes incapacitated. According to ART, who were critical of the initiative, the training was instigated by the GM Station Operations, and developed in isolation. The training session was of about 20 to 30 minutes duration.

The assessment of competency for supplementary crewmembers was tasked to the OSMs. ART were only advised of the training initiative at the last moment. *The assessment form*

(116) *shows a complete lack of task analysis. The assessment form does not contain any guidelines, including categories of observable behaviour that would indicate to the assessor that the student understands when he/she is to intervene, and precisely what actions need to take place in order to halt the train.*

#### *Findings - Training Evaluation*

Although there are various methods of evaluating training, StateRail/RailCorp's intentions should not be limited to determining merely whether a program is accomplishing its immediate objectives. *Training evaluations should also be utilised to determine issues such as costs/benefits of training programs, strengths and weaknesses, the selection of future participants, and who within the organisation is benefiting from particular programs.*

As Section 5, Course Evaluation, is missing from the Training Policy and Procedures manual (4), it was not possible to ascertain precisely what StateRail/RailCorp are expecting from course evaluation. For example, is the evaluation designed to measure course inputs (the performance of personnel in the field as a result of training) or outputs (the effect on state rail organisational safety as a result of the training), or both?

In response to the review team's questions regarding evaluation, ART dispatched to the Commission, among other deliverables, a 'blank response' stating the draft Section 5 Course Evaluation of the Policy and Procedures Manual was to follow.

ART also provided evidence of internal reviews of courses - Pilot Course review, SMS review meeting minutes and course critique forms. *Although these types of assessments provide useful and necessary information, they fall short of fulfilling a comprehensive training evaluation.*

#### *Findings - Competency Assessment*

**Drivers and Guards.** Competencies for Guards and Drivers are documented in the Assessment Record Book (117). From a training perspective, drivers and guards must complete both a knowledge-based assessment, conducted at Petersham, and a skill based component as per the Assessment Record Book. The Assessment Record Book provides evidence to ART that the competency requirements are being satisfied. Train Controllers and Signallers utilise the same Assessment Record Book system.

The review team obtained the Guards Assessment Record Book (117) The content simplifies competency, and could do more to assist the assessor by specifying categories of behaviour that can be observed – in other words, outlining precisely what behaviours to look for when assessing performance.

For example, the section 'Assessment Records Driver Incapacitated' identifies seven competencies. In the sub-section related to Task Completion, the assessor is asked 'Can the trainee explain the procedure for driver incapacitated and pilot valve failure' also 'Can the trainee follow relevant procedures for powering, controlling and braking the train'. The categories of behaviour involved in performing these tasks would normally be specified to ensure that an acceptable level of competence is observed.

The relevant procedure, which is not referenced in the Assessment record book, is probably OSP19 'Responding To An Incapacitated Driver' (118). However, this procedure provides instructions to guards for dealing with a train that stops due to driver incapacitation, rather than the situation in which the driver is incapacitated and the train is accelerating, as was the case in the Waterfall accident. Although OSP 19 cross-refers to 'Trains in Danger' (OSP 34),

it is not made clear which procedure(s) should be applied by the assessor in such circumstances.

*The Assessment Record Book is a step in the right direction, but requires further development to achieve a comprehensive assessment of the competency of operator performance on safety critical tasks.*

**Other personnel.** *The poor quality of competency assessment documentation is clearly evident outside ART. Samples of assessment forms from the Rail Management Centre show a lack of configuration control, and origin. One sample assessment pro-forma obtained by the audit team is both inadequate in content, and incomplete - yet the candidate has been signed off as 'Competent' (119).*

The internal audit of Network Operations (107), states that 'some sections of the assessment record books are not duly signed and attested by on-the-job trainers' (Train Controllers).

#### *Findings - Quality of Instruction*

In order to experience the quality of instruction, reviewers 'sat in' on an SMS class of train drivers (120). During a classroom observation it was noted how the train drivers would engage and disengage from the lesson, depending upon the teaching strategy. *The reviewers considered the quality of delivery of SMS 2.4 in this particular case appeared marginal.* However, it should be acknowledged that auditors were unable to assess a number of different courses, and the low level of interaction observed may have been attributable to a number of other factors, including student introversion. Training provided by Workplace Trainers was not assessed due to time and scope limitations.

A second observation of a 'contracted' course on 'train the trainer' seemed much more satisfactory. *The critical role of the instructor in delivering the safety message, and all other training, effectively should not be underestimated. The quality of instruction is a prime determinant of the effectiveness of training. A full and valid assessment to determine the quality of instruction across RailCorp was outside the scope of the present review.*

Senior ART management accept that some instructors are below par (113). The ability of the system to place unsatisfactory instructors back into the field was discussed with a senior manager. That officer expressed frustration with the complexities and other difficulties associated with removing ineffective instructors (113). The relocation of unsatisfactory instructors requires Labour Council approval. To date, it has rejected the only application to relieve an instructor from duty.

**Use of Interactive Virtual Reality Simulation.** The Virtual Reality Centre at Petersham has two simulators. The first, a line simulator, has characteristics of both the Millennium train and the Tangara. For this reason, it is used for general types of training scenarios, such as a train approaching level crossings; the driver response; subsequent group discussion and analysis. Advice from ART was that, because the simulator was not of a fixed configuration it was used for general emergency scenario training, rather than type-specific emergency procedures training. Type specific training was carried out in cabin simulators.

The second Virtual Reality Centre simulator is currently non-interactive. It is utilised to play computer generated visual representation of accident scenarios, such as a person lying on the track at a station, which then become the subject of group discussion.

*Although the Virtual Reality Centre simulators were visually impressive, the cost benefit of these devices, under the training strategies presently being utilised, should be the subject of*

*closer scrutiny.* For example, the non-interactive scenarios presented on the second simulator could possibly be presented equally well, and more realistically, on video.

The Virtual Reality Centre simulations being digital systems, provides the potential for training scenarios to become interactive. For example, rather than playing a scenario from start to finish, it may be possible for individuals to make decisions about certain actions, and alter the outcomes based on their own real-time risk analysis of what they observed. However, the cost of developing the software to enable and maintain such levels of interaction would require detailed investigation and analysis.

#### *Findings - SMS Training*

**General.** According to ART, middle order management in the field consider SMS rostering to be a drain on their primary resource (114).

The reluctance of PFM to release staff for training due to work commitments was also acknowledged by interview at (122). According to ART, up to 5,500 personnel are trained every 16 weeks. The fact that Petersham meets this very large training demand should be acknowledged.

The 16 week cycle was determined using benchmarking from other railways. According to the interviews, this benchmarking indicated that there should be a daily intervention 3 to 4 times per year, hence the 16 week cycle. However, SMS training has now been suspended until 1 June 2004. It would therefore seem that RailCorp is unable to support a continuous 16 week cycle. The review team considered this situation avoidable had a full TNA and risk assessment been conducted at the outset, to determine the effect of a continuous 16 week cycle on RailCorp's resources. The haste that led to acceptance of the 16 week cycle was also identified informally by ART through an interview (121).

**Drivers, Guards and other Safeworking Personnel.** From interviews with ART personnel, and a review of various items of courseware, *it is apparent that 'SMS training' is strongly focused on Occupational Health and Safety, plus safe working procedures, rather than on the broader elements of a contemporary SMS. This may not be a problem in itself given that, as noted earlier, all training needs to be tailored for relevance.*

*However, the present SMS training program requires formal training evaluation to ascertain whether the current program is having the desired effect in the field. Such an evaluation is long overdue, given that SMS training in its present form has been going on for a number of years.*

#### *Findings - Management*

At the time of the review, *ART did not provide SMS training for management personnel. This is a further indication of the lack of leadership and integration of RailCorp's SMS. The fact that management does not participate in SMS training delivered to workers indicates a lack of commitment.*

#### *Findings - CRM Training (see also the section on Human Factors)*

Following the investigations of a series of major accidents in the late 1970s and early 1980s, the aviation industry developed a program of training known today as Crew Resource Management (CRM). *The objective of CRM training is to achieve the most effective use of all available resources by an individual or a crew to accomplish a mission safely and successfully. CRM training programs involve the practical application of human factors principles.*

CRM programs have been progressively developed and improved since their original introduction in the 1980s, and are now in their 'sixth generation'. The principles of CRM training have been implemented in other industries, such as medicine and maritime.

A degree of CRM was to be introduced in SMS 2.5, although the delivery of that component has been suspended until further notice. The standard may have been effective for purely familiarisation purposes, but it would certainly require significant enhancements to have the potential to create an observable change in the behaviour of crews in the field.

SMS 2.5 Train Crew Lesson Plan (123) demonstrates the current approach to CRM within RailCorp. Learning outcomes included: Define CRM, Identify skills for effective CRM, Communicate information and ideas clearly and concisely, Identify poor authority gradient, Explain procedures for random drug test. Time allocated: Approximately one day.

**Operational CRM Initiatives.** The Manager Human Factors developed a practical CRM communication program in 2003 with input from train drivers, guards and the union. This program was titled the Safety Alertness and Vigilance Enhancement (SAVE) procedure. The program was trialed at Mortdale and Wollongong, and was validated scientifically by the Manager Human Factors. Indicative of the support from train crews was the fact that drivers and guards voluntarily appeared in the training videos for the SAVE procedure (124).

Part of the development process saw the final version retitled Operation Safety Briefing (OSB). The program was scheduled for implementation on the metropolitan network, with training delivered by ART from 30 Oct 2003. However, the program did not receive senior executive support and final sign off. The program has now been re-established for Country-Link, commencing 24 March 2004 (127).

Another initiative to develop a CRM program utilising ART train simulators for abnormal operations procedures training is currently under development. ART have contacted an expert from Air New Zealand Captain Werner Naef. Captain Naef has extensive experience with aviation and rail CRM training in Europe.

#### *Findings - Record Keeping*

The current system for maintaining ART training records is called DART (D stands for David Chapman, the person who developed the database). A demonstration of the databases' capability to collate information and convert it into lists and charts depicting courses, attendance, planned and actual completions, etc. was observed (125). Generally the database is adequate for these purposes.

However, the training database does not track the recurrent training requirement for ART trainers to spend time back in the field. Glenbrook Training Recommendation 3, states that trainers of safety critical staff should have, and maintain, operational experience. The review team consider that it would be logical for this requirement to be recorded on DART, but it is not.

#### *Findings - Changes Since Waterfall*

**Discussion.** *With the exception of variations in the content of SMS training, the review team found that no significant changes have occurred in the way training is designed or delivered since the Waterfall accident.*

**Risk Assessment.** As previously noted (112), the MoT Report into Waterfall (p64) stated that SRA's risk-based approach to curriculum development was ineffective because it should have addressed the hazard created by authority gradients between drivers and guards. Based on discussion with staff, and evidence of a recent risk assessment undertaken for a guard's

training course (104), the review team concluded that the standard of risk assessment is still below the required standard.

**OSM Training.** OSMs are the personnel who assess the operational performance of train drivers and guards. A useful analogy is to regard the Petersham training centre as a ‘motor registry issuing licences’ and the OSMs as ‘licence testing staff’.

The concern that OSMs were not conducting the required number of training interventions was highlighted. For the Sydney City Region, there are approximately 850 train crew, but there are only eight OSMs. OSMs are required to conduct performance management interventions consisting of training, coaching, and competency assessment, at least three times annually on all crew. Given the numbers of train crew and OSMs in the region, it is not possible for the required numbers of annual assessments to be completed within the 12 month time frame.

Recommendation 14 from the Glenbrook inquiry requires a ratio of one OSM to 30 drivers. The SRA Report in response to Glenbrook (dated 15 Mar 2004) states that the 30:1 ratio was fully achieved by June 2001. However, evidence provided by the Crew Manager Sydney, in the form of a crew allocation sheet (128), indicated that the present ratio of one OSM to *approximately 100 crew is seriously impacting the ability of the system to achieve the required number of training interventions.*

#### 4.3.5 Emergency Preparedness

##### *Introduction*

Research and operational experience within aviation and other industries has established that during an emergency people react best in a manner that has been practised or rehearsed. This is one reason why high risk industries such as nuclear, petrochemical and aviation invest heavily in simulated emergency training. This training includes onsite activation actions, site shutdowns and the use of simulators.

Additionally, a hazard and risk analysis is carried out to determine all foreseeable emergencies and mitigation action put in place. Whilst the draft RailCorp Incident Response Plan 1.2 February 2004 is a comprehensive document, it is only a planning document. As with other high risk industries, a need exists for the development of immediate action checklists. These checklists are normally in dot point fashion, set out in a logical sequence that details action to be taken immediately after an accident or incident occurs, or is notified (132).

This review found that a number of recommendations issued following the inquiry into the Glenbrook rail disaster had not been implemented.

##### *Key Findings*

1. There is more than one version of the RailCorp Network Incident Plan in current use by RailCorp staff.
  - Version 1 – State Rail Network Incident Management Plan dated December 2000; (130)
  - Version 2 – Network Incident Management Plan Final draft issue 1.0 dated November 2003; (131)
  - Version 3 – RailCorp Incident Response Plan (Response to Rail Incidents) draft issue 1.2 dated February 2004; (132)

- There was confusion amongst staff as to which version was current; (133)
2. RailCorp Incident Response Plan (Response to Rail Incidents) draft issue 1.2, dated February 2004, was considered to be an improvement on the previous versions. Notwithstanding this improvement, the document format was assessed to be confusing, and it lacks “immediate action checklists” (132).
  3. Real time site emergency exercises are not conducted on a regular basis (135).
  4. RailCorp has not effectively coordinated its emergency response plan with the New South Wales Emergency Services. RailCorp’s emergency preparedness plan was not successfully integrated with the New South Wales Emergency Services Disaster Plan (Displan) (140).
  5. Not all departments/sections in State Rail/RailCorp have appointed “Departmental Emergency Coordinators”.
  6. Some recommendations in the Ministry of Transport investigation report that have immediate regard to emergency preparedness have not been actioned (9).

### *Analysis and Examples*

StateRail Network Incident Management Plan dated December 2002 was judged as not containing clear and precise instructions that could be followed following a major rail accident or serious incident (141). A draft RailCorp Incident Response Plan dated February 2004 version 2.1 is considered to be an improvement on the existing plan. This draft plan is yet to be approved (29/03/04).

Note: Some RailCorp staff are already using this *draft* incident management plan in lieu of approved plans.

RailCorp use maintenance shutdowns as opportunities to exercise emergency plans. While useful, unless at least one fully operational exercise is run annually, there is no baseline with which to compare the ‘limited’ nature of an exercise run during a shutdown.

RailCorp has not developed a disaster plan (Displan), which interfaces and aligns with other State emergency services. As a rail accident or incident can impact upon the community as a whole, it would be advantageous for RailCorp to identify the risk and coordinate with the State emergency services.

The New South Wales disaster plan (Displan) provides guidance for emergency services; however, this plan does not identify any risk to emergency services when they respond to a rail incident or does it discuss rail as critical infrastructure in dealing with emergencies.

*RailCorp needs to urgently liaise with the New South Wales emergency services to develop a relationship between key operational personnel in all organisations. This relationship could be developed using the airport link line to seek membership to the Kingsford-Smith airport emergency planning committee. All emergency services are represented on this committee.*

The RailCorp Incident Response Plan is a critical document. All documents associated with emergency preparedness and response must be subject to a strict and efficient document control process. Having three uncontrolled documents simultaneously in circulation at a given time causes confusion to operational staff (141, 142).



During the safety review process, RailCorp staff told the reviewers that the “overall coordinator” for emergency preparedness and response was not clearly identified. A need exists to identify several senior managers to be trained as emergency response coordinators. A requirement for several senior persons to be trained is because some major emergencies can continue for several days. As such, there is a need to put in place a shift process with a formal handover when there is a change of coordinator. It is suggested that senior managers at the level of Chief Operations Manager would be suitable. Formal identification of responsibilities and authority for these nominated coordinators should be produced (145).

Following a rail accident or incident at some stage each individual department will be affected from the immediate timeframe of the occurrence, up to and including paying compensation to passengers some time after the accident. A need exists to appoint a person from within each department as departmental emergency preparedness response coordinators. While some departments do have people in these positions, not all departments have complied. It is also suggested that the term “coordinator” be changed to some other appropriate title, to remove any confusion with the title “overall coordinator”.

A need exists for RailCorp to conduct an analysis of its emergency response for all foreseeable emergencies at all of its sites. This analysis should involve vulnerability analysis, hazard identification and assessment, and risk assessment.

Section 5 of the SCOI Waterfall Interim Report reveals that members of Waterfall station staff were not familiar with the topography or the road system in the Waterfall area. Emergency plans for RailCorp sites should include a comprehensive search and rescue plan for areas that could host some form of rail accident or incident. This requirement also applies to the city underground system. During the review an underground stationmaster could not readily supply a copy of the emergency response plan site layout for that station. A copy was obtained from the RailCorp/StateRail Fire Service at Redfern (141).

While the Waterfall accident occurred in an area of track within the Royal National Park, and was considered by some as unique, the Glenbrook accident also occurred in an isolated area, and, similar to Waterfall, communication problems were experienced. In general, on all the “intercity” operations there are areas where radio communications are difficult. Technology is available, and is producing some extremely effective communication mediums at low cost. *An overall communications strategy with a high quality of service and expected reliability should be developed and implemented for the entire network.*

#### **4.3.6 Asset Management**

##### *Introduction*

This section documents the results from the review conducted of elements the NSW rail safety management system with particular focus on:

1. Fleet Maintenance.
2. Capital Equipment Procurement.
3. Asset Management.
4. Use of system safety engineering techniques within RailCorp.

The review focused on issues relating to the Train Services Division with only some elements of the Infrastructure Division being examined.

The review was limited due to:

1. Slow turnaround by RailCorp in the provision of background information to assist in identifying the organisational elements to be examined and the personnel to be interviewed.
2. Delay in interviewees being available to meet the review schedule.
3. Delay in information collected as part of the review process due to State Rail internal delays in processing. At the time of writing the report documentation was still turning up at the Commission in response to earlier information requests.
4. Delays by RailCorp in providing access to the corporate intranet site until approximately half way through the review period (RailCorp publishes most of its documentation on the corporate intranet).

### *Key Findings*

7. Passenger Fleet Maintenance (PFM) personnel have a demonstrated commitment to the safety of the rail rolling stock fleet. RailCorp senior management back this commitment by financial support (142, 143, 144, 151, 152, 155, 171, 173, 174, 175, 176, 177).
8. During 1999 StateRail senior management had an endorsed and signed safety management plan (206).
9. In 1999 PFM had a PFM Safety Management Plan endorsed/signed by divisional management (205).
10. The system for distribution of safety critical information within PFM is immature (145, 179, 180, 181, 182, 183, 184, 185, 191, 194, 195).
11. There are safety committees operating within PFM (145, 146).
12. PFM does not have an overall training plan (142, 144, 153, 163).
13. Whilst several sections within PFM have an adequate level of document control other sections have not (141, 145, 150, 186).
14. Emergency preparedness within PFM is informal, not well documented and overall is considered unsatisfactory (142, 154, 193).
15. PFM conducts comprehensive and regular maintenance reviews of its maintenance depots (143, 160, 161, 162, 163).
16. PFM maintenance management systems and maintenance records are inadequate for the fleet size and complexity (142, 144, 153, 154, 164).
17. At the time of the review, PFM had not completely defined and documented all rolling stock safety critical items (142, 144, 153, 154, 164).
18. Configuration management in PFM is not institutionalised or formalised (142, 154).
19. At the time of the review, random drug and alcohol testing was not conducted within passenger fleet maintenance (142, 154).
20. PFM has an accredited quality assurance system (143, 158, 159).
21. Major interface issues exist between PFM and the Capital Works section within Train Services Division (143, 157).

22. The safety manager for PFM has appropriate qualifications, training and experience (145).
23. PFM does not have a position designated as responsible for judgement of significance to assess risk and delegate engineering authority, e.g. a chief maintenance engineer (143).
24. PFM doesn't have an authorised process for assessing risk and assigning engineering authority (143).

#### *Fleet Maintenance*

**Management commitment.** *There is a high level of management commitment within PFM to the safety of the State Rail rolling stock fleet.* Direct evidence to support this was obtained from interviews with management staff from PFM, who were quite open in their discussions and freely provided documents generated internally. These documents identified safety issues that need to be addressed and action management had taken to identify and resolve safety issues. Note that in addition to their responsibilities under the Train Services Safety Improvement Program (TSSIP), PFM has taken initiatives to uncover latent safety related issues within fleet maintenance and are trying to put programs in place to address a number of these issues (164, 168, 178). The commitment to safety is such that the General Manager (GM) PFM has established a position, Strategic Projects Manager, as a direct report to progress the system safety issues (142, 144).

Financial support from management for PFM safety initiatives is evidenced further by the fact that a number of a number of contracts have been approved to progress safety initiatives and other contracts are currently being progressed and were in draft at the time of the review (142, 169, 170, 171, 172, 173, 174, 175, 176, 177).

Documents supplied to the review team demonstrated a degree of executive management support for the initiatives being progressed by PFM. This was in the form of an email from the GM PFM to the RailCorp Chief Executive Officer (CEO), containing a signed statement by the CEO stating that he supported the funding for the initiatives, but that funding will be allocated on a project-by-project basis (142, 152).

*However, current funding allocation to support all required activity, as part of the safety initiatives of PFM, may be less than adequate when the total budget required is examined.* In a Ministerial Memorandum obtained as part of the review, the full scope of costing for the TSSIP is significant, and since PFM is a major focus of this program (in addition to internal safety issues identified by PFM management staff) it is unlikely that without adequate funding commitment the full scope of commitments will be addressed in an adequate time frame (196).

**System safety plan.** In 1999 PFM had a Safety Management Plan endorsed by management. The sign-off sheet for the plan contains signatures of a number of management staff explicitly committing the organisation and its elements to safety and satisfaction of the requirements of the Safety Management Plan. Signatures on the sheet were for personnel holding the positions off General Manager Passenger Fleet Maintenance; Manager Maintenance Operations; Manager Technical Services; Director Capital Works; Manager Fleet Maintenance; Fleet Manager (FM) Hornsby; FM Flemington; FM Mortdale; Diesel Service Manager; Maintenance Manager Explorer; Manager Fleet Training; Diesel Services Support Manager; Manager Human Resources; Manager MainTrain Contract Admin; Manager Fleet Projects, Assets and Contracts; Manager Maintenance Planning (205).

Since that time, however, there is no evidence to suggest that the Safety Management Plan has been updated and remains valid. Discussions with management staff in PFM indicate that at the time of the review they were using the State Rail Safety Management Plan (2002-2005) and were examining the potential for development of a PFM specific safety management plan (142, 145).

**Safety critical information.** The definition of requirements for distribution of safety critical information within PFM is immature. At the time of the review a procedure had been established identifying the distribution needs for safety critical information within PFM, but this had only been recently established. As the initiative for this process only commenced recently, there is a strong inference that no such mechanism existed within PFM prior to this initiative. Given the time between finalising the initiative within PFM and the time of the review, there is a high likelihood that the requirements have not been promulgated throughout the organisation at an acceptable level. Additionally, evidence obtained from communications between executive safety staff and PFM safety staff also indicates that the RailCorp system for defining the distribution requirements for safety critical information is also immature (145, 179, 180, 181, 182, 183, 184, 185, 191, 194, 195).

**Safety committees.** Several safety committees operate within PFM extending from 'tool box' meetings and OH&S committees in the depots through to a joint consultative safety committee at the Divisional management level (141, 145).

**Occupational health and industrial safety committees.** There are some indications that the safety committees at Flemington Maintenance Facility may be ineffective in ensuring that OH&S issues raised by staff are addressed to the satisfaction of staff. The review was inconclusive as to whether this was in fact a legitimate concern, or whether it was a symptom of broader industrial issues affecting the operation of the Flemington maintenance centre. However, the fact that the Australian Manufacturing Workers Union ("AMWU") was engaged to conduct an independent safety review and Work Cover are carrying out continuous spot inspections at the facility in relation to concerns raised by some of the line staff, indicates that their could be real concerns regarding worker safety. The review did not obtain a copy of the AMWU report or Work Cover findings (146).

**PFM Training Issues.** Documents collected as part of the review indicated that:

1. PFM lacks a comprehensive training plan (142, 153, 164).
2. A number of safety training courses delivered by Australian Rail Training (ART) centre do not meet the safety training needs of PFM. At the time of the review, PFM had established a training manager position, which had been filled by an employee from ART, to try to resolve many its training issues (142).
3. PFM has a backlog of safety and technical training, some of which can be considered safety critical in nature. This backlog was attributed to the demands of meeting both operational and training commitments (142).
4. PFM management believe that training practices within PFM have prevented them from complying with legal legislative and regulatory requirements (the exact nature and extent of this could not be uncovered during the period of the review) (142).
5. Safety Management Systems (SMS) training for Supervisors and Running Foreman of shunters at PFM may not be providing them with the necessary knowledge to make them aware of their safety responsibilities (145, 187, 188, 189, 190, 192).

6. The PFM Safety Manager is a key position. The new appointee has eminent qualifications and experience in respect of SMS issues relating to OH&S and system safety within a maintenance environment (145). There is however, a lack of specialist system safety engineering training evident throughout PFM. Given that PFM are responsible for maintaining the ongoing technical integrity of rolling stock, there is a need for training in non-traditional, functional engineering specializations such as system safety and risk assessment, human factors engineering, technical review and audit, requirements management and specification, reliability centred maintenance and other maintenance engineering analysis subjects. Evidence was not identified to indicate that training was being provided in any of the specialist areas.

Without an understanding of these specialist areas, PFM cannot be guaranteed that all of the services being acquired through subcontracts cover the full scope of skills required to adequately address these specialist engineering domains. The review also did not identify authorised and documented procedures, guidance or standards to address technical specialty engineering programs (159).

**Document Control.** *Although several elements within PFM have demonstrated an adequate level of document control, some key issues still need to be resolved before document control across the whole of PFM could be considered satisfactory.* This conclusion was based on interviews with staff at maintenance depots, and statements of admissions in documentation collected as a result of interviews with senior staff in PFM (142, 143, 154).

Significant issues with respect to document control identified during the review include:

1. Although PFM engineering instructions have versions indicating the different revision status of instructions, there appears to be some inconsistency in the approval of documents, in that some documents have had formal signatures on hard copies while others have not, even though a signature block exists on each engineering instruction to support authorisation. Examination of a sample of engineering instructions promulgated on the StateRail Intranet indicated that electronic versions did not have signatories, yet any instructions promulgated on the Intranet is considered authorized (141, 143, 150).
2. Documentation control within the depots is less than adequate. This was an issue of concern raised in an internal issues paper from PFM management, and was directly observed during the review of maintenance depots (142, 164). As an example of poorly controlled maintenance documentation; at Flemington maintenance depot all documents are received and recorded by the maintenance manager's personal assistant, who then copies the documents and distributes them to all sections responsible for maintenance (1).

**Emergency Preparedness.** Emergency preparedness at the maintenance depots is unsatisfactory. Although a RailCorp safety standard exists specifying the responsibility of depot managers with respect to emergency preparedness, the depot managers interviewed during the review were not aware of their existence (141). Documentation obtained as a result of interviews with PFM senior management, indicate a lack of emergency preparedness training. The review did not identify evidence that emergency preparedness exercises had been conducted recently at maintenance depots (141, 142, 154, 193).

**Maintenance Reviews.** PFM conducts comprehensive and regular maintenance reviews of the Mortdale, Flemington and Hornsby maintenance depots and conducts detailed trend analysis and Pareto analysis as part of these reviews. Such trend analysis can provide

indicators of safety related issues (143, 161, 162, 163). PFM also conducts reviews of major contracts for maintenance/provision of services for rolling stock (144, 165, 166, 167).

**Maintenance Plans.** Maintenance plans exist for the majority of rolling stock with the exception of the Outer Suburban Cars and the Hunter Cars (142, 143, 153, 160, 161, 162, 163). However, the maintenance engineering analysis underpinning the determination of maintenance requirements across the complete RailCorp fleet appeared to be less than adequate (143). Although Failure Modes Effects Analysis (FMEA) has been conducted in support of development of a number of Technical Maintenance Plans (TMPs), it did not appear to have been conducted for all TMPs. In addition, FMEA conducted in the past failed to perform detailed criticality assessments to identify hazards and assess risks (156). Typically a Failure Modes Effects Analysis and Criticality Analysis (FMECA) would be performed to provide some mechanism to prioritise the criticality of failure modes (143). At best, failure modes in the past had been categorised as either safety and or environmental but without a full risk analysis being performed (143).

Such a position is understandable given that there is no policy or authorised requirement to undertake criticality analysis as part of any formal maintenance engineering analysis (MEA) program. There is no formalized and documented requirement for MEA as part of PFM's practices and procedures. This represents a major risk in the event of staff turnover, the understanding that a criticality analysis is required may be lost (159).

Similarly there is no policy or authorised requirement to conduct Damage Mode Effects Analysis (DMEA), which is an extension of the FMECA process. Such an analysis is a critical to understand the vulnerability of systems to physical damage, and is one of a number of techniques that can be used when assessing the damage tolerance of systems e.g. as part of a crashworthiness program (159).

Although there was evidence to suggest that attempts had been made to practice the concepts of Reliability Centred Maintenance (RCM) within PFM, the review did not locate any documentary evidence to suggest that there are documented procedures, guidance or standards for RCM authorised within PFM (159). In addition, there were indications that the RCM being conducted was dependent on consultant support. Without inherent knowledge of the required processes for an RCM program, the risk that PFM is not well placed to act as an informed customer to communicate requirements to the consultants may result in a less than adequate RCM process being established. PFM staff require RCM training at an appropriate level to ensure that the contracted services are fit for purpose.

Specific issues identified by PFM, documented in an internal issues paper developed by PFM, and supplied as part of the review, stated that there were a number of concerns with respect to existing TMPs (some of which support the findings already discussed):

1. Maintenance plans have not been revised since 1995 (142, 144, 153, 164).
2. Maintenance plans theoretical and do not provide a practical basis for effective maintenance (142, 144, 153, 164).
3. Maintenance plans do not exist for Outer Suburban Cars and Hunter cars (142, 153, 164).
4. The formal requirements in rolling stock TMPs do not accurately reflect practice on the shop floor (142, 144, 154, 164).
5. Maintenance Plans are not fully implemented at depots (142, 153).

**Maintenance management systems and maintenance records.** MIMS and METRE systems are the two information management systems used in support of maintenance in PFM. Due to time constraints, a full assessment of these systems was not possible. However, PFM have staff have documented their concerns with maintenance record keeping at depots and with the information management systems used to perform this function. The concerns included:

1. Maintenance record keeping across the depots is less than adequate (142, 154).
2. Both the MIMS and METRE systems used for maintenance management throughout PFM maintenance depots are less than adequate, and need to be enhanced to ensure that maintenance activities are fully documented (142, 144, 145, 153, 164).
3. The MIMS used at the workshop level needs enhancement to include a work order system. Currently there are no mechanisms for individual sign off on maintenance conducted, hence no sense of accountability (142, 145, 153, 164).
4. **Safety critical items.** PFM personnel stated that some safety critical items within the RailCorp fleet are yet to be defined (142, 143, 144, 164). This was supported in statements made by senior RailCorp safety staff during the RailCorp presentation to the review team (207, 208). PFM further stated in supplied documentation that (explicit) identification of safety critical items is not included in TMPs (142, 153, 154, 164). Senior management and the PFM safety manager acknowledged the need for explicit identification of safety critical functions and items in TMPs and understand what is required to achieve it (142, 143, 144).

A review of supervisory and inspection regimes in maintenance depots is related to this issue. Currently supervisors and foreman perform random inspection of tasks and there is no work order system in place within the depots. Staff use tick sheets as checklists (141). The industrial climate in the maintenance depots may impact the success of introducing a formal sign off regime for safety critical items (142, 145).

**Configuration management.** Although PFM has detailed records on the modification status of the rolling stock fleet, the discipline of configuration management in PFM is not institutionalised or formalized, and needs strengthening (142, 143, 154, 160). At the time of the review, a program had commenced to introduce a formal configuration management system. A contractor had been employed to establish the system to meet accepted industry standards. The contractor is also engaged to develop procedures and conduct training tailored to PFM's specific needs (143, 170).

**Medical issues.** Documents provided by management indicated a number of concerns regarding medical issues. Thee included:

1. Random drug and alcohol testing was not conducted in PFM (142, 154).
2. There is confusion relating to the requirements for medical assessments post-recruitment as part of the process for re-issuing of TSA Certificates to PFM staff (145).
3. Fatigue Management procedures have not been established in PFM (142, 154). The review noted that training records indicate that some fatigue management training had been conducted, 6 out of 761 staff. The review concluded that fatigue management had not been accepted as normal work practice in PFM at the time of the review.

**PFM quality and technical standards.** The Quality and Technical Standards (QTS) element of PFM is critical to fleet maintenance operations. PFM has formal ISO9001 accreditation for Engineering and Technical Services for rolling stock through the establishment and updating of standards, policies and procedures, and the reviewing of maintenance activities (143, 158).

There is a quality manual as part of this system, supported by a technical procedures manual detailing the procedures to be followed by QTS in conducting activities (143, 159). Procedures for QTS include:

1. Detailed and specific assignment of responsibilities for different elements of the Quality Management Systems (QMS).
2. Documentation Control.
3. The framework for the structure and relationships between documents used by QTS extending beyond the quality procedures to technical procedures.
4. Engineering Change Proposals (known as ECARS).
5. Records Management.
6. The framework for QMS reviews. (A number of these reviews include assessing safety processes and the condition of safety critical rolling stock assets).
7. Design Management and Control.

The review did discover documents to indicate that PFM had authorised procedures, standards or guidance in place for conduct of the non-traditional specialty engineering disciplines relevant to the activities being undertaken by PFM such as:

1. Reliability Engineering.
2. Maintainability Engineering.
3. System Safety Engineering.
4. Maintenance Engineering Analysis.
5. Reliability Centred Maintenance.
6. Human Factors engineering.
7. Technical Reviews and Reviews
8. Requirements Management and Specification Development.
9. Systems Engineering.

**Interfaces to capital works organisation.** Interfaces between the Capital Works rolling stock programs and PFM has major disconnects. In an inter office memorandum, the manager of PFM QTS highlighted a number of areas relating to logistic support that need to be addressed by Capital Works when modifications to the configuration of the fleet are planned. Logistic support issues are either not addressed or addressed inconsistently by projects. The areas of concern included: (143, 157)

1. Compliance with StateRail engineering specifications.
2. Drawings and schematics.
3. Technical manuals.
4. Analysis of maintenance requirements.



5. Training for maintenance staff.
6. Special test facilities, equipment and tools.
7. Spare parts approval.
8. Maintenance support infrastructure facilities.
9. Update to simulator(s) at ART Petersham where applicable.
10. Warranty details.
11. In-Service implementation schedules.
12. Update to PFM's METRE system modification module.

Examination of the Capital Works Policies/Procedures Manual verified that such guidance did not exist in authorised publications (203)

**Lack of an engineering authority.** RailCorp does not have a senior position identified with full accountability for judgement of significance for engineering decisions, technical authority and competency to establish the organisations, people, processes and engineering systems to assure the continuing technical integrity of rolling stock (143).

**Lack of formal Engineering Authority mechanism.** RailCorp and hence PFM, does not have a mature and formalized engineering management system to assure fitness for purpose of new systems and design and to preserve the technical integrity of in-service systems (143).

#### *Capital Equipment Procurement*

**Definition of technical program requirements.** There are no documented procedures, standards or guidance for speciality engineering programs, let alone standard technical programs, that require consideration as part of procurement. This deficiency is a management issue that relates directly to the Waterfall accident and the deficiencies in the deadman system (203). As noted previously, such programs may be conducted on an ad-hoc basis, depending upon the knowledge of the appointed project manager (198, 199, 200, 201, 202).

For example, consider the specification for the new Vigilance System for the Inner City Fleet (147, 197). This specification:

1. Does not adequately specify the reliability requirements for new vigilance systems.
2. Does not include the specification of a suitable measure for determining the reliability of safety critical systems (eg. MTBCF).
3. Fails to specify the level of confidence to which the reliability of the system needs to be verified by the contractor, a major risk for safety critical systems.
4. Requires the contractor to undertake a FEMCA but does not specify an acceptable standards to be used by the contractor.
5. Perpetuates the false concept that a safety critical system that involves human intervention and hence error, can be fail-safe.
6. Requires that a logic diagram be presented as the only method for validating that the system is fail-safe; not a standard practice for safety critical systems since it does not provide the level of assurance required of such systems.

**Formal engineering management system.** There is no approved engineering management system for capital equipment projects to assure that the project organisation is sufficiently competent for the project being undertaken (203).

**Formal accreditation mechanism to ensure fitness for purpose.** There isn't a formal mechanism to verify that products and services delivered by the capital equipment procurement program or those designed in house are certified in accordance with an approved standard, by an appropriate authority, as being fit for purpose and hence acceptable to RailCorp (203).

**Lack of Engineering Authority.** RailCorp does not have a senior position identified with full accountability for judgement of significance for engineering decisions, technical authority and competency to establish the organisations, people, processes and engineering systems to assure the continuing technical integrity of assets (143).

#### *Asset Management*

**Safety critical item asset register.** The Strategic Asset Manager for RailCorp within Capital Works, stated during an interview, that an asset register did not exist for safety critical items, and in fact RailCorp had only just commenced defining asset categorisations in a preliminary working document (148, 204).

**Condition standards for safety critical items.** The Strategic Asset Manager for RailCorp within Capital Works stated during an interview, that condition standards had not been identified for all safety critical items (148).

**Condition monitoring for safety critical items.** The review did not identify an institutionalised condition-monitoring program for safety critical items within RailCorp (148).

**Use of system safety analysis techniques within RailCorp.** *System safety and risk analysis are not well defined or mature processes within RailCorp. While some areas do perform some levels of systems analysis and risk assessment, such processes are not specified or controlled at the corporate level and are applied with varying levels of success throughout RailCorp. Hazard techniques such as Fault Tree Analysis and assessment methods such as FMECA have been performed at various stages of organisation development but not consistently or on a basis of continuous improvement. A senior staff member from corporate safety confirmed this to be the case during an interview (149). This statement was supported by observations during the review. In particular, mature systems safety and risk analysis processes were expected to be an integrated part of PFM and Capital Works processes, however this was not the case.*

*The requirement for mature system safety and risk assessment processes underpinning the development of system safety programs was expected to be part of RailCorp's Safety Management System model. However, the SMS model presented to the review team did not such an expectation (207, 208).*

### **4.3.7 Key Findings**

#### *High Level Issues*

The findings from the review of RailCorp's SMS can be summarised by the following high level issues:

1. The safety review found that most day-to-day activities by staff occur without adverse impact upon passengers, equipment or assets. *However, the major safety*

*focus throughout RailCorp appears to be primarily on compliance with the NSW Occupational Health & Safety Act and Regulations, rather than on the broader concept of an integrated safety management system across the entire organisation.*

2. The safety review *did not identify an effective system safety program or an integrated safety management system* that was understood and applied consistently across the organisation. Plans and booklets describing the elements of an SMS were identified.
3. RailCorp *does not have effective and well communicated change management policy and procedures* that define the requirements with regards to organisation, people, processes and engineering change at all levels of the organisation.
4. RailCorp *does not appear to recognise the critical importance of ensuring that its technical assets are fit for purpose*. Consequently RailCorp does not appear to have adopted many of the principles and practices employed by other organisations operating in high reliability environments such as aerospace, petrochemical and nuclear industries. Such industries involve proactive hazard identification and assessment and comprehensive risk analysis to determine acceptable risk and hence system safety.
5. *Personnel in key safety and risk management positions lack critical qualifications, training and experience in organisational safety, system safety engineering, risk management, safety investigation, safety analysis and human factors skills.*

## 4.4 Safety Reform Agenda

### 4.4.1 Introduction

RailCorp developed the Safety Reform Agenda in recognition of the need for major systemic change in the management of safety throughout the organisation. The Agenda confirms that many of the findings identified by this review are recognised by senior RailCorp management as requiring improvement. The referenced document is a draft version without version number or date.

### 4.4.2 Key Findings

The Safety Reform Agenda describes a high level framework intended to establish working level programs to carry forward the safety change agenda. As such, it:

1. Was developed in response to historical incident data and the RailCorp accreditation process and resulting milestones to achieve full accreditation.
2. Identifies critical elements of a safety management system that need urgent attention.
3. Established a reporting structure with the Project Manager accountable directly to the CEO and the Board and regular committee meetings to discuss progress and decide actions.

*However, at the time of the SMS review, the Agenda lacked detailed program plans to underpin the strategic directions and ensure that actions were achievable within assigned time frames and that accountabilities were assigned to ensure appropriate and timely close out of all actions. Whilst the Agenda did draw on previous reviews, investigations and accreditation processes, including the Glenbrook and Waterfall accidents to formulate the safety goals, a comprehensive, whole-of-organisation analysis to determine hazards and assess risks was not done at the time of the review. The SMS review could be used to add to the Agenda but cannot be assumed to satisfy the need for a comprehensive, whole-of-organisation analysis.*

*At the time of the review, evidence of external validation and verification of Agenda actions was not identified. For example, safety accountability statements were developed for all group general managers and provide a good, tiered outline of generic accountabilities, however, external validation may suggest:*

- The language is generic. Indeed, the Group General Manager Train Services and the Group General Manager, Customer Service have signed Accountability Statements in identical terms apart from the name of the Group. There is some rewording in the (retyped) Statement signed by the Group General Manager Infrastructure, but the effect is the same.
- There is not much in the way of measurable performance indicators and nothing in the way of timelines. There is nothing wrong with requiring senior leaders to promote the development of a sustainable safety culture, but when is it to be done and how is it to be measured?
- Consistent with the above, there is no indication of the state of affairs that the Group General Manager (GGM) is accountable to establish and maintain within the Group or (in the case of the Acting GGM Safety and Environment) across the Corporation.

- Whilst it is possible that specific objectives for the year might be set down in the Personal Safety Action Plans that each GGM has undertaken to agree with the CEO and implement, it is feasible to expect the Accountability Statements themselves to be much more outcome focused and at least provide a statement of what the GGM is accountable to deliver to the Corporation in the safety realm.

To be effective the accountability Statements require:

- The development of supporting, measurable and challenging safety KPIs.
- A rigorous performance appraisal against those KPIs.
- Recognition and reward of good performers.
- Counselling and management of poor performers.

#### **4.4.3 Analysis and Examples**

*The Expert Panel has concerns about the capacity of RailCorp to achieve the goals set out in the Agenda. These concerns are based upon:*

1. The lack of success within StateRail to effectively implement an integrated safety management system.
2. The timeframes outlined in the Safety Reform Agenda. Experience from other organisations suggests that the timeframes to implement a fully effective SMS across a complex organisation are lengthy. Similar organisations have as long as three years to implement an effective risk management framework, and between four to five years to establish an effective and integrated SMS.
3. The number and complexity of programs being implemented by RailCorp over the same time period. Every organisation has a finite capacity to fully implement change, as effective implementation requires time and effort. Attempts to implement too many programs over too short a time period result in ineffective implementation. RailCorp should identify a small number of key action areas and allow the appropriate time to ensure that those actions are effectively and sustainably implemented, followed by an audit program to validate the implementation.
4. A perceived lack of internal capability and knowledge within RailCorp to drive the changes needed to develop a SMS suitable for high reliability organisations. The review identifies the organisational competency to manage system safety and risk assessment effectively as less than necessary, especially in the fields of system hazard analysis, risk assessment and human factors analysis. Management responsible for driving the Agenda should possess current, qualifications, training and experience in system safety and risk assessment or have access to a support network of professionals who can provide such competencies.
5. The lack of an identified and involved “champion” to act as the corporate leader to ensure the SMS is fully integrated across all organisational interfaces. The “champion” should be a level 2 manager to demonstrate that senior management are accountable for safety and will make it an organisation priority.
6. A continuing focus on tactical issues including accident and incident investigation, safeworking and OH&S to the detriment of attention on strategic issues including high-level systemic risk and technical vulnerability.

7. *While the safety reform agenda has identified assurance as a critical element for safety improvement, the current system audits focus on low-level observations and interventions. It is essential that assurance include both internal and external verification of the safety systems to ensure they have been fully implemented and are effective.* Assurance activities to assist business units identify gaps in their safety management systems are also important.
8. The demonstrated capacity and effectiveness of the committee driving the process. Analysis of meeting minutes (209) indicate that:
  - Activity and discussion appears to be focused during the committee meetings but quickly falls away between meetings as staff go about their 'normal' jobs.
  - The committee structure does not demonstrate line management accountability as *there is a lack of direct involvement and input from Level 2 and 3 operational managers.* This project is critical to the future of the organisation. *It should therefore be championed by at least a level 2 operational manager* and have representation of level 3 operational managers from across the entire organisation.
  - *Most of the actions have been allocated to the safety professionals or the project manager, rather than being allocated to line managers* who are supported by safety professionals.
  - The committee appears to *have too many members* to be effective,
  - Committee members generally *do not have the necessary contemporary knowledge and competencies with regard to safety systems, system safety engineering and risk management skills,*
  - None of the action items have dates for completion and few have assigned accountabilities,
  - *The Agenda provides a statement of intended outcomes. It does not have clearly defined specific actions, nor does it have detailed implementation plans for those actions,* with appropriate performance measures to verify achievement.
  - The Project Manager has been allocated many of the actions identified. *Project managers should be accountable for ensuring that the project achieves its goals by ensuring that appropriate systems are in place to support the project team.* Project manager should not be accountable for completion of action items. These need to be shared by the team members who are held accountable for completion of tasks allocated to them in the required timeframe.

## 4.5 Safety Climate Review

Although it is not feasible to measure such a complex phenomenon as safety culture with any single tool, in the interest of efficiency, a questionnaire can be used to measure perceptions of safety within an organisation – commonly referred to as ‘safety climate’. Safety climate is an aspect of safety culture. A more detailed discussion of the distinction between safety climate and safety culture can be found at Section 2 of this report. A well-constructed survey can be used to assess different groups’ safety perceptions and attitudes, and compare the views of different occupational groups within an organisation. The RailCorp safety climate survey methodology is described further in section 4 of this report.

The RailCorp safety climate survey was undertaken in parallel with the safety review. Because systematic sampling of the entire organisation was not possible in the time available, sufficient numbers of some key occupational groups within RailCorp were surveyed so that comparisons could be made. The main RailCorp occupational groups surveyed were: Drivers, Guards, Signalling Staff, Maintenance Staff (rolling stock & track), Station & Customer Service Staff, Management & Supervisory Staff, and New Employees (with less than 12 months service).

A Commission representative visited a number of locations to ask groups of RailCorp employees to complete the questionnaire. This ensured both a good response rate (only one of those asked declined to complete a questionnaire), an adequate sample size for statistical analysis, and reasonable representation across key occupational groups. All questionnaires were completed during February and March 2004. A total of 459 RailCorp employees completed safety climate questionnaires.

### Key findings

1. The survey analysis generated two safety climate measures: “Management & Staff Safety” (comprising 14 of the questionnaire questions), and “Safety Training & Rules” (comprising another ten questions).
2. *Overall perception of safety climate across the whole organisation was poor.*
3. *There were major differences between occupational groups’ perceptions of RailCorp’s safety climate. Specifically:*
  - Drivers’ perceptions of RailCorp’s safety climate were significantly poorer than those of all other groups.
  - Perceptions of safety climate by Maintenance Staff, Guards, and Signalling Staff were significantly poorer than those of Station & Customer Service Staff, Management & Supervisory Staff, and New Employees.
4. On the issue of shiftwork and tiredness:
  - Drivers and Guards considered that work shifts were too long and that tiredness resulted from RailCorp’s shift pattern.
  - All other groups were at mid-point on shiftwork and tiredness, differing significantly from Drivers and Guards on this issue.
5. On the important issue of RailCorp rail operations safety in the 12 months since the Waterfall accident:

- None of the groups held the view that rail operations over the previous 12 months could be considered “Safe”, and the overall perception was that rail operations safety was only just above a “Neutral” position, falling well short of being “Safe”.
  - Drivers, Guards, and Maintenance Staff views were essentially the same – that rail operations safety within RailCorp over the previous 12 months was little better than “Neutral”.
  - These three groups’ views on rail operations safety over the previous 12 months were significantly lower than the views of Signalling Staff, Station & Customer Service Staff, and Management & Supervisory Staff.
6. In respect of perceptions as to whether RailCorp rail operations safety had improved in the 12 months since the Waterfall accident:
- The overall view was that rail operations safety had barely improved since the time of the Waterfall accident.
  - Compared with other groups, Management & Supervisory Staff were significantly more likely to perceive that rail operations safety had improved in the previous 12 months.
  - However, even Management & Supervisory Staff perceptions fell short of a view that rail operations safety had markedly improved in the 12 months since the Waterfall accident.
7. A wide range of topics was mentioned in response to the open-ended question inviting respondents to express any further views on safety matters. On the basis of numbers of mentions, these were grouped under two main headings.
- The “Big 3” – topics that were of greatest concern to respondents, receiving by far the greatest number of comments, were: “Management matters”, “General safety issues”, and “Training”.
  - The “Secondary 5” topics were: “Organisational culture/work attitudes”, “Maintenance/equipment”, “Rostering/shifts/fatigue/overtime”, “Communications”, and “Work rules & practices”.

### *Analysis and Discussion*

**Occupational groups participating in the safety climate survey.** Of 469 completed questionnaires, ten were excluded from the analyses on the grounds of too many unanswered questions or questions answered in ways that suggested that they might not have been understood by the person completing the survey. A majority (84.4%) of respondents had been employed by the State Rail Authority, with 3.9% having been employed by the Rail Infrastructure Corporation. The remaining 11.5% were new RailCorp employees. Of the 459 employees whose questionnaires were analysed, some had less than 12 months’ employment with RailCorp or its predecessor constituent organisations. Of the remaining 372 cases for which this information was available, the average period of employment within the NSW rail industry was 15.4 years. The following table shows numbers of respondents in each of the main occupational groups surveyed.



Occupational Group	Number responding
Drivers	56
Guards	69
Signalling Staff	48
Maintenance (rolling stock and track) Staff	50
Station Staff/Customer Service Staff	72
Management & Supervisory	69
New Employees (<12 months service)	63
Others	32
Total	459

Numbers of RailCorp employees completing a safety climate questionnaire

### *Developing RailCorp Safety Climate Measures*

The main part of the questionnaire comprised 34 questions on various aspects of safety. Respondents answered these questions on a 5-point scale ranging from “1: Strongly Disagree” to “5: Strongly Agree”. Thus, the higher the score on a question, the greater is the agreement with that item. Comparing responses from each occupational group to every question would produce a confusing mass of data that would defy interpretation. Therefore, to better understand the survey results, a statistical technique called factor analysis, which reduces the complexity of such data, was used. Appendix I gives further details about this technique and statistical information about its use in analysing data for this report.

Factor analyses reduced the questionnaire items to two main factors to represent safety climate within RailCorp. The survey questions making up each of these factors are shown below. Factor 1 was called “Management and Staff Safety” with the 14 questions grouped under this factor relating to this concept. Factor 2 was called “Safety Training and Rules” because the ten questions grouped under this factor related to these two aspects of safety. Appendix I provides further details of how these two factors were generated.

### *Management and Staff Safety (Factor 1) Questions*

1. Where necessary, operational staff can freely and openly talk to management about genuine errors that they have made.
2. Management looks for underlying factors that contribute to safety incidents rather than blaming people involved.
3. Management are genuinely interested in safety issues.
4. Staff are not pressured to perform duties if they have a safety concern.
5. Managers demonstrate a high level of safety behaviour.
6. Suggestions to improve safety are encouraged.
7. Management has a good understanding of operational issues that impact upon safety.
8. Staff are able to openly discuss safety problems with supervisors or managers.
9. Management regards safety as an important part of operations.
10. Reported technical faults that impact upon safety are rectified.
11. Staff are consulted about safety issues.
12. Staff who report incidents are provided with timely feedback.

13. Safety is considered to enhance rather than limit productivity.
14. Staff are kept informed about safety issues that directly affect them.

*Safety Training & Rules (Factor 2) Questions*

1. Training is received at regular intervals to refresh and update knowledge.
2. Adequate training is received when new procedures or equipment are introduced.
3. Regular training is provided for a range of emergency situations.
4. Safety rules and procedures are easy to use during normal operations.
5. Company training provides adequate skills and experiences to carry out normal duties safely.
6. Company emergency operating procedures give enough guidance on how to deal with emergencies.
7. Company safety rules and procedures are easy to understand.
8. Company safety rules and procedures are as complete and comprehensive as they need to be.
9. Staff induction adequately covers all safety issues.
10. Safety training is carried out by people with appropriate skills and experience.

*Comparing RailCorp Occupational Groups on the Safety Climate Factors*

The following table shows RailCorp occupational groups' scores on the two safety climate factors. The "Others" group (comprising security staff, trainers, cleaning staff and other RailCorp employees) was not included in these analyses as they did not represent a coherent occupational group.

Occupational Group	Safety Climate Factor	
	Management & Staff Safety – Factor 1	Safety Training & Rules – Factor 2
	Group average	Group average
Drivers	2.28	2.82
Guards	2.66	2.98
Signalling Staff	2.96	3.11
Maintenance (rolling stock and track) Staff	2.88	2.88
Station Staff/Customer Service Staff	3.42	3.52
Management & Supervisory	3.60	3.27
New Employees (<12 months service)	3.75	3.94
<b>Overall</b>	<b>3.11</b>	<b>3.24</b>

RailCorp Average Scores for employee groups  
(Possible scores range from 1: Strongly Disagree" to "5: Strongly Agree)

The average scores (in bold at the foot of the table) for all respondents (excluding the "Others" group) were 3.11 for Factor 1, and 3.24 for Factor 2. This means that overall, respondents perceived both RailCorp's safety climate factors to be just above the mid-point of the 5-point scale, where a score of "3" indicates "Neutral". Thus the overall perception of RailCorp's safety climate is that it is above "neutral" but that it falls well short of 4, which would represent "Agree" on the 5-point scale.

The overall scores of Drivers, Guards, Signalling Staff and Maintenance Staff indicate that these groups disagree more than they agree with the items comprising the "Management &

Staff Safety”, Factor 1 – these groups’ scores are all below the scale mid-point (“3 Neutral”). Scores of New Employees, Management and Supervisory Staff, and Station and Customer Service Staff are all above the mid-point of the scale, but only the New Employees’ score comes close to agreement with the items comprising this factor. The picture is similar for the “Safety Training and Rules”, Factor 2 with Drivers, Guards, and Maintenance Staff scoring below the scale mid-point, and the other groups scoring higher than “3” but none reaching “4”. The scores on both factors show more than a 20% difference between the highest (New Employees in both cases) and lowest (Drivers in both cases) group scores.

*These findings indicate substantial differences between occupational groups’ perceptions of RailCorp’s safety climate. To determine whether these differences are real, or whether they could have arisen by chance, a technique that compares the averages of the seven groups to test for statistically significant differences was used. Further details of this technique and its application to these data are given in Appendix I. Figure 6.a summarises whether overall differences between the seven RailCorp occupational groups’ scores on the two safety climate factors differ significantly.*

#### Management & Staff Safety (Factor 1)

Group	Guards	Signalling Staff	Maintenance Staff	Station & Customer Service Staff	Management & Supervisory	New Employees
Drivers	Differ	Differ	Differ	Differ	Differ	Differ
Guards		Differ	Agree	Differ	Differ	Differ
Signalling Staff			Agree	Differ	Differ	Differ
Maintenance Staff				Differ	Differ	Differ
Station & Customer Service Staff					Agree	Differ
Management & Supervisory						Agree

#### Safety Training & Rules (Factor 2)

Group	Guards	Signalling Staff	Maintenance Staff	Station & Customer Service Staff	Management & Supervisory	New Employees
Drivers	Agree	Agree	Agree	Differ	Differ	Differ
Guards		Agree	Agree	Differ	Differ	Differ
Signalling Staff			Agree	Differ	Agree	Differ
Maintenance Staff				Differ	Differ	Differ
Station & Customer Service Staff					Agree	Differ
Management & Supervisory						Differ

Agree	Indicates general agreement between groups on the safety climate factor
Differ	Indicates a significant difference between groups on the safety climate factor

#### Do RailCorp occupational groups agree or differ in their perceptions on the two safety climate factors?

*The overall picture is one of more differences than similarities between the seven groups of RailCorp staff in their perceptions of safety climate. In respect of their perceptions of the Management and Staff Safety factor, there are three separate clusters of RailCorp employees (shown diagrammatically in Appendix I, Figure H.1). Drivers are in a “cluster” of their own – agreeing with no other group in their perceptions of this safety climate factor. While Guards and Signalling Staff differ significantly in their perceptions of this factor, both agree with the perceptions of Maintenance Staff. However, these groups’ perceptions differ significantly*

from those of the other three groups. While there is no agreement between Station/Customer Service Staff and New Employees, the Management and Supervisory group forms a “bridge” in terms of being in broad agreement with the perceptions of both these groups.

The picture in respect of the Safety Training and Rules factor is one of greater agreement between Drivers, Guards, Maintenance Staff, and Signalling Staff, all of which have similar perceptions of the Safety Training and Rules factor. Signalling Staff and the Management & Supervisory group also have common perceptions. Management & Supervisory respondents and Station & Customer Service Staff also share perceptions on this safety climate factor. However, the New Employees group is completely isolated in terms of their perceptions of this safety climate factor (Appendix I, Figure H.1 shows these relationships diagrammatically).

#### *Comparing RailCorp Occupational Groups on the Shiftwork Question*

The questionnaire included one question on the topic of shiftwork: “Staff shifts are not too long, so that staff are not tired at work”. This item was not included in the earlier analyses because it formed a factor on its own – indicating that respondents considered it to be a distinct topic. It was therefore analysed separately. The following table shows scores on this question for the six main occupational groups. As well as excluding the “Others” group, “New Employees” were also excluded from this analysis on the grounds that some in this group had not experienced shiftwork, having only been with the organisation as trainees for a few weeks.

<i>Occupational Group</i>	<i>Average score for question</i>
Drivers	2.20
Guards	2.19
Signalling Staff	3.17
Maintenance Staff	3.16
Station/Customer Service Staff	3.28
Management & Supervisory	3.33
<b>Overall</b>	<b>2.89</b>

#### **Results to Question: “Staff shifts are not too long, so that staff are not tired at work”**

A statistical technique for comparing group averages, described in more detail in Appendix I, was used to make the comparisons shown in the following table, summarising groups agreeing and disagreeing in their responses to this question.

### Do RailCorp occupational groups have similar or different perceptions on the “shiftwork question”?

Group	Guards	Signalling Staff	Maintenance Staff	Station & Customer Service Staff	Management & Supervisory
Drivers	Agree	Differ	Differ	Differ	Differ
Guards		Differ	Differ	Differ	Differ
Signalling Staff			Agree	Agree	Agree
Maintenance Staff				Agree	Agree
Station & Customer Service Staff					Agree

Agree	Indicates general agreement between groups on the “shiftwork question”
Differ	Indicates a significant difference between groups on the “shiftwork question”

A clear picture emerges from this analysis. Agreeing strongly with each other, both Drivers and Guards essentially disagree with the shiftwork question, with both groups’ average scores being close to position “2 Disagree” on the 5-point scale. All other groups’ aggregate scores are a little above the scale mid-point (“3 Neutral”), one point above Drivers’ and Guards’ average responses. It is reasonable to conclude that the different groups’ responses to this question reflect their respective experiences of shiftwork, with drivers and guards reporting that their shiftwork patterns result in tiredness. It is a short step to query whether this could adversely affect the safety criticality of key operations.

#### *Perceptions of the Safety of Rail Operations within RailCorp over the Previous 12 months*

Two questions assessed respondents’ perceptions of the general state of safety in RailCorp over the previous 12 months – representing approximately the time elapsed since the Waterfall accident.

1. The first asked, “How safe do you think rail operations were in this company within the last 12 months”? (emphasis in original), on a 5-point scale ranging from “1 Very Unsafe” to “5 Very Safe”.
2. The second asked, “How has the overall level of rail operations safety within this company changed in the last 12 months”? (emphasis in original), on a 5-point scale ranging from “1: Very Much Deteriorated” to “5: Very Much Improved”.

Average scores for the same six groups are compared in the following table. To allow meaningful comparisons, the “Others” and “New Employees” were excluded from this analysis.

**Average scores from six occupational groups on two questions about operational rail safety within RailCorp over the previous 12 months**

	<b>Perceived level of safety in last 12 months</b>	<b>Perceived change in level of safety in last 12 months</b>
<b>Group</b>	<b>Average Score</b>	<b>Average Score</b>
Drivers	2.95	3.02
Guards	3.1	2.75
Signalling Staff	3.66	3.17
Maintenance Staff	3.14	3.20
Station/Customer Service Staff	3.50	3.35
Management & Supervisory	3.65	3.68
<b>Overall</b>	<b>3.34</b>	<b>3.20</b>

These results show that while Drivers' average score falls just below the scale mid-point on the question regarding safety over the previous 12 months, the other groups' scores are all above the scale mid-point. However, all still fall short of the scale point "4" that represents "Agree" with this question, with the overall average of 3.34 being just one third of a scale point above "Neutral".

Regarding perceptions of whether the level of rail operations safety had changed over the past 12 months, with an overall score of 3.20 – just above the "3 Neutral" scale point, the overall picture may be summed up as "not much"! To this question, while Guards were the only group to suggest that rail operations safety had slightly deteriorated during the previous 12 months, the other groups all scored between the mid-scale neutral point and "4 Improvement". With a score of 3.68, the Management and Supervisory group agreed most with the question of whether rail operations safety had improved over the past 12 months.

Responses to these two questions show that as far as perceptions of the level of safety of RailCorp rail operations within the previous 12 months are concerned, Drivers, Guards, and Maintenance Staff are in broad agreement and their scores are lower than the Management and Supervisory group score. Drivers and Guards rate the safety of rail operations significantly lower than do the Management and Supervisory, and Signalling Staff groups. There is broader agreement between the groups in respect of the perceived change in rail safety operations over the previous 12 months, although Drivers' and Guards' perceptions still differ significantly from those of the Management & Supervisory group. Group comparisons are summarised in the following table. Further details are in Tables H.6 and H.7 in Appendix I, which also shows the relationships between the groups diagrammatically in Figure H.2.

**Do occupational groups have similar or different perceptions of rail operations safety within RailCorp over the previous 12 months?**

Group	Guards	Signalling Staff	Maintenance Staff	Station & Customer Service Staff	Management & Supervisory
Drivers	Agree	Differ	Agree	Differ	Differ
Guards		Differ	Agree	Agree	Differ
Signalling Staff			Agree	Agree	Agree
Maintenance Staff				Agree	Agree
Station & Customer Service Staff					Agree

**Differences and similarities between occupational groups in their perceptions as to whether safety of RailCorp rail operations has changed over the previous 12 months**

Group	Guards	Signalling Staff	Maintenance Staff	Station & Customer Service Staff	Management & Supervisory
Drivers	Agree	Agree	Agree	Agree	Differ
Guards		Agree	Agree	Differ	Differ
Signalling Staff			Agree	Agree	Agree
Maintenance Staff				Agree	Agree
Station & Customer Service Staff					Agree

Agree	Indicates general agreement between groups on the question
Differ	Indicates a significant difference between groups on the question

*Further Respondent Comments*

A final question invited respondents to "... write in any other information about safety that you think would be of interest to the Commission of Inquiry". The 35.4% of respondents availing themselves of this opportunity wrote a total of 379 identifiable comments, which were coded under 30 headings. This volume of additional comment – unusual in such a survey, may reflect respondents' strong feelings on this topic, and also their belief that some benefit would result from them expressing their comments in this context. To some extent the comments were "primed" by the prior question topics, although a wide range of issues was raised in response to this question. On the basis of numbers of mentions, the topics could be grouped under four headings, labelled: "The Big 3" ("Management matters", "General safety issues", and "Training", with each receiving over 60 comments), "The Secondary 5" (each with between 17 and 28 comments), "Tertiary Issues" (eight topics each with between 4 and 7 mentions), and "Minority Matters" (the remainder with between 1 and 3 mentions). The following table summarises the main response categories.

In respect of each of the "Big 3" topics there was reasonable equivalence in percentages of mentions by different occupational groups. However, some topics were notable for being mentioned by some groups rather than others. For example only one Management and Supervisory respondent mentioned rostering and related topics, whereas eight Station/Customer Service Staff respondents mentioned this topic. Conversely, Management and Supervisory respondents made all the six referrals to "Union influence".

*Summary of topics spontaneously mentioned by survey respondents*

Topic	Issue	N	% of all
The "Big 3"	Management	70	18.5
	General Safety	68	17.9
	Training	63	16.6
The "Secondary 5"	Organisational Culture/work attitudes	28	7.4
	Maintenance/equipment	21	5.5
	Communications	19	5.0
	Rostering/shifts/fatigue/overtime	198	5.0
	Work rules & practices	17	4.5
"Tertiary Issues"	Funding for rail operations/maintenance	7	1.9
	Union influence	6	1.6
	Political influence	6	1.6
	Tangara Deadman system	6	1.6
	Incidents	5	1.3
	Infrastructure	4	1.1
	Staff quality/EO policies	4	1.1
	Medical/health standards	4	1.1
"Minority Issues"	Other*	32	8.4
Total		379	100.1

\* These included: driver attesting, emergency procedures, rolling stock, workload/work pressure, staffing levels, threat of/actual violence/assault on staff, OTR/network decisions, reporting defects, public relations, Tangara brakes, procurement, accreditation, operating procedures.

*Summary*

*None of the surveyed occupational groups considered that either of the two safety climate factors ("Management & Staff Safety", and "Safety Training & Rules") was being adequately addressed. This should be a matter of major concern to RailCorp management.* Because RailCorp operations also affect other rail industry organisations - for example, when they use the same sections of track, and also when RailCorp operations interface with other sectors, for example road users at level crossings - these findings are also likely to be of interest to a number of other parties.

*Widely different perceptions between employee groups within RailCorp on vital safety matters should also be a cause for serious concern.* In respect of aspects of safety climate measured by the main factor – "Management and Staff Safety", Drivers shared their perceptions with no other occupational group surveyed. There were also wide disparities between perceptions of other operational staff (Guards, Signalling Staff), indicating that three key groups of operational staff (Drivers, Guards, Signalling Staff) have very different perceptions of RailCorp's safety climate. This should be a matter of some concern. Perceptions of these groups in respect of this safety climate factor also differed significantly from those of Management and Supervisory Staff, as well as those of Station and Customer Relations Staff and New Employees.

While there were similarities between operational groups (Drivers, Guards, Signalling Staff) and Maintenance Staff in respect of the "Safety Training & Rules" safety climate factor, similarities with other occupational groups were tenuous. New Employees' perceptions of this safety climate factor differed significantly from those of all other groups.

While the drivers and guards surveyed agreed that their shiftwork patterns resulted in tiredness, this was significantly less likely to be accepted by other groups, whose views on



this issue were closer to “neutral”. That the shiftwork question produced such a clear result should be a matter of concern in respect of the long-term effect that shiftwork could have upon the safety critical performance of drivers and guards.

*The overall picture of the perceived level of rail operations safety by all groups sampled is rather dismal. None of the groups’ average scores on the question relating to this topic reaches the level representing “4 Safe” on the 5-point scale, the overall score being 3.34 and just above the “Neutral” position. This should be a cause for concern within RailCorp. Even Management and Supervisory respondents rated the overall level of rail operations safety at 3.65, which is still some way below the level representing “Safe”.*

The picture in respect of perceived changes in rail operations safety over the previous 12 months – representing the period since the Waterfall accident, gives even greater cause for concern. The overall score in response to the question on this topic was 3.20, a figure that represents only a 20% movement towards the scale point identified as “Improved”. This means that across all groups, *the dominant view is that rail operations safety improvements in the 12 months since Waterfall have been barely perceptible. Indeed the Guards’ view was that rail operations safety had slightly deteriorated during this period, while even the Management and Supervisory group, which had the highest average score (3.68), still fell short of unambiguously perceiving rail operational safety as having improved over the previous 12 months.*

The open-ended question inviting respondents to make further comments indicated that a wide range of safety-related topics was of concern to all occupational groups. In the case of topics not already represented, there is the option of formulating further relevant questions for future use in the RailCorp safety climate survey.

#### *Broader Implications for NSW Rail System*

Different perceptions could give rise to different interpretations of safety, misunderstandings between safety critical groups of employees, and divergent behaviours in respect of safety.

Shiftwork patterns that result in reported tiredness among safety critical staff would potentially impact across the wider rail network, with safety critical staff tiredness representing a “latent pathogen” in the terminology of Reason’s model.



## CHAPTER 5 ITSRR FINDINGS

The following findings are largely based upon an analysis of the evidence gathered by the safety review team through site visits, document reviews and staff interviews. An edited version of the document where this evidence was collated by the project manager forms a separate attachment to this report and is titled '*ITSRR: Safety Audit Document*'. The document has been edited so that the identity of individuals remains confidential.

### 5.1 Background

This section describes a comprehensive safety review of NSW railway regulation and specifically the Independent Transport Safety and Reliability Regulator (ITSRR) conducted to identify deficiencies with respect to the regulatory structure at the time of the Waterfall accident, and more recent initiatives by the new authority.

The activities of the Ministry of Transport (MoT) from the period following the Waterfall accident to the actual establishment of ITSRR on 1 January 2004 are described. In addition, the future plans and activities of ITSRR are evaluated as a means of determining the likelihood of the authority establishing a more contemporary approach to the safety regulation of the NSW rail industry. The organisation and effectiveness of the regulator pre-Waterfall is not discussed as this was comprehensively addressed in the SCOI Interim Report.

The key findings identified in this review are supported by detailed evidence, such as interview notes with key personnel, draft and final version documents submitted by ITSRR and from an analysis of the transcript of the formal briefing session conducted by ITSRR senior management to members of the Expert Panel and SCOI staff on 19 March 2004.

#### The New Regulatory Arrangements

In determining the relevant findings, it is necessary to emphasise that the SCOI auditors conducting this review faced particular difficulty in assessing the adequacy of the new regulatory arrangements because of the relatively early formative stage of ITSRR and its documentation. In the words of the Chairman of ITSRR:

*Building a new regulator by way of this new statutory authority which came into being on 1 January this year is very much, I might stress, a work in progress and coming off a considerably low base. (Briefing by ITSRR to SCOI, 19 March 2004)*

Because of this situation, understandably the auditors discovered a considerable lack of finalised policy documents, and many examples of “future plans” with little or no supporting documentation. As such, any identified deficiencies from this review must be tempered with the recognition of the evolutionary stage of the authority. Rather than appearing to criticise the new authority for a failure to produce detailed plans, this report attempts to present a balanced view, encouraging and reinforcing current and planned initiatives by the authority where appropriate.

New South Wales was the first State in Australia to introduce specific rail safety legislation. This was achieved in 1993 with the first NSW Rail Safety Act. A small unit was established within the then Department of Transport in New South Wales to administer that Act.

The NSW process was mirrored at a national level, when during the 1990s small regulatory units were established in each State, usually within transport or infrastructure departments,

reporting to the relevant portfolio Minister. In 1996 the state and territory transport ministers signed an inter-governmental agreement on rail safety, which committed jurisdictions to a nationally consistent approach, based on an accreditation or co-regulation model and mutual recognition of other regulators' accreditation of operators.

A significant event in the development of rail safety regulation was a Booz Allen Hamilton report published in 1999 commissioned by the Commonwealth Standing Committee on Transport (SCOT) at the request of the Australian Transport Council. The review was titled *Independent review of rail safety arrangements in Australia*. This report endorsed the co-regulatory approach for rail. However, it was clear from that review that there were some limitations in the way that the model had actually been implemented, and a lack of clarity in regard to the roles and accountabilities of regulators and operators.

In response, the accreditation authorities/State rail safety regulators released a paper on rail safety regulation in May 2001 titled: *Rail Safety Co-Regulation: Roles and Accountabilities of Accreditation Authorities and Accredited Railway Track Managers and Operators*. The intention of the document was to provide greater clarity in the roles and responsibilities of regulators, track managers and rail operators.

### **No Clear Definition of “Co-Regulation”**

Despite this, *the concept of co-regulation within the Australian rail industry has defied clear definition and is poorly understood, partly due to the lack of detail in the accreditation authorities' documents regarding the role of the regulator in a co-regulatory environment*. As a result of this poor understanding and lack of clarity in regard to the respective roles of the regulator and industry partners, the National Transport Commission (NTC) has recently established a process to more clearly define the co-regulatory safety framework including roles and responsibilities of all stakeholders. The NSW rail safety regulator is an active participant in this process.

ITSRR has been founded and built against the backdrop of current national developments, particularly the current debate surrounding the relative merits of co-regulation described above, as well as the previous limitations of the former regulator.

### **The Formation and Composition of ITSRR**

In April 2003, the Minister for Transport Services announced his intention to establish an Independent Transport Safety and Reliability Regulator (ITSRR) from 1 January 2004. Prior to the announcement by the Minister, the current Chair of the ITSRR board was requested to provide assistance in setting up the new authority.

Under the direction of the ITSRR Chair, a small Transport Regulation Project Team was established to conduct a review of the regulatory model and the way it was being administered at that time. The project team, as part of its review, examined regulatory models in other Australian jurisdictions and overseas, evaluated the merits of the Glenbrook inquiry recommendations relating to regulatory arrangements, and process mapped the core activities of the former regulator in administering the Rail Safety Act 2002. Many of the weaknesses identified from the project team's review were outlined in the previous section.

One of the outcomes from this review was the following assertion by the project team:

Prior to the establishment of the Independent Transport Safety and Reliability Regulator neither in New South Wales nor elsewhere in Australia could we find a rail

regulator template developed since 1996 that we would pick up and adapt to New South Wales' needs. (*Briefing by ITSRR to SCOI, 19 March 2004*)

To address the limitation of the previous regulatory framework a new regulatory mandate was proclaimed, although it is still consistent with the broader national co-regulatory approach. A new Rail Safety Act 2002 was introduced in February 2003 of that year which included the following improvements:

1. A risk based approach that also introduces the concept of Safety Management Systems.
3. A wider scope for regulator roles and responsibilities.
4. Increases the powers of the regulator and investigator.
5. Expands the range of enforcement tools.
6. Substantially increases offences and sanctions.

The organisation structure of ITSRR at the time of the review is provided at Appendix A.

ITSRR is a statutory authority responsible for the strategic coordination of transport safety regulation in NSW. Under section 42G of the Transport Administration Act 1988 as amended by the Transport Legislation Amendment (Safety and Reliability) Act 2003, ITSRR reports to the Minister for Transport Services on safety and reliability issues affecting transport services.

The work of ITSRR can be summarised under the following four core activities:

1. Strategic transport safety policy development.
2. Accreditation of railway operations, safety compliance and auditing.
3. Monitoring and advising on public transport service reliability.
4. Public transport safety investigations under the auspices of the Office of Transport Safety Investigations (OTSI).

The organisation structure of ITSRR reflects these four activities and consists of:

1. A Chief Executive Officer (CEO) who is responsible for the day-to-day administrative and financial control of ITSRR.
2. An advisory board, which consists of a Chairperson, three external members and the CEO.
3. A Chief Investigator who leads OTSI and reports directly to ITSRR Chairperson.

The ITSRR Advisory Board advises and makes recommendations to the Minister for Transport Services and to the authority on any matters concerning the safe operation of transport services and the reliability of publicly funded transport services. Neither the board nor the Chairman, has decision rights in making regulations or granting or removing accreditation. These responsibilities rest with the CEO.

In addition, the legislation establishes an Office of Transport Safety Investigations (OTSI), within ITSRR, and the position of Chief Investigator is nominated in that legislation. The Chief Investigator, however, is not subject to the direction or control of the CEO of ITSRR when undertaking a rail safety inquiry. The Chief Investigator reports directly to the Chairman of the Advisory Board.

In summary, the organisational structure of ITSRR consists of two separate and distinct reporting lines. The first, through the CEO, deals with regulation, accreditation and compliance including investigations for compliance purposes. The second, through the Chief Investigator, concerns itself with “just culture” investigations. They do, however, share common services, administration support, a Technical Panel and financial management.

### **Problems with the Previous NSW Regulatory Regime**

At the time of the Waterfall accident the legislation in effect was the 1993 Rail Safety Act. The limitations of the 1993 Act were clearly identified following the Glenbrook Inquiry. A summary of the limitations of the legislation include:

1. Safety standards and rules were typically set by industry rather than the regulator.
5. Safety analysis was not required to be risk based.
6. Limited scope in regards to the variety of roles and accountabilities required of a regulator.
7. Apart from the removal of safety accreditation, there were limited enforcement tools for the regulator, in regard to fines, and prosecutions.
8. There were no legislative restrictions on ministerial control in relation to power or capacity to influence the discretion vested in a public servant under any legislation.

### **The Previous Regulator**

With regard to issues outside of the legislative framework, the previous NSW regulatory regime was also constrained by the following:

1. Limited resources, systems and expertise to effectively regulate.
2. No permanent independent agency in New South Wales responsible for undertaking accident investigations.
3. There was limited separation of the investigation and compliance functions of the regulator.
4. There was limited external review of the regulator.
5. There were limited documented policies and procedures describing the key business processes of the regulator.
6. The regulator had limited capacity to undertake comprehensive systems based compliance inspections.
7. There was limited capacity to track previous safety actions arising from reports due to misused and disparate databases.
8. The regulator had limited in-house qualifications, training and experience in systems safety and risk assessment.
9. There was limited capacity for research and analysis.
10. The confidential reporting system set up under the former regulator following the Glenbrook Inquiry recommendations was not effectively promoted and rarely used.

The Chairman of ITSRR provided a succinct account of the problems besetting the previous regulator in an introductory briefing to the SMS review by ITSRR:

The lack of adequate management structure in the old regulator would have led to confusion among operators when the person they saw last week doing a just culture investigation was this week doing a compliance audit or inspection which could lead to some form of sanction. There was no structured review process to ensure quality output of reports, so we have been conscious in this period up to now that, in making significant changes, the ball is not dropped on existing regulation and investigation work. (*Briefing by ITSRR to SCOI, 19 March 2004*)

The present review sought to establish whether the limitation of the former regulator have been adequately addressed by the formation of the new authority, ITSRR, and in the light of significant structural and legislative changes, whether the core compliance tasks of the regulator have been maintained to a satisfactory level.

## 5.2 SMS Review

### Element 1. Regulatory Independence

*For a regulator to be effective, it is critical that it operate in an independent role, free from undue outside influence.* Because RailCorp and ITSRR are in the same Ministry it is physically impossible to be truly independent. This Ministry still has responsibility for delivering transport services. The Minister's key role in the appointment and performance management of some key positions within ITSRR calls in to question the practicality and strength of this independence. If the Minister is supporting ITSRR, he will be critical of RailCorp, or if he is supporting RailCorp he will be seen as criticising ITSRR.

While there are both structural and statutory provisions to ensure safety regulatory independence from broader transport policy, the ITSRR Advisory Board and the Transport Advisory Group have the same Chairperson. This may create a perceived conflict of interest regarding the independence of ITSRR from transport operations.

The reporting lines of ITSRR and the Office of Transport Safety Investigations (OTSI) to the same Minister may create an issue of 'perceived dependence'. There is a need for ITSRR, through consistent education programs, and through regular independent external reviews, to ensure that any perceived conflict of interest does not remain.

The ITSRR Office of Transport Safety Investigations (OTSI) is not sufficiently decoupled from the regulatory process to give OTSI investigators the tools that they will need to conduct independent investigations. Although OTSI has a separate management process from the ITSRR Regulator and manages a separate budget, it does share resources, in particular a Technical Panel.

The Technical Panel members could become privy to compliance failures found during OTSI investigations. This "cross-germination" could effectively infect the non-punitive investigatory methodology mandated to OTSI.

*The safety review determined that additional internal controls are required to better manage potential conflicts of interest and a strong communications strategy will be needed to manage perceived conflicts of interest.*

The safety promotion function of ITSRR will be critical to managing perceptions and communicating messages of change in the functions of the regulator and the new independent investigation regime.

## **Element 2. Regulatory Mandate**

A regulatory body must have sufficient statutory authority to implement an effective safety oversight process. If that authority is not in place, or is not empowered to carry out its responsibilities then it is difficult to have an effective oversight process.

At the time of the Waterfall accident there was sufficient mandate for the regulator to complete its function and changes that resulted in the Rail Safety Act of 2002 further enhanced the regulator's legislative powers.

*Unfortunately the new legislation has been amended to the effect that there is now no need for a rail operator to produce a Safety Management Plan.* The Rail Safety Act 2002 now requires the applicant to produce a document which describes its 'safety management system' which, arguably, does not provide as thorough or stringent a basis for verification as the former position.

## **Element 3. Policy and Objectives**

*Appropriate regulatory policy and objectives must be in place as part of the regulatory infrastructure for effective rail safety oversight.*

ITSRR does have a number of policies in place or in draft form. However, the safety review indicated that system safety fundamentals and more detailed processes for assessing safety management systems are still being developed.

While ITSRR is developing policy and procedures as quickly as it can, this is being done in the absence of a clear document control process, which is still under development.

ITSRR has commendable plans to conduct safety research and development, although such proposals are still in relative infancy. However, as yet it is unclear as to the processes ITSRR will use to develop research strategies and priorities and establish links with industry, other regulators and academic institutions.

## **Element 4. Organisation and Function**

*A well-established organisation with clearly delineated functions is important for the regulatory process. If these functions and the organisational structure are ill defined then it becomes difficult and cumbersome to oversee the safety of rail systems.* The current focus on developing the 'top policy structure' of ITSRR has created an environment where there are insufficient field staff conducting audit and compliance inspections. This will damage the credibility of the new Regulator.

Numerically, ITSRR is more than double the size of its predecessor but the authority is still recruiting staff. At the time of the SCOI review it was at about 60% of full staffing, with many positions either vacant or filled by seconded staff. Those numbers are strongly in favour of management, policy and administration staff (including 9 in the 'reliability' function), with only about 20% of the total being dedicated 'field' staff.

*Given the size of the RailCorp operation, Pacific National (PN) and the pending lease of infrastructure to ARTC, ITSRR's mandate to review the safety accreditation of all NSW rail operators will require a significant number field staff to conduct audit and compliance functions.* A number of management staff are designated as officers and will be trained to conduct audit and compliance investigation, however, given the large task of developing the regulatory framework and organisational processes, it is difficult to accept that management will be involved in much field work.



*A desktop analysis based on the annual requirement to audit RailCorp, PN and in the future ARTC, suggests that in the order of 28 to 30 dedicated field staff will be required to support an active Regulator. The other organisation issue identified by the review was that the position of Regulator is not clear. The Chief Executive Officer (CEO) is responsible for managing and controlling the affairs of ITSRR and may delegate any of the functions of the regulator to an authorised officer of ITSRR. The exact nature of the relationships between the CEO, the transport safety regulator and the transport safety investigator is yet to be made clear.*

*All position descriptions for ITSRR specify tertiary qualifications only as desirable. This policy needs to be reviewed for more technical positions, where senior specialists may be required. The review of ITSRR indicated that the current organisation does not have significant skills or practical experience in system safety and risk assessment or implementation of system safety programs to effectively evaluate rail operator accreditation programs or provide guidance to the industry. ITSRR intends to address these organisational deficiencies through the Technical Panel members.*

Besides safety regulation, ITSRR has a function to monitor rail system reliability. Most of the rail community believe reliability to be a pseudonym for ‘on time running’. This belief will be a hard perception to overcome and with out competent leadership and direction could easily become the reality. The CEO intends the reliability function to be used to monitor asset reliability trends to identify precursor events that could lead to unsafe conditions. If implemented effectively, this will become an important source of data for ITSRR.

#### **Element 5. Data Analysis**

*Data analysis is at the heart of the compliance of rail safety regulations. For the regulator to truly understand the status of rail operator’s safety effectiveness, it is critical that it have a strong data analysis capability. At the time of the Waterfall accident record keeping by the Regulator was ad hoc and inadequate to provide a system for proving due diligence or appropriately analysing the safety health of the railway. Establishing a valid data and information management system should be a very high priority for ITSRR.*

At present there is no document control procedure in place in ITSRR. An ‘interim’ manual filing system has been put in place to catalogue ‘inherited’ documents. A system called PRISM (Performance Reliability Investigation Safety Management) is under development, but is not planned to be fully operational until late 2004. Among other things, this system is expected to manage documents and data. It was not been possible for the safety review to make an adequate assessment of PRISM due to it only being a “concept” at this stage. *ITSRR will need to ensure that whatever system is implemented, it provides an effective knowledge management framework for trend analysis, record keeping and decision support.*

OTSI has also continued to refine a Confidential Incident Reporting System established by the previous regulatory organisation. While, data continues to be collected, trend analysis will not be available in the short to medium term.

ITSRR has a plan to seek ISO9001 quality assurance accreditation, which will assist in the development of a more robust document control system, but there was no clear timetable presented to the safety review team to indicate when such accreditation might be achieved.

#### **Element 6. Transition**

*The Regulator must have a strong change management process and culture in place to effectively manage its own transition and corporate changes. Effective transition*

*management processes are critical to assure that safety oversight of railways does not lack appropriate attention and action during the building of ITSRR.*

Audit results indicated that the ITSRR transition plan has an appropriate and realistic timeframe for true organisational and cultural change. However, *little evidence was found of an analysis of the risk to oversight failures or an effective change management process to assure that safety oversight continues with sufficient attention and resources during the organisation development.* Credibility of the new regulator will be dependent on being seen to be in the field and effective. Lack of credibility with the rail industry was a major deficiency of the transport safety regulator at the time of Waterfall.

A number of key activities are in the process of being dealt with by ITSRR and the time lines for these activities are such that the newly developing ITSRR policies will not be ready in time. It is likely that these priority activities will dominate demands on ITSRR resources for the immediate future. They include:

- Ensuring the full and effective implementation of the recommendations from the MoT Waterfall investigation
- Effectively managing the close out of conditions and milestones of the RailCorp Provisional Accreditation and assessing RailCorp for full accreditation
- Managing the close out of the ARTC accreditation application and start up of operations in NSW, including the key interface arrangements
- Implementing and monitoring recommendations from SCOI

ITSRR was not able to provide a clear picture as to how it will determine that the various actions from the above will be adequately closed out by those responsible. ITSRR has indicated that it may need external assistance to do so.

## **Element 7. Safety Enforcement over Rail Authority**

*The safety enforcement process is the principal tool available to the regulator for assuring that safety regulations are met. Compliance with the regulatory framework is essential to ensure safety in rail operations.* At the time of the review ITSRR had developed a draft Compliance and Enforcement policy. The stated goals of this policy were:

1. To protect passengers, workers and the public from individuals and organisations who cannot, or will not, operate in accordance with the defined regulatory framework.
2. To assist in education of the rail community with the aim of establishing processes for continuous improvement in rail safety.
3. To take appropriate action against individuals or organisations that choose to put other considerations ahead of their obligations under the Rail Safety Act or those who deliberately disregard those safety obligations.

The new enforcement powers allowed by ITSRR under the amended Rail Safety Act provides for escalation depending on the seriousness of the non-compliance. Enforcement actions allowed are:

1. Counselling and or warnings (intended to guide and educate).
2. Agreed undertakings (milestones or agreed actions to restore compliance).

3. Improvement Notice (used for non-urgent rectification).
4. Prohibition Notice (used to cease operations immediately until the non-compliance is rectified).
5. Variation, suspension or cancellation of accreditation (used to remove a threat to rail safety).
6. Penalty Notice (used in conjunction with Improvement/Prohibition notices or variation, suspension or cancellation of accreditation where a deliberate action has resulted in the non-conformance).
7. Prosecution (used for serious, deliberate or repeat, breaches of the regulatory framework).

*The co-regulatory environment, as exists in NSW, is predicated on the maturity of both the railway and the regulator. Audit results indicated that ITSRR does not have a mature and comprehensive strategy to address how they would react if RailCorp failed to meet the requirements for full accreditation, other than a graduated sanction regime. It was unclear if ITSRR was prepared to actually withdraw accreditation of an operator, especially RailCorp. RailCorp is currently operating under a provisional accreditation, valid until December 2004 and which can only be renewed once.*

*As discussed during the Stage 1 hearings of the SCOI, the DoT had not sufficiently used its authority to identify critical safety issues that exist on the railway. In particular, the SCOI Interim Report findings identified the deadman issues that were previously unknown to DoT safety regulators. It is too early to assess if ITSRR will be more effective in identifying safety issues, but at the time of the review, ITSRR staff did not have the requisite qualifications, training or experience to perform proactive hazard and risk assessments effectively.*

### **Element 8. ITSRR Accident/Incident Investigation**

A comprehensive accident/incident investigation regime is an important component of the regulator's continuous improvement process for safety oversight. Much can be learned from an accident if properly investigated and corrective actions are tracked to closure.

The safety review results indicated that the previous regulatory regime followed the AS5022 standard for accident investigation. However, the vast majority of these investigations were not sufficiently risk-based and did not follow a system safety analysis approach.

Due to the evolving status of OTSI, the safety review was unable to evaluate the quality and effectiveness of accident investigation reports, however, the new OTSI does have an organisational wall to prevent compromising of information from the independent investigation function to the compliance arm. However, with a common technical support panel of experts, there is a chance of information migration.

*Apart from notable exceptions, prior investigations were not consistently systematic or risk-based due to a lack of appropriate training for staff and the requisite skills and resources. Little evidence was found that investigation results impacted upon continuous improvement in regulatory safety policy.*

OTSI do not yet have a comprehensive track record for the completion of investigation reports, so it remains difficult to judge their quality and effectiveness. However, according to ITSRR Advisory Board Arrangements, before publishing a report or giving a report to the Minister, ITSRR must refer the report to the Advisory Board and consider any advice of the

Advisory Board relating to the report. If all reports were subject to this procedure, it seems to be an unnecessary and cumbersome process.

There are plans to develop investigation skills training programs using outside contractors incorporating safety management systems, human factors and investigatory training based on ICAM/Reason models. *OTSI based investigators should receive more in depth skill-based training in contemporary safety investigation techniques using appropriately qualified training providers.*

Review results indicated that the Confidential Safety Information Reporting System (CSIRS) has been well-designed and good checks and balances exist to ensure confidentiality. Reports can be made online, by phone, fax or mail.

### **Element 9. ITSRR Audits**

*The safety oversight audit process is the primary tool to verify compliance with safety regulations. This is particularly important in the NSW co-regulatory environment. The role of the regulator is to audit the railway and assure that the railway follows its own procedures.*

*At the time of the Waterfall accident, there wasn't a standard audit protocol, audits were not evaluated for efficacy nor were corrective actions tracked to closure. With the new ITSRR organisation it is still too early to determine the adequacy of the audit process, however, development of a standard audit protocol has commenced using a consultant organisation.*

*Auditors had not received system safety training. Auditors need to be fully trained in technical report writing, audit and verification processes, and risk based system safety assessments.*

A new audit protocol is under development but it was difficult to make an assessment because of its embryonic state. It is to be based on an existing tool developed in the United Kingdom and not currently used in Australia. It is not clear what validation process will be used to confirm whether it is fit for purpose.

No safety trend information system currently exists for analysing the results obtained from audits. ITSRR has identified this deficiency and has a program to address the need.

### **Element 10. Safety Accreditation**

*Because NSW has a co-regulatory regime, the safety accreditation process is its cornerstone. The safety review determined that the accreditation process does not sufficiently incorporate system safety management principles, or require demonstration of a valid system safety program documented in a system safety program plan, safety case or other valid model. Without a supporting systems safety plan or safety case, it is unclear how ITSRR would determine that system safety management systems and system safety engineering processes were being implemented effectively by RailCorp.*

*The review did not identify a well documented, transparent system for accreditation with evidence of a clearly defined and well articulated process describing how ITSRR (or MoT previously) undertook verification and validation of system safety leading to accreditation. Also, there was no direct evidence of a clear set of criteria provided to operators to guide their applications for accreditation.*

Safety review results indicated that *follow up to 2001 and 2002 accreditation results and validation were ineffective in determining, tracking and closing out deficiencies. StateRail safety milestones were not verified as completed.* Interviews and document reviews indicated

that no DoT accreditation acceptance procedure or objective assessment tool was in place at the time of the Waterfall accident.

*In the past, the regulator has failed to adequately evaluate the 'fitness' of an operator's SMS. Nor did the regulator prescribe policy and guidance to assist in the understanding and satisfaction of the accreditation process. To do so would require the regulator to possess mature, high level competencies in systems safety and risk assessment. This was not the case in regards the regulator at the time of the Waterfall accident, and was still not the case for ITSRR at the time of the safety review.*

*Accordingly, the accreditations issued by the previous regulator must be considered as less than valid or effective. Similarly, the current provisional accreditation of RailCorp must be questioned for validity. Particularly since the RailCorp provisional accreditation is based on the validity of the prior StateRail and RIC accreditations. Given the level of system safety maturity of the regulator, StateRail and RIC at the time of previous accreditation awards, very little confidence can be placed in the validity of those accreditations. The effectiveness of the process is questioned following on from the Glenbrook and Waterfall accidents.*

*The RailCorp application for accreditation had not identified who was accountable for hazard identification and risk management, and lacked any follow up of StateRail's conditions such as worker competency, document control and communications. ITSRR has not been able to provide a clear picture as to how they will manage and assess the close out of conditions and milestones of the RailCorp Provisional Accreditation, based on currently agreed timelines.*

#### **Element 11. Partnership with the Rail Authority**

Though the regulator is responsible for assuring the safety oversight process of the railway that does not restrict it from establishing mutually beneficial partnerships with the railway to continuously improve the safety management system.

While there are evolving plans to involve industry in safety research initiatives, the safety review found little evidence that the regulator planned to develop safety standards or safety design guidelines in consultation with the rail organisations.

Though the Regulator is responsible for assuring the safety oversight process of the railway, it does not obviate the fact that the regulator can still partner with the railway to continuously improve safety management systems. The safety review results indicated an adversarial relationship rather than a teaming relationship existed between StateRail and the previous Regulator.

Very little evidence exists to indicate that the previous regulator had attempted to develop safety standards or safety design guidelines in conjunction with the rail organisations.

ITSRR stated during the safety review that there was plans develop partnerships with the rail industry to conduct research and development activities with a view to improving safety. ITSRR has circulated draft accreditation models and enforcement models to industry for comment, and has a good website that provides a means of interactive exchange with the industry.

## 5.3 Analysis

### 5.3.1 Regulatory Independence

The formation of the new ITSRR, has resulted in additional powers being afforded to the authority so that there is sufficient mandate to appropriately implement safety management oversight of NSW rail operations. However, because RailCorp and ITSRR are still under the same NSW Ministry, there cannot be true regulatory independence. The Rail Safety Act of 2002 does separate out Ministerial influence from the regulatory process but the CEO is still subject to direction and control of the Minister in non-regulatory issues. Both the Chairman and CEO are appointed at the Minister's recommendation, and report to the Minister. The Minister still has responsibility for delivering transport services (210).

The CEO is subject to the direction and control of the Minister for Transport Services, except with respect to regulatory duties. The Chairperson of the Board is a "key advisor" to the Minister. Although the Chairman and CEO report to the Minister, and the Minister has responsibility for delivery of transport services, the Act specifically does not allow the Minister to take any role in the critical activities of ITSRR. Although legislation prevents direct involvement of the Minister in ITSRR's affairs, both the Chairperson and CEO are appointed at the Minister's recommendation, as well as three Advisory Board members, and thus allows the possibility of the perception of a potential lack of independence (211). It should be noted that the CEO negotiates an annual Performance Agreement with the Minister.

In spite of these relationships, the Safety Act subjects ITSRR to the direction of the Minister except as provided by subsection (211), specifically:

1. Exercise of a function relating to accreditation.
2. Any decision to take or not to take enforcement action under the Act.
3. The exercise of a function relating to a rail safety inquiry or a transport safety inquiry.
4. Outcome of any monitoring or auditing of the safety or reliability of the transport service.
5. The contents of any report or recommendations of ITSRR.
6. The exercise of a function under section 421 (except as provided by section 421(5)).

However, even though these provisions exist, the Minister's key role in the appointment and performance management of some key positions within ITSRR, calls into question the practicality and strength of this independence (212).

Furthermore, the reporting lines of ITSRR and OTSI to the same Minister may create an issue of 'perceived independence' given that both ITSRR and OTSI exist within the same organisation. While this situation exists in other industries, eg in the Australian aviation industry, where both CASA and ATSB (being separate organisations) report to same Minister, *there is a need for ITSRR, through consistent education programs, to ensure that any perceived conflict of interest does not remain. Similarly, there is a potential for a perceived conflict of interest arising from regulatory policy being developed within ITSRR and being subject only to review by ITSRR Advisory Board (i.e. no external review process), which has no executive powers* (213).

While there are both structural and statutory provisions to ensure safety regulatory independence from broader transport policy, ITSRR and the Transport Advisory Group have the same Chairperson. This may create a perceived conflict of interest regarding the independence of ITSRR from transport operations (214) and will need to be addressed in advisory material and public information as part of the safety promotion system.

The safety review also found that the ITSRR Office of Transport Safety Investigations (OTSI) is not sufficiently decoupled from the regulatory process to give the OTSI investigators the tools that they will need to conduct independent investigations. Although OTSI has a separate management process from ITSRR and has its own budget, (215) and it does share key resources, in particular, a Technical Panel. This *Technical Panel is faced with the dual challenges of having to support regulatory compliance through their technical expertise, while also having to support the OTSI accident investigations* (216).

Potentially, the Technical Panel could be over resourced to the OTSI investigations and not be able to support other ITSRR technical duties. It is likely that if the OTSI is involved in a large-scale investigation that it could monopolise the Technical Panel resources for a significant period of time. Not only would the compliance and accreditation functions suffer from not having the technical expertise available to continue daily functions, but also, the Technical Panel members could become privy to compliance failures found during the OTSI investigation. This “cross-germination” could effectively infect the non-punitive investigatory methodology mandated to the OTSI. The shared Technical Panel resources are a ‘healthy’ situation, so long as it can be conducted in an appropriately open manner. However, there is the opposite risk that the relationship might become too cosy, leading to a potential reluctance to be critical. In the formation of ITSRR, no evidence could be found that these issues were considered.

An additional concern with the lack of complete separation of OTSI from ITSRR, is that OTSI conceivably may not have the internal independence to investigate ITSRR’s regulatory efficacy, particularly in relation to the oversight process. Various interviews with senior leaders of ITSRR indicated a clear understanding of the challenges of trying to maintain an internal independence (217). A review of the MoT Waterfall Railway Safety Investigation Final Report (218) indicated that investigators did adopt an independent assessment of both StateRail organisational safety failures, and to a much lesser extent, government oversight failures. However, it was clear from the present SCOI review of ITSRR, that in practice it probably will be difficult for ITSRR to implement a true independent investigatory arm that does not adversely influence the regulatory functions.

In response to this, the CEO of ITSRR stated that this situation will be managed by ensuring that technical panel members will not be lead investigators in any inquiries, but will simply be technical experts providing input to the investigation, as might a technical expert from the industry itself. An external technical panel is proposed so that additional resources may be made available (219).

While these proposed internal procedures appear to represent a valid method of avoiding conflict of interest scenarios, the SCOI review team was not able to locate any internal procedures for managing this problem, or any documentation regarding an external expert panel.

Concerns about regulatory independence have surfaced in other countries. For example, as explained during the evidence presented to the SCOI by Robert Lauby, the United States (US) has a completely independent accident investigation board, the National Transportation Safety Board (NTSB), which is responsible for investigating all transportation accidents in a non-

punitive fashion. The NTSB does not report to the United States Department of Transportation (USDOT) but rather answers directly to the President of the United States, and is funded by the United States Congress. Because of this, the NTSB is free to arrive at conclusions about accidents independently, without the added pressure of witnesses feeling that they have to suppress vital safety information because of fear of punitive action by the regulator.

Furthermore, in most states within the United States, an independent agency has been created that is responsible for operating the railway, and is not part of the state Department of Transportation. Funding is supplied by fare box collection, local taxes, and some federal support, but only in the form of infrastructure upgrade grants. Transit authority operating budgets are set, funded, and managed at the local independent transit authority level.

Through the USDOT, Federal Transit Administration (FTA), urban mass transit regulation has been delegated to the state level. The FTA retains federal oversight; however, the Department of Transportation at the state level is responsible for regulating safety of local rail operators. The FTA is primarily an infrastructure grant-giving agency to transit authorities. Each state that has a transit authority in its jurisdiction is required to establish a state-level safety oversight agency.

This state safety oversight agency is responsible for assuring rail safety. The FTA oversees, and regularly audits, state safety oversight agencies and individual rail authorities to assure compliance. If a rail authority does not meet state safety standards the FTA has the legislative ability to withhold up to five per cent of the transit agencies' grant funding. The FTA requires each oversight agency to completely audit each rail authority at least once every three years. Audits are conducted with experts from peer railroads, federal oversight agents, state safety oversight authorities, and safety oversight contractors.

US urban mass transit safety regulation is managed in a co-regulatory framework similar to NSW. The American Public Transportation Association (APTA)—an industry association comprised of all public transport operators—and FTA have jointly developed a considerable amount of safety standards and safety guidance, to assist transit authorities in meeting their regulatory requirements. Government and industry sit on joint standards-writing panels.

The USDOT Federal Railroad Administration (FRA) regulates all commuter and freight rail. The FRA uses a prescriptive regulatory framework, with very detailed safety engineering standards and requirements.

It is quite clear from established practices in the US that there are well-defined structural and governance arrangements to ensure independence in relation to the roles of the transport safety regulator, accident investigator and industry stakeholders. In contrast, the roles, and thus the independence of various parties within the NSW rail system are less clear.

### **5.3.2 Organisation and Function**

The position of the “Regulator” within ITSRR is unclear. Legislation requires the Chair to possess safety experience, but not the CEO. Interviews and document reviews indicated that the CEO does not have any significant operational safety experience (220).

Though ITSRR is more than double the size of its predecessor, the authority is still recruiting staff and at the time of the SCOI review was at about 60% of full staffing, with many positions either vacant or filled by seconded staff. Many of the staff within ITSRR are previous employees of the transport operators. Some key positions are filled with appropriately qualified and experienced people, but many are not. There is an on going



process of advertising to permanently fill positions currently filled with acting staff. ITSRR is planned to be staffed by approximately 85 people; currently only around 50 staff are in place. As a result, ITSRR has a limited capacity to conduct proactive risk analysis.

Of the planned 85 staff there are approximately 18 field positions, 15 management, 28 policy, 14 clerical, and six technical staff. From a review of the organisational structure, and from comments by Regulator staff within ITSRR that were interviewed, there may be too many staff focused on management, policy and administration, and not enough staff in the field to validate accreditation claims. Document reviews and interviews indicate that approximately 20% of ITSRR staff will be deployed to field positions. Given the size of the RailCorp operation and the mandate of ITSRR to review the safety accreditation of all NSW rail operators, *there is significant potential that there may not be enough field staff to validate accreditation arrangements. This is of particular concern because RailCorp still is going through significant reorganisation and safety changes.*

Some staff interviewed have suggested that the organisation is evolving to be top heavy, with an over emphasis on safety policy and strategy skills to the detriment of sufficient resources being provided to manage core accreditation and compliance functions. However, it is acknowledged that this situation may only be transitory until all the recruitment is completed, and ITSRR has a full complement of operational staff. *This will require monitoring by ITSRR senior management in the interim.*

*ITSRR staff have recognised, and the safety review results corroborate, that the current organisation does not have significant skills or practical experience in system safety and safety management systems. The primary concern is that staff and managers do not have a strong system safety and risk assessment education and background to effectively evaluate rail operator accreditation programs.* For example, the appropriate analysis of the design review and acceptance process for the deadman pedal design and subsequent issue reports would have revealed the now confirmed deficiencies. If the regulator is to assess the adequacy of safety accreditation, especially in a co-regulatory environment, *then it is paramount that the regulator has sufficient safety analysis skills to determine whether the operator has adequately assessed all operational risks to safety. The regulator should have the same high degree of safety analysis expertise as the rail operator safety analysts. Because StateRail, and now RailCorp still have serious system safety challenges, it is critical that the rail regulator has the expertise to validate the rail operator's safety programs.* An internal training needs analysis has indicated this gap, and ITSRR plans to launch a training program that will develop these skills (222).

ITSRR currently has an acknowledged deficiency in key system safety and risk assessment skills, particularly in the area of product/ design standards, hazard – vulnerability analysis, and systems analysis (222). System safety and risk assessment skills includes identification and assessment of hazards, analysis of risks, verification and validation of controls to mitigate risk and processes to accept or transfer risk. System safety and risk assessment is a compilation of engineering analysis and management practices that control dangerous situations, specifically:

1. Identification of the system boundaries and interfaces.
2. Identification of hazards in the system.
3. Determination of the underlying causes of those hazards.
4. Development of engineering or management controls to either eliminate the hazards, reduce exposure to the hazard or mitigate their consequences.

5. Verification that controls or defences are adequate and in place.
6. Monitor the system after it has been changed and modify further as needed.

*The fact that the regulator does not have adequate system safety and risk assessment skills creates an even bigger risk to regulation, since the industry is also lacking in these same skills. The current plans for the Technical Panel do not appear to address this deficiency, nor is it probable that the intended implementation will be successful in attracting the right level of skills.*

ITSRR has established a Technical Panel to bring some of these skills in-house. *However, the Technical Panel concept could be expanded to include a panel contract with industry to provide access to safety system specialists that would not normally be available to a government entity.* By establishing a pre-selected panel of experts, ITSRR could provide a greater pool of expertise for both TSR and OTSI. Such a panel contract would also be available to industry.

Interviews and document reviews indicated that the ITSRR senior leadership had safety management systems and operational rail experience, excluding the ITSRR CEO who brings a strong policy (without safety) background (221 & 222). Although this leadership does have safety experience, audit results indicated that the safety background may not be sufficient and deep enough to assure that an appropriate safety management system can be implemented at RailCorp. Senior staff do not have a significant background in safety oversight policy. The safety review results indicated that it is still unclear whether ITSRR had sufficient safety management systems background to provide RailCorp with additional guidance on incorporating a more contemporary approach to safety within their management systems.

ITSRR Accreditation and Compliance staff have operator backgrounds, with a primary focus on rolling stock and safeworking rules. There is no clear indication of appropriate safety system experience. Current training that is provided involves compliance with audit processes, rather than the underlying concepts of system safety, including organisational and human factors.

Position descriptions have been prepared for all positions. The position descriptions were prepared in mid 2003 by an external consultant using the Cullen Egan Dell approach. Details of how this methodology works have not been obtained. However, it was observed that in all cases the *selection criteria in the position descriptions are imprecise, and do not include either measurable practical experience or relevant professional qualifications* (223).

ITSRR's reliability section has the potential to distract attention from safety and asset management unless it is appropriately focused early in its development. Because the organisation is still forming, the exact relationship between the safety and reliability functions was unclear. Results of the safety review indicated that the reliability section seemed to be duplicating operational statistics gathered by RailCorp. There was little evidence that the focus would be on other rail entities as well. Staff competencies focused on on-time running. It was unclear whether the reliability section's on-time running requirements would influence safety requirements (224).

There is a need for clarity with regard to the reliability role in ITSRR. The Rail Safety Act 2003 defines *reliability* as meaning, in relation to a transport service, *the quality, effectiveness and efficiency of the service, having regard to the following matters:*

- a) *management and administration of infrastructure, assets, resources and liabilities,*
- b) *fulfilment of obligations under contracts and arrangements relating to the provision of services, including timeliness and quality of services,*

c) *any other matters prescribed by the regulations.*

There is no mention of any link between reliability and safety in the ITSRR function. Clearly, ITSRR needs access to reliability and maintainability qualified systems engineers as soon as possible to help frame terms of reference for this section.

The governance processes of ITSRR incorporate legislative requirements to report on accidents and incidents and on industry safety and reliability performance to the Minister, who is obliged to table such reports to both Houses of Parliament. The requirement to table investigation reports to the Minister seems overly restrictive, and may have a potential impact on the authority to be able to inform the industry about safety critical issues in a timely manner. In contrast, such tabling is not a requirement for ATSB reports. (Advisory Board Arrangements, 5 February 2004, page 13, Part 17, point 9)

Similarly, Part 17 of the ITSRR Advisory Board Arrangements describes the process for inquiries into transport accidents and incidents. According to point 9 of Part 17 of this document, all investigation reports produced by OTSI require Advisory Board approval before submission to the Minister for Transport Services. Again, this requirement is overly restrictive, leading to unnecessary delays for relaying safety information to the industry, given that the Advisory Board only meets on a monthly basis.

The new ITSRR organization is not based on any particular model (it was stated that the Transport Regulation Project Team had looked at other regulatory examples, but no documented assessment was provided) but it has been set up to comply with the requirements of the relevant NSW Legislation. The legislation provides little direction on the nature of the organisation, other than for the role and reporting of the Chair, Advisory Board, CEO and Chief Investigator. The process that was used to assess other regulatory models was not provided, and in this instance it is difficult to determine whether the organisational structure is based on any existing transport legislation practices. Certainly, compared to other Australian jurisdictions, the makeup of the ITSRR organisation is distinctly different in regard to the co-location of the reliability and investigation functions with the regulator. It remains to be seen whether this model will be effective for NSW rail regulation.

In addition, the co-location of OTSI within ITSRR may create a potential conflict of interest, particularly in regard to independence, as discussed previously. According to the briefing provided to the SCOI on 19 March 2004, the CEO of ITSRR indicated that decision to co-locate the regulator and the investigator was based on a recognition that the relative immaturity of rail regulatory arrangements ensured that the policies and practices of the two arms, compliance and investigation, needed to be developed in a complementary manner rather than a possibly conflicting process. While this appears logical, the issue of perceived or actual independence will need to be carefully monitored.

Another issue with the current structure is the risk that the authority is continuing to create by occupying the majority of its resources in the development and evolution of ITSRR. There is a need to carefully monitor the resources that are available for conducting the core and necessary ongoing tasks of compliance and accreditation management.

One of the ways that the new evolving ITSRR could have avoided this problem is by more carefully considering either: a staged implementation of the new authority that would not have disrupted the pre-existing structure of the former TSB.

In support of this observation the document produced by the Accreditation Authorities Group titled *Rail Safety Co-Regulation* under the topic, *Principles of Co-regulation*, states:

*In the rail safety co-regulation model rail safety legislation and administration arrangements should be organised so that:*

- there is a separation between strategic policy setters,
- the Accreditation Authorities and
- the service providers (railway Track Managers and Operators).

### 5.3.3 Policy and Objectives

As acknowledged by ITSRR, many policy and procedure documents are still in draft format. While ITSRR is developing policy and procedures as quickly as it can, this is being done in the absence of a clear document control process, which is still under development. *This lack of a controlled documentation process has been evident to the safety review team, where a number of versions of the ITSRR organisational structure have been provided based on continual change. There does not appear to have been a quality control process used (225).*

However, of note, is that ITSRR is seeking ISO9000 accreditation as a quality assurance process for policy development.

*The primary ITSRR activities with respect to rail are accreditation, and compliance with accreditation. A draft 'Accreditation Model' has been developed, but not finalised (226). This model is based on the previous AS4292 approach, with some enhancements. The AS4292 headings are used with guidance included against each heading. This guidance could be developed into measurable assessment criteria, but this has not been seen.*

AS4292 has been clearly recognised by the industry and regulators as being out of date, and consequently will be reviewed as part of the ME79 Standards Australia committee. This may require the ITSRR model to be changed, based on the outcomes of the ME79 process. *ITSRR appears to have given little thought to providing a clear basis of how accreditation applications both in content and in the management processes outlined therein, are verified. For example, methods to validate how an applicant has demonstrated that it has managed its risks so that they are as low as reasonably practicable (ALARP) and that the operator has a process in place for continual improvement. A safety case approach would provide a verifiable basis for an award of accreditation as opposed to the current process that primarily relies upon the processes for managing risk outlined in the accreditation application. Arguably the current approach adopted by ITSRR does not reflect the needs of the current rail environment (considerably different from the mid 90s) and safety management standards.*

Furthermore, the regulatory 'model' to be used by ITSRR is not clearly defined, either in the legislation or by ITSRR itself. Whilst acknowledging national initiatives to develop a common approach and documented preferences for a 'co-regulatory' approach, ITSRR sees that the challenge of establishing credibility with industry means that it has a mandate to 'get tough', impose standards, and enforce them through a range of sanctions.

*Without an appropriate model, ITSRR will be challenged to determine that system safety is effectively integrated into RailCorp's business practices. It has been said at interview that it would be for the operator to 'convince' ITSRR that such was the case (227).*

ITSRR have commendable plans to conduct safety research and development, although such proposals are still in relative infancy. However, it is unclear as to the processes that ITSRR

will use to develop research strategies and priorities, and establish links with industry, other regulators and academic institutions.

### 5.3.4 Document Control and Data Analysis

At the time of the review, there was no Document Control Procedure in place in ITSRR (228). An ‘interim’ manual filing system was implemented to catalogue ‘inherited’ documents.

ITSRR is developing a data acquisition strategy to manage its records in accordance with its regulatory role. This has arisen from an acknowledged major deficiency with the previous regulator in that there was a total lack of appropriate records and information management processes and systems. ITSRR plans to rectify these problems, but they have yet to be enacted.

There is a plan to seek ISO9001 quality assurance accreditation, which will assist in the development of a more robust procedures and a document control system, but there was no clear timetable presented to the SCOI review team for achievement of such accreditation (229).

A system called PRISM (Performance Reliability Investigation Safety Management) is under development but is not planned to be fully operational until late 2004. Among other things this system is intended to manage documents and data. It was not been possible for the SCOI review to make an adequate assessment of PRISM due to it only being a “concept” at this stage. ITSRR plans to develop the PRISM system into a mature capability to analyse and trend safety data (230).

OTSI has also refined a Confidential Incident Reporting System that is based on an evolution of the system developed by the previous regulatory regime. Data continues to be collected. Trend analysis will not be available in the short to medium term. However, ITSRR have recently recruited a tertiary qualified human factors specialist as a member of the Technical Panel, to assist with the development of a causal factor framework for the collection and analysis of organisational and human factors data.

### 5.3.5 Transition Arrangements

The ITSRR’s transition plan has a realistic timeframe to achieve organisational maturity by June 2007, but it *lacks a detailed risk management strategy to ensure safe operations during the period of establishing such an organisation* (231).

The accreditation process model refers to governance arrangements, but leaves it up to the operator’s safety management system to define how responsibility and oversight (there is no reference to accountability) are demonstrated. The accreditation model does not nominate specific appointments, or describe specific competencies for those specified positions (232). The only requirement under the Act is to nominate the individual responsible for the safety management system at a corporate level. *There is a need, based on the findings within RailCorp, that positions responsible for exercising judgement of significance and accountability for safety and risk such as a Chief Engineer, Chief Risk Officer or Senior System Safety Manager should be held accountable under the accreditation regime, and should have specified qualifications, training and experience to fulfil such obligations.*

### 5.3.6 Safety Enforcement

Unlike prior policy, new policy within ITSRR clearly delineates enforcement escalation and sanction policies. ITSRR has a draft compliance and enforcement policy (233). This policy

has both an informal enforcement and statutory enforcement actions. The safety review results indicated that enforcement policies are better considered and have more impact post-Waterfall.

Document reviews and interviews were inconclusive in determining whether the ITSRR audit process is sufficiently robust to identify key safety issues. ITSRR is in the early stages of developing an audit protocol. Interviews indicated that it might be based on a United Kingdom model (234). However, because this was still under development, ITSRR did not release any documentation to elucidate their new audit strategy.

Current staff within ITSRR recognised that prior to the Waterfall accident, record keeping was very poor and uncoordinated. Interviews indicated ITSRR's intention to develop a new information technology system to capture this key safety data, trend it, and analyse its implications (235).

It should be noted that the regulator has the authority to vary, suspend, or cancel accreditation. *However, audit findings indicated that the regulator did not present a comprehensive strategy to address major deficiencies in RailCorp's safety operations. Of particular concern is how ITSRR would react if RailCorp does not meet its current 2004 Safety Milestones* (236).

Compliance and enforcement policy is in final draft, and tends to describe broad philosophies. Implementation is yet to be validated. It is not clear that the ITSRR rail authority oversight process is 'robust, systematic and based on system safety principles'. It is yet to be seen how ITSRR will tackle serious breaches of accreditation or failure to meet milestone timeframes set by ITSRR (237).

Legislation now allows for an escalation of enforcement actions which provides ITSRR with more options, and hence the confidence to act. The effectiveness of this is yet to be demonstrated.

### **5.3.7 Accident and Incident Investigation**

The Chief Investigator of OTSI is appointed by ITSRR on the recommendation of the Board Chairperson (238). Within ITSRR, OTSI is independent of the TSR and answers to the Chairperson. As discussed previously, OTSI and ITSRR share a Technical Panel of experts. This panel will be comprised of technical rail operations and engineering experts. It was unclear whether individuals with deep system safety engineering experience will also form part of the Technical Panel.

ITSRR and prior DoT accident investigation process is based on AS5022 and the Australian Transportation Safety Board (ATSB) procedures. ITSRR also uses the Incident Cause Analysis Method (ICAM) tool. Apart from notable exceptions such as the 2003 MoT investigation report into Waterfall, and investigations at Beresford, Bargo and Everleigh Gate Road (all investigated based on a Reason approach), prior investigations were not consistently systemic or risk-based, due to a lack of appropriate training for staff and the requisite skills and resources.

*Based on document reviews and interviews, the SCOI review could not identify many cases where investigation results have impacted upon continuous improvement in regulatory safety policy. In other words, little evidence was found that past accident investigations significantly improved rail safety.* The notable exception was the 2003 MoT investigation report, and creation of ITSRR and the amendments to the Transport Administration Act.

Through staff support seconded from the ATSB, OTSI have continued to manage a Confidential Safety Information Reporting System (CSIRS). Safety review results indicated

that the CSIRS has been well-designed and good checks and balances exist to ensure confidentiality. Reports can be made online, by phone, fax or mail.

ITSRR through the office of the Transport Safety Regulator, can conduct its own investigations and audits of the rail operators. Results can be used as the basis for sanctions for not meeting accreditation requirements. In contrast, OTSI's role is to provide a "just culture" environment for accident investigation, and it is not permitted to pass confidential information obtained during its investigations to the Regulator.

The OTSI does not yet have a comprehensive track record for the completion of investigation reports, so it remains difficult to judge their quality and effectiveness. However, according to ITSRR Advisory Board Arrangements, before publishing a report (whether under this or any other Act) or giving a report to the Minister, ITSRR must refer the report to the Advisory Board and consider any advice of the Advisory Board relating to the report (238). If all reports were subject to this procedure it seems to be an unnecessary and cumbersome process, and has the potential to delay the communication of safety information/action to the industry. However, such a procedure may be appropriate for high profile reports. In addition, it is recognised that the regulator can require safety actions at any time during an investigation.

There are plans to develop investigation skills training programs using outside contractors, incorporating safety management systems, human factors and investigatory training based on ICAM/Reason models (239). This should be done in consultation with other jurisdictions as part of the National Regulator's panel activities, to ensure national training competency, consistency and the use of appropriately qualified training providers.

### 5.3.8 Safety Accreditation

The present ITSRR and the previous DoT safety accreditation, under the co-regulatory model are based on AS4292, a quality assurance-based standard, and AS4360 and AS4801, which are predominately OH&S focused standards. This process is heavily dependent on the safety management system as prescribed by the rail operator. *It does not include sufficient safety oversight tools to assure that the operator's safety management system incorporates system safety concepts, is sufficiently comprehensive and methodical, and uses a "systems-based" risk management approach to safety.*

In other words, the model *should accredit the risk management process across the entire railroad system, not just those deemed important by the operator.* AS4292 is nearly 10 years old, and in need of review and updating. The standard does not reflect the current NSW rail safety-operating environment. The new ITSRR draft accreditation model still focuses on these standards. *Draft accreditation guidance reviewed did not indicate assessment criteria for a Regulator to measure or verify the safety progress of a rail operator (237).*

*No documented evidence could be found as to how ITSRR would determine that system safety management systems and system safety engineering procedures had been integrated into an operator's management processes.* Interviews indicated that operators would be asked to demonstrate integration.

Currently, the accreditation process *does not have a direct focus on senior management and their governance and accountability—key fundamentals of the system safety process.* However, review of draft accreditation documents indicated that *these concepts are being developed for the new accreditation process.*

As discussed previously in the section on RailCorp findings, there appears *to be poor understanding by both ITSRR and the industry about what constitutes a variation to be basis*

*of accreditation requiring the submission to ITSRR of material change documentation, and the correct process to follow.*

There was evidence that in at least three instances, significant changes in safety processes had been made by RailCorp without reference to the regulator. For example, at the RailCorp presentation to the SCOI in February 2004, the RailCorp Director Safety and Environment admitted that neither a risk assessment nor a material change request had been initiated for the proposed transfer of the Fire and Rescue unit to the NSW Fire Brigade (240). This proposal has since been stopped but a comprehensive risk assessment is yet to be conducted as part of an overall capability assessment process (241). Secondly, placing a second person in the driver's compartment occurred without initial reference to ITSRR, although it was later followed up by a change notice (242). Thirdly, the submission of a material change application by RailCorp AFTER the commencement of the installation of backup vigilance devices demonstrates a lack of understanding of the process by industry, and poor monitoring and control by the regulator.

The process of introduction and use of ATRICS by StateRail is of particular concern. Whilst the designers of ATRICS may have conducted appropriate tests and certifications, *there was no evidence of a full operational risk assessment including human factors analysis prior to introduction of ATRICS by StateRail.* In fact, RailCorp initiated a human factors analysis late in 2003. ITSRR could not provide any records of a risk assessment with respect to a variation to StateRail's accreditation.

Since ATRICS's initial design and introduction, it has evolved such that it is now used for vital functions. However, design and operational safety accreditation does not reflect this. The accreditation process should not only flag this issue, but also, the operator should understand that these changes constitute variations to its accreditation that should be endorsed by the Regulator.

The original ATRICS was initially conceptualised and specified as a non-vital information system and interface for signalling. It was originally intended to provide train location and context information in light of the timetable to assist signallers in performing train control. ATRICS engineers did conduct a series of in-depth quantitative risk assessments on the original design. *However, little evidence was found that indicated that the Regulator evaluated ATRICS as a train systems management tool.* Since implementation, ATRICS has gone through significant changes that may now make ATRICS vital. Those changes include:

1. To the ATRICS Block management processes.
2. Implementation of an ARS Pending Clear function.

*The safety review did not find any evidence that the Regulator identified these areas for risk assessment as part of a variation to accreditation, or has been sufficiently involved in the process to assure that safety is assured in the use ATRICS across the entire network.*

The ATRICS accreditation issue also illustrates the importance of ITSRR staff having a deep system safety engineering background, and experience in understanding how the safety of one system can affect overall rail safety.

As discussed during the hearings of the SCOI, the DoT had not sufficiently used its authority to identify critical safety issues that exist on the railway. In particular, the SCOI Interim Report findings identified the deadman issues that were previously unknown to DoT safety regulators.



Safety review results indicated that follow up to 2001 and 2002 accreditation results and validation were poor. StateRail safety milestones were not verified as complete. Interviews and document reviews indicated that a DoT accreditation acceptance procedure or objective assessment tool was not in place at the time of the Waterfall accident (236).

*Provisional accreditation was granted to RailCorp following a short review period. The safety review found that the Director General of Transport reviewed and approved the recommendation from the A/Executive Director in one day (December 23-24, 2003) (243). Overall, Provisional Accreditation was granted in six days after receipt of application. It is unclear as to the robustness of the method used to evaluate the adequacy of the application, particularly given the absence of an appropriate program model against which to verify effectiveness.*

*In the past, the accreditation process under the co-regulatory model has failed to adequately evaluate the 'fitness' of StateRail's safety management systems to ensure that identified risks are controlled. The new ITSRR accreditation model, still focuses on quality system judgements, safe working rules and OH&S rules. In addition, there is no requirement to identify 'specified personnel' and the essential qualifications, training or experience needed to exercise judgement in safety management positions, especially at senior levels.*

The RailCorp accreditation was based on the previous accreditation conditions of StateRail and RIC. Previous accreditations were the result of recommendations by a Regulator considered to be under resourced, and not sufficiently skilled in exercising its regulatory mandate. This situation casts some doubt on the veracity of all previous accreditations. Additionally, the current provisional RailCorp accreditation application had not identified who was accountable for hazard identification and risk management, and lacked any follow up of StateRail's conditions of accreditation such as worker competency, document control and communications. Despite this, provisional accreditation of RailCorp was granted.

A number of key activities are in the process of being dealt with by ITSRR and the time lines for these activities are such that the newly developing ITSRR policies will not be ready in time. It is likely that these priority activities will dominate demands on ITSRR resources for the immediate future. They include:

1. Ensuring the full and effective implementation of the recommendations from the MoT Waterfall investigation.
2. Effectively managing the close out of conditions and milestones of the RailCorp Provisional Accreditation, based on given timelines.
3. Managing the close out of the ARTC accreditation application and start up of operations in NSW, including the key interface arrangements.
4. Up coming recommendations SCOI into the Waterfall accident.

ITSRR has not been able to provide a clear picture as to how it will determine that the various actions resulting from the above will be effectively closed out by those responsible. ITSRR has indicated that it may need external assistance to do so.

One example is 'milestone' 2.2 of the RailCorp Provisional Accreditation, which refers to *Hazard Identification and Risk Management*. There is general agreement within ITSRR that to satisfy this milestone RailCorp will essentially need to prepare a comprehensive system safety program plan underwritten by a whole of system hazard and risk analysis. Despite the comprehensive detail required, at the time of the review, no progress had been reported on this milestone after nearly three months of the 12-month time frame.



## CHAPTER 6 CONCLUSIONS

### Context

In relation to RailCorp, the findings of the safety review suggest that any conclusions made about required changes need to account for the following organisational issues:

1. Demonstrated inability to effectively implement integrated corrective actions.
2. Poor track record of effective project management.
3. Lack of organisational competence in contemporary Safety management system practices.
4. Insular/non-learning organisation.
5. Over-emphasis on Rail Operations expertise to the detriment of system safety expertise.
6. Lack of formally defined management accountability.
7. Still evolving approach to Human Resource (HR) management eg, selection, promotion, reward, performance management and personnel development.
8. Lack of consistent approach to line supervision.
9. Poor appreciation of current practices in organisational development and change management.
10. Unwillingness for critical self-examination.

In relation to broader issues that have an influence on the capacity of both RailCorp and ITSRR to address the findings detailed in this report, various industry, government and national interface issues need to be considered, for example:

1. Harmonisation with the National Agenda on rail safety in regard to co-regulation and Rail Safety Regulator Key Business Processes.
7. Short-term goals to improve safety versus long-term strategic improvement.
8. Political interference versus independence.
9. Shadow management (unions).

### RailCorp

There are two key findings in relation to RailCorp:

1. There wasn't a fully integrated safety management system.
2. There weren't clearly defined processes to achieve full accreditation.

### Lack of Integrated SMS

1. There is a need to develop and implement a system safety program that fully integrates risk management practices, and involves the following:
  - Employ and consult with qualified safety professionals.
  - Develop proactive approach to risk management that includes:

- \* A system-wide approach to hazard identification; in particular, low probability/high consequence events.
  - \* Hazard analysis.
  - \* Risk analysis.
  - \* Development of controls to mitigate risk.
  - \* A system for monitoring risk and providing feedback to validate controls.
2. Develop a culture that is focused on safety:
    - Address findings identified during the SCOI review.
    - Specifically address current disparities in safety views between groups as indicated by the SCOI safety climate assessment.
    - Develop a continuing program to enhance safety culture.
    - Regularly evaluate safety culture.
  3. Develop processes to ensure management visibility and accountability for safety from Board level to supervisors:
    - Targeted key performance indicators (KPIs) for safety and regular performance reviews at all levels.
    - Managers to be made responsible for leading safety improvement programs.
  4. Develop an integrated safety information system, which includes:
    - Capture of all hazards, OH&S incidents, audit results, non-compliance findings, near miss reports, etc.
    - The system should be capable of systemic analysis to focus finite resources on priority areas.
    - Decisions should be supported by data and trend analysis.
    - The system should be capable of sharing with other safety information systems.
  5. Develop and implement a human systems integration program that incorporates Human Factors principles, such as error tolerance/error management, “just culture” concepts, etc:
    - Design and implementation of communication protocols that include standard phraseology and emergency language.
    - Customised human factors training for rail safety workers and management/supervisory level staff based on contemporary Crew Resource Management (CRM) principles.
    - Incorporating Human Factors into standards development systems & workplace design, evaluation and acceptance e.g., ATRICS, vigilance, cab design, signals.

6. Ensure that training is designed to meet the strategic safety needs of the total organisation:
  - Formal approach to training needs analysis throughout entire organisation (not just ART).
  - Develop a comprehensive approach to competency-based training that includes:
    - \* Task analysis.
    - \* Delivery skills.
    - \* Assessment and certification of effectiveness.
7. Develop and implement an engineering management system that includes:
  - Employment of a Chief Engineer position or equivalent.
  - An approved Quality Management System (QMS).
  - Defined and approved standards.
  - Acceptance into service processes that ensure fitness for purpose.
  - Processes to ensure the continuing technical integrity of in-service equipment, especially safety-critical systems.
8. Change management process.

Develop a formal documented process for change management that includes:

  - Document control.
  - Configuration management system.
  - Material control.
  - Critical Personnel succession planning and changes.
9. Further develop Emergency Preparedness procedures through improved:
  - Document control.
  - Real time site Emergency Preparedness exercises.
  - Co-ordination with NSW DISPLAN.
  - Appointment of section co-ordinators.
  - Development and implementation of immediate response checklists.
  - Improved coordination and communication with first response agencies.
10. Develop a clear and consistent corporate communications policy that specifies responsibilities at all organisational levels.
11. Safety Reform Agenda.
  - Review Safety Reform Agenda objectives, accountabilities, and priorities in light of SCOI Stage 2 findings—especially re: system safety.

- Identify “SMART” criteria for Safety Reform Agenda.
  - S**pecific
  - M**easurable
  - A**chievable
  - R**easonable
  - T**imely

## **Accreditation**

Establish a valid basis for accreditation by:

1. Using information from the SCOI audit/review.
2. Taking into account external audits/reviews.
3. Accessing expertise relevant to application of system safety program or safety case methodology.
4. Acting in conjunction with ITSRR.

## **ITSRR**

The findings for ITSRR can be categorised into two key areas:

1. Issues relating to a lack of perceived independence and inadequate resources.
2. Inadequate approach to the safety accreditation of RailCorp.

## **Independence and Resources**

1. Achieve sufficient autonomy for effective operation of OTSI including:
  - Chief Investigation Officer should report directly to the Minister.
2. Ensure that adequate resources are available within the regulatory function to enable compliance and accreditation activities to be effectively achieved.
3. Ensure clear, concise definitions of accountabilities between CEO and Executive Director of TSR.
4. Accident investigation responsibilities:
  - Ensure that adequate resources are available for TSR to undertake audit and compliance investigations.
  - Ensure adequate internal procedures for managing potential conflicts between ITSRR and OTSI.
5. Urgently increase the number and depth of surveillance audits of RailCorp to ensure that TSR has an increased level of oversight of RailCorp as it develops its internal SMS capability; this will be necessary for at least the next 24 months.

## **Safety Accreditation**

1. The milestones for RailCorp’s provisional accreditation need to be reassessed and redefined with better defined accountabilities and measures of effectiveness.

2. Develop and publish contingency plans for the case of accreditation milestones not being achieved, including adequate measures to address non-compliance.
3. Review the accreditation model in conjunction with national developments, and adopt a more contemporary approach, such as the safety case methodology used by a number of high reliability organisations.

## **Overarching Issues**

### **RailCorp Specific**

1. The Board should report back publicly within 3 months on the actions that have been identified to respond to the SCOI recommendations.
2. The Board and CEO should appoint a small group of external safety professionals with expertise in high reliability organisations and oversight of SMS implementation to develop and drive safety improvement strategies throughout the organisation.
3. RailCorp should appoint internal safety professionals with experience in high reliability organisations and safety management systems implementation, who will take over from the external professionals (see number 2) within a 12-24 month timeframe.

### **Broader Issues**

1. Establish a standing body to ensure that the recommendations from the SCOI are implemented for the NSW rail industry.
2. The safety review undertaken by the SCOI should be repeated in 12 months to ensure that strategies and improvement activities are well focused.
3. A safety review process should be repeated every 12 months for a minimum of 3 years.
4. Ensure an appropriate level of authority, expertise, and independent reporting ability to the government for the organisation charged with managing the safety reviews.

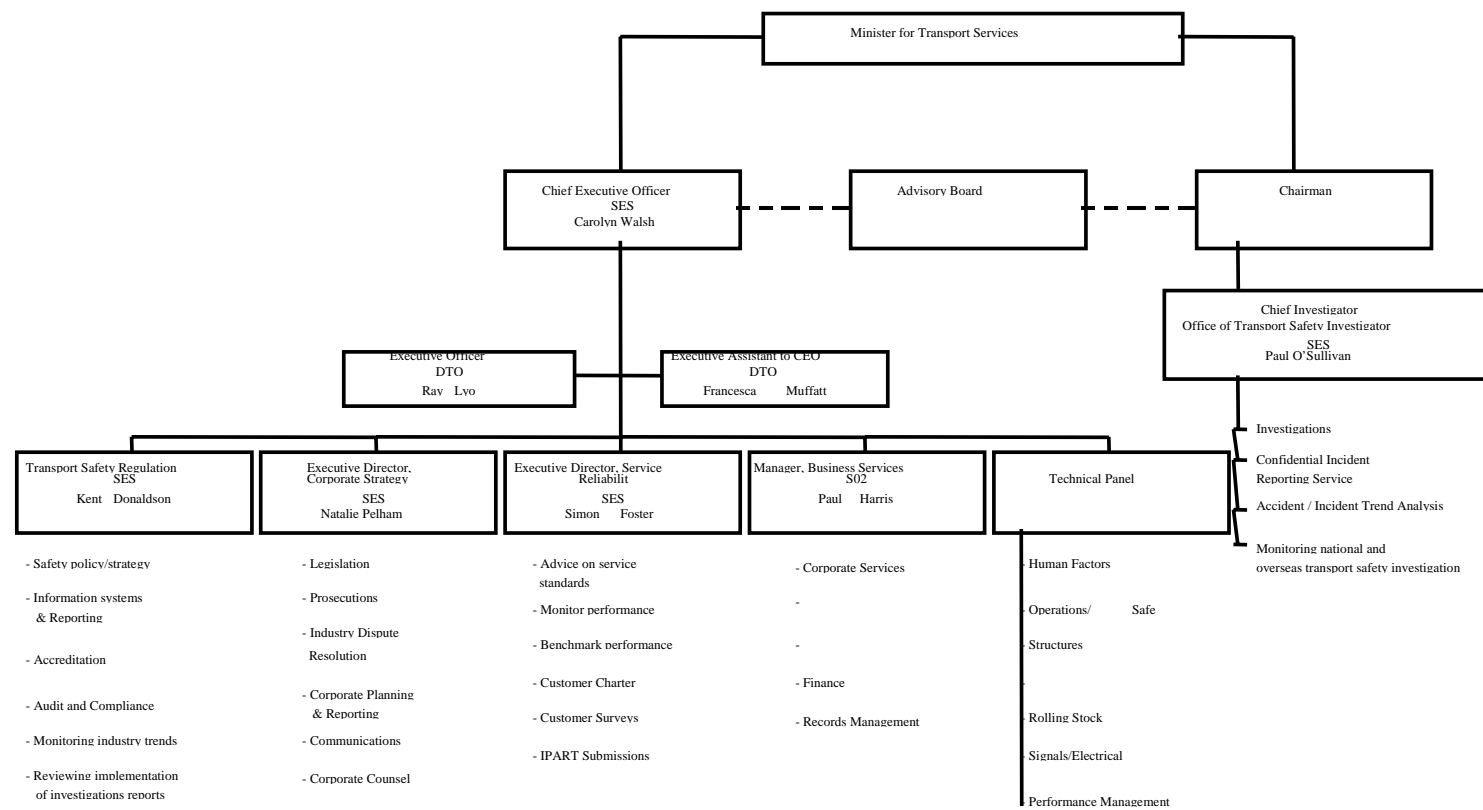




## APPENDIX A

### Organisational Structure of ITSRR

#### TOP LINE STRUCTURE - updated 15 March 2004





## APPENDIX B

### Table from Edkins and Lee ” 24 September 2003 Report

**“Review and analysis of SRA safety system elements”, comparing SRA safety system elements against high performing organisations.**

<b>State Rail NSW</b>	<b>Qantas</b>	<b>Emirates</b>	<b>CASR 119.05</b>	<b>Pacific National</b>
1. Commitment & Policy	1. Management Commitment (ISO 9001:2000 - 5.1)	1. Leadership & Vigilance	1. Nominated management representative	
2. Responsibility & Accountability	2. Roles Responsibilities And Authorities (CASR 119.290) (ISO 9001:2000 - 5.5)		2. Responsibility & Authority	1. Organisational structure & Safety Responsibilities
3. Objectives, Targets and KPIs	3. Policy And Objectives (CASR 119.280 / 119.285) (ISO 9001:2000 - 5.3 / 5.4)	2. Planning	3. Safety Policy, Objectives & Safety Planning	2. Safety & Environment Management Plans
4. Hazard Identification, Risk Assessment & Control	4. Hazard Identification And Risk Management (CASR 119.315) (ISO 9001:2000 - 8.5)	3. Hazard Management 10. Risk Management	4. Risk Management & Hazard Identification	3. Risk Management 4. Site Hazard Identification & Management 5. Operational Risk Registers 6. Major Hazard List 7. Risk Assessment
5. Safety Communication, Consultation, Motivation & Awareness	5. Management Review (CASR 119.295) (ISO 9001:2000 - 5.6) 6. Safety Committee (CASR 119.295) (ISO 9001:2000 - 5.6)	4. Safety Communication & Awareness	5. Review of Safety Management 6. Internal Communication / Consultation	
6. Selection, Training & Competence	7. Training And Education (CASR 119.310) (ISO 9001:2000 - 6.2)	5. Training 6. Performance Management		
7. Incident Reporting & Investigation	8. Incident / Accident Reporting System (CASR 119.345) (ISO 9001:2000 - 8.3) 9. Incident And Accident Investigation (CASR 119.350) (ISO 9001:2000 - 8.5)	7. Safety Reporting 8. Incident / Accident Investigation	7. Monitoring, Feedback, Corrective & Preventative Action	8. Incident reporting 9. Incident Investigation
8. Emergency Preparedness & Response	10. Emergency Response Procedures (CASR 119.355) (ISO 9001:2000 - 7.0)		8. Emergency Response Planning	
9. Documentation, Information & Record Management	11. Documentation Control (CASR 119.325) (ISO 9001:2000 - 4.2) 12. Record Control (CASR 119.330) (ISO 9001:2000 - 4.2.4)		9. Control of Records	

<b>State Rail NSW</b>	<b>Qantas</b>	<b>Emirates</b>	<b>CASR 119.05</b>	<b>Pacific National</b>
10. Safety Procedures		9. Standard Operating Procedures		
11. Contractor & Visitor Safety	13. Contracted Goods And Services (ISO 9001:2000 - 7.2.3 / 7.4) 14. Procurement Of Goods And Services (ISO 9001:2000 - 7.4)	10. Procurement (Goods & Services)	10. Internal and external (sub-contractor) processes	10. External Compliance Review
12. Health & Wellness				
13. Interface Management	15. Analysis And Monitoring (CASR 119.300) (ISO 9001:2000 - 8.4)	11. Business Partnerships	11. Management of infrastructure (human & technical)	
14. Inspections 15. Audits, Review & Accreditation	16. Internal Audit (CASR 119.335) (ISO 9001:2000 - 8.2.2)	12. Safety Inspections & Audits		
	17. System For Managing Requirements And Changes (ISO 9001:2000 - 7.1 / 7.2) 18. Change Management (ISO 9001:2000 - 5.4.2)		12. Change Management	
	19. Customer Feedback (ISO 9001:2000 - 7.2 / 8.2.1)			
	20. Traceability Of Goods And Services (ISO 9001:2000 - 7.5.3)			
	21. Measuring Equipment And Calibration System (ISO 9001:2000 - 7.6)			
	22. Equipment Maintenance (ISO 9001:2000 - 6.3)			
	23. Design And Development (ISO 9001:2000 - 7.3)			

## **APPENDIX C**

### **Experts engaged for Stage 2 Inquiry**

#### **Safety Management Systems Expert Panel**

- Dr Graham Edkins, Director Public Transport Safety, Department of Infrastructure, Victoria (Panel Chair)
- Dr Chris Darling Manager Safety, BHP Steel, Wollongong;
- Dr Ian Glendon, Associate Professor in Applied Psychology, Griffith University Gold Coast campus (Head of School until 31.12.03 and Director, Gold Coast Organisation of Psychology Postgraduate programs);
- Dr Rob Lee, International Consultant on Human Factors and System Safety, former Director, Bureau of Air Safety Investigation and former Director of Human Factors, Systems Safety and Communications, Australian Transport Safety Bureau;
- Ken Lewis, former Group General Manager, Corporate Safety Department, Qantas Airways; (Lead Auditor)
- Norm Thompson, Consultant, Special Commission of Inquiry (seconded from Ministry of Transport)

#### **Project Managers**

- Peter Olsen, Associate, Booz Allen Hamilton, Sydney
- Len Neist, Senior Associate, Booz Allen Hamilton, Canberra

#### **SMS Review Director**

- Nicholas Bahr, Senior Associate, Booz Allen Hamilton, McLean, Virginia

#### **Review Team**

- Ken Lewis, former Group General Manager, Corporate Safety Department, Qantas Airways; (Lead Auditor)
- Martin Baggott, Executive Manager Transport Victoria, Bovis Lend Lease
- Barry Broom, Manager Network Safety, Queensland Rail
- John Evans, Manager Safeworking, Queensland Rail
- Charles Galea, Senior Consultant, Nova Systems Consulting
- Dr Neil Isles, Principal Consultant Ibis Business Solutions
- Brian McBride, Associate, Booz Allen Hamilton, Canberra
- Len Neist, Senior Associate, Booz Allen Hamilton, Canberra
- Mike Nendick, Human Factors and System Safety Specialist, Civil Aviation Safety Authority
- Mike Rodgers, Consultant, formerly Manager Safety Systems and Human Factors, Civil Aviation Safety Authority
- Alan Ross, Principal A & K Ross and Associates, Former Rail Safety Regulator, Victoria



## **APPENDIX D**

### **SCOI Brief for Auditors**

#### **Waterfall Inquiry Briefing Paper –Audit Scope**

##### **Purpose**

The Special Commission of Inquiry into the Waterfall Rail Accident has determined the need to undertake a Safety Management System (SMS) audit as part of stage 2 of the inquiry. The purpose of the SMS Audit is to assess the adequacy of safety performance of the Safety Management System of the three rail entities; State Rail Authority (SRA), Rail Infrastructure Corporation (RIC) & the Ministry of Transport NSW (MoT).

This paper proposes the scope for that SMS audit in support of the stage 2.

##### **Background**

Stage one of the inquiry covered “the causes of the railway incident at Waterfall on 31 January 2003 and factors which contributed to it”. The stage one report is pending.

In September 2003 a review was undertaken of the safety management system of SRA by Dr Graham Edkins and Dr Rob Lee and comparison made against other safety management systems used within aviation. Their findings were reported in a paper titled “Review and Analysis of SRA Safety System Elements”.

Stage two of the Inquiry has not yet commenced and will cover: “the adequacy of the safety management systems applicable to the circumstances of the railway incident”.

Rail infrastructure in NSW is owned and maintained by the RIC which employs approximately 10,000. Passenger services are provided by StateRail (employing approximately 15,000), with metropolitan services provided by CityRail and country services provided by CountryLink. Each weekday, CityRail carries 930,000 customers on over 3000 services. In 2001/02 this equated to 276.4 million passenger journeys across 306 stations and along 2,080 route kilometres of track.

The industry is regulated by a section of the Ministry of Transport NSW.

##### **Scope**

The optimum basis for development of a change management program for Safety in the Railways is a baseline audit. This critical step identifies what is in place and indicates what needs to be done to improve the system.

The Safety Management Systems Audit (SMS Audit) is to be a systematic examination against defined criteria to determine the adequacy of the Railway safety systems, structures, policies, instructions and guidelines.

Verification checks are also to be performed as part of the audit process to verify the audit findings. Interviews with knowledgeable people and tours to appraise physical conditions may be appropriate.

The scope of the audit is to include:

- An audit of the identified elements of the SMS's in use within the three rail entities namely, SRA, RIC and MoT; and
- Identify more recent actions/initiatives by SRA, RIC and MoT both prior to and post-Waterfall that are reflective of their current safety culture; and
- Make observations of the adequacy of the safety system elements in comparison to organisations with recognized mature 'best practice' safety systems.

Feedback sessions are to be held with the commission's expert panel and a detailed report issued following the audit process.

Audit results will help the commission to develop action plans to bridge the gap between the present and desired safety performance of the railways.

### **Deliverables**

1. A clear statement of methodology and approach. To be approved by the Commission's panel of experts.
2. A project plan, corresponding task statements and resource plan to complete the audit. To be approved by the contract manager for the commission.
3. Fortnightly written and verbal briefings on progress which is to cover initial findings, issues with the audit itself, the plan for the following period of the audit.
4. A detailed report of findings, detailing current performance of the three rail entities including areas of positive performance and any non-conformances or deficiencies of the rail entities against the standard checklist attached in Appendix A.

### **Contact Details**

Further clarification on the Commission's requirements can be obtained from:

Marina Rizzo  
Solicitor  
Special Commission of Inquiry

T: 8251-8600  
F: 8251-8686  
Email: [marina\\_rizzo@agd.nsw.gov.au](mailto:marina_rizzo@agd.nsw.gov.au)





03 November 2003

## APPENDIX E

### List of Stage 2 Inquiry Auditors showing areas of expertise in Safety Systems

Auditor	Organisation	Lead Auditor Qualified?	Quality Assurance	Knowledge and application of Safety Management Systems	Human Factors	Risk Management	OH&S	Regulatory Compliance	Rail Operations
Ken Lewis	Qantas Airways	Yes	Yes	Yes	No	Yes	Yes	No	No
Martin Baggott	Bovis Lend Lease	No	No	Yes	No	Yes	No	No	Yes
Barry Broom	Queensland Rail	Yes	Yes	Yes	No	Yes	Yes	No	Yes
John Evans	Queensland Rail	Yes	Yes	Yes	No	Yes	Yes	No	Yes
Charles Galea	Nova Systems Consulting	No	No	Yes	Yes	Yes	No	No	No
Dr Neil Isles	Ibis Business Solutions	Yes	Yes	Yes	No	Yes	Yes	No	No
Brian McBride	Booz Allen Hamilton	No	Yes	Yes	No	Yes	No	No	No
Len Neist	Booz Allen Hamilton	Yes	Yes	Yes	No	Yes	No	No	No
Mike Nendick	Civil Aviation Safety Authority (CASA)	Yes	No	Yes	Yes	Yes	No	Yes	
Mike Rodgers	Civil Aviation Safety Authority (CASA)	Yes	No	Yes	Yes	Yes	No	Yes	No
Allan Ross	A & K Ross and Associates	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
<b>Total</b>		<b>8</b>	<b>7</b>	<b>11</b>	<b>3</b>	<b>11</b>	<b>5</b>	<b>3</b>	<b>4</b>





**Special Commission of Inquiry  
Into the Waterfall Rail Accident**

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NEW SOUTH WALES

**APPENDIX F**

**Special Commission of Inquiry  
into the Waterfall Accident**

**SMS Review Methodology report  
by Nicholas Bahr  
dated 12 May 2004**

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## **EXECUTIVE SUMMARY**

Under the auspices of the Special Commission of Inquiry into the Waterfall Rail Accident (SCOI) a safety audit was developed and used to audit ITSRR and RailCorp. The purpose of the audit was to further review the adequacy of the safety management systems in place (at the time of the accident and at the time of the audit).

This Report (Part 1) details how the Waterfall accident investigation safety management systems audit was developed and performed. Part 2 (under a separate cover) describes the audit results and an analysis of the findings.

The intent of the audit process was not only to identify critical issues that affect safety but to also document those findings in a thorough fashion. The audit methodology was based on well-established safety audit processes and international best practices. Safety management system (SMS) audit methodologies, taken from various high-risk industries, were reviewed.

The audit development source selection criteria process is described, including the criteria used in selecting the audit review elements. Next, the Report discusses the audit review scope and a general description of the audit tool itself. Audit data was gathered through site visits, document reviews, and interviews with a cross-section of managers and staff. The audit process placed great emphasis on gathering data in a participatory, transparent, and thorough manner.

A template was created for the SRA/RIC/RailCorp audit, based on 29 key system safety elements. These elements were based on the Qantas Airlines safety management systems audit process, further developed to include more detail relevant to the NSW rail industry. Each of the 29 elements was further divided into sub-elements or protocols that specifically list key issues. Eleven elements were developed for the DoT/MoT/ITSRR review.

## **1. INTRODUCTION**

Under the auspices of the Special Commission of Inquiry into the Waterfall Rail Accident (SCOI) a safety audit was developed and used to audit ITSRR and RailCorp. The purpose of the audit was to further explore the adequacy of the safety management systems in place (at the time of the accident and at the time of the audit).

## **2. SAFETY MANAGEMENT SYSTEM REVIEW TOOL**

### **2.1 DEVELOPMENT OF THE REVIEW TOOL**

The intent of the audit process was not only to identify critical issues that affect safety but to also document those findings in a thorough fashion. Therefore, it was necessary to review numerous sources of information to identify key elements of an organisation that can affect safety and are measurable. The table from Edkins and Lee 24 September 2003 Report *“Review and analysis of SRA safety system elements”, comparing SRA safety system elements against high performing organisations* compares some of the system safety elements considered. The system safety audit methodologies incorporated into the Waterfall audit were taken from:

- Input from SCOI Commissioner and Staff
- Input from SCOI Experts Panel
- Audit designer and audit team members' experience
- Stage 1 Interim Report
- DoT/MoT Waterfall Final Report
- Glenbrook Final Report
- Qantas Airways system safety audit process
- American Public Transit Association (APTA) *Manual for the Development of Rail Transit System Safety Program Plans*, 1999
- AS 4292 (all parts)—Australian Standard-*Railway Safety Management*, 1995.
- NSW Rail Safety Act 1993, 2002, and Transport Administration (Safety and Reliability) Act 2003
- CASA regulations - notice of proposed rule making part 119
- BlueScope Steel *Occupational Health and Safety Management System*
- U.S. Department of Transportation. Federal Transit Administration. *Handbook for Transit Safety and Security Certification*. DOT-FTA-MA-90-5006-02-01. 2002
- ISO 9001: 2000



- U.S. Department of Defence. *Military Standard System Safety Program Requirements*. Mil-Std 882C, 1993.
- U.S. Occupational Safety and Health Administration, *Voluntary Protection Program*. 1996
- Center for Chemical Process Safety. *Guidelines for Hazard Evaluation Procedures*. New York: American Institute of Chemical Engineers
- U.S. National Aeronautics and Space Administration (NASA). NSTS 1700.7B – Safety Policy and Requirements for Payloads Using the Space Transportation System (STS). 1999.
- McCormick, N.J., *Reliability and Risk Analysis: Methods and Nuclear Power Applications*. London, UK: Academic Press, 1981
- Bahr, N.J. *System Safety Engineering and Risk Assessment: A Practical Approach*. London, UK and New York City, US: Taylor and Francis, 1997.

The audit methodology was based on well-established safety audit processes and international best practices. Safety management system (SMS) audit methodologies, taken from various high-risk industries, were reviewed and their most applicable elements incorporated into the Waterfall Inquiry audit process. **Table 2-1** lists the review criteria.

Table 2-1: SMS Methodology Review Criteria

- |   |
|---|
| <ul style="list-style-type: none"> <li>▪ Best SMS practice</li> <li>▪ Applicability to the NSW rail industry</li> <li>▪ Addresses Stage 1 findings</li> <li>▪ Repeatability of data collection findings</li> <li>▪ Uniformity of results</li> <li>▪ Ability to roll data up into key findings</li> <li>▪ Ease of use</li> </ul> |
|---|

The process for selecting the audit safety elements is illustrated in **Figure 2-1**.

The first step was to meet with the SCOI and the Experts Panel to determine the audit objectives. The objectives agreed upon were to assure that the audit was of high quality, based on sound system safety audit processes, and further examine Stage 1 findings. The audit was to focus on both the railway organisation and the rail regulator. Also, the audit was to look at the systems that affect safety (as defined by Terms of Reference Number 2) during Waterfall in the SRA, RIC, and DoT organisations. Because of the recent merger of SRA and RIC and the reorganisation of DoT, it was agreed that the audit team would meet with current RailCorp and ITSRR employees that were part of the earlier organisations. Where appropriate, the audit team would also meet with relevant individuals who are no longer in the new organisations.

Next, numerous audit methodologies and safety management control processes were reviewed for relevancy to the audit. A broad review of other high hazard industries such as: aviation, aerospace/military, petrochemical, and nuclear was conducted. **Table 2-1**, above, lists the criteria used to select the most appropriate safety elements to be used in the safety audit tool.

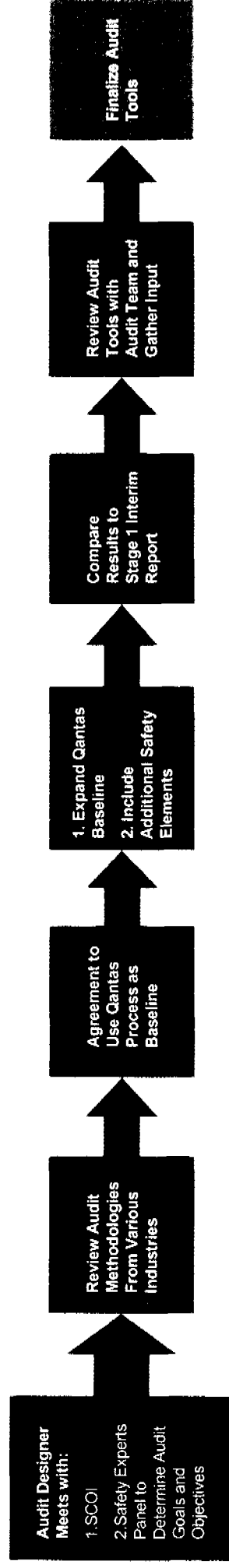
The Experts Panel and audit team determined that the Qantas twenty-three safety elements would be used as the baseline for the audit tool. It was agreed that rail operations are very dependent upon human interactions and the human-machine interface; and that the Qantas methodology was a good tool to measure the organisation's safety efficacy. An additional rationale for choosing the Qantas safety elements is that they also conform to the ISO 9000 quality process.

However, to fully assess the rail operation and the rail regulator it was determined that additional elements that go beyond a human factors focus needed to be added to the Qantas system. For example, because the Qantas system assesses a mature, well designed, and highly regulated airline industry, it does not overtly focus on the safety analysis process that leads up to aircraft construction. In the rail industry, through normal procurements and system expansions, there is a considerable amount of design and modification conducted on rail vehicles and infrastructure. Review of other safety management audit processes yielded safety elements that could further investigate SRA's and RIC's ability to assess and manage critical safety problems. Where appropriate, the Qantas system was expanded. In other cases, additional elements were added to the audit tool.

It is clear that SRA and RIC are vastly different from the rail regulator. As part of the process of developing an audit methodology it was necessary to develop a separate audit tool for SRA/RIC/RailCorp and DoT/MoT/ITSRR.

The next step was to verify that the audit tools addressed Stage 1 findings. Once this was accomplished, the audit team reviewed the tools and incorporated their comments into a finalized audit process.

Figure 2-1: Audit Safety Element Selection Process



## **2.1 AUDIT SCOPE AND METHODOLOGY**

The Safety Management Systems Audit (SMS Audit) was a systematic examination against defined criteria to determine the adequacy of the railway safety systems, structures, policies, instructions and guidelines and the regulatory agency's regime for monitoring them. Verification checks were also performed as part of the audit process to verify the audit findings.

The scope of the audit included:

- An audit of the identified elements of the SMS's in use within the three entities namely, SRA, RIC and DoT/MoT; and
- Identify more recent actions/initiatives by SRA, RIC and DoT/MoT both prior to and post-Waterfall that are reflective of their current safety culture; and
- Make observations of the adequacy of the safety system elements in comparison to organisations with recognized mature 'best practice' safety systems.

The scope of the audit focused on the adequacy of the SRA and RIC management systems that affect safety and how DoT/MoT regulated the two organisations. While RailCorp and ITSRR were the organisations audited, there were essentially three separate audits: SRA, RIC, and DoT/MoT. The same audit methodology was used to audit both the railway and the regulator. In general terms, the audit tool gathered information from three key sources:

- Site Visits—the purpose was to view how the railway organisations actually operate. Audit teams also noted how normal and emergency activities impact overall safety
- Document reviews—the purpose was to understand how the organisation had been designed to operate and whether the organisations followed their own policies and procedures.
- Interviews—a cross section of staff from all organisational layers were interviewed to determine how safety systems were actually implemented and the efficacy of these systems.

The SCOI eCourt casebook and a separate FTP site were created to assist in the audit process. Information and notes from the site visits, document reviews, and interviews were uploaded to the sites. This allowed Expert Panel members, audit team members, and others to have insight into the audit process

## **2.2 SAFETY REVIEW TOOL**

Data that was obtained through site visits, document reviews and staff and manager interviews was assembled and documented with the safety audit tool. This tool was the primary method for managing the disparate pieces of information and collating them into meaningful safety subject areas. The safety audit tool also served as the

principal method of documenting and communicating audit results to the Experts Panel.

A unique safety audit tool was created for ITSRR/DoT/MoT and a separate one for SRA/RIC/RailCorp. The specific audit tools for each organisation are discussed in detail in Sections 4.2.4 and 4.2.5. Below is a brief description of the tool format.

### **Item**

A unique tracking item number

### **Safety Program Element**

There are 29 safety program elements for SRA/RIC/RailCorp and 11 safety program elements for DoT/MoT/ITSRR. Safety program elements are the major safety categories that were assessed. Safety program elements that have been added to the original Qantas approach are marked with a double asterisk.

### **Protocol**

Each of the safety program elements is subdivided into individual protocols. These protocols further define detailed safety categories. Protocols expanded from the original Qantas approach are marked with a single asterisk.

### **Findings**

Audit results are documented in this section. Input is gathered from site visits, document reviews, and interviews.

### **Audit Data**

It was critical that all findings were appropriately documented. This section cites specific references for the audit findings. Cited references can be document citations, interviews, or observations during site visits.

### **Rating**

An overall, qualitative rating was given based on the finding results. There are five ratings and are defined as:



*Element Present and Integrated*—indicates that the safety element was in-place and integrated into an effective process.



*Element Present but not fully Integrated*—indicates that the safety element is in-place, however, it was not 100 per cent effective. The ¾ rating denotes that overall the safety element still is fairly effective.



*Element Partially Present and Partially Integrated*—indicates that a fair portion of the safety element does exist and is partially deployed into the organisation. The ½ rating indicates marginal safety effectiveness and that the safety element needs improvement.



*Some Key Aspect of the Element is Missing and Not Integrated*—a significant part of the safety element is missing and therefore cannot be adequately deployed through the organisation. The ¼ rating indicates a very poor safety element.



*Element Not Identified During This Review*—indicates that either that the safety element does not exist. The zero rating indicates a totally ineffective safety element.

The safety audit tool template not only served as a way to document the audit results but also as an integral part of preparing for the audit site visits, document reviews, and interviews. The safety audit tool assisted as a checklist of key data items that must be gathered during the audit. The audit team used the tool as a checklist in preparation for the audit.







Table 2-2 Sample 0Safety Program Review Template

## Safety Program Review Template for SRA/RIC/RailCorp

### Evaluation and Effectiveness Criteria Checklist for Safety Programs

Date of revision:

SRA /RIC/RailCorp—Safety Program Review Audit

ITEM	PROGRAM ELEMENT	PROTOCOL	FINDINGS	AUDIT DATA	SRA/RIC/ RailCorp Rating
1.0	MANAGEMENT COMMITMENT				
1.13		There is an effective means of making senior managers accountable for safety issues*	Executive level job descriptions do not include safety responsibilities	GM Position Description Director of Ops PD GM interview 3/2/04 Director of Ops interview 3/2/04	
					
	Element Present and Integrated	Element Present but not Fully Integrated	Element Partially Present and Partially Integrated	Some Key Aspect of the Element is Missing and not Integrated	Element Not Identified During this Review

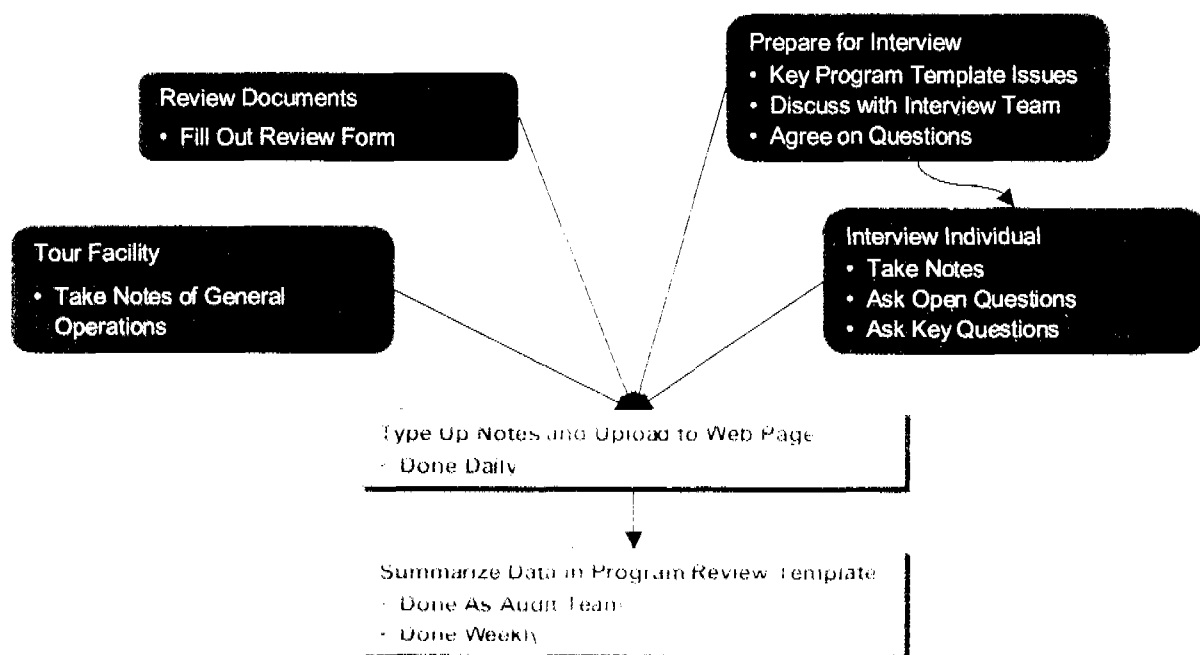
- \* Expansion of Qantas Safety Systems Audit Checklist
  - \*\* New Element not included in Qantas Safety Systems Audit Checklist
- SCOI Stage 2

Warning: This document contains sensitive information and shall not be disclosed to persons outside of the Special Commission of Inquiry into the Waterfall Rail Accident without prior written approval

**Figure 2-2** illustrates how information was gathered and added to the safety audit tool template. Documents were reviewed and notes collected on a document review form. Likewise, tours of facilities or observation of operations were also documented. This information was then uploaded to the FTP and ecourt sites.

In preparation for interviews, team members reviewed the safety audit template and identified key program areas of interest. They then discussed specific questions with interview team members and agreed on a set of questions. All interviews were conducted with two auditors present. One led the questions while the other documented the results. Auditor teams were paired based on skill set and the safety program element reviewed. Interview notes were also uploaded to the ecourt and FTP sites.

**Figure 2-2: Audit Data Flow**



## 2.3 PREPARING THE REVIEW TEAM

After the audit team was selected they met the week of January 19, 2004 at SCOI offices for audit induction. The purpose of the induction was to ensure that the audit team understood the audit process, followed the correct audit protocols, and applied the audit tool appropriately.

The first day of audit team induction focused on familiarization of the rail environment and the safety audit process. Australian rail industry experts made presentations and discussed the rail environment during the Waterfall accident. In particular, discussion addressed the regulator's organisational context and the co-regulatory model. Auditors were then briefed on the SRA and RIC rail network and operations.



The next part of the induction focused on the audit process and detailed the differences between the ITSRR and RailCorp audit. The audit tool was presented to the team, explaining how data is collected, tracked, and then interpreted. The safety climate questionnaire was also presented to the audit team and how it applied to the overall methodology. Audit etiquette and responsibilities were also discussed with the team. Because of the large quantity of information that was gathered during the audit, the audit documentation control process was also outlined.

The second day of induction was largely filled with a railway system familiarization tour. Because the audit team composition was made up of both rail and non-rail safety experts it was essential to ensure that all team members had a concrete understanding of how a railroad (both SRA and RIC) operates. The purpose of this tour was not to be all encompassing, but rather to give audit members a practical understanding of how a railway operates. Audit team members were given familiarisation tours of:

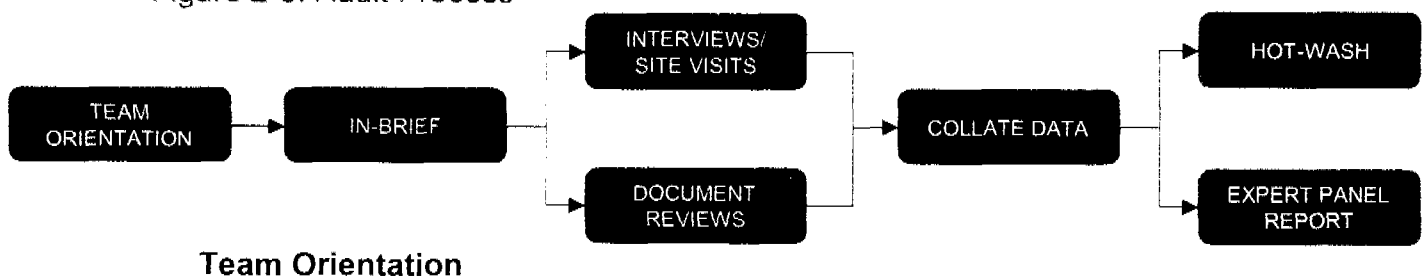
- Rail Management Centre
- Sydney Box
- Eveleigh Maintenance Centre
- Rail Training Centre

After the tour, all audit team members participated in an individual practice audit. Part of the practice audit gave audit team members a chance to role-play both the interviewer and the individual being interviewed. This gave auditors the ability to understand some of the nuances involved in interviewing key staff. This was very important because of the in-depth news coverage of the accident and its effect on rail staff.

## 2.4 GENERAL REVIEW PROCESS

The audit process was designed as a formal and systematic method to be performed with multiple teams operating simultaneously. **Figure 2-3** illustrates the general audit process applied to both SRA/RIC/RailCorp and DoT/MoT/ITSRR. Subsequent sections will detail how each was specifically audited.

Figure 2-3: Audit Process



The first step was to orient the team to the organisation that would be audited. Audit members met to discuss the audit format and process, ensuring that all team

members understood the data collection goals. The audit tool shown was used as the audit checklist and team orientation.

During team orientation the audit team was divided into sub-teams that focused on key areas of interest. Audit member skill sets were matched to optimise the data gathering and analysis. **Table 2-3** below is an example of how the team members were matched to key safety elements.

Table 2-3: Sample Team Orientation Table

Interviewee	Team Member	Most Relevant Safety Element Topics	Date
Station Area Mgr (U/G)	KL, MN	4.0, 6.0, 7.0, 14.0	
Wynyard SM	KL, MN	4.0, 7.0, 14.0	
Martin Place SM	KL, MN	4.0, 7.0, 14.0	
Document Owner	NI, JE	2.0, 8.0, 29.0	
Central SM	NI, CG	4.0, 7.0, 14.0, 27.0	
Drivers and guards	BB, AR	6.0, 14.0	
Complaints Call Centre	MB, CG	17.0	
Platform 6 Town Hall staff member	NI, CG	14.0, 28.0	
Fire, Police, Ambo	JE, BMc	14.0	

Part of the team orientation also included pre-audit, audit, and post-audit preparations and discussions. **Table 2-4** illustrates the activities that were planned as part of the audit process.

Table 2-4: Audit Activities

Stage	Activities	Documentation
Pre-Audit	Issue pre-visit/interview letter (only if required)	Pre-visitation letter (only if required)
	Confirm interview time and audit team	Document review notes
	Review appropriate documentation	Question list
	Develop and validate interview questions	Statement of purpose of interview
Audit	Give verbal entry brief	Confidentiality
	Conduct audit/interview individual	Document interview
	Give out safety climate survey form	Completed survey
	Exit brief summarizing interview main points for validation	Audit notes
Post-Audit	Hot wash	Audit evidence
	Register documents submitted	Updated action item list
	Update action item list	Updated schedule
	Update audit schedule	
	Upload materials to website	

### In-brief

The purpose of the In-brief was to clearly establish and define the audit process for the individual being interviewed. A short verbal introduction was provided to each interviewee to describe the audit purpose and process. This was done to ensure that all groups involved had a thorough understanding of their involvement. Earlier in the process, a presentation was also given to senior leaders that described the audit process, expectations, and how the audit was to be coordinated.

### Interviews

A significant amount of data was gathered through interviews. The purpose of the interviews was twofold: to verify that safety systems discussed in organisation documents have actually been implemented and to further investigate other safety issues not addressed through documents. **Figure 2-2** and **Table 2-4** illustrate the interview preparation process.

The first step was to identify which safety tool elements will be addressed during the interviews and for the 2-person interview to prepare specific questions. Then a standard set of open-ended questions were asked of all those interviewed. Specifically, the open-ended questions were:

- In your daily job activities what role do you play in the overall safety of the transit system?
- How does management deal with safety problems? How does front-line staff deal with safety problems?
- From your perspective, how effective is the current safety program?

- What do you feel are the biggest safety challenges? What should be the top safety priorities?
- Do you have any suggestions of how to improve safety?
- Why do you feel that way?
- If an employee sees a safety problem what would s/he do? How would management react?
- Other comments?

Each interview was summarised on the data collection sheet and archived for audit interpretation. Interview notes are then typed and uploaded to the FTP and ecourt web sites. A representative cross-section of the organization's management staff and front-line employees (not just those with specific safety duties) were interviewed. Over 125 individuals from RailCorp and 23 individuals from ITSRR were interviewed. Typically, interviews were one hour in length. When required, follow-up interviews with the same individual were also conducted. Listed below is a brief outline of the kinds of staff and management that were interviewed:

#### **ITSRR/DoT/MoT**

- CEO, Board Chairman
- Director General Transport
- Executive Director of each line division
- Policy managers
- Project officers
- Lead auditors and accident investigators
- Accreditation and compliance managers and staff
- Technical support staff

#### **SRA &RIC/RailCorp**

- CEO
- GGM Customer Service
- GGM Train Service
- Corporate Safety Manager
- Division safety managers
- Key safety staff
- Training manager and key staff
- Fleet maintenance managers
- Electrical and Mechanical Maintainers
- Drivers
- Guards
- Dispatchers
- Train control managers
- Signallers
- Track workers
- Accreditation managers
- QA managers and inspectors

Safety Climate Questionnaire

Over 400 SRA/RIC/RailCorp personnel completed a safety climate questionnaire. This process was not intended to be an exhaustive study and did not employ a randomised sample approach. Rather the intent of the safety climate review was to further investigate manager and staff attitudes towards safety.

## Document Reviews

The SCOI has over 300,000 documents related to the Waterfall accident. Of these documents, over 500 were deemed as relevant to the safety audit and were reviewed by the audit team. **Tables 2-5 and 2-6** are brief surveys of the kinds of documents reviewed (it is not meant to be an exhaustive list):

**Table 2-5: ITSRR Documents**

Types of ITSRR/DoT/MoT Documents Reviewed				
Safety and incident data bases	Accreditation requirements	Accreditation submittals	SRA and RIC audit reports	SRA and RIC accident investigations
Audit corrective action plans	Data logger information mgt	Comments on network rules	SRA and RIC internal audits	Audit responses sent to DoT/MoT
Rail safety regulations	Rail safety management plans	Rail safety act	Audit findings and mitigation plans	Safety checklists
Risk assessment tables	Rail safety workers Certificate of Competency	Operations contingency plans—risk assessment	SMS training targets	Safeworking Qualification Framework
National guidelines for rail safety accreditation applications	Notice of Accreditation	Vigilance system waivers	NSW Rail Industry Safety Charter	DoT/Operator Interface stds.

**Table 2-6: RailCorp/SRA/RIC Documents**

Types of RailCorp/SRA/RIC Documents Reviewed				
Safety coordination plans	Internal SRA and RIC audit findings	Internal SRA and RIC accident investigation reports	System safety plans	SRA and RIC audit responses to Transport Safety Bureau
Internal audit plans	Internal training plans	Training and assessment of train crews	Risk assessments	SMS training material
Medical examinations and restrictions	Accreditation applications	Safety validation reports	SPADS risk assessment and analysis of incidents	Submissions to Safety Validation Board
Alertness management reports	System safety plans for purchasing and contracts	System safety plans	Safety management plans	System safety hazards and controls
System safety management: methods and procedures	Critical hazard lists	Incident management manual	Hazard code manual	Safety worker certification

A standard format was used to record the analysis of the document and capture a summary of the document along with other key data. This information was then uploaded to the ecourt and FTP web sites. The key data captured on these document review forms were:

- Document title
- Reviewer name
- Date reviewed
- Summary of key points
  - Safety issues addressed in the document
  - Safety management processes discussed in the document
  - Determination if the document meets its intent

### **Collate Data**

Fridays of the audit week were used as a time to finish compiling reports and to transfer the week's data from site visits, document reviews, and interviews onto the safety tool template. This was compiled on a weekly basis to ensure that key data was not "lost" during the audit process. It also served as a method to document the process of how the audit team arrived at each of their audit conclusions. The completed audit tool was then uploaded to the ecourt and FTP site in support of weekly feedback sessions with the Experts Panel. The Experts Panel will then use the completed safety tool templates as direct input into the Final Report.

### **Hot Wash**

A "hot wash" session was conducted at the end of each day by gathering the audit team together and discussing individual findings. This was used as a way to collate

the data and identify linkages to the various audit findings. The “hot wash” was an open forum for the auditors to discuss and debate findings. The daily sessions were useful in validating information gathered and to assist in refocusing the audit teams to further investigate key areas of interest.

### **Experts Panel Report**

The Experts Panel is tasked to take the audit data and write a report that summarises the major findings, citing fact-based evidence and making recommendations for improvement. The completed audit tools served as direct inputs into the Experts Panel Report.

## **3. ITSRR/DoT/MoT REVIEW**

As discussed earlier, the ITSRR/DoT/MoT and RailCorp/SRA/RIC audits used the same audit methodologies and audit tools. However, because the nature of the two organisations is vastly different, it was important to customize the audit tools for each organisation. The ITSRR/DoT/MoT audit focused on how well the regulator met its statutory obligations of providing safety oversight of SRA and RIC at the time of the Waterfall accident. In particular, it addressed the regulatory framework and if it was adequate to monitor rail safety. ITSRR/DoT/MoT safety program elements are listed below in **Table 3-1**.

**Table 3-1: ITSRR/DoT/MoT Safety Elements**

Item	Safety Element
1.0	Regulatory independence
2.0	Regulatory mandate
3.0	Policy and objectives
4.0	Organisation and function
5.0	Data analysis
6.0	Transition
7.0	Safety enforcement over rail authority
8.0	ITSRR accident/incident investigation
9.0	ITSRR audits
10.0	Safety accreditation
11.0	Partnership with the rail authority

## **4. SRA/RAILCORP AND RIC/RAILCORP REVIEWS**

SRA/RailCorp and RIC/RailCorp both used the same safety element protocols. The purpose of these audits was to determine how well each organisation managed its safety responsibilities and implemented effective safety controls. Listed below in **Table 4-1** are the major safety elements.

**Table 4-1: SRA/ RailCorp and RIC/RailCorp Safety Elements**

Item	Safety Element
1.0	Management Commitment
2.0	Policy and Objectives
3.0	Safety Representative and Personnel
4.0	Safety Committee
5.0	Management Review
6.0	Training and Education
7.0	Hazard Identification and Risk Management
8.0	Document Control
9.0	Record Control
10.0	Internal Audit
11.0	Incident/Accident Reporting System
12.0	Incident/Accident Investigation
13.0	Analysis and Monitoring
14.0	Emergency Response Procedures
15.0	Change Management
16.0	System for Managing Requirements and Changes
17.0	Customer Feedback
18.0	Contracted Goods and Services
19.0	Traceability of Goods and Services
20.0	Measuring Equipment and Calibration System
21.0	Procurement of Goods and Services
22.0	Equipment Maintenance
23.0	Design and Development
24.0	Management and Staff Recruitment**
25.0	Medical Issues**
26.0	Human Factors**
27.0	Safety Organisation**
28.0	Safety Awareness**
29.0	System Safety Program Plan

\*\*New element not included in Qantas Safety Systems Audit Checklist

## **5. QUALITY CONTROL AND FEEDBACK TO EXPERT PANEL**

Every Friday the Experts Panel was briefed on the progress to date. Information gathered during the audit was uploaded to the ecourt and FTP sites, allowing the Experts Panel and Audit Designer the ability to maintain quality control on the process. The Audit Project Manager and Audit Team Lead were responsible for daily quality control issues.

## **6. CONSIDERATIONS OF METHODOLOGICAL APPLICATION**



As with any audit process it must be recognized that there are a number of limitations with the approach adopted in this review. This section discusses these limitations, commenting on whether they are expected to have any influence on the quality of data collected. In addition, various initiatives taken to reduce the impact of these limitations, where possible, are outlined.

## **6.1 TIME CONSTRAINTS**

Though this was a public inquiry it was neither feasible nor practical to have an open-ended completion date. Through discussions with the Commissioner and Experts Panel, the completion date was determined based on the time it would take to complete the interviews and document reviews. However, the Commissioner instructed the audit team to ensure that quality was the principal project driver and not the audit timetable.

The audit process was designed to take these issues into consideration. Both the Experts Panel and the audit team felt that it would not be necessary to interview all employees, but rather a cross-section of those who could influence the safety process. Therefore to mitigate the potential of not interviewing a key individual, a cross-section of ITSRR/DoT/MoT and SRA/RIC/RailCorp employees were carefully selected from all ranks of management and staff and from all the major divisions. To further mitigate the potential of not speaking to a key individual a confidential hotline was set up to allow individuals not interviewed to participate anonymously.

## **6.2 Organisational restructuring post 1 January 2004**

One of the key challenges to the entire audit process was the fact that the MoT/DoT had reorganised into ITSRR and SRA and RIC merged to form RailCorp, both effective January 1, 2004. This produced various issues that had to be addressed. The most important was the need to audit organisations that no longer exist. Because the transition for both changes was a long-term process covering six months, it was felt that there was still sufficient access to information from both organisations. As mentioned earlier, the SCOI already had over 300,000 documents related to the Waterfall accident and therefore provided more than enough access to relevant information.

## **6.3 Cooperation with relevant parties**

The Experts Panel, Audit Designer, Audit Project Manager, and Audit Team Leader met with the CEOs of both organisations and the relevant labour unions to ensure that access would be available to all relevant information and individuals. During these meetings the SCOI made presentations describing the audit purpose and

process. Senior leaders from the organisations strongly supported the audit process and were very active in assuring that the process was completed in a timely and professional manner. CEOs of both organisations and the union leadership wrote letters to all staff and managers firmly endorsing the audit process and asking that all individuals proactively participate in the audit process.

#### **6.4 Disclosure of information**

For a successful safety audit of both organisations it was critical to maintain confidentiality as best as possible. Though this is a public inquiry, it may be difficult to get individuals to come forward and explain in detail failures in the safety systems if confidentiality could not be maintained. Names of individuals interviewed will not be released without the explicit consent of the Commissioner.

## APPENDIX G

### Safety Management System Review Elements – RailCorp/StateRail

#### Safety Program Review Template for State Rail Authority and RailCorp

##### Evaluation and Effectiveness Criteria Checklist for Safety Programs

###### Instructions:

The entire audit team will function as a group to complete this template. Input will include: interviews, document reviews, site visits, and general observations. Each assessed area will state the findings (whether positive or negative), and cite specific evidentiary sources of input (e.g., document number, interview notes, or site visit). The team will then qualitatively rate the old organisation (SRA at the time of the Waterfall accident) and the new organisation (RailCorp).

This evaluation focuses on management issues that can influence and affect rail technical issues.

###### Acronyms:

SMS                Safety Management System

OH&S            Occupational Health and Safety

ITEM	Program Element	Protocol
1.0	Management Commitment	
1.1		Corporate Policy and Procedures Manual include documented procedures for a SMS
1.2		There is an adequate program in place that makes staff aware and understand safety policy objectives
1.3		There are checks and balances in place that ensure safety policy and standards are implemented
1.4		These checks and balances are periodically reviewed by senior management and updated*
1.5		Programs are in place that encourage staff awareness and participation in the SMS
1.6		There are sufficient staff in place to support the SMS

ITEM	Program Element	Protocol
1.7		Key staff positions throughout the organisation that support the SMS are filled*
1.8		There is sufficient funding to support the SMS
1.9		Funding that affects the SMS are periodically reviewed for adequacy*
1.10		There is an adequate process in place for communicating safety issues to senior management for review
1.11		This process is reviewed periodically for effectiveness and updated as required*
1.12		There is a robust system in place to identify safety issues throughout the organisation and that communicates this information to management for disposition
1.13		There is an effective means of making senior managers accountable for safety issues*
1.14		Roles are explicitly delineated to ensure a thorough understanding of requirements*
1.15		Staff understand its roles & responsibilities to safety*
1.16		Effective means of providing line management and workforce involvement and ownership of safety program*
1.17		Asset managers understand their roles and responsibilities and are held accountable (especially as related to safety)*
2.0	Policy and Objectives	
2.1		There is a published Safety Policy Statement and Objectives
2.2		It is signed by the CEO
2.3		The safety policy and objectives align appropriately with other organisational policies

ITEM	Program Element	Protocol
2.4		There is an effective process to communicate safety policy to all staff and visitors
2.5		There is a process to periodically review safety policy for effectiveness and relevancy
2.6		Objectives are appropriate for key risks
3.0	Safety Representatives & Personnel	
3.1		There is a safety manager on staff
3.2		The safety manager's role is appropriate
3.3		The safety manager's roles and responsibilities are defined and documented, including interrelationships with other key personnel
3.4		There is an effective process for the safety manager to communicate with staff and senior management
3.5		The safety manager has sufficient and adequate access to senior managers to freely and openly discuss safety issues*
3.6		All personnel have written position descriptions that accurately reflect current activities
3.7		Where appropriate, position descriptions clearly define safety roles and responsibilities for staff*
3.8		There is a documented process in place that describes the organisation structure and is adequately communicated to staff
4.0	Safety Committee	
4.1		There is a safety committee, comprised of appropriate staff representation and it includes OH&S personnel

ITEM	Program Element	Protocol
4.2		The safety committee addresses both OH&S issues and system safety issues*
4.3		The safety committee is appropriately trained*
4.4		Safety committee findings and corrective actions are communicated to senior management for decision*
4.5		Safety committee deliberations have a positive impact on reducing risk*
4.6		Safety committees are created and implemented at the front-line staff level*
4.7		Safety committees have adequate visibility with management and authority to implement and track safety issues to closure*
4.8		Safety committees are effective*
4.9		Safety committees include representatives from all appropriate areas of the organisation *
5.0	Management Review	
5.1		Management regularly reviews the effectiveness of the SMS
5.2		There is a documented process for management review that also includes periodicity of review*  The review cycle is adequate*  It is followed*
5.3		Results of this review affect policy*
5.4		Management review meeting minutes are adequately documented and there is an effective process in place for monitoring corrective actions

ITEM	Program Element	Protocol
5.5		Management review is adequate and includes review of audit and accident investigation findings (both internal and external to the organisation), status of corrective and preventative actions, resource planning, safety data and analysis, and review of policy and performance towards safety objectives
5.6		There is an adequate process that links all relevant data into this review
5.7		There is an adequate process that communicates the results of this review across the organisation and up to executive management
6.0	Training and Education	
6.1		All key personnel, including the safety manager, have received adequate training in the SMS (including induction and ongoing safety related training)
6.2		There is an adequate process to ensure that these personnel receive initial and recurrent training on a regular basis*  This training is appropriately updated for changes in the SMS*
6.3		All staff are aware of the SMS and their role and responsibilities in relation to the system
6.4		All levels of staff are appropriately trained with regard to hazards they face in their work place*
6.5		Staff adequately trained to fulfill their safety roles and responsibilities*  Staff receive periodic refresher training*  Staff are trained for new safety information or changes to the SMS*
6.6		Training requirements for all staff are documented, including competencies, standards and recurrent training

ITEM	Program Element	Protocol
6.7		<p>There are processes in place that periodically review the effectiveness of training</p> <p>This review includes all training and verifies that safety issues have been properly addressed and are relevant*</p>
6.8		<p>There is a process for informing and training personnel on new work practices, procedures, policies and standards</p> <p>This process assures that appropriate safety issues are included*</p>
6.9		Training personnel have appropriate competencies
6.10		There is a process to inform training personnel of changes in the system that could affect training*
6.11		There is an adequate process in place to maintain training records, monitor them, and update when appropriate
6.12		Safety training aligns with identified hazards in safety assessments, audits, or accident reports (especially newly identified hazards)*
6.13		Training programs adequately cover human factors issues (e.g., driver performance)*
6.14		There is adequate team-based training that includes important principles of crew resource management, management, and safety-critical decision making*
6.15		Contractors and visitors are appropriately trained in safety before entering hazardous areas*
6.16		SMS adequately supports the training regime*
7.0	Hazard Identification & Risk Management	
7.1		There is an adequate process in place for identifying and reporting hazards



ITEM	Program Element	Protocol
7.2		There is an adequate risk management process
7.3		This process is documented
7.4		There is a method in place that determines the effectiveness of risk treatment and controls
7.5		Appropriate staff are involved in the process
7.6		All relevant staff have received adequate and appropriate training in risk management
7.7		Formalised safety or risk assessment process in place and documented*
7.8		This includes methodical, systems-based hazard identification protocols are in place*
7.9		Hazard inspection and abatement in place*
7.10		Adequate hazard resolution process in place* This includes regular review of hazard and risk registers*
7.11		There is appropriate management oversight of the process* Senior managers are informed of system risks* This process is documented*
7.12		Senior managers are responsible for accepting risk rationale* There is a process in place that holds them accountable*
7.13		Safety assessments are performed and updated regularly*
7.14		System changes and deviations are analysed for safety impacts*
7.15		System exists that verifies that safety controls are adequate and in place*

ITEM	Program Element	Protocol
7.16		All workplace hazardous operations have been safety assessed*
7.17		Network hazards have been risk assessed* Includes both train scheduling* Also includes entire safe movement of trains, equipment, staff, contractors onto the right of way and network*
7.18		There is a process in place to appropriately control these hazards*
7.19		Safety assessments take into consideration all characteristics of transit property (i.e. facilities, equipment, procedures, environment, etc.)*
7.20		Hazards, undesired events, and causes are identified in safety assessments*
7.21		Hazard severity and event probability are assessed*
7.22		Safety assessments state whether risks should be eliminated or controlled (or accepted, with or without attendant contingency plans)*
7.23		Safety assessments address corrective actions to eliminate or control hazards*
7.24		Safety assessments validate that controls are verified to be adequate*
7.25		Safety assessments verify that hazards are tracked till closure and give adequate rationale of how closed (e.g., appropriate hazard and risk registers)*
7.26		There is a pre-determined responsibility/authority for hazard closure*
7.27		Risk ranking is pre-defined and risk prioritisation protocol in place*
7.28		Risk acceptance and rationale documented and signed by senior executives*
7.29		Risk management process based on recognized standards (e.g., AS 4360)*

ITEM	Program Element	Protocol
7.30		Risk management system considers audit and investigation reports*
8.0	Document Control	
8.1		There is an adequate process in place for maintaining and controlling documents, including manuals, (both internal and external)
8.2		This procedure is documented The procedure is followed*
8.3		There is a formal process for amendment of controlled documents, including review and approval of changes
8.4		There is a regularly maintained controlled document distribution list
8.5		There is a process for confirming/recording of distributed, controlled documentation
8.6		The process that ensures that changes to documentation are communicated to all relevant personnel is adequate
8.7		There is a process for retrieval of obsolete documentation
8.8		There is a process for personnel to submit feedback on documentation
8.9		There is an adequate process for configuration control of all safety critical documents
8.10		Rules and procedures are periodically reviewed to assure that latest safety information has been incorporated*
9.0	Record Control	
9.1		There is a documented process for control of records

ITEM	Program Element	Protocol
9.2		The procedure defines the regulatory/legal/company requirements to keep records
9.3		There is an adequate process for identification, storage, protection, retrieval, retention time, and disposal of records
10.0	Internal Audit	
10.1		There are documented audit procedures which include standards and checklists
10.2		There is an approved audit schedule which includes scope and frequency The audit schedule is followed*
10.3		The internal audit frequency is adequate*
10.4		There are system safety audits as part of the audit program  Audit program is risk focused (including both safety systems and other systems that can affect safety)*  Audit program includes work practices that could affect safety such as joiner rights*
10.5		There is an adequate process to communicate audit results to management for review and action
10.6		This process includes causal analysis and risk assessment of findings
10.7		There is an adequate process that monitors actions, follows-up and tracks to closure
10.8		There is an adequate process that reviews that actions are appropriate and effective
10.9		Auditors receive appropriate training to perform the audit
10.10		There is an adequate process in place to measure the effectiveness of the audit program

ITEM	Program Element	Protocol
10.11		Results of audits are fed back into the safety management system in a closed-loop corrective action process*
11.0	Incident/Accident Reporting System	
11.1		There is a formal process for identifying, reporting, and recording incidents and accidents (across the organisation and within each department)
11.2		There is an open-reporting policy and it is effectively communicated to staff
11.3		There is an independent confidential reporting system There is a system in place that adequately protects confidentiality
11.4		There is an appropriate feed-back process for staff who report hazards and incidents
11.5		Accidents and near misses are rapidly and accurately reported to senior management*
11.6		No blame assigned to those who report accidents, incidents, or near misses*
11.7		There is an appropriate process for handling whistle blowing*
12.0	Incident/Accident Investigation	
12.1		There is a formal, documented process in place for investigating reported incidents, accidents, serious near misses, and hazards
12.2		This process includes causal analysis and risk assessment
12.3		The process includes preventative and corrective actions
12.4		Results of investigations are communicated to relevant staff
12.5		There is an appropriate system to monitor reported hazards and incidents, including actions

ITEM	Program Element	Protocol
12.6		There is an appropriate process for follow-up and closure of actions
12.7		A methodical recording and record keeping system is adequate and in place*
12.8		Investigation teams are comprised of competent staff that have been appropriately trained*
12.9		Investigation reports appropriately assess safety implications and how they affect the entire organization*
12.10		Investigation results are appropriately input into the safety management system (especially training and goal setting)*
13.0	Analysis and Monitoring	
13.1		There is a process for analysis and monitoring of safety-related incidents, accidents, and hazards
13.2		There is an adequate process for monitoring safety-related trends
13.3		There is an adequate process that monitor audits and their results
13.4		There is an adequate process in place for management to regularly review results of data analysis
13.5		Uncorrected vs. corrected safety discrepancies are tracked*
13.6		Safety performance compared over time*
13.7		Safety performance of contracted goods and services are trended*
13.8		Trending is conducted for safety-related incidents, accidents, and hazards*
13.9		Results of safety or risk assessment analyses are incorporated into the safety management system*

ITEM	Program Element	Protocol
14.0	Emergency Response Procedures	
14.1		There is a documented emergency response action plan
14.2		This document is appropriately controlled, including distribution
14.3		It specifies responsibilities/authorities allocated to personnel
14.4		There is adequate periodic testing and auditing of the emergency response plan
14.5		The emergency response plan is regularly reviewed and updated It is reviewed by appropriate levels of management*
14.6		There is an adequate process to make staff aware of the plan (including location and how to access it) It also includes how staff are informed of changes
14.7		Staff have been adequately trained on the emergency procedures
14.8		Emergency preparedness plan identifies critical emergency response personnel from outside the organisation (e.g., fire, EMS, etc.)* And is communicated to them
14.9		Hazard controls that depend on emergency response personnel are adequately addressed in the emergency preparedness plans*
14.10		Staff and emergency services are aware of the plan in its most current revision, including contact numbers and communications protocols*
15.0	Change Management	

ITEM	Program Element	Protocol
15.1		There is a clearly defined process for introducing changes into the business
15.2		The procedures for changes are well documented
15.3		Risks are adequately identified, documented (including procedures for assessing and treating risks), and regularly reviewed and monitored
15.4		Changes are adequately planned Changes are adequately tracked and managed*
15.5		Appropriate requirements are considered in the planning and risk assessment process (e.g., regulatory, safety, internal/external influences)
15.6		There is an effective program for monitoring and measuring the effectiveness of changes
16.0	Systems For Managing Requirements And Changes	
16.1		There is an adequate process to identify legal, legislative, regulatory and company requirements
16.2		There is an adequate process to identify, notify, and review requirements and changes
16.3		There is an adequate process to assess, implement and manage change in the organisation
16.4		This process is documented
16.5		There is an adequate process to monitor and measure business processes and determine how effectively they conform and meet specified requirements
16.6		There is an effective process in place to make employees aware of the requirements and their responsibilities for meeting them
16.7		Process changes & deviations analysed & modifications documented*
16.8		System modifications are adequately reviewed and approved for safety impact*



<b>ITEM</b>	<b>Program Element</b>	<b>Protocol</b>
17.0	Customer Feedback	
17.1		The organisation clearly understands who their customers are
17.2		There is a process in place to determine customer requirements (especially as they relate to safety)
17.3		There is a system to track changes to customer requirements
17.4		There is an adequate process in place to collect and handle customer feedback and complaints
17.5		There is an adequate process in place to review feedback and actions
17.6		There is an adequate system in place to follow-up the results of customer feedback
17.7		Customer service incorporates key system safety principles*
18.0	Contracted Goods and Services	
18.1		List processes that are outsourced
18.2		All outsourced services have been appropriately assessed for their safety criticality*
18.3		There is an adequate process in place to select and evaluate contractors
18.4		Performance targets are adequate and are measured
18.5		Contractor performance is adequately monitored and reviewed
18.6		There is appropriate and adequate interface between contractors and staff

ITEM	Program Element	Protocol
18.7		Interface processes are appropriately managed and monitored
18.8		There is an adequate process to ensure that contractors (including contracted equipment) comply with all regulations and requirements
18.9		There is adequate hazard identification and risk assessment conducted before contracted services or equipment are introduced into the system or workplace
18.10		There is an adequate process in place to make contractors aware of the SMS  This process also assures that they comply with SMS requirements*
18.11		Adequate contractor and subcontractor safety oversight program in place*
19.0	Traceability of Goods and Services	
19.1		There is an adequate process to identify, trace and control goods and services at all stages (e.g., what are the goods and services, where they came from, and their current stage)
19.2		There is a process that adequately identifies customer property, traces and controls it at all stages, and determines how it is protected and safeguarded from damage/theft/loss, etc
19.3		There is an adequate process in place to manage and communicate when customer property is damaged or lost  Records are kept and maintained appropriately
19.4		Supply chain has been adequately assessed for safety criticality and routinely reviewed for effectiveness*
19.5		Supply chain controls are adequate to mitigate safety-critical risks*
19.6		The supplier approval process adequately addresses safety issues*
20.0	Measuring Equipment & Calibration Systems	

<b>ITEM</b>	<b>Program Element</b>	<b>Protocol</b>
20.1		There are adequate monitoring, measuring and testing devices/equipment
20.2		There are established calibration and maintenance standards for this equipment
20.3		There is an adequate process in place to maintain monitoring, measuring/testing equipment in good order and at the required standard
20.4		There is an adequate process to determine that equipment is appropriately used, maintained, and calibrated
20.5		There is an adequate process to safeguard devices and equipment from adjustments that would invalidate the calibration
20.6		There is an adequate process to protect devices and equipment from damage and deterioration during handling maintenance and storage
20.7		There is an adequate process to record and track calibration results
20.8		There is an adequate method to reassess the validity of previous results if devices are found to be out of calibration and corrective action taken
21.0	Procurement of Goods and Services	
21.1		There is a formal and documented process for purchasing goods and services
21.2		<p>It includes the use of approved suppliers; ensuring adequate order details; and identifies and verifies delivery</p> <p>There is an adequate process to assure that appropriate levels of quality control are levied on suppliers*</p> <p>This is verified as adequate*</p>

ITEM	Program Element	Protocol
21.3		There is an adequate process that identifies and assesses risk prior to purchase
21.4		Safety requirements are considered in the purchasing process
21.5		Products and services are regularly tested and assessed for effectiveness
21.6		Purchasing records are adequate and kept
21.7		Purchases are adequately reviewed and approved for safety impact*
21.8		<p>A rigorous, methodical, formal safety certification process is adequate and in place for the purchase of any new rolling stock or major infrastructure changes*</p> <p>The certification process assesses all hazards in the rolling stock or infrastructure*</p> <p>Rolling stock and infrastructure hazards to existing systems are also adequately assessed*</p>
21.9		The safety certification process follows the items listed in Section 7.0, Hazard Identification and Risk Management*
22.0	Equipment Maintenance	
22.1		There is an adequate process for maintenance of equipment
22.2		The requirements for maintenance of equipment is documented
22.3		There is an appropriate maintenance schedule for all maintained equipment
22.4		This process is followed*
22.5		Maintenance records are adequately kept and maintained

ITEM	Program Element	Protocol
22.6		Asset management system is in place and adequate*
22.7		Asset management system appropriately tracks conditions of all assets*
22.8		An appropriate calibration program is in place for safety critical equipment*
22.9		Maintenance plan and schedule is adequate to sustain safety critical subsystems*
22.10		Maintenance records are adequate and suitably archived*
22.11		Maintenance audits are performed and are adequate*
22.12		Safety assessment results are fed back into the maintenance regime*
22.13		Employees are adequately qualified and trained to perform their functions*
23.0	Design & Development	
23.1		There is an adequate process for design and development of goods/services
23.2		The process is adequately documented
23.3		Safety requirements are considered in the design and development process
23.4		The process for design and development is adequately reviewed and approved at the appropriate levels of management
23.5		Stakeholders are adequately involved in the review and approval process
23.6		There is an adequate process to control design and development changes
23.7		Safety assessments are performed and documented during design and test activities*
23.8		The Safety Office follows a documented rigorous and systematic review and approval of all major new designs (both equipment and infrastructure)*

ITEM	Program Element	Protocol
24.0	Management & Staff Recruitment	
24.1		Competence focused recruitment
24.2		Staff advancement and rotation based on competency
25.0	Medical Issues**	
25.1		There are adequate programs that ensure that employees in safety critical positions have undergone fitness to work assessments
25.2		There are adequate programs that ensure that fitness to work assessments are undertaken by people with appropriate competence and skills
25.3		There are adequate programs that ensure the accuracy and timeliness of the medical assessments
25.4		There are adequate programs that ensure risks to health from work related hazards are identified, assessed, controlled and recorded
25.5		There are adequate programs that assist individuals with work related psychological issues
25.6		There are adequate programs that ensure that individuals in non safety critical positions are fit to work
25.7		There are adequate programs that rehabilitate employees injured at work
25.8		There are adequate programs that ensure that , on a daily basis, individuals are fit to function, with specific reference to: Fatigue Alcohol and other drugs, Acute medical conditions, Prescription medication
26.0	Human Factors	
26.1		There is a written human factors policy

ITEM	Program Element	Protocol
26.2		Human factors specialists are on staff and technically qualified
26.3		Human factors staff are used appropriately in the SMS
26.4		There is a 'just' policy on safety on staff who commit errors
26.5		There is an appropriate system for staff that commit violations
26.6		Managers have an adequate understanding of the concept of error tolerance
26.7		There are adequate mechanisms in place to review and continuously improve communication protocols
26.8		There is an adequate program in place to manage fatigue in all safety-critical jobs, especially at the depot level
26.9		The SMS program verifies that vigilance controls (e.g., deadman switch, data loggers, etc.) are adequate and in place
26.10		Safety critical employees are adequately screened (including medical checks)
26.11		There are mechanisms to incorporate human error best practices from other organisations
27.0	Safety Organisation**	
27.1		The safety management system is integrated with other operational and management systems
27.2		Safety employees have a viable career path in the organisation
27.3		Good relationship fostered between corporate centre and operations/ sites in respect to safety issues
27.4		There is sufficient Board involvement in safety issues
27.5		Safety organisation structure promotes ownership of safety issues where they should be – not with the safety dept.

<b>ITEM</b>	<b>Program Element</b>	<b>Protocol</b>
27.6		Strategic plan addresses near/long term safety goals
27.7		Effective organisation employed for assisting compliance with safety policy, process etc.
27.8		Safety Organisation is focused on overseeing and assuring adequate safety performance, as well as, identifying and correcting deficiencies.
27.9		The safety organisation periodically reviews the SMS
27.10		Safety program involved during the entire program life cycle (including acquisition and disposal)
27.11		Safety plans motivate the organisation to reduce safety risk
27.12		Safety office high on organisation chart
27.13		Employees understand where safety is in the organisation
27.14		Safety management has requisite visibility and authority to sustain effective safety programs
27.15		Safety organisation does not have conflicting reporting
27.16		The process for identifying and monitoring external safety requirements is adequate
27.17		The safety management system is integrated with other operational and management systems
27.18		External safety requirements have been embedded into all appropriate business processes
27.19		Corporate and divisional safety goal setting in place
27.20		Goals reviewed periodically
27.21		Risk priorities stated and measurable results defined



ITEM	Program Element	Protocol
27.22		Appropriate safety performance measurement tools are in place
27.23		A process exists to track and incorporate safety best practices from other industries and/or countries
27.24		There are systems in place that assure that operational performance does not negatively impact safety (e.g., timetabling/speed boards)*
28.0	Safety Awareness**	
28.1		Employees involved with safety meetings & on-site briefings
28.2		Upper management communicates safety priorities to staff
28.3		Adequate employee' awareness of workplace hazards
28.4		All levels of management regularly communicates safety issues to employees
28.5		The safety recognition program is adequate
28.6		Employees can communicate safety concerns to management
29.0	Safety System Program Plan	
29.1		The corporate system safety program plan adequately addresses all of the areas listed above
29.2		The program plan is regularly reviewed and updated
29.3		The program plan establishes the safety program across the entire organisation and all of its activities
30.0	Miscellaneous Elements added by Review Team	

<b>ITEM</b>	<b>Program Element</b>	<b>Protocol</b>
30.1		Train Services
30.2		Train Management
30.3		Rail Management Centre

\* Expansion of Qantas Safety Systems Audit Checklist

\*\* New Element not included in Qantas Safety Systems Audit Checklist

## Safety Management System Review Elements – ITSRR

### Safety Program Review Template for NSW Independent Transport Safety and Reliability Regulator (ITSRR)

#### Evaluation and Effectiveness Criteria Checklist for Safety Programs

##### Instructions:

Purpose: Evaluate and determine the regulatory effectiveness of ITSRR's ability to oversee SRA and RIC (at the time of Waterfall) safety program and post-Waterfall. The principal focus is to determine if the regulatory framework imposed on the rail authority is adequate and sufficient.

The entire audit team will function as a group to complete this template. Input will include: interviews, document reviews, site visits, and general observations. Each assessed area will state the findings (whether positive or negative), and cite sources of input (e.g., document number, interview notes, or site visit). The team will then qualitatively rate the old ITSRR organisation (at the time of the Waterfall accident) and the new ITSRR organization.

References to ITSRR denote the relevant safety organisations within ITSRR that manage the rail transport regulatory environment. RailCorp, SRA or RIC.

Item	Program Element	Protocol
1.0	Regulatory Independence	
1.1		ITSRR safety policy development and enforcement are sufficiently independent from transport operations
1.2		ITSRR safety managers and staff organisations do not report to transport operations
1.3		Safety policy decisions are made in an environment free from transport operations conflict
1.4		Safety funding is sufficiently independent from transport operations funding
1.5		Safety monitoring and reporting is independent from ITSRR transport operations
1.6		ITSRR is sufficiently independent to adequately investigate rail accidents and incidents

<b>Item</b>	<b>Program Element</b>	<b>Protocol</b>
1.7		ITSRR is sufficiently independent to report findings and recommendations from rail accidents and incidents
1.8		ITSRR elevates key safety issues to the Minister in a timely and appropriate manner
1.9		ITSRR does not receive undue pressure from outside groups that can affect safety
1.10		ITSRR reliability functions and mandates do not conflict with the ITSRR safety process
2.0	Regulatory Mandate	
2.1		ITSRR has sufficient regulatory authority to effectively monitor safe rail transport
2.2		Appropriate mechanisms are in place to assure no future conflicts
2.3		ITSRR is sufficiently empowered to advise the Minister on key safety issues
2.4		Appropriate rail entities are accredited
2.5		ITSRR has sufficient budget to adequately complete its obligations
2.6		Key ITSRR staff positions are filled to perform regulatory mandate
2.7		Other ITSRR non-rail safety groups do not dilute rail safety authority and responsibility
2.8		ITSRR is adequately managing their transition
3.0	Policy and Objectives	
3.1		ITSRR policy and regulations are clearly written, understandable, and easy to follow
3.2		ITSRR strives to communicate how the regulatory environment works and provides guidance on how to comply
3.3		ITSRR provides technical assistance to the rail authority to support guidance on the regulatory process
3.4		Policies and regulations are periodically reviewed and updated

Item	Program Element	Protocol
3.5		Policy is based on a system safety model
3.6		The safety policy takes an approach of verifying that system safety is integrated into rail authority business practices
3.7		ITSRR conducts safety research and development
4.0	Organisation and Function	
4.1		ITSRR is appropriately organised to effectively monitor rail authority safety
4.2		A systematic compliance regime exists that appropriately validates rail authority safety
4.3		ITSRR appropriately liases with non-rail entities that can affect rail authority safety (e.g., fire, police, EMS)
4.4		ITSRR staff understand their roles and responsibilities in the regulatory process
4.5		ITSRR staff have the appropriate competencies to perform their job
4.6		ITSRR are appropriately trained to perform their job
4.7		ITSRR employees have a viable career path
5.0	Data Analysis	
5.1		ITSRR retains all relevant records
5.2		ITSRR tracks and trends appropriate rail authority safety data Including specific hazard data Human factors data is also tracked
5.3		Trended data are fed back into the regulatory process and influence policy
5.4		Trended data affects new ITSRR safety goals

Item	Program Element	Protocol
5.5		ITSRR implements its own recommendations
5.6		Appropriate pre-Waterfall (e.g., Glenbrook) recommendations for ITSRR have been adequately implemented
5.7		ITSRR have and track compatible and comparable safety data
6.0	Transition	
6.1		ITSRR's transition plan is appropriate and realistic
6.2		ITSRR appropriately identifies transition risks (how transition can adversely affect rail safety) and manages those risks
6.3		ITSRR appropriately identifies RailCorp transition risks (how transition can adversely affect rail safety) and manages those risks
6.4		There is an adequate process to monitor RailCorp staff and managers effectiveness and performance
7.0	Safety Enforcement over Rail Authority	
7.1		ITSRR's rail authority oversight process is robust, systematic, and based on system safety principles
7.2		There is an appropriate escalation and sanction policy in place to react to inappropriate response from the rail authority.
7.3		ITSRR has sufficient authority to impose sanctions if safety regulations are not met.
7.4		ITSRR imposes the appropriate response if the rail authority does not meet requirements
7.5		ITSRR is adequately tracking and evaluating the RailCorp transition.
7.6		ITSRR enforcement policies have become stricter post-Waterfall

Item	Program Element	Protocol
7.7		ITSRR annually reports on the adequacy of rail authority to Minister of MoT
7.8		ITSRR has sufficient access to all levels of rail authority
8.0	ITSRR Accident/Incident Investigation	
8.1		ITSRR investigations are independent of MoT transport operations and rail authority
8.2		Investigation budgets, time constraints, and control are independent of outside organizations
8.3		Investigation staff are adequately trained (both in rail technology/operations and system safety)  Investigation teams have sufficient mixture of multiple disciplines
8.4		Investigations are thorough, systematic, rigorous, and risk-based  Investigations determine root causes  Investigations determine if the management and safety management systems contributed to the accident or incident
8.5		Investigations follow a standard format
8.6		Investigation results affect ITSRR and MoT policy
8.7		Investigation results affect rail authority policy
8.8		Threshold to commence investigations is appropriate
8.9		Prior ITSRR investigation results have been implemented by ITSRR or MoT
8.10		ITSRR provides sufficient confidentiality for rail employees to speak openly

Item	Program Element	Protocol
8.11		There is an appropriate system in place for rail authority employees and the public to report safety issues confidentially
9.0	ITSRR Audits	
9.1		ITSRR has a robust audit function that identifies key rail authority safety issues
9.2		ITSRR audits are appropriately targeted
9.3		Results are trended
9.4		Corrective actions are required, tracked to completion, and when appropriate, re-audited
9.5		Audit cycle is appropriate
9.6		Audit criteria match ITSRR policy and accreditation process
9.7		Process is well documented
9.8		Auditors are sufficiently independent from other ITSRR or MoT functions and the rail authority
9.9		Auditors are sufficiently qualified in both rail technical issues and system safety
9.10		Auditors are appropriately trained
9.11		Audit results affect ITSRR and MoT policy
9.12		Audits take into consideration prior or concurrent ITSRR or rail authority accident investigations
9.13		ITSRR identifies rail authority safety culture issues and tracks and trends these issues
9.14		Rail authority safety culture issues affect ITSRR and MoT policy



Item	Program Element	Protocol
9.15		ITSRR audits rail authority construction
9.16		There is an adequate system that periodically assesses the audit process to determine if it is effective  Changes are made if the process is not adequate
10.0	Safety Accreditation	
10.1		Accreditation process is sufficient and adequate to determine safety of rail authority
10.2		Appropriate and sufficient information is required from rail authority to adequately determine accreditation
10.3		Cycle of accreditation is appropriate
10.4		Cycle of re-accreditation is appropriate
10.5		Accreditation activities are appropriately documented and maintained
10.6		Accreditation results are tracked and trended
10.7		Accreditation trending results affect policy
10.8		There are sufficient and adequate rail industry standards to support the accreditation process
10.9		Accreditation process considers all stakeholders that can affect safety
10.10		Accreditation review and approval process is adequate
10.11		ITSRR tracks and trends rail safety performance levels and goals.

Item	Program Element	Protocol
10.12		ITSRR sets minimum requirements and standards.
10.13		ITSRR communicates those requirements adequately (through clear guidelines) to the rail authority.  ITSRR gives guidance to the rail authority of how to successfully meet accreditation requirements
10.14		ITSRR accreditation process covers all key areas of rail authority and includes the entire system life cycle
10.15		Accreditation process evaluates rail authority safety management system and all other systems that affect safety
10.16		Accreditation process is systematic, integrated, risk-based, and rigorous
10.17		There is sufficient ITSRR review and approval of rail authority accreditation
10.18		ITSRR documents their accreditation process and retains all pertinent records
10.19		ITSRR differentiates between occupational safety and system safety in its regulatory framework
10.20		ITSRR verifies rail authority operational readiness before giving final approval before a new system or significant modification is activated
10.21		There is an appropriate and adequate safety regulation waiver or deviation policy
10.22		ITSRR is a leader in developing transit safety design criteria
10.23		Identify medical standards for employees in safety critical positions
10.24		Ensure that the medical standards and frequency of assessment are appropriate to the level of assessed risk for all positions

<b>Item</b>	<b>Program Element</b>	<b>Protocol</b>
10.25		Ensure that protocols 10.23 and 10.24 are reviewed regularly for currency
10.26		Ensure that the fitness to work systems utilised by the operators are "fit for purpose"
10.27		Ensure that the operator's systems to ensure daily fitness to function are "fit for purpose" Ensure that both systems are effective and utilised
11.0	Partnership with the Rail Authority	
11.1		ITSRR partners with the rail industry to improve safety ITSRR coordinates with the rail industry to develop appropriate safety standards (especially safety design criteria)
11.2		ITSRR tracks new rail and safety technology
11.3		ITSRR regularly liases with the rail industry to solicit input to the regulatory process
11.4		ITSRR identifies and tracks industry and non-rail safety best practices
11.5		ITSRR implements rail safety and non-rail safety best practices where appropriate



## APPENDIX H

### RailCorp Safety Survey

This brief survey is designed to gather important information about safety within RailCorp. In order to obtain as many responses as possible, we ask you to spend ten minutes or so to complete all the questions below.

Your responses are very important in assessing safety standards within RailCorp. All responses will remain confidential and anonymous and it will not be possible to identify individual respondents.

The information gathered will be used to inform the Special Commission of Inquiry into the Waterfall Rail Accident and findings will be incorporated within the final Inquiry report.

If you have any questions, please ask the person who gave you this survey.

Please respond to the following statements in terms of your work. Indicate by circling the appropriate number depending on whether you “strongly disagree”, “disagree”, are “neutral”, “agree”, or “strongly agree” with the following statements as they apply to the work you did most during the last 12 months. In these questions the term “staff” includes all RailCorp employees and contractors.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Staff are kept informed about safety issues that directly affect them	1	2	3	4	5
2. Staff are able to openly discuss safety problems with supervisors or managers	1	2	3	4	5
3. Reported technical faults that impact upon safety are rectified	1	2	3	4	5
4. Regular training is provided for a range of emergency situations	1	2	3	4	5
5. Safety rules and procedures are easy to use during normal operations	1	2	3	4	5
6. Staff are given sufficient feedback regarding safety incidents across the organisation	1	2	3	4	5
7. Staff who report incidents are provided with timely feedback	1	2	3	4	5
8. Staff are encouraged to consider safety as more important than keeping to schedule	1	2	3	4	5
9. Suggestions for improving safety are encouraged	1	2	3	4	5

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
10. Company training provides adequate skills and experience to carry out normal duties safely	1	2	3	4	5
11. Company work demands are realistic	1	2	3	4	5
12. Training is received at regular intervals to refresh and update knowledge	1	2	3	4	5
13. Staff are consulted about safety issues	1	2	3	4	5
14. Equipment is replaced or updated when necessary	1	2	3	4	5
15. Staff induction adequately covers all relevant safety issues	1	2	3	4	5
16. Company safety rules and procedures are easy to understand	1	2	3	4	5
17. Equipment is satisfactory for the type of operations conducted	1	2	3	4	5
18. Management regards safety as an important part of operations	1	2	3	4	5
19. There is no need to work around company safety rules and procedures to get the job done	1	2	3	4	5
20. Management looks for underlying factors that contribute to safety incidents rather than blaming people involved	1	2	3	4	5
21. Where necessary, operational staff can freely and openly talk to management about genuine errors that they have made	1	2	3	4	5
22. Staff shifts are not too long, so that staff are not tired at work	1	2	3	4	5
23. Safety training is carried out by people with appropriate skills and experience	1	2	3	4	5
24. Management are genuinely interested in safety issues	1	2	3	4	5
25. Managers demonstrate a high level of safety behaviour	1	2	3	4	5

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
26. Company safety rules and procedures are as complete and comprehensive as they need to be	1	2	3	4	5
27. Sufficient resources are allocated for all maintenance to be completed to an adequate standard	1	2	3	4	5
28. Company emergency operating procedures give enough guidance on how to deal with emergencies	1	2	3	4	5
29. Management allocate sufficient resources to safety	1	2	3	4	5
30. Staff are not pressured to perform duties if they have a safety concern	1	2	3	4	5
31. Safety is considered to enhance rather than limit productivity	1	2	3	4	5
32. Management has a good understanding of operational issues that impact upon rail safety	1	2	3	4	5
33. Operational equipment is maintained to a safe standard	1	2	3	4	5
34. Adequate training is received when new procedures or equipment are introduced	1	2	3	4	5

The following questions ask about your behaviour at work in the last 12 months.  
Please indicate by circling the appropriate number how often you...

	Never	Rarely	Sometimes	Often	Always	Not applicable
35. ... encourage other staff to work safely	1	2	3	4	5	0
36. ... use safety equipment effectively	1	2	3	4	5	0
37. ... report all technical faults and mechanical defects you are aware of	1	2	3	4	5	0
38. ... comply with safety rules and procedures	1	2	3	4	5	0
39. ... meet all required communication protocols	1	2	3	4	5	0
40. ... report all incidents and near misses you are involved in	1	2	3	4	5	0

	Very Unsafe	Unsafe	Neutral	Safe	Very Safe
41. How safe do you think rail operations were in this company within the <b>last 12 months</b>	1	2	3	4	5

	Very Much Deteriorated	Deteriorated	Unchanged	Improved	Very Much Improved
42. How has the overall level of rail operations safety within this company <b>changed</b> in the <b>last 12 months</b>	1	2	3	4	5

43. Please tick the box corresponding to the company that you mainly worked for during 2003

- ☐ State Rail Authority
- ☐ Rail Infrastructure Corporation
- ☐ Neither (e.g., new employee)

44. Please indicate your length of service in the NSW Rail Industry \_\_\_\_\_ years

45. Please tick the box below that best describes your role over the last 12 months

- ☐ Driving
- ☐ Guard
- ☐ Signalling
- ☐ Controller
- ☐ Track Maintenance
- ☐ Rolling Stock Maintenance
- ☐ Engineering
- ☐ Procurement
- ☐ Station Staff (includes clerical, timetabling)
- ☐ Passenger/customer service
- ☐ Management and supervisory
- ☐ Other (please write in)

46. Please indicate by ticking one box below the type of operations you were **most** involved during the last 12 months.

- ☐ Passenger Operations
- ☐ Freight Operations
- ☐ Both Passenger and Freight
- ☐ Other (please write in)



**MANAGEMENT and SUPERVISORY RESPONDENTS ONLY**, please indicate:

47a. How many levels of management, including your own, are there now between your position and the **CEO**? \_\_\_\_\_

47b. How many levels of management, including your own, are there now between your position and **operations level**? \_\_\_\_\_

**ALL RESPONDENTS**

48. In the space below, please write in any other information about safety that you think would be of interest to the Commission of Inquiry.

Thank you for completing this survey. Should you wish to discuss any further issues please contact Peter Olsen on 8251 8616.



## **APPENDIX I**

### **Further Statistical Information relating to the Safety Climate Survey**

#### **A Note On Sampling**

Surveying an organisation such as RailCorp would ideally be based upon adequate samples of employees that represent their distribution throughout the organisation. Adopting this approach requires that the organisation has access to excellent employment records and also that reliable mechanisms exist for questionnaire distribution and subsequent collection. In surveying an organisation the size, structure and employee dispersion of RailCorp, this could represent a considerable logistical challenge. To reduce the burden on the organisation and to enable data to be collected within the 2-month time frame available, the expedient adopted for gathering quantitative data for this report ensured that key occupational groups were sampled in a number of locations, reinforced by a reasonably large sample size and a 99.8% response rate. Excluding respondents who had been employed by RailCorp or its predecessor organisations for less than 12 months, the mean period of employment within the NSW rail industry was 15.4 years, standard deviation (SD) 11.7 years

#### **Developing RailCorp Safety Climate Scales**

Factor analysis is based upon the relationships – or correlations, between variables – in this case the 34 questionnaire items about RailCorp safety. In this survey, all 1,156 inter-item (bivariate) correlations (34 x 34 questions) were highly significant (meaning that they were very unlikely to have arisen by chance), indicating strong relationships between all items. This finding indicated two things. First, that the questionnaire was reliably measuring a single phenomenon – in this case, perceptions of safety within RailCorp. This suggests that the questions made sense to respondents and that they responded consistently. The second was that factor analysis was a valid technique to use on these items. This was confirmed tests for the use of this technique on these data, specifically, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy was very high at .97, and Bartlett's Test of Sphericity was highly significant ( $\chi^2=7637$ , df 276,  $p<.001$ ).

All analyses undertaken were principal component analyses (PCA). On the criterion of eigenvalues greater than one, both an initial orthogonal rotation and an oblique rotation suggested a 4-factor solution. However, irrespective of whether the PCA was based upon the correlation matrix or the covariance matrix, the fourth factor had only one item loading at  $>.4$  and was therefore not a robust factor. This item was "Staff shifts are not too long, so that staff are not tired at work" (loading .78). As this was the only survey item dealing with shiftwork, its appearance as a factor suggests that this is an important issue for respondents. Therefore this item was considered in a separate analysis. Given the high between factors correlation, all subsequent solutions were rotated obliquely.

After removing the shiftwork item, a subsequent analysis generated a 3-factor solution. However, again the final factor was represented by only a single item and was therefore not considered to be sufficiently robust. With the scree test and the rotated component plots both indicating a 2-factor solution, this item, together with eight complex items (loading on more than one factor) were removed. The final analysis produced a 2-factor solution with the item loadings shown in Table H.1.

**Table H.1** - Items loading on the two factors**Factor 1: Management & Staff Safety (54.74% of variance;  $\alpha$  .95)**

Item	Loading
Where necessary, operational staff can freely and openly talk to management about genuine errors that they have made	.91
Management looks for underlying factors that contribute to safety incidents rather than blaming people involved	.86
Management are genuinely interested in safety issues	.80
Staff are not pressured to perform duties if they have a safety concern	.79
Managers demonstrate a high level of safety behaviour	.79
Suggestions to improve safety are encouraged	.77
Management has a good understanding of operational issues that impact upon safety	.76
Staff are able to openly discuss safety problems with supervisors or managers	.74
Management regards safety as an important part of operations	.73
Reported technical faults that impact upon safety are rectified	.70
Staff are consulted about safety issues	.66
Staff who report incidents are provided with timely feedback	.64
Safety is considered to enhance rather than limit productivity	.63
Staff are kept informed about safety issues that directly affect them	.50

**Factor 2: Safety Training & Rules (5.75% of variance;  $\alpha$  .93)**

Training is received at regular intervals to refresh and update knowledge	.85
Adequate training is received when new procedures or equipment are introduced	.83
Regular training is provided for a range of emergency situations	.81
Safety rules and procedures are easy to use during normal operations	.78
Company training provides adequate skills and experiences to carry out normal duties safely	.72
Company emergency operating procedures give enough guidance on how to deal with emergencies	.72
Company safety rules and procedures are easy to understand	.64
Company safety rules and procedures are as complete and comprehensive as they need to be	.59
Staff induction adequately covers all safety issues	.58
Safety training is carried out by people with appropriate skills and experience	.51

The percentage of variance explained by the factors is a measure of how good they are, both together and separately, at explaining the phenomenon being investigated. In this case, Factor 1 explains 54.74% of the variance in the questionnaire data – quite a high percentage. Factor 2 adds another 5.75% worth of explanation, giving a total explained by the two factors together of nearly 60.5%. This figure compares well with studies of this type. The other statistic given in Table H.1 is  $\alpha$  (Cronbach's Coefficient alpha), which is a measure (with a value between 0 and 1) of the internal consistency of a scale. In this case, the  $\alpha$  values for both factors are very high, which indicates that both can be considered to be reliable measures. This last point is important for the next stage of the analysis, because it means that both factors – or scales as they can now be called, can be used within RailCorp as valid measures of the aspects of safety described by the factor labels. The reliability analysis showed that in neither case would removal of any item improve the  $\alpha$  value of either scale. Both scales were normally distributed – Factor 1, mean 3.14, SD .90, skew -.14, kurtosis -.54; Factor 2 mean 3.27, SD .86, skew -.23, kurtosis -.52. The two factors correlate at  $r$  .75.

## Comparing RailCorp Occupational Groups on the Safety Climate Scales

**Table H.2** - Aggregate scores for seven RailCorp occupational groups on two safety climate scales

	Management Training & Staff Safety	Safety & Rules	
Occupational Group	Mean(SD)	Mean(SD)	N
Drivers	2.28 (.64)	2.82 (.83)	52
Guards	2.66 (.70)	2.98 (.74)	67
Signalling Staff	2.96 (.83)	3.11 (.80)	43
Maintenance (rolling stock and track) Staff	2.88 (.92)	2.88 (.91)	50
Station Staff/Customer Service Staff	3.42 (.82)	3.52 (.82)	68
Management & Supervisory	3.60 (.77)	3.27 (.75)	65
New Employees (<12 months service)	3.75 (.61)	3.94 (.53)	57
Overall	3.11 (.90)	3.24 (.85)	402

Because the two scales are correlated, a technique (MANOVA) that considers both sets of questions at the same time is used in these analyses. To determine whether to use all available cases or to improve the robustness of the design by generating groups of equal size, Box's M Test of Equality of Covariance Matrices was checked. The value, Box's  $M$  40.14,  $F$  2.20,  $p=.002$ , was just within the acceptable range and therefore the analyses were conducted using all the data from the sampled groups. The largest group (Guards 67) was just over 1.5 times the smallest group (Signalling Staff 43), which is at the limit for this technique and the decision was made to use all the available data. Group numbers in Table H.2 differ slightly from those in Table 6.a because cases with missing data were excluded from the MANOVA analysis.

In the MANOVA analysis, the corrected model  $F$  values were highly significant, effect sizes were large and the power of the analysis (with  $\alpha$  set at .05) was very acceptable: Factor 1 –  $F$  28.36,  $p<.001$ , partial  $\eta^2$  .30, power 1.00; Factor 2 –  $F$  15.05,  $p<.001$ , partial  $\eta^2$  .19, power 1.00. Details of paired group comparisons are in Table H.3.

On the basis of their different responses to items on the two safety climate scales, notional distances and relationships between the occupational groups can be represented diagrammatically, as in Figure H.1. In Figure H.1, a line between two groups indicates that they share similar perceptions about the safety climate scale items. Absence of a link between groups indicates that they differ significantly on that safety climate scale.

**Table H.3** - Whether scores between RailCorp occupational groups on two safety climate scales differ significantly

**Management & Staff Safety scale**

Group	Guard	Signal	Maintenance	Station	Management	New Employee
Driver	0.38**	0.68***	0.60***	1.14***	1.31***	0.47***
Guard		0.30*	0.22	0.76***	0.94***	1.09***
Signalling			0.08	0.45**	0.63***	0.79***
Maintenance				0.54***	0.71***	0.87***
Station Staff					0.18	0.34*
Management						0.16

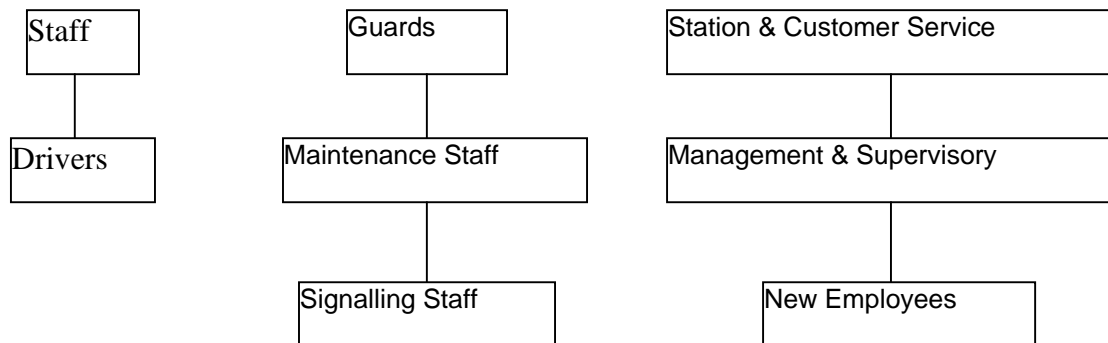
\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

**Safety Training & Rules scale**

Group	Guard	Signal	Maintenance	Station	Management	New Employee
Driver	0.16	0.29	0.06	0.70***	0.45**	1.12***
Guard		0.13	0.10	0.54***	0.29*	0.96***
Signalling			0.23	0.40**	0.16	0.83***
Maintenance				0.64***	0.39**	1.06***
Station Staff					0.24	0.42**
Management						0.67***

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

### Management & Staff Safety scale



### Safety Training & Rules Scale

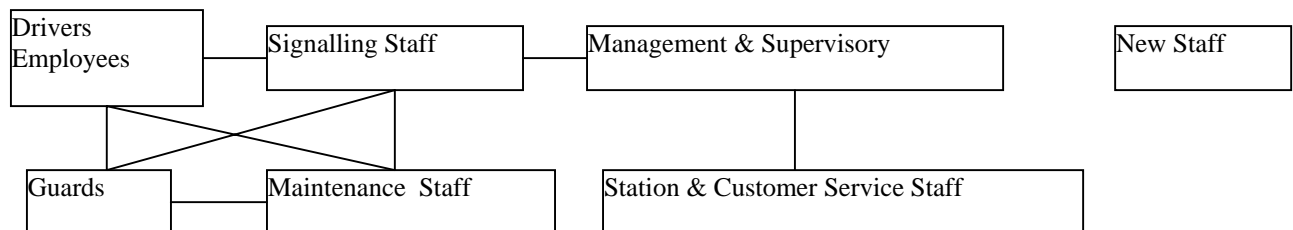


Figure H.1: Links between occupational groups on the two RailCorp safety climate scales

## Comparing RailCorp Occupational Groups on the Shiftwork Question

Group responses to the “shiftwork question” were analysed using ANOVA. Levene’s test of Equality of Error variances indicated that the data were appropriate for ANOVA,  $F$  0.92,  $df$  5,357,  $p=.47$ . The corrected model was highly significant,  $F$  14.82,  $p<.001$ ,  $\eta^2$  .17, (adjusted  $R^2$  .16), power 1.00. Group mean comparisons are in Table H.4 and paired comparisons are in Table H.5. Post hoc Tukey HSD and Scheffé tests produced similar outcomes.

**Table H.4** Mean responses from six occupational groups on the “shiftwork question”

Occupational Group	Mean (SD)	N
Drivers	2.20 (1.06)	55
Guards	2.19 (1.11)	69
Signalling Staff	3.17 (1.21)	48
Maintenance Staff	3.16 (1.18)	50
Station & Customer Service Staff	3.28 (1.08)	72
Management & Supervisory	3.33 (1.07)	69
Total	2.89 (1.22)	363

**Table H.5** - Whether scores between six RailCorp occupational groups on the question: “Staff shifts are not too long, so that staff are not tired at work” differ significantly

**Group differences on the “shiftwork question”**

Group	Guard	Signal	Maintenance	Station	Management
Driver	0.01	0.97***	0.96***	1.08***	1.13***
Guard		0.98***	0.97***	1.09***	1.14***
Signalling			0.01	0.11	0.17
Maintenance				0.12	0.17
Station Staff					0.06

\*\*\*  $p < .001$

## Perceptions of the Safety of Rail Operations within RailCorp within the Last 12 Months

Because overall responses to these two questions were correlated,  $r = .59$ ,  $p < .001$ , the appropriateness of a MANOVA design was tested using Box’s M Test of Equality of Covariance Matrices, which indicated that it was, Box’s  $M = 20.90$ ,  $F 1.37$ ,  $p = .51$ . The corrected model indicated significant effects for both variables:  $F 6.09$ ,  $p < .001$ ,  $\eta^2 .080$ , (adjusted  $R^2 .067$ ), power .996; and  $F 7.45$ ,  $p < .001$ ,  $\eta^2 .096$ , (adjusted  $R^2 .083$ ), power .999. Group means are shown in Table H.6 and between-group differences (Tukey HSD and Scheffé tests) are summarised in Table H.7. Figure H.2 represents these differences diagrammatically.

**Table H.6** - Comparing responses from six occupational groups on questions concerning operational rail safety over the previous 12 months

	Perceived level of safety in last 12 months	Perceived change in level of safety in last 12 months	
Group	Mean (SD)	Mean (SD)	N
Drivers	2.95 (1.07)	3.02 (1.05)	56
Guards	3.10 (0.99)	2.75 (1.09)	67
Signalling Staff	3.66 (0.94)	3.17(0.76)	47
Maintenance Staff	3.14 (0.94)	3.20 (0.91)	49
Station/Customer Service Staff	3.50 (0.91)	3.35 (0.91)	68
Management & Supervisory	3.65 (0.84)	3.68 (0.82)	68
Overall	3.34 (0.98)	3.20 (0.98)	355



**Table H.7** - Whether scores of six RailCorp occupational groups on perceptions of rail operations safety over the previous 12 months differ significantly

### Differences in Perceived Safety of RailCorp Rail Operations in the Last 12 Months

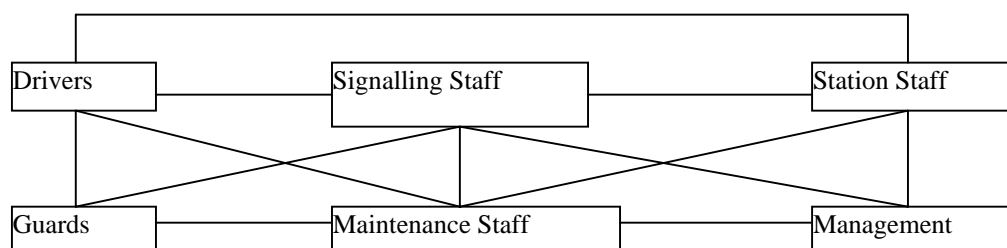
Group	Guard	Signal	Maintenance	Station	Management
Driver	0.16	0.71**	0.20	0.55*	0.70***
Guard		0.56*	0.04	0.40	0.54*
Signalling			0.52	0.16	0.01
Maintenance				0.36	0.50
Station Staff					0.15

### Differences in Perceived Change in Operational Rail Safety Over the Past 12 Months

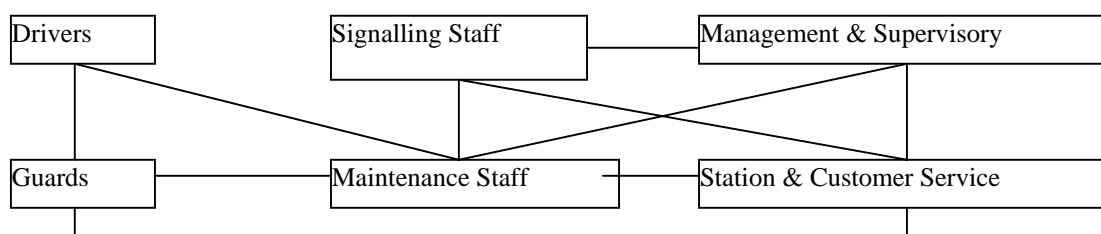
Group	Guard	Signal	Maintenance	Station	Management
Driver	0.27	0.15	0.19	0.34	0.66**
Guard		0.42	0.46	0.61**	0.93***
Signalling			0.03	0.18	0.51
Maintenance				0.15	0.47
Station Staff					0.32

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

### Perceived Level of Rail Operations Safety in Past 12 Months



### Perceived Change in Rail Operations Safety in Past 12 Months



**Figure H.2:** Links between occupational groups on perceptions of rail operations safety within RailCorp over the previous 12 months



## APPENDIX J

**Table J.1**

No	Description	Document ID	Interview Reference
1	Item 5: Safety Issues and Initiatives - 5.3 Review Safety Accountabilities dated 11 Feb 2003	WAUD 006.001.0347 at 0350	
2	RailCorp - Safety Reform Agenda - Draft	WAUD.006.011.2009	
3	Rail Safety Worker - Post Incident Management - Interface with Disciplinary Process	WAUD.007.018.0846	
4	Safety Accountability Statement	WAUD.011.001.0762	
5	SCOI - RailCorp Presentation of 5 March - SCOI Request for Information dated 22 Mar 2004	WAUD.011.001.0003 at 0011	
6	Performance Development Scheme Translation Guidelines	WAUD.007.014.1707	
7	Review of Performance Development Scheme dated 1 Mar 2004	WAUD.007.014.0652	
8	Review of Performance Development Scheme - Initial Report dated 1 Mar 2004	WAUD.007.014.0654 at 0656	
9	Review of Performance Development Scheme - Initial Report dated 1 Mar 2004	WAUD.007.014.0654 at 0657	
10	Occupational Health Safety and Safety Management Systems Audit - Orange Box dated 23 Jun 2003	WAUD 007.017.0427	
11	Occupational Health Safety and Safety Management Systems Audit - Newcastle CAM dated 23 Jan 2003	WAUD.007.017.0420	

<b>12</b>	Item 5: Safety Issues and Initiatives - 5.3 Review Safety Accountabilities dated 11 Feb 2003	WAUD.006.001.0347 at 0359	
<b>13</b>	SCOI - RailCorp Presentation of 5 March - SCOI Request for Information dated 22 Mar 2004	WAUD.011.001.0003 at 0008	
<b>14</b>	SCOI - RailCorp Presentation of 5 March - SCOI Request for Information dated 22 Mar 2004	WAUD.011.001.0003 at 0009	
<b>15</b>	SCOI - RailCorp Presentation of 5 March - SCOI Request for Information dated 22 Mar 2004	WAUD.011.001.0003 at 0009	
<b>16</b>	2001/02/03 State Rail Priority Hazard List	WAUD.011.001.0271	
<b>17</b>	Minutes of Meeting 2 - 1 October 2003	WAUD.006.011.1783 at 1785	
<b>18</b>	RailCorp - Safety Reform Agenda - Draft	WAUD.006.011.2009 at 2018	
<b>19</b>	RailCorp Accreditation 2004 - Safety Milestones dated 23 Dec 2003	WAUD.003.001.0054	
<b>20</b>	Split of Drivers/ Guards to OSMS	WAUD.005.001.0352	Audit Interview NI04CG04 held in Feb 2004 *
<b>21</b>	Safety Standard 9.002 - Safety Document Control dated 13 Jul 2001	WAUD.007.002.0395	
<b>22</b>	Safety Standard 9.001 - Document Hierarchy dated 13 Jul 2001	WCOM.004.003.0262	
<b>23</b>	Minutes of a Meeting of the Board Safety Committee dated 28 Oct 2003  Meeting of the Board Safety Committee held at 1.30pm on Monday 4 November 2002 in Conference Room 1 Australian Rail Training College 2 Trafalgar Street Petersham NSW dated 4 Nov 2002	WAUD.006.001.0026  WWAT.002.683.0040	
<b>24</b>			Audit Interview NI0JE08 held in Feb 2004 *

<b>25</b>	State Rail Safety Steering Committee Meeting Room 242 Level 4 18 Lee Street 2.00 pm Thursday - Meeting No 33 dated 23 Jan 2003	WWAT.002.318.0039	Audit Interview MB04POIG held in Feb 2004 *
<b>26</b>			Audit Interview NI01JE01 held in Jan 2004 *  Audit Interview NI05JE06 held in Feb 2004 *  Audit Interview NI20BB17 held in Feb 2004 *
<b>27</b>			Audit Interview NI03JE04 held in Feb 2004 *  Audit Interview NI02BB03 held in Feb 2004 *
<b>28</b>			Audit Interview NI21JE23 held in Feb 2004 *
<b>29</b>			Audit Interview CG26MN15 held in Mar 2004 *  Audit Interview MN6JE15 held in Feb 2004 *  Audit Interview MN2BB2 held in Feb 2004 *  Audit Interview MN13JE24 held in Mar 2004 *  Audit Interview MN6JE15 held in Feb 2004 *
<b>30</b>			Audit Interview MN6JE15 held in Feb 2004 *
<b>31</b>			Audit Interview MN1MR2 held in Jan 2004 *
<b>32</b>			Audit Interview NB02KL02 held in Jan 2004 *
<b>33</b>			Audit Interview MR1BB1 held in Jan 2004 *  Audit Interview MR5BB04 held in Feb 2004 *  Audit Interview NI09BMB7 LN9BB05 held in Feb 2004 *  Audit Interview NI24KL21 held in Mar 2004 *

<b>34</b>	Technical Report - Qualitative Risk Assessment of the Implementation of SAVES Program to all StateRail Services for StateRail dated 9 Apr 2003	WAUD.007.001.1337	Audit Interview MN15CG23 held in Mar 2004 *
	Passenger Train Fire Risk Assessment-Management Review - Prepared for State Rail - Revision 0 dated 1 Aug 2003	WAUD.007.001.1166	Audit Interview MN6JE15 held in Feb 2004 *
	Emergency Evacuation Procedures from SRA Trains dated 3 Feb 2004	WAUD.007.001.1063	Audit Interview MN2BB2 held in Feb 2004 *
	ATRICS, ARS and Signaller Workload - Preliminary Analysis	WAUD.007.001.1204	Audit Interview MN9KL17 held in Feb 2004 *
	Metropolitan Signalling Project: Consequences of ATRICS for operations personnel dated 9 Apr 2003	WAUD.007.001.1197	Audit Interview MN13JE24 held in Mar 2004 *
<b>35</b>			Audit Interview JE29NI28BM28 held in Mar 2004 *  Audit Interview NI30JE30 held in Mar 2004 *
<b>36</b>			Audit Interview JE21BMB13 held in Mar 2004 *  Audit Interview MB10 held in Mar 2004 *  Audit Interview MB02KL held in Feb 2004 *
<b>37</b>			Audit Interview NI18CG17 held in Feb 2004 *
<b>38</b>			Audit Interview NI07JE08PO held in Feb 2004 *
<b>39</b>			Audit Interview NI18CG17 held in Feb 2004 * Audit Interview NI01JE01 held in Jan 2004 *

<b>40</b>			Audit Interview MB3KL held in Feb 2004 * Audit Interview MB9LN23 held in Feb 2004 *
<b>41</b>	Safety Reform Agenda dated 16 Mar 2004	WAUD.006.021.0156	
<b>42</b>			Audit Interview CG03BMB02 held in Feb 2004 *
<b>43</b>			Audit Interview CG07BMB06 held in Feb 2004 *
<b>44</b>			Audit Interview MN1MR02 held in Jan 2004 *
<b>45</b>			Audit Interview BB03 held in Jan 2004 *  Audit Interview NI04CG04 held in Feb 2004 *  Audit Interview MB10KL held in Mar 2004 *
<b>46</b>			Audit Interview NI21JE23 held in Mar 2004 *  Audit Interview MR07LN07 held in Feb 2004 *  Audit Interview AR6MR6 held in Feb 2004 *  Audit Interview MB03KL25 held in Feb 2004 *  Audit Interview MB10KL19 held in Feb 2004 *
<b>47</b>			Audit Interview NI08JE09 held in Feb 2004 *  Audit Interview NI02BB03 held in Feb 2004 *  Audit Interview NI04CG04 held in Feb 2004 *
<b>48</b>			Audit Interview JE29NI28BM28 held in Mar 2004 *  Audit Interview NI30JE30 held in Feb 2004 *

<b>49</b>			<p>Audit Interview NI02BB03 held in Mar 2004 *</p> <p>Audit Interview NI03JE04 held in Mar 2004 *</p> <p>Audit Interview NI05JE06 held in Mar 2004 *</p> <p>Audit Interview NI08JE09 held in Feb 2004 *</p>
<b>50</b>			Audit Interview NI07JE08 held in Feb 2004 *
<b>51</b>			Audit Interview NI16MB07 held in Feb 2004 *
<b>52</b>			<p>Audit Interview KL01NB01PO01 held in Feb 2004 *</p> <p>Audit Interview NI02BB03 held in Mar 2004 *</p> <p>Audit Interview NI01JE01 held in Jan 2004 *</p> <p>Audit Interview NI20BB17 held in Feb 2004 *</p>
<b>53</b>			<p>Audit Interview KL02NB02 held in Jan 2004 *</p> <p>Audit Interview KL17MN09 held in Jan 2004 *</p> <p>Audit Interview JE11KL10 held in Feb 2004 *</p>
<b>54</b>			Audit Interview BM24 held in Mar 2004 *
<b>55</b>	SRA's Procurement Policies (WE and/or Capital) March 1992	WWAT.004.107.0019	
<b>56</b>			Audit Interview BM21 held in Mar 2004 *
<b>57</b>	Vigilance Control for Double Deck Rolling Stock dated 30 Aug 1999	WITS.355.001.0018	
<b>58</b>			Audit Interview BM21 held in Mar 2004 *



<b>59</b>	NSW State Rail Authority Vigilance Control for Outer Suburban trains Project (VC Project) Project Management Plan dated 28 Nov 2003	WWAT.015.173.0130	
	NSW State Rail Authority Vigilance Control for Outer Suburban Trains Project (VC Project) Project Management Plan dated 28 Nov 2003	WWAT.015.173.0153	
<b>60</b>			Audit Interview BM21 held in Mar 2004 *
<b>61</b>	NSW State Rail Authority Vigilance Control for Outer- Suburban Trains Project (VC Project) Master Test Plan dated 28 Nov 2003	WWAT.015.173.0100	
<b>62</b>			Audit Interview CG03BM02 held in Feb 2004 *
<b>63</b>	PFM Electric Fleet Change Program dated 7 Jan 2004	WAUD.007.014.0526	
<b>64</b>			Audit Interview BMB06CG held in Feb 2004 *
<b>65</b>	Draft Agenda paper (Board) plus Passenger Fleet Maintenance (PFM) - Major Issues Paper dated 6 Feb 2004	WAUD.007.006.0002	
<b>66</b>			Audit Interview BM20BB21 held in Mar 2004 *
<b>67</b>	DDIC Vigilance and Deadman Safety System Test Procedure dated 23 Aug 2000	WAUD.001.003.0001	
<b>68</b>			Audit Interview BMB06CG held in Feb 2004 *
<b>69</b>	Draft Agenda paper (Board) plus Passenger Fleet Maintenance (PFM) - Major Issues Paper dated 6 Feb 2004	WAUD.007.006.0002	
<b>70</b>			Audit Interview CG12BM10 held in Feb 2004 *

<b>71</b>	OHS Content of ART Training Courses for PFM Staff dated 2 Jul 2003	WAUD.007.018.0503	
<b>72</b>			Audit Interview CG12BM10 held in Feb 2004 *
<b>73</b>	Emergency Procedures Training dated 28 Nov 2003	WAUD.007.018.0510	
<b>74</b>			Audit Interview CG03BM02 held in Feb 2004 *
<b>75</b>	DRAFT - StateRail Passenger Fleet Maintenance - Future Directions dated 1 Oct 2003	WAUD.007.014.0529	
<b>76</b>			Audit Interview BMB05CG06 held in Feb 2004 *
<b>77</b>	Fleet Configuration - Logistic Support dated 8 Mar 2001	WAUD.007.012.0777	
<b>78</b>			Audit Interview CG03BM02 held in Feb 2004 *
<b>79</b>	DRAFT - StateRail Passenger Fleet Maintenance - Future Directions dated 1 Oct 2003	WAUD.007.014.0529	
<b>80</b>			Audit Interview CG03BM02 held in Feb 2004 *
<b>81</b>	DRAFT - StateRail Passenger Fleet Maintenance - Future Directions dated 1 Oct 2003	WAUD.007.014.0529	
<b>82</b>	Audit Report: Train Operations - Prepared by Martin Baggott dated 23 Mar 2004	WAUD.016.001.0001	
<b>83</b>	Control Documentation of Network Rules dated 18 Mar 2004	WAUD.012.009.0160	Audit Interview MB14 held in Mar 2004 *  Audit Interview CG20MB13 held in Mar 2004 *
<b>84</b>	General Network Rules and Network Procedures containing 76 documents	WCOM.003.018.0001 WCOM.003.018.0005 WCOM.003.018.0006 WCOM.003.018.0080 WCOM.003.018.0081	

		WCOM.003.018.0141	
		WCOM.003.018.0142	
		WCOM.003.018.0213	
		WCOM.003.018.0214	
		WCOM.003.018.0283	
		WCOM.003.018.0284	
		WCOM.003.018.0383	
		WCOM.003.018.0384	
		WCOM.003.018.0420	
		WCOM.003.018.0422	
		WCOM.003.018.0423	
		WCOM.003.018.0430	
		WCOM.003.018.0437	
		WCOM.003.018.0444	
		WCOM.003.018.0462	
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		WCOM.003.018.0585 WCOM.003.018.0589 WCOM.003.018.0599 WCOM.003.018.0603 WCOM.003.018.0608 WCOM.003.018.0611 WCOM.003.018.0614 WCOM.003.018.0626 WCOM.003.018.0630 WCOM.003.018.0632 WCOM.003.018.0636 WCOM.003.018.0642 WCOM.003.018.0646 WCOM.003.018.0650 WCOM.003.018.0656 WCOM.003.018.0661 WCOM.003.018.0668 WCOM.003.018.0674 WCOM.003.018.0678 WCOM.003.018.0682 WCOM.003.018.0684 WCOM.003.018.0685 WCOM.003.018.0687 WCOM.003.018.0692 WCOM.003.018.0696 WCOM.003.018.0699 WCOM.003.018.0703 WCOM.003.018.0708 WCOM.003.018.0711 WCOM.003.018.0713 WCOM.003.018.0715 WCOM.003.018.0719	
<b>85</b>			Audit Interview NI05JE06 held in Feb 2004 *  Audit Interview NI01JE01 held in Jan 2004 *
<b>86</b>	State Rail - Position Description - Manager, Rail Management Centre	WAUD.007.002.0419	

<b>87</b>			Audit Interview NI01JE01 held in Jan 2004 *
<b>88</b>			Audit Interview MN2BB2 held in Feb 2004 *
<b>89</b>	Barbara Klampfer CV, dated 1 Feb 2004	WAUD.007.007.0556	
<b>90</b>	Performance Development Scheme		Audit Interview MN1MR2 held in Jan 2004 *  Audit Interview MN2BB2 held in Feb 2004 *
<b>91</b>			Audit Interview MN2BB2 held in Feb 2004 *
<b>92</b>	SMS 2.5 - Train Crew Lesson Plan - Crew Resource Management	WAUD.007.012.1524 at 1528	
<b>93</b>			Audit Interview MN2BB2 held in Feb 2004 *
<b>94</b>	RailCorp - Safety Reform Agenda - Draft	WAUD.006.011.2009	
<b>95</b>			Audit Interview NI06JE07 held in Feb 2004 *  Audit Interview CG18MR12 Held in Feb 2004 *  Audit Interview NI21JE23 held in Feb 2004 *  Audit Interview MR07LN07 held in Feb 2004 *  Audit Interview MR16BB23 held in Mar 2004 *  Audit Interview CG21MR13 held in Feb 2004 *  Audit Interview MR06AR06 held in Feb 2004 *  Audit Interview MR08CG11 held in Feb 2004 *  Audit Interview MR04CG01 held in Feb 2004 *  Audit Interview MR18JE31 held in Mar 2004 *

<b>96</b>	No Blame Investigation Procedure Safeworking Policy, dated 6 Jun 2002	WAUD.011.001.0454	
	Safeworking Policy dated 16 Nov 2003	WAUD.006.004.0001	
<b>97</b>			Audit Interview MR01BB01 held in Jan 2004 *  Audit Interview MR05BB04 held in Feb 2004 *  Audit Interview MR18JE31 held in Mar 2004 *
<b>98</b>			Audit Interview MR08CG11 held in Feb 2004 *  Audit Interview MB10KL19 held in Feb 2004 *
<b>99</b>	StateRail Fatigue Management Strategic Plan, Fatigue Management Policy, Safety Standard 12.023 Fatigue Management, and Fatigue Rostering Principles and Workplace Guidelines	WAUD.007.014.1204	
<b>100</b>	First European Rail Conference on Human Factors	WAUD.006.038.0001	
<b>101</b>	Policy and Procedures for Assessment (Generic), dated 1 Oct 2003	WAUD.007.003.0271	
<b>102</b>			Audit Interview CG08BB07 held in Feb 2004 *  Audit Interview MR8CG10 held in Feb 2004 *  Audit Interview CG26MN15 held in Mar 2004 *
<b>103</b>	Certificate of Registration, dated 9 Dec 2003	WAUD.007.022.0823	
<b>104</b>	Policy and Procedures Manual, dated 1 Oct 2003	WAUD.007.003.0207	
<b>105</b>	Certificate of Registration, dated 9 Dec 2003	WAUD.007.022.0823	
<b>106</b>	Application for Registration as an RTO - Registration Approved, dated 9 Dec 2003	WAUD.007.022.0830	

<b>107</b>	Network Operations - Training and Safety Standards Validation Project, dated 20 Nov 2003	WAUD.007.022.0886	
<b>108</b>			Audit Interview CG25 held in Mar 2004 *  Audit Interview NI06JE07 held in Feb 2004 *
<b>109</b>	Training & Development Handbook for Trainers, dated 1 May 2002	WAUD.003.006.0804	
<b>110</b>	SMS Training Management Flowchart	WDOT.005.001.0898	
<b>111</b>	Policy and Procedures Manual, dated 1 Oct 2003  Report of the outcomes from the Intercity Guard's Course Risk Workshop, dated 11 Nov 2003	WAUD.007.003.0207  WAUD.007.019.0878	
<b>112</b>	Waterfall - 31 January 2003 - Railway Safety Investigation - Final Report	WAUD.002.003.0325 at 0389	
<b>113</b>			Audit Interview MR14CG21 held in Mar 2004 *
<b>114</b>			Audit Interview CG18MR12 held in Mar 2004 *
<b>115</b>			Audit Interview CG26MN15 held in Mar 2004 *
<b>116</b>	Station operations staff used as supplementary crewmembers on outer suburban Tangara rolling stock competency assessment form, dated 1 Jan 2004	WAUD.007.004.0239	
<b>117</b>	Driver Training - Assessment Record Book - January 2004, dated 27 Jan 2004	WAUD.007.019.0921	
<b>118</b>	Driver Training - Assessment Record Book - January 2004, dated 27 Jan 2004	WAUD.007.019.0921	
<b>119</b>	Assessment of North Control Board - Assessment Form (Masked Version), dated 22 May 2003	WAUD.007.004.0130A	

<b>120</b>			Audit Interview CG15MN10 held in Feb 2004 *
<b>121</b>	State Rail - Operator Specific Procedures, dated 1 Dec 2003	WAUD.007.012.0553	
<b>122</b>			Audit Interview CG23 held in Mar 2004 *
<b>123</b>			Audit Interview CG18 MR12 held in Feb 2004 *
<b>124</b>			Audit Interview MR8CG10 held in Feb 2004 *
<b>125</b>	Disk Containing S.A.V.E. / OSB Files	WCOM.005.018.0258	
<b>126</b>	RailCorp Simulator Training, dated 10 Mar 2004	WAUD.007.018.0300	
<b>127</b>			Audit Interview MR15 CG22 held in Mar 2004 *
<b>128</b>			Audit Interview NI04CG04 held in Feb 2004 *
<b>129</b>	Operational Safety Briefing Plan, dated 12 Aug 2003	WAUD007.001.0001	
<b>130</b>	StateRail Network Incident Management Plan, dated 1 Dec 2002	WWAT.002.050.0001	
<b>131</b>	Network Incident Management Plan (Response to Rail Incidents), dated 1 Sep 2003	WAUD.007.001.0416	
<b>132</b>	RailCorp Incident Response Plan (Response to Rail Incidents), dated 1 Feb 2004	WAUD.011.001.0302	
<b>133</b>			Audit interview NI03JE04 held in Feb 2004 *  Audit Interview NI01JE01 held in Jan 2004 *  Audit Interview NI10LN10BMB8BB6 held in Feb 2004 *
<b>134</b>	RailCorp Incident Response Plan (Response to Rail Incidents) dated February 2004	WAUD.011.001.0302	



<b>135</b>	Sydney and Eastern Suburbs Emergency Management Districts - Exercise Blue Rattler - Final Exercise De-Brief Reports - dated 23 May 1997	WITS.502.001.0317	Audit Interview MN09KL17 held in Jan 2004 *
			Audit Interview NI10LN10BMB8BB6 held in Feb 2004 *
<b>136</b>	New South Wales State Disaster Plan – known as Displan	WAUD.014.001.0021	
<b>137</b>			Audit Interview JE25NI21 held in Feb 2004 *
<b>138</b>	Ministry of Transport Railway Safety Investigation Final Report dated 2 December 2003	WDOT.029.005.0001 at 0079	
<b>139</b>			Audit Interview JE22KL16 held in Feb 2004 *
<b>140</b>			Audit Interview JE29NI28 held in Mar 2004 *
<b>141</b>			Audit Interview CG02BM01 held in Feb 2004 *
<b>142</b>			Audit Interview CG03BM02 held in Feb 2004 *
<b>143</b>			Audit Interview BMB05CG06 held in Feb 2004 *
<b>144</b>			Audit Interview BMB06CG held in Feb 2004 *
<b>145</b>			Audit Interview CG12BM10 held in Feb 2004 *
<b>146</b>			Audit Interview BM19 held in Mar 2004 *
<b>147</b>			Audit Interview BM21 held in Mar 2003
<b>148</b>			Audit Interview BM26 held in Mar 2004 *
<b>149</b>			Audit Interview JE29NI28BM28 held in Mar 2004 *

<b>150</b>	Engineering Instruction EI 116, Minimum Standards for Electric Trains Entering and Operating in Revenue Service	WAUD.006.004.0047	
<b>151</b>	State Rail Safety Management Plan 2002-2005 - Passenger Fleet Maintenance	WAUD.007.014.0504	
<b>152</b>	Memorandum from Alan Cavenagh to Vince Graham dated 12 Jan 2004	WAUD.007.014.0521	
<b>153</b>	PFM Electric Fleet Change Program	WAUD.007.014.0526	
<b>154</b>	Draft State Rail Passenger Fleet Maintenance - Future Directions dated Oct 2003	WAUD.007.014.0529	
<b>155</b>	Passenger Fleet Maintenance - PFM Safety Objectives 2003-2004	WAUD.007.014.0565	
<b>156</b>	City Region Hazards Summary	WAUD.007.008.0141	
<b>157</b>	Internal Memorandum - Fleet Configuration Logistic Support	WAUD.007.012.0777	
<b>158</b>	State Rail Authority of NSW Quality and Technical Support, ISO 9001:2000 Certificate of Registration, dated 9 Dec 2002	WAUD.007.012.0778	
<b>159</b>	Quality Manual for Quality and Technical Support, dated 12 Nov 2002	WAUD.007.012.0779	
<b>160</b>	Passenger Fleet Maintenance Quality and Technical Support Maintenance Review Summary for Periods 4, 5 and 6, 2003/4	WAUD.007.012.0819	
<b>161</b>	Passenger Fleet Maintenance Quality and Technical Support Maintenance Review Summary for Periods 4, 5 and 6, 2003/4	WAUD.007.012.0819 at 0844	
<b>162</b>	Passenger Fleet Maintenance Quality and Technical Support Maintenance Review Summary for Periods 4, 5 and 6, 2003/4	WAUD.007.012.0819 at 0854	

<b>163</b>	Passenger Fleet Maintenance Quality and Technical Support Maintenance Review Summary for Periods 4, 5 and 6, 2003/4	WAUD.007.012.0819 at 0863	
<b>164</b>	Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper	WAUD.007.006.0002	
<b>165</b>	Review of Maintenance Facility and Equipment of MainTrain	WAUD.007.006.0010	
<b>166</b>	PWC Independent Review of MainTrain Contract Mar 2002	WAUD.007.006.0018	
<b>167</b>	PWC Independent Review of MainTrain Contract 1 Jul 1999 to 30 Jun 2001, dated Dec 2001	WAUD.007.006.0056	
<b>168</b>	Copy of Briefs for each of the proposed studies on Passenger Fleet Maintenance Major Issues List	WAUD.007.006.0119	
<b>169</b>	DRAFT RFQ for the provision of a Project Management Team for the electric fleet reliability improvement program.	WAUD.007.006.0119 at 0129	
<b>170</b>	Specification for provision of professional services, review and document a sustainable Configuration Management System, Passenger Fleet Maintenance, dated 25 Nov 2003	WAUD.007.006.0119 at 0150	
<b>171</b>	Specification for provision of professional services, Finalise Data Logger Specifications for the State Rail Electric Fleet, Passenger Fleet Maintenance, dated 27 Nov 2003	WAUD.007.006.0119 at 0158	
<b>172</b>	State Rail Passenger Fleet Maintenance, Brief for Preparation of Preliminary Design and Indicative Costs Estimates for a new EMU Service Centre in the Clyde Down Yard, dated 27 Nov 2003	WAUD.007.006.0119 at 0165	

<b>173</b>	Specification for professional services, Train Services Safety Improvement Program - Identification of Safety Critical Fleet Assets, dated 27 Nov 2003	WAUD.007.006.0119 at 0175	
<b>174</b>	DRAFT Specification for professional services, Train Services Division, Risk Assessment of Train Crew Preparation and Stabling Procedures, dated 27 Nov 2003	WAUD.007.006.0119 at 0182	
<b>175</b>	DRAFT RFQ for professional services to prepare TMPs for the Diesel Passenger Fleet, dated 12 Dec 2003	WAUD.007.006.0119 at 0189	
<b>176</b>	Draft RFQ for professional services to undertake review of TMPs for the Electric fleet, dated 12 Dec 2003	WAUD.007.006.0119 at 0209	
<b>177</b>	Draft Specification for Professional services, Passenger Fleet Maintenance, Project Assistance for Manager Strategic Projects, dated 12 Dec 2003	WAUD.007.006.0119 at 0230	
<b>178</b>	Train Services Safety Improvements Program 2004 (Program 4) dated 4 Feb 2004	WAUD.007.006.0238	
<b>179</b>	Email from Roger Fairfax to Alan Cavenagh, Subject: System Check to reach 100% Distribution of Safety Critical Information, undated	WAUD.007.018.0452	
<b>180</b>	Email from Roger Fairfax to Andrew Pondekas, Subject: Re: PFM - Distribution of Safety Critical Information, dated 4 Aug 2003	WAUD.007.018.0471	
<b>181</b>	Email from Roger Fairfax to Brett Doak, Subject: Safety Critical Information Matrix, dated 5 Aug 2003	WAUD.007.018.0464	

<b>182</b>	Email from Roger Fairfax to Brett Doak, Subject: re: Glenbrook Report Rec No 8, dated 5 Aug 2003	WAUD.007.018.0466	
<b>183</b>	Email from Roger Fairfax to Brett Doak, Subject: Draft Rail Safety Information Distribution Matrix, dated 4 Mar 2003	WAUD.007.018.468	
<b>184</b>	Written Rail Safety Information Distribution System Matrix - Passenger Fleet Maintenance (Draft Document), 3 Apr 2003	WAUD.007.018.0469	
<b>185</b>	Email from Roger Fairfax to Andrew Pondekas, Subject: re: PFM - Distribution of Safety Critical Information, dated 4 Aug 2003	WAUD.007.018.0471	
<b>186</b>	Safe Work Method Statement, Emergency Coupler Test, dated 13 Sep 2003	WAUD.007.018.0485	
<b>187</b>	Two Emails from Roger Fairfax to Ron Devitt, Subject: SMS Training for Senior and Running Supervisors of Shunters, dated 12 Sep 2003 and 1 Sep 2003 respectively	WAUD.007.018.0488 WAUD.007.018.0489	
<b>188</b>	Email from Roger Fairfax to Ron Devitt, Subject: SMS Training for Running and Senior Supervisors in PFM, dated 17 Dec 2002	WAUD.007.018.0491	
<b>189</b>	Email re: FWD: SMS Training for Senior and Running Supervisors of Shunters, dated 29 Jan 2003	WAUD.007.018.0492	
<b>190</b>	Email re: FWD: SMS Training for Running and Senior Supervisors in PFM, dated 30 Jan 2003	WAUD.007.018.0493	
<b>191</b>	Written Safety Information Distribution Matrix, dated 24 Mar 2003	WAUD.007.018.0496	

<b>192</b>	RE: SMS Training for Supervisors and Shunters, dated 12 May 2002	WAUD.007.018.0500	
<b>193</b>	Re: Emergency Procedures Training, dated 28 Nov 2003	WAUD.007.018.0510	
<b>194</b>	DRAFT - Written Rail Safety Information Distribution System Matrix, dated 24 Mar 2003	WAUD.007.018.0512	
<b>195</b>	Re: Written Safety Information Distribution System Matrix, dated 24 Mar 2003	WAUD.007.018.0496	
<b>196</b>	Briefing Note to Minister for Transport Services from Vince Graham, Status of Waterfall Initiatives, dated 19 Nov 2003	WAUD.007.013.0115 at 0118	
<b>197</b>	Vigilance Control for Double Deck Rolling Stock Specification FE 082-99, 1 Dec 1998	WWAT.004.164.0003	
<b>198</b>	Safety risk evaluation of driver deadman device upgrades on intercity T and G type trains, Safety optimisation of Stage 1 vigilance installation and use, dated 6 Aug 2003	WWAT.015.173.0301	
<b>199</b>	NSW State Rail Authority Vigilance Control for Outer Suburbans Train Project (VC Project) Critical Design Review, dated 9 Feb 2004	WWAT.015.173.0001	
<b>200</b>	Vigilance Control Unit Failure Modes, Effects and Criticality Analysis for Fischer Industries, 30 Jan 2004	WWAT.015.173.0322	
<b>201</b>	MainTrain State Rail Vigilance Control Project FMECA And Safety Assessment Report, undated	WWAT.015.173.0013	
<b>202</b>	Vigilance Control Project Passenger Fleet Maintenance Train Maintenance and Risk Assessment Report on Findings, dated 27 Feb 2004	WWAT.015.173.0078	

<b>203</b>	State Rail Procurement Manual on CD, dated 10 Mar 2004	WAUD.007.018.1035	
<b>204</b>	Asset Categorisation Draft Proposal, undated	WAUD.007.018.0370	
<b>205</b>	SRA Passenger Fleet Maintenance - System Safety Plan 1999 (sign off sheet), dated 29 Jun 1999	WDOT.006.001.0616	
<b>206</b>	SRA Passenger Fleet Maintenance - System Safety Plan 1999 (sign off sheet), dated 29 Jun 1999	WDOT.006.001.0616 at 0620	
<b>207</b>	PowerPoint Slides for Rail Corporation Briefing to Waterfall Stage 2 Review Team, dated 5 Mar 2004	WCOM.005.012.0001	
<b>208</b>	Transcript Rail Corporation Briefing to Waterfall Stage 2 Review Team, dated 5 Mar 2004	WCOM.005.045.0001	
<b>209</b>	Safety Reform Agenda - Meeting held 20 January 2004 @ Lee St dated 23 Jan 2004 Minutes - Safety Reform Agenda dated 2 Mar 2004 Minutes - Safety Reform Agenda dated 16 Mar 2004	WAUD.005.001.0318 WAUD.007.021.0023 WAUD.006.021.0156	
<b>210</b>	ITSRR Advisory Board Arrangements ITSRR Organisational Chart dated 5 Feb 2004  ITSRR Organisational Chart Safety & Reliability Act 2003 - Top Line Structure - Updated 22 January 2004  Transport Legislation Amendment (Safety and Reliability) Act 2003 No 65	WAUD.003.005.0006  WAUD.002.003.0001  WRES.001.006.0092 at 0114	Audit Interview LN17MR09 held in Feb 2004 *  Audit Interview LN16MN08AR07 held in Feb 2004 *  Audit Interview AR10LN20 held in Feb 2004 *

<b>211</b>	<p>Transport Legislation Amendment (Safety and Reliability) Act 2003 No 65</p> <p>ITSRR Advisory Board Arrangements ITSRR Organisational Chart dated 5 Feb 2004</p>	<p>WRES.001.006.0092 at 0114</p> <p>WAUD.003.005.0006</p>	
<b>212</b>	<p>Transport Legislation Amendment (Safety and Reliability) Act 2003 No 65</p> <p>ITSRR Advisory Board Arrangements ITSRR Organisational Chart dated 5 Feb 2004</p> <p>ITSRR Organisational Chart Safety &amp; Reliability Act 2003 - Top Line Structure - Updated 22 January 2004</p>	<p>WRES.001.006.0092 at 0109</p> <p>WAUD.003.005.0006</p> <p>WAUD.002.003.0001</p>	<p>Audit Interview LN17MR09 held in Feb 2004 *</p> <p>Audit Interview LN16MN08AR07 held in Feb 2004 *</p> <p>Audit Interview AR10LN20 held in Feb 2004 *</p>
<b>213</b>	<p>ITSRR Advisory Board Arrangements ITSRR Organisational Chart dated 5 Feb 2004</p>	<p>WAUD.003.005.0006</p>	<p>Audit Interview LN17MR09 held in Feb 2004 *</p> <p>Audit Interview LN16MN08AR07 held in Feb 2004 *</p> <p>Audit Interview AR10LN20 held in Feb 2004 *</p>
<b>214</b>	<p>Transport Legislation Amendment (Safety and Reliability) Act 2003 No 65</p> <p>ITSRR Advisory Board Arrangements ITSRR Organisational Chart dated 5 Feb 2004</p> <p>ITSRR Organisational Chart Safety &amp; Reliability Act 2003 - Top Line Structure - Updated 22 January 2004</p>	<p>WRES.001.006.0092</p> <p>WAUD.003.005.0006</p> <p>WAUD.002.003.0001</p>	<p>Audit Interview LN17MR09 held in Feb 2004 *</p> <p>Audit Interview LN16MN08AR07 held in Feb 2004 *</p> <p>Audit Interview AR10LN20 held in Feb 2004 *</p>
<b>215</b>			<p>Audit Interview MN07LN15 held in Feb 2004 *</p>



<b>216</b>	ITSRR Organisational Chart Safety & Reliability Act 2003 - Top Line Structure - Updated 22 January 2004	WAUD.002.003.0001	Audit Interview LN17MR09 held in Feb 2004 *  Audit Interview MN04LN11 held in Feb 2004 *  Audit Interview AR07LN16MN08 held in Feb 2004 *
<b>217</b>			Audit Interview LN17MR09 held in Feb 2004 *  Audit Interview AR10LN20 held in Feb 2004 *  Audit Interview LN17AR08 held in Feb 2004 *
<b>218</b>	MoT Waterfall Investigation Report dated 15 Jan 2004	WDOT.029.005.0001	
<b>219</b>	ITSRR Brief to SCOI on 19 Mar 2004	WAUD.003.003.0003	
<b>220</b>	Transport Legislation Amendment (Safety and Reliability) Act 2003 No 65  ITSRR Advisory Board Arrangements ITSRR Organisational Chart dated 5 Feb 2004	WRES.001.006.0092 at 0114  WAUD.003.005.0006	Audit Interview LN17AR08 held in Feb 2004 *  Audit Interview AR10LN20 held in Feb 2004 *
<b>221</b>	ITSRR Organisational Chart Safety & Reliability Act 2003 - Top Line Structure - Updated 22 January 2004	WAUD.002.003.0001	Audit Interview LN17AR08 held in Feb 2004 *
<b>222</b>	Development Schedule - Training Schedule dated Nov 2003  ITSRR Learning and Development Needs Analysis, Oct 2003	WAUD.002.003.0318  WAUD.003.003.0411	Audit Interview LN17MR09 held in Feb 2004 *  Audit Interview MN04LN11 held in Feb 2004 *
<b>223</b>			Audit Interview MN4LN11 held in Feb 2004 *  Audit Interview AR11MN12 held in Feb 2004 *

<b>224</b>	Transport Administration Act 1988 No 109	WRES.001.006.0181 at 0209	Audit Interview MR10LN18 held in Feb 2004 *  Audit Interview LN17MR09 held in Feb 2004 *  Audit Interview AR10LN20 held in Feb 2004 *
<b>225</b>			Audit Interview AR7LN16MN8 held in Feb 2004 *
<b>226</b>	Safety Accreditation Model, dated 1 Feb 2003	WAUD.003.002.0066	
<b>227</b>			Audit Interview BB16NI17 held in Feb 2004 *  Audit Interview BB19CG19 held in Mar 2004 *
<b>228</b>	Rail Safety Act 2002 (Compliance and Enforcement)	WCOM.005.008.0203	Audit Interview MN4LN11 held in Feb 2004 *
<b>229</b>			Audit Interview LN16MN08AR07 held in Feb 2004 *
<b>230</b>	Development Schedule, dated 1 Nov 2003  ITSRR Information Management & Technology Strategic Plan for 2003-2006, dated 1 Feb 2004  ITSRR PRISM Project: Project Execution Plan Version 0.5, dated 1 March 2004	WAUD.002.003.0318  WAUD.003.003.0558  WAUD.002.004.0864	Audit Interview LN16MN08AR07 held in Feb 2004 *  Audit Interview LN11MN04 held in Feb 2004 *  Audit Interview LN17MR09 held in Feb 2004 *
<b>231</b>	Building an Effective Transport Regulator, undated	WAUD.003.006.0249	Audit Interview LN16MN08AR07 held in Feb 2004 *  Audit Interview LN11MN04 held in Feb 2004 *  Audit Interview LN17MR09 held in Feb 2004 *

<b>232</b>	Rail Safety Co-Regulation, dated 1 May 2001  Rail Accreditation - Rail Operator Accreditation Model - Version 3, dated 28 Aug 2003  Notice of Accreditation, dated 1 Jan 2004	WWAT.002.395.202  WAUD.002.003.0140  WAUD.003.001.0045	
<b>233</b>	Safety Accreditation Model, dated 1 Feb 2003	WAUD.003.002.0066	
<b>234</b>			Audit Interview AR16 held in Mar 2004 *
<b>235</b>	Development Schedule - Training Schedule, dated 1 Nov 2003	WAUD.002.003.0318	Audit Interview LN16MN08AR07 held in Feb 2004 *  Audit Interview LN11MN04 held in Feb 2004 *  Audit Interview LN17MR09 held in Feb 2004 *  Audit Interview AR17 held in Mar 2004 *
<b>236</b>	Rail Safety Act 2002 (Compliance and Enforcement)  Rail Accreditation Process - Macro View, dated 19 Jan 2004  Rail Accreditation Process - Micro View, dated 19 Jan 2004	WCOM.005.008.0203  WAUD.003.001.0315  WAUD.003.001.0316	Audit Interview LN11MN04 held in Feb 2004 *  Audit Interview BB16NI17 held in Feb 2004 *  Audit Interview BB19CG19 3 Mar 2004 *
<b>237</b>	RailCorp 2002 Accreditation Notice, dated 1 Jan 2004  RailCorp provisional Accreditation Milestones, undated  RailCorp Accreditation Safety Milestones (Assessment by SCOI)	WAUD.002.001.0011  WAUD.001.004.0001  WAUD.001.004.0008	
<b>238</b>	ITSRR Advisory Board Arrangements, dated 5 Feb 2004	WAUD.003.005.0006	
<b>239</b>	OTSI Investigation Manual Version 3.0, undated	WCOM.005.006.0515	

240	<p>Material Change with Respect to ATRICS, dated 4 Apr 2003</p> <p>Agenda - First Accreditation Milestones Meeting, RailCorp and ITSRR, dated 10 Feb 2004</p> <p>Transcript of RailCorp Presentation to SCOI, dated 5 Mar 2004</p>	<p>WAUD.003.001.0150</p> <p>WAUD.003.001.0302</p> <p>WCOM.005.045.0001</p>	<p>Audit Interview BM16LN25 held in Apr 2004 *</p>
241	<p>Guidelines for Changing and Accredited Safety Management System, undated</p> <p>Transcript of RailCorp presentation to SCOI, dated 5 Mar 2004</p> <p>Warrington Fire Research Consultancy, dated 5 Feb 2004</p>	<p>WAUD.002.004.0039</p> <p>WCOM.005.045.0001</p> <p>WAUD.007.017.0254</p>	
242	<p>RailCorp Train Crewing Division General Order 9-2004, dated 30 Jan 2004</p> <p>RTBU Letter from Allen Barden to Vince Graham re: second person in drivers cab, dated 3 Feb 2004</p>	<p>WAUD.001.004.0015</p> <p>WAUD.001.004.0016</p>	
243	<p>Provisional Accreditation of Rail Corporation NSW, dated 23 Dec 2003</p> <p>Untitled letter, dated 1 Jan 2004</p>	<p>WAUD.003.001.0041</p> <p>WAUD.003.001.0043</p>	

\* confidential record

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**Special Commission of Inquiry  
Into the Waterfall Rail Accident**

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NEW SOUTH WALES

**Special Commission of Inquiry  
into the Waterfall Accident  
System Safety Review**

**SRA/RailCorp  
Safety Audit Document**



## **Special Commission of Inquiry Into the Waterfall Rail Accident**

NEW SOUTH WALES

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### **System Safety Review Methodology**

In dealing with paragraph 1 of his terms of reference, the Commissioner considered matters related to and arising under paragraphs 2 and 3 of the terms of reference. The services of Dr Graham Edkins and Dr Rob Lee, two internationally recognised experts in safety management systems, were retained to assist the Commissioner in determining the most appropriate way of addressing matters arising under paragraph 2.

Dr Edkins and Dr Lee conducted a review of documentation that described the safety management system (SMS) model applied by State Rail Authority (StateRail) at the time of the Waterfall accident. In comparison with the SMS models applied by other railways and the aviation industry, the StateRail SMS model, dated July 2001, contained 15 elements, and appeared to be a valid model. However, the two experts advised the Commissioner that StateRail's SMS model needed to be validated and the effectiveness of its implementation verified through a safety review of StateRail, Rail Infrastructure Corporation (RIC) and the rail safety regulator.

In November 2003 the SCOI selected an internationally recognised system safety specialist, Mr Nicholas Bahr from Booz Allen Hamilton in Mclean Virginia USA, to develop the safety review methodology.

The intent of the safety review process was not only to identify critical issues that affect safety but to also document those findings in a thorough fashion. The methodology was based on well-established safety audit processes and international best practices. Safety management system (SMS) audit methodologies, taken from various high-risk industries, were reviewed.

An audit tool was created for the review of StateRail/RIC/RailCorp based on 29 key system safety elements. These elements were derived from the Qantas Airlines safety management systems audit process, further developed to include more detail relevant to the NSW rail industry. Each of the 29 elements was further divided into sub-elements or protocols that specifically list key issues.

A second audit tool was created for the review of ITSRR comprising eleven elements. These elements were based on best practice elements that exist in the management structure of effective regulatory bodies and system safety management organisations.

### **Safety Review Audit Tool**

Data that was obtained through site visits, document reviews and staff and manager interviews was assembled and documented using the safety review audit tool as the means for recording data. This tool was the primary method for managing the disparate pieces of information and collating them into meaningful safety subject areas. The safety review audit tool also served as the principal method of documenting and communicating audit results to the Experts Panel.










## Special Commission of Inquiry Into the Waterfall Rail Accident

NEW SOUTH WALES

The collated data was then examined and a qualitative maturity score was assigned as follows:





Qualitative Score	Meaning
	<i>Element Present and Integrated</i> —indicates that the safety element was in-place, was considered fully effective and was an integrated part of the organisations management systems and operations. An organisation operating at this level would exhibit continuous improvement in safety management systems.
	<i>Element Present but not fully Integrated</i> —indicates that the safety element is in-place, however, it was not 100 per cent effective and or was not fully integrated into the organisations management systems and operations. An organisation operating at this level would exhibit performance measurement and effective change management control.
	<i>Element Partially Present and Partially Integrated</i> —indicates that a reasonable portion of the safety element does exist and is partially deployed into the organisation. However, the effectiveness is less than acceptable, the organisation isn't measuring performance and the processes are not fully understood throughout the whole organisation.
	<i>Some Key Aspect of the Element is Missing and Not Integrated</i> —a significant part of the safety element is missing and therefore cannot be adequately deployed through the organisation. The processes are not effective in assuring or improving safety, successful application is not repeatable since the reasons for success are not understood and application through the organisation is ad hoc.
	<i>Element Not Identified During This Review</i> —indicates that either that the safety element does not exist or was so isolated within the organisation that it was evident during the review. The zero rating indicates a totally ineffective safety element.

### Data Captured in Safety Review Audit Tool

The data in the enclosed sheets is raw data and includes both findings and opinion of the safety review audit team. In some instances, findings and observations may be based on a single source and so need to be considered carefully in context of the whole review. Whilst the sheets contain opinion, it is the combined opinion of the eleven safety professionals who conducted the audit as well as Mr Bahr.

The raw data captured in the safety review audit tool was subjected to analysis and validation by a panel of safety management system experts with the subsequent results and conclusions being recorded in the panel report.

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
			1	MANAGEMENT COMMITMENT		
RailCorp		21-Mar-2004	1.1	Corporate Policy and Procedures Manual include documented procedures for a SMS	Senior commitment to Safety is weak.	At interview CG18MR12 when asked about the suspension of periodic training at ART responded that in reality this referred only to SMS training as this was the only periodic training done at Petersham. Further, this was indicative of Senior Management commitment to on time running over safety; it was done in isolation and without consideration of the risks and without any involvement or ART; and there were several options for accomplishing the same aim.
StateRail	State Rail	21-Mar-2004	1.1		State Rail has a documented procedure concerning Management inspections	DOCUMENT REFERENCE: State Rail Safety Standard 14 , Management inspections
StateRail	PFM	21-Mar-2004	1.1		There is a level of financial commitment to support safety initiatives in the Train Services Safety Improvement program - contributing to the safety of the state rail Rolling Stock fleet. This is verifiable by the fact that a number of contracts have been approved to progress elements of program 4 of the Train Services Safety Improvement Program (responsibility of PFM to manage) and other contracts are currently being progressed (in DRAFT form at this time).	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0230, Draft Specification for Professional services, Passenger Fleet Maintenance, Project Assistance fro Manager Strategic Projects. INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0209, Draft RFQ for professional services to undertake review of TMPs for the Electric fleet INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0189, DRAFT RFQ for professional services to prepare TMPs for the Diesel Passenger Fleet INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0182, DRAFT Specification for professional services, Train Services Division, Risk Assessment of Train Crew Preparation and Stabling Procedures, 27 November 2003 INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0175, Specification for professional services, Train Services Safety Improvement Program - Identification of Safety Critical Fleet Assets, 27 November 2003 INTERVIEW REFERENCE: BMB_06;
						DOCUMENT REFERENCE: WAUD.007.006.0158, Specification for provision of professional services, Finalize Data Logger Specifications for the State Rail Electric Fleet, Passenger Fleet Maintenance, 27 November 2003 INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0129, DRAFT RFQ for the provision of a Project Management Team for the electric fleet reliability improvement program. INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0150, Specification for provision of professional services, Review and Document a sustainable Configuration Management System, Passenger Fleet Maintenance, 25 November 2003 INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0120, Specification for Provision of Professional Services, Facilitation General Inspection Workshop, Passenger Fleet Maintenance, 12 December 2002
RailCorp		21-Mar-2004	1.2	There is an adequate program in place that makes staff aware and understand safety policy objectives	New StateRail Safework Policy Nov 2003 not explained to responsible manager.	At interview MR16BB23 stated that although he signed for the new Safeworking Policy WAUD.007.012.1010 he did receive any briefings or other information to explain the content.
StateRail	Station Operations	21-Mar-2004	1.2		Safety policy displayed on notice board and in induction package given to new staff	Sighted on Notice board at and included in Induction Package
RailCorp	RailCorp Corporate Staff	21-Mar-2004	1.2		There is a program in place .Adequacy of this program could not be ascertained from this interview.	Register document # 04110
RailCorp	Station Masters	21-Mar-2004	1.2		Yes - Safety policy was evident in all station master officer, and in the sign on rooms.	Visible display of safety policy through out the work place.
RailCorp	CEO	21-Mar-2004	1.2			
RailCorp	CEO	21-Mar-2004	1.2		Mr Graham stated that frontline staff and lower levels of supervisions had yet to understand their safety responsibility	
RailCorp	Train Crew Assignment Centre TCAC	21-Mar-2004	1.3	There are checks and balances in place that ensure safety policy and standards are implemented	Currently in TCAC implementation of safety plans not effective	TCAC member was not aware of any safety plan or equivalent document. TCAC manager does see safety audits coming through the TCAC but described safety activities as adhoc.
RailCorp	Train Services Operations	21-Mar-2004	1.3		Currently, there is some monitoring of safety performance by senior managers in Train Ops	Train Services Ops manager sees audit reports and incident reports and investigations. Daily meeting with Ops GM involves review of incidents [04507 Rail performance summary 0800 report]. Interviewee does go into field and looks at safety compliance but mentioned that level of compliance observed is no always good. Also mentioned that there are too many meetings that prevent interviewee from spending more time in the field.
RailCorp	Station Masters	21-Mar-2004	1.3		Local procedures ensure that safety procedures are in place	Local procedures are sighted and verified
RailCorp	RailCorp Corporate Staff	21-Mar-2004	1.3		There is a training program in place .This training is conducted at the RailCorp training establish situated at Petersham. Interviewee stated that the subject matter was designed to support the written safety policy.	investigation into training at Petersham should be used to confirm or deny this factor
RailCorp	Duty Manager	21-Mar-2004	1.3			At interview MR05BB04 reported that the Station holds monthly meeting during which safety issues are discussed.
RailCorp	Station Masters	21-Mar-2004	1.4	These checks and balances are periodically reviewed by senior management and updated*	Station managers periodically reviewed the procedures at the OH&S meetings	Sighted the documentation
RailCorp	Station Masters	21-Mar-2004	1.4		There is evidence to show that station managers reviewed these procedures, and some evidence to confirm audits from Lee street, however there is no sufficient evidence to confirm that Lee street undertook to these procedure themselves.	Local documentation sighted, nil evidence from lee street
RailCorp	RailCorp Corporate Staff	21-Mar-2004	1.4		This factor could not be established	
RailCorp	SRA	21-Mar-2004	1.5	Programs are in place that encourage staff awareness and participation in the SMS	No SMS training programs appear to be currently in place for Snr Management	Interviews: MN6/JE15
StateRail	Train Crew Assignment Centre TCAC	21-Mar-2004	1.5		Safety related (OHS) activities undertaken currently at TCAC	Safety targets set for TCAC staff in Performance Development Agreements [eg WAUD.007.014.1374] - related to key job functions of crew attestment and distribution of documents to crew. Monthly meetings with staff include safety. Safety register is available but has not been filled out. [WAUD.007.014.1372].
StateRail	Safety Executive	21-Mar-2004	1.5		Staff awareness systems operating	MB04_PO _IG Widespread consultation within a short timeframe

Observations	Interview/Document Review ID	Ratings for Finding
	CG18MR12	
There may be a lack of awareness of the State Rail Safety standards across State Rail (might have some pockets that are aware). For example, in one specific case of an interview with a safety officer who has been in the safety game in state rail since 2001 he didn't even know that State Rail Safety standards actually existed. There is a suspicion that this may be a systemic issue across the board and warrants further investigation to verify.		
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0230, Draft Specification for Professional services, Passenger Fleet Maintenance, Project Assistance fro Manager Strategic Projects. INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0209, Draft RFQ for professional services to undertake review of TMPs for the Electric fleet INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0189, DRAFT RFQ for professional services to prepare TMPs for the Diesel Passenger Fleet INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0182, DRAFT Specification for professional services, Train Services Division, Risk Assessment of Train Crew Preparation and Stabling Procedures, 27 November 2003 INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0175, Specification for professional services, Train Services Safety Improvement Program - Identification of Safety Critical Fleet Assets, 27 November 2003 INTERVIEW REFERENCE: BMB_06;	
	DOCUMENT REFERENCE: WAUD.007.006.0158, Specification for provision of professional services, Finalize Data Logger Specifications for the State Rail Electric Fleet, Passenger Fleet Maintenance, 27 November 2003 INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0129, DRAFT RFQ for the provision of a Project Management Team for the electric fleet reliability improvement program. INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0150, Specification for provision of professional services, Review and Document a sustainable Configuration Management System, Passenger Fleet Maintenance, 25 November 2003 INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0120, Specification for Provision of Professional Services, Facilitation General Inspection Workshop, Passenger Fleet Maintenance, 12 December 2002	
	WAUD.007.012.1010, MR16BB23	
	MR05_BB04	
safety policy was sighed in all offices and workshops but he adequacy of the is program could not be ascertained at this interview	KL01/NB01/PO 01	
	KL01/NB01/PO 01	
	NI02 / BB03	
	NI05 / JE06	
Station Manager monthly meetings discuss safety issues	MR05BB04	
		
	Interviews: MN6/JE15	
	NI02 / BB03	
	MB04_PO _IG	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
RailCorp	SRA	21-Mar-2004	1.5		There are no SMS training programs currently available to non -Safe Work qualified staff (approx 70% of RailCorp employees).	Interviews: MN9/KL17 MN13/JE24 MN15/CG23 Observations: MN10/CG15 SMS 2.4
RailCorp	SRA	21-Mar-2004	1.5		There are training programs in place with rudimentary SMS content. However these are currently only targeted towards safeworker qualified staff (approx 30% of RailCorp staff) and the content and delivery of these programs are lacking in various ways. In some cases the training is discouraging staff take up of SMS principles because it does not appear relevant to the job.	Interviews: MN3/LN13 V2 MN9/KL17 MN13/JE24 Observations: MN10/CG15 SMS 2.4 Documents: SMS 2.4 Faciliatators guide WAUD.007.012.1056 SMS 2.4 Trainee workbook SMS 2.5 Train crew lesson plan WAUD.007.012.1524
RailCorp	RailCorp Corporate Staff	21-Mar-2004	1.5		There is atraining program in place .This training is conducted at the RailCorp training establish situated at Petersham.Interveiwee stated that the subject matter was designed to support the written safety policy.	investigation into training at Petersham should be used to confirm or deny this factor
RailCorp	Station Masters	21-Mar-2004	1.5		Training is given at Petersham every 16 weeks cycle. This training is considered valid for new staff, not experienced staff.	Interview KL06LN04
RailCorp	Duty Manager	21-Mar-2004	1.5			When asked in interview MR05BB04 about Senior Management commitment to safety x replied that there "was a lot of loud music but little action".
StateRail	Central Station	21-Mar-2004	1.6	There are sufficient staff in place to support the SMS	Currently resourcing at Central Station is lacking	Doc [ reg #04087 , 8] shows that 64 vacancies exist at Central Station as of 23/2/2004. At least half of these positions are "to be advertised" or "HR asked to advertise". Vacancies exist in many areas including Duty Managers, Rostering, CCTV Control Centre Operators, Customer Service Team Leader , and Customer Service Attendants.
RailCorp	SRA	21-Mar-2004	1.6		Intercity stations are running 30% staff vacancies thar are being covered by overtime and staff movement between stations. Staff levels are sometimes at minimims to run normal operations and would not be adequate to cover emergency situations at all times such as evacuations do to terrorist alerts.	Interviews: MN9/KL17 MN13/JE24 Documents: Coverage of Repeater & Right Away shifts Town Hall & Wynyard, 4037 Part time CSA1 positions at Wynyard, 4037 Safety critical positions, 4037 Re: Fwd: Coverage of Inner Ciry Inner West, 4037 Fwd: North Sydney Tuesday 2/3/04 Train Incident - Require Plasma and Staff Positions to be covered, 4224 Fwd: North Sydney Tuesday 2/3/04 Train Incident - Require Plasma and Staff Positions to be covered, 4224
RailCorp	Station Masters	21-Mar-2004	1.6		Local stations are understaffed, with excessive levels of overtime being worked, by current staff.	In interviews: JE11KL10, KL05LN04, MN09KL17: Local management stated they did not have full staffing. They stated most staff worked 13 fortnite cycle, with excessive levels of overtime.
RailCorp	Crew Area Management	21-Mar-2004	1.6		Resources for effective safety management inadequate in the crewing area and do not meet Glenbrook recommendation 14 regarding ratio of inspectors / OSMs to crew	CAM for Sydney has 850 crew and 8 OSMs. Provided with list of OSMs and crew to which they are assigned. Ratio in Wollongong area approximately 1/60 [see KL10JE11 interview G21 at Wollongong].
StateRail	Train Crewing	21-Mar-2004	1.6		Response to Glenbrook recommendation 14 regarding resources for crew supervisionis not complete	Interviewee noted that organisation does not recognise criticality of this recommendation. Added that organisation struggles with setting priorities. Interviewee sees sound team leadership at the front line as a critical issue. Interviewee confirmed that there is no documented strategy to deal with this recommendation. Some hiring of new OSMs has commenced but applicants are coming from the drivers ranks - so RailCorp doesn't want to proceed becuase of the current drivers shortage.
StateRail	ART	21-Mar-2004	1.6		Staffing Support for SMS: Glenbrook Monthly report results are possibly misleading. The 100%attainment rate for OSM's has clearly not been satisfied for Sydney Crews.	Ratio (1 OSM to aprox 100 drivers) is contained in the Inspector Allocation Sheet (#03543). 30:1 ratio attainment is claimed in SRA Glenbrook Monthly Report #04482.
StateRail	ART	21-Mar-2004	1.6		Staffing to support SMS: There are insufficient OSM's to meet driver re-current coaching/training/assessment requirements. Shortage of qualified OSM's suggests that not all drivers are receiving 3 interventions per year as required. This was also confirmed by the Crew Manager for Sydney.	Ratio (1 OSM to aprox 100 drivers) is contained in the Inspector Allocation Sheet (#03543). Tri-annual training requirement contained in Item #03551.
StateRail	Safety Executive	21-Mar-2004	1.6		Suffcient staff, of less than ideal quality, some constraints	MB04_PO _IG Difficulty in recruiting - , some team members only adequate. Public service rules prevented rapid response
StateRail	Capital Works	21-Mar-2004	1.6		There are only 2 safety positions in Capital Works.	INTERVIEW REFERENCE: BMB_22; DOCUMENT REFERENCE: WAUD.007.015.0704, Organisational Changes Proposed
StateRail	PFM	21-Mar-2004	1.6		There are only 2 safety positions in PFM	INTERVIEW REFERENCE: BMB_10
RailCorp	RailCorp Corporate Staff	21-Mar-2004	1.6		There is sufficient staff available.Training in Safety Management systems[SMS] would be required for this resource to be effective.	RailCorp organisational chart shows the total number of safety related staff on strength at time of audit as well as proposed safety staff
StateRail	Train Crewing	21-Mar-2004	1.6		Glenbrook recommendation 14 has not been fully addressed in Train Crewing and resources remain below levels recommended in the Gbrook final report.	Interviewee noted there was no specific plan or timeline to address Glenbrook recommendation 14 regarding ratios of OSMs to crew. There was no evidence of a specific action item in the Train Crewing Buiness Plan Oct 2003 [doc04240] that addresses this recommendation. There are actions to "better manage and support crew" but this is non specific and is not clearly linked to the need to reduce crew /OSM ratios. Interviewee noted that current crew shortages prevent hiring more OSMs because many applicants for OSM roles come from driver ranks. Current priority in Buiness Plan [doc02420] is "to provide adequate number of train crew to meet business needs". Interviewee also noted problems with capability of OSMs to make the transition from "policeman" to "team leader".
StateRail	Safety Executive	21-Mar-2004	1.7	Key staff positions throughout the organisation that support the SMS are filled*	Filled but with delay in recruitment	MB04_PO _IG Human Factors Manager filled after 12 months
RailCorp	CEO	21-Mar-2004	1.7		Interview established that key staff postions were yet to be filled	Interview KL01/NB/PO:
RailCorp	RailCorp Corporate Staff	21-Mar-2004	1.7		Interviewee stated that some key safety positions had not been filled.This was also stated by other interviewees	Statement made by 3 senior executives and organisational chart shows some safety positions not filled
RailCorp	HR	21-Mar-2004	1.7		RailCorp currently does not have any HF specialists on staff. The previous Manager HF position is vacant. New HF staffing positions have not been scoped or advertised.	Interview: MN2/BB2 Documents: PD Manager Human Factors WAUD.007.004.0234
RailCorp	Station Masters	21-Mar-2004	1.7		Some staff positions are not being filled, due to the lack of expertise in the industry	Interview and the presentaition given on the 5th of March 2004




Observations	Interview/Document Review ID	Ratings for Finding
	Interviews: MN9/KL17 MN13/JE24 MN15/CG23 Observations: MN10/CG15 SMS 2.4	
	Interviews: MN3/LN13 V2 MN9/KL17 MN13/JE24 Observations: MN10/CG15 SMS 2.4 Documents: SMS 2.4 Faciliatators guide WAUD.007.012.1056 SMS 2.4 Trainee workbook SMS 2.5 Train crew lesson plan WAUD.007.012.1524	
Senior Management commitment to safety is soft.	MR05BB04	
	NI 18 CG 17	
	Interviews: MN9/KL17 MN13/JE24 Documents: Coverage of Repeater & Right Away shifts Town Hall & Wynyard, 4037 Part time CSA1 positions at Wynyard, 4037 Safety critical positions, 4037 Re: Fwd: Coverage of Inner Ciry Inner West, 4037 Fwd: North Sydney Tuesday 2/3/04 Train Incident - Require Plasma and Staff Positions to be covered, 4224 Fwd: North Sydney Tuesday 2/3/04 Train Incident - Require Plasma and Staff Positions to be covered, 4224	
	NI04 / CG04	
	NI21/JE23	
Concern: Recommendation 14 from Glenbrook requires a ratio of 1 OSM to 30 drivers. The SRA Report in response to Glenbrook (Dated 15 Mar) states that the 30:1 ration has been met 100%. Evidence provided by the Crew Manager Sydney contradicts this	#03543 and 04482	
Concern: Operations Station Managers are the personnel who have been introduced to assess train drivers. A useful analogy is to consider Petersham as a 'motor registry issuing licences' and the OSM's as the 'Police on the streets monitoring and assessing driver behaviour'. Concern is that the OSM's are not conducting the required number of assessments on drivers as required. For example, there are 850 crew with only 8 OSM's for the Sydney City region. OSMs are required to conduct performance management interventions (training, coaching and competency assessment) at least 3 times annually on all crew. Numbers presented do not add up to any feasible means of completing the assessments as required (1 OSM to 100 drivers requires an annual rate of effort of 300 interventions per year). OSM's are also pre-occupied with their 'old tasks' such as platform and crew management.	(#03543	
There is sufficient staff within the constraints of the public service regime, including long and convoluted recruitment that promotes the easy transfer of less appropraite personnel from within the public service	MB04_PO _IG	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_22; DOCUMENT REFERENCE: WAUD.007.015.0704, Organisational Changes Proposed	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_10	
	NI23BB22	
There is sufficient staff within the constraints of the public service regime, including long and convoluted recruitment that promotes the easy transfer of less appropraite personnel from within the public service	MB04_PO _IG	
	KL01/NB01/PO 01	
Appear to be plans to employ HF specialist in Train Services Division (RailCorp presentation to SCOI)	Interview: MN2/BB2 Documents: PD Manager Human Factors WAUD.007.004.0234	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	Safety Executive	21-Mar-2004	1.8	There is sufficient funding to support the SMS	Funding for safety related items seems never to have been a problem	MB04_PO _IG No constraints on staff or program development
RailCorp	RailCorp Corporate Staff	21-Mar-2004	1.8		Interviewee stated that funding was available.	Unable to verify
RailCorp	CEO	21-Mar-2004	1.8		Interview established Satisfactory budget to enforce SMS	
RailCorp		21-Mar-2004	1.8		Senior Management has allocated funds to support safety	At interview MR18JE31 stated that when drivers/guards are rostered to ART they still receive their full rostered pay (unless the reason for referral is alcohol drugs etc in which they receive their base pay). This in effect costs RailCorp double or 2.5 salary: once for the driver and once for his replacement with possible extra overtime.
StateRail	State Rail	21-Mar-2004	1.8		The full funding commitment necessary to institute all identified Train Services Safety Improvement program requirements had not been approved in 19 Nov 2003.	INTERVIEW REFERENCE: BMB_12; DOCUMENT REFERENCE: WAUD.007.013.0118, Briefing Note to Minister for Transport Services from CEO, Status of Waterfall Initiatives, 19 November 2003
StateRail	PFM	21-Mar-2004	1.8		There is a significant support for funding (1.5 million dollars) to support safety related initiatives being managed by PFM (CEO level Support)	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0521,
RailCorp	Station Masters	21-Mar-2004	1.8		there is sufficient funding to support the SMS	no lack of funding for SMS - Interview No:KL01NB01, KL02NB02
RailCorp	RailCorp Corporate Staff	21-Mar-2004	1.9	Funding that affects the SMS are periodically reviewed for adequacy*	Unable to answer	
RIC	Train Services	21-Mar-2004	1.10	There is an adequate process in place for communicating safety issues to senior management for review	According to a new level 2 manager, management culture has not promoted open and honest reporting in the past	Interviewee commented that in the past senior managers did not want to hear bad news and were punished for speaking out on safety and other concerns. He said that in the past senior managers were afraid to put up their head for fear of getting it shot off. Interviewee has only been in job 12 days but is taking steps to promote an "open" culture amongst management team. Eg asking them to provide list of top 10 most critical issues and top emerging issues [Doc reg# 4240 contains email from one level 3 manager highlighting critical issues and ideas]. The interviewee thought that reporting at all levels was critical to effective hazard identification.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	1.10		Corporate policy and procedures manual [State Rail Safety Plan 2002_2005] contains a 15 element SMS .	Register document # 04110
RailCorp	Station Masters	21-Mar-2004	1.10		corporate safety policy and procedures was sighted, however, no assessment was made to examine if a SMS program was contained within the manual.	
StateRail	Safety Executive	21-Mar-2004	1.10		Safety Steering Committee ( Executive Safety Committee) and Board Safety Committee operated	MB04_PO _IG with x 11th Feb Minutes of ESC & BSC DRMB01 "StateRail Safety Steering Committee 23 Jan 2003"
RailCorp	SRA	21-Mar-2004	1.10		There are a series of Safety Committees whose purpose is to communicate safety issues to senior management in the top level safety committees for review.It is difficult to determine how well these work. Meeting minutes show various levels of attendance.	Documents: WAUD.006.001.0018 14-Mar-2002 Joint Boards Safety Liaison Committee Meeting 2002/01 Minutes WAUD.006.001.0006 1-Aug-2003 Joint Boards Safety Liaison Committee Meeting 2003/01 Minutes WAUD.006.001.0002 21-Nov-2003 Joint Boards Safety Liaison Committee Meeting 2003/02 Minutes WWAT.002.337.0207 24-Sep-2001 Meeting of the Executive Advisory Committee Meeting No 6 Minutes WWAT.002.387.0080 13-Feb-2002 Meeting of the Executive Advisory Committee Meeting No 8 Minutes WWAT.002.386.0250 25-Mar-2002 Meeting of the Executive Advisory Committee Meeting No 9 Minutes WWAT.002.386.0322 26-Apr-2002 Meeting of the Executive Advisory Committee Meeting No 10 Minutes WWAT.002.386.0199 5-Jun-2002 Meeting of the Executive Advisory Committee Meeting No 11 Minutes WWAT.002.386.0160 18-Jul-2002 Meeting of the Executive Advisory Committee Meeting No 12 Minutes WWAT.002.396.0281 30-Aug-2002 Meeting of the Executive Advisory Committee Meeting No 13 Minutes WWAT.002.427.0011 21-Nov-2002 Meeting of the Executive Advisory Committee - Meeting No 14 Minutes
						WAUD.006.001.0163 21-Aug-2002 Meeting of the State Rail Board Safety Committee Agenda 3371 WAUD.006.001.0284 11-Feb-2003 Meeting of the State Rail Board Safety Committee Agenda 3371
RailCorp	Station Masters	21-Mar-2004	1.10		There is an adequate process in place - whilst the process in place, it is not always effective	Documentation for communication between senior managers and station managers was sighted - station managers stated that material went to Lee street, but that's where it ended.
RailCorp	CEO	21-Mar-2004	1.10		CEO's level of commitment to management is low	Interview KL01/NB/PO: 1. Sighted his safety policy statement; Commitment to was to safety and not 'on time departure'.
StateRail	Safety Executive	21-Mar-2004	1.11	This process is reviewed periodically for effectiveness and updated as required*	The Board reviewed the Executive Committee	MB04_PO _IG with x 11th Feb Minutes of ESC & BSC DRMB01 "StateRail Safety Steering Committee 23 Jan 2003"
StateRail	Safety Executive	21-Mar-2004	1.12	There is a robust system in place to identify safety issues throughout the organisation and that communicates this information to management for disposition	A consultative and meeting based system operated	MB04_PO _IG with x 11th Feb Local safety committees operated and time limits were placed on action locally before intervention Executive Safety Committee reviewed progress
RailCorp	SRA	21-Mar-2004	1.12		A Safety Reform Agenda process has been set up to identify safety issues throughout the organisation and that communicates this information to management for disposition	Documents: Safety Reform Agenda Charter - draft, reg # 4437 Joint Boards Safety Liaison Committee Meeting 21/11/2003 WAUD.006.001.0002
StateRail	PFM	21-Mar-2004	1.12		There is a procedure in place identifying the distribution needs for safety critical information within PFM. As the initiative for this process only commenced in 1993 there is a strong inference that no such mechanism existed prior to this initiative being commenced.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Email Subject: System Check to reach 100% Distribution of Safety Critical Information, Dated: Undated INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Email Subject: Re: PFM - Distribution of Safety Critical Information, Dated 4/8/3 INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Email Subject: Safety Critical Information Matrix, Dated: 5/8/03 INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Email Subject: RE: Glenbrook Report Rec No 8, Dated: 5/8/03 INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Email Subject: Draft Rail Safety Information Distribution Matrix, Dated: 4/3/03 INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Written Rail Safety Information Distribution System Matrix - Passenger Fleet Maintenance (Draft Document)
						INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Email Subject: RE: PFM - Distribution of Safety Critical Information, Dated: 4/8/03 INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Written Safety Information Distribution Matrix INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, DRAFT - Written Rail Safety Information Distribution System Matrix INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Re: Written Safety Information Distribution System Matrix

Observations	Interview/Document Review ID	Ratings for Finding
No funding issues within the constraints of the public sector system. The system has not been tested for the ability to move immediately on an issue. However, the recent vigilance system has brought out the ability to move relatively quickly but without the appropraite risk assessments being made	MB04_PO _IG	
	KL01/NB01/PO 01	
	MR18JE31	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_12; DOCUMENT REFERENCE: WAUD.007.013.0118, Briefing Note to Minister for Transport Services from CEO, Status of Waterfall Initiatives, 19 November 2003	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0521, Memorandum from Alan Cavenagh to CEO Dated 12 January 2004	
		
	NI07JE08	
	KLo5	
	Station Master Interview List	
The trail has not been exhaustive in discovering how a simple low lwvel safety committee can elevate an issue to more senior status	MB04_PO _IG, DRMB01	
	Documents: WAUD.006.001.0018 14-Mar-2002 Joint Boards Safety Liaison Committee Meeting 2002/01 Minutes WAUD.006.001.0006 1-Aug-2003 Joint Boards Safety Liaison Committee Meeting 2003/01 Minutes WAUD.006.001.0002 21-Nov-2003 Joint Boards Safety Liaison Committee Meeting 2003/02 Minutes WWAT.002.337.0207 24-Sep-2001 Meeting of the Executive Advisory Committee Meeting No 6 Minutes WWAT.002.387.0080 13-Feb-2002 Meeting of the Executive Advisory Committee Meeting No 8 Minutes WWAT.002.386.0250 25-Mar-2002 Meeting of the Executive Advisory Committee Meeting No 9 Minutes WWAT.002.386.0322 26-Apr-2002 Meeting of the Executive Advisory Committee Meeting No 10 Minutes WWAT.002.386.0199 5-Jun-2002 Meeting of the Executive Advisory Committee Meeting No 11 Minutes WWAT.002.386.0160 18-Jul-2002 Meeting of the Executive Advisory Committee Meeting No 12 Minutes WWAT.002.396.0281 30-Aug-2002 Meeting of the Executive Advisory Committee Meeting No 13 Minutes WWAT.002.427.0011 21-Nov-2002 Meeting of the Executive Advisory Committee - Meeting No 14 Minutes WAUD.006.001.0163 21-Aug-2002 Meeting of the State Rail Board Safety Committee Agenda 3371 WAUD.006.001.0284 11-Feb-2003 Meeting of the State Rail Board Safety Committee Agenda 3371	
	KL01/NB01/PO 01	
Board and Safety Exec Committees did not have difinitive follow up and sign off procedures	MB04_PO _IG, DRMB01	
The "consultative statement" was an attempt to get rigour and roles into the large number of safety committees	MB04_PO _IG	
	Documents: Safety Reform Agenda Charter - draft, reg # 4437 Joint Boards Safety Liaison Committee Meeting 21/11/2003 WAUD.006.001.0002	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Email Subject: System Check to reach 100% Distribution of Safety Critical Information, Dated: Undated INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Email Subject: Re: PFM - Distribution of Safety Critical Information, Dated 4/8/3 INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Email Subject: Safety Critical Information Matrix, Dated: 5/8/03 INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Email Subject: RE: Glenbrook Report Rec No 8, Dated: 5/8/03 INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Email Subject: Draft Rail Safety Information Distribution Matrix, Dated: 4/3/03 INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Written Rail Safety Information Distribution System Matrix - Passenger Fleet Maintenance (Draft Document) INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Email Subject: RE: PFM - Distribution of Safety Critical Information, Dated: 4/8/03 INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Written Safety Information	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
RailCorp		21-Mar-2004	1.12			MR01BB01 response was that hazards were identified mostly from the OH&S Committee and post accident investigation.
StateRail	Train Crewing	21-Mar-2004	1.13	There is an effective means of making senior managers accountable for safety issues*	Anecdotal evidence that system for holding personnel accountable are not effective.	Interviewee when asked what would happen if major accountabilities were not met replied that it would either mean promotion or moved into an easier role.
StateRail	Safety Executive	21-Mar-2004	1.13		PDs lacking in mid 2001, draft accountabilities were introduced, but still lack specific KPI responsibilities	MB04_PO _IG with x 11th Feb. Docs DRMB20, DRMB43-47-48-49, reg 03993, 04229 Modified and newly created PDs passed to HR and subsequently rewritten with the creation of RailCorp
StateRail	Executive	21-Mar-2004	1.13		PD's updated, accountabilities included but no KPI's and no specific accountabilities have been allocated on an individual by individual basis, rather a distributed accountability	MB04_PO _IG with x 11th Feb Modified and newly created PDs , DRMB20 reg 03988
RailCorp	Rail Management Centre (RMC)	21-Mar-2004	1.13		Senior managers not effectively held accountable for safety performance	RMC Manager has no formal safety measures / KPIs that he has to meet. (These are in development). Position description does not include safety KPIs and contains only broad statements about safety accountabilities. [WAUD.007.002.0419] Discussion of safety in individual performance reviews is limited according to Warwick
RailCorp	Station Masters	21-Mar-2004	1.13		Station mangers have listed in their PD's that they are accountable for safety issues.	sighted PD's
RailCorp	Human Resources	21-Mar-2004	1.13		Systems for driving personal performance accountability are not effective	doc[04131] Review of Performance Development Scheme (PDS) , Initial Report, Draft, March 2003 outlines deficiencies in the PDS from the viewpoint of the StateRail Human Resource Group. The review details the results of an "audit" of the PDS undertaken by State Rail HR. Key findings are: 1. "there is little evidence the performance agreements are being used as intended.. to identify training needs, identify or plan work tasks related to broader organisational goals, nor to measure outcomes or performance and reward them as appropriate." 2. There is an "overemphasis on participation in the scheme being the means of ensuring accelerated incremental progression (pay increases)". 3. The quality of documentation is very poor - no mention of training or career development in many cases". 4. There is no systematic auditing of the system. 5. Ratings are biased towards the "excellent" end of the scale. 6. the scheme "provides a paper trail for the processing of (pay) increments and a trigger for accelerated progression through the payscale". 7. Participation in the PDS often ceases when staff reach the top of their paybands.
RailCorp	Human Resources	21-Mar-2004	1.13		Systems for driving personal performance accountability have not been effective across SRA in last 2 years	The PDS (performance development scheme) was developed (updated) approximately 4 years ago. Interviewee related problems with implementation, especially getting different workgroups covered by different functional agreements to agree to the system. Bottom line is that not all workgroups in the organisation participate in the PDS. [doc 04085] Functional agreements shows which work groups are covered by the PDS. Those that do not participate include: City Rail Station salaried staff, signallers, train controllers, and train crew.
RailCorp	Human Resources	21-Mar-2004	1.13		Systems for driving personal performance accountability have not been effective across SRA in last 2 years	Interviewee was the custodian of the PDS. they were not aware of a train crew performance management initiative outlined in doc[WAUD.007.003.0101] Annual Performance Plan for Train Crew. The later has been developed by the Training group without knowledge of the corporate HR people.
RailCorp	Human Resources	21-Mar-2004	1.13		Systems for driving personal performance accountability have not been effective across SRA in last 2 years	Performanc e Development Policy [doc 04085] exists but is not implemented effectively. The document notes in section 3.2 that all salaried employees participate in statrail's PDS. Doc [04085] Functional Agreements contradicts this - and shows that many salaried employees do not participate in the PDS. For example, payroll officers, electrical and signals operations, and train controllers. Managing Poor Work Performance Policy [doc04085] provides guidelines for managers to deal with poor performers irrespective of whether they participate in the PDS or not.
RailCorp	Rail Management Centre (RMC)	21-Mar-2004	1.13		Systems for driving personal performance accountability have not been effective across SRA in last 2 years	Train Ops Manager has not set KPIs for direct reports. Train Ops Manager performance review [04489] includes safety discussion including introducing new safeworking rules and reducing LTIFR. Position description contains several statements about safety responsibilities.
RailCorp	Human Resources	21-Mar-2004	1.13		Systems for driving personal performance accountability have not been effective across SRA in last 2 years (but effort being made to improve).	Interviewee noted that efforts have been undertaken in the past to get safety accountabilities into Position Descriptions. [Doc 04132] Position Descriptions was developed by Jstaff and details safety accountabilities that should be in Position Descriptions. Previous CEO also pushed for inclusion of safety into PDs. Brochure produced as part of communication and training of the Performance Development Scheme [doc 04085] requires four key areas of performance to be reviewed - quality, safety, finance and people. These headings have been dropped from the Performance Development Agreement form at the direction of the next to last CEO. Another effort to include concrete safety accountabilities into position descriptions is currently underway. Safety Accountability Statement [doc 04240] is a list of accountabilities that are being "cascaded" down the Train Services Division currently.
RailCorp	Human Resources	21-Mar-2004	1.13		There are currently efforts underway in RailCorp to improve systems for driving senior management accountability	KRAs are included in executive contracts [4518] that define safety accountbalities. KPIs around these areas are in development.
RailCorp	SRA	21-Mar-2004	1.13		There does not appear to be accountability currently. A process is apparently being developed for this as part of the Safety Reform Agenda.	Documents: Safety Reform Agenda Charter - draft, reg # 4437
RailCorp	Human Resources	21-Mar-2004	1.13		There is some anecdotal evidence that managers wont manage because of "shadow management".	Opinion of interviewee - noted that there is no direct evidence to support this view. Interviewee adamant that managers need to manage and be supported by effective systems and capable people in the right role.
StateRail	Train Crewing	21-Mar-2004	1.13		New Safety Accountability Statements for level 2 to 4 managers have been developed and are in the early stages of implementation.	doc[04240] Safety Accountability Statement (undated) outlines accountabilities for level 2 to 4 managers. Topics include leadership, risk management, planning, and performance. This has not been integarted into Position descriptions at this time in Train Crewing. Interviewee noted that he had only recently received this document.
StateRail	Human Resources	21-Mar-2004	1.13		Safety is included in performance development reviews for those who participate in the Performance Development Scheme but there tends to be little focus on assessing the effectiveness of tasks assigned / completed. Implementation of Safety Plans is only assigned as a divisional initiative in one area - Station Operations.	Annual performance review documents for senior managers and line managers reviewed [docs 04489, 6 reviews]. These covered the period 2002-2003. Key issues are as follows: 1. safety is included in all performance reviews - and there are a series of objectives and specific tasks assigned in all reviews examined; 2. There is no reference to implementation of safety plans in the reviews EXCEPT for the Manager of Station Operations; 3. There is an emphasis on meeting specific targets for completion of specific tasks but there is no measures of effectiveness applied. For example, Manager of Train Operations has tasks such as "introduce new safeworking rules , all staff trained and competent". The assessment of this task is noted as "achieved November 2002" without any reference to the effectiveness of this program. Another example is "implement period SMS training for all operational staff for one day three times a year" - this assessment of this task is noted as "achieved" - without any reference to the effectiveness of this task.
StateRail	Safety Executive	21-Mar-2004	1.14	Roles are explicitly delineated to ensure a thorough understanding of requirements*	Confusing, overlapping and incomplete roles	MB04_PO _IG with x 11th Feb. DRMB42 reg 04229 3 CEOs in a short period, change to Rail Safety Act, 2 Regulators, 3 Board changes, Exec group changes, rewriting of Rule Book all contributed to confusion
RailCorp	Station Operations	21-Mar-2004	1.14		Limits of authority currently not clearly defined for managers in SRA.	Audthority to close stations not clear in PD of GM Station Ops [ doc# 04198]. Other position descriptions do not include statements of authority levels - position descriptions are done to a standard template that does not include authorities.
RailCorp	Station Masters	21-Mar-2004	1.14		PD's are in place that outlined the requirements of the station staff	Sighted PD's
RailCorp	Organisational Psychologist	21-Mar-2004	1.15	Staff understand its roles & responsibilities to safety*	Directly Affected Staff not consulted in development of Incident Management policy	WAUD.007.012.1034 At interview MR06AR06 stated that they were not consulted and had no input to the development of the Safework Policy Post Incident Management flow chart.
StateRail	Train Crewing	21-Mar-2004	1.15		Authority levels not clearly defined in Train Crewing	Interviewee noted that level of authority was not clear and could not provide evidence of clear assignment of authority levels. No statements about authority in position description. [04507]
RailCorp	RailCorp Corporate Staff	21-Mar-2004	1.15		Direct labour staff do understand their roles and responsibilities.	Registerd document #04110 Outlines direct labour resposibilities






Observations	Interview/Document Review ID	Ratings for Finding
The system for identifying safety issues is not robust	MR01BB01	
	NI21/JE23	
Current PDs are outdated, need more specific accountability and KPI	MB04_PO _IG, DRMB20, DRMB43-47-48-49	
	DRMB20, doc 03988	
	NI01 / JE01	
	NI20 BB17	
	NI20 BB17	
	NI20 BB17	
	NI20 BB17	
	NI05 / JE06	
	NI20 BB17	
	NI16 MB07	
	Documents: Safety Reform Agenda Charter - draft, reg # 4437	
	NI16 MB07	
Document appears to list a generic set of accountailities that is unlikely to be effective without a clear organisational focus on safety risk management.	NI23BB22	
	NI20BB	
Senior management "churn" prevented settling down of process	MB04_PO _IG, DRMB42	
	NI09 BB LN BMB	
	MR06AR06	
	NI21/JE23	




StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
RIC	Train Operations	21-Mar-2004	1.15		No performance management / performance appraisal process for signallers at the moment.	Signallers performance management process reported to be in development but being held up by industrial issues according to interviewee. Refer also to NI12BB09 - confirmed that signallers do not participate in performance development scheme at the moment.
RIC	Train Services - Train Ops - Rail Management	21-Mar-2004	1.15		Not all personnel in SRA / Train Operations have been given clear role direction	Interviewee does not have Position Description. This interviewee is in a safeworking support role that was created in 2001 according to interviewee's boss (int #NI05JE06).
StateRail	PFM	21-Mar-2004	1.15		SMS Training for Supervisors and Running Foreman of shunters in PFM may not be providing them with the necessary knowledge to make them aware of their safety responsibilities.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Emails about SMS Training for Running and Senior Supervisors in PFM INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Email Subject: SMS Training for Running and Senior Supervisors in PFM, Dated: 12/17/02 INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Two Emails Subject: SMS Training for Senior and Running Supervisors of Shunters, Dated 12/9/02 and 1/9/03 respectively INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, RE: SMS Training for Supervisors and Shunters, 12/5/02
StateRail	Signalling	21-Mar-2004	1.15		Staff at Sydnam did not understand its roles & responsibilities to safety	Interview NI12_BB09 Where, in the response to a prompt, he indicated that he checks his staffs fitness for duty and carries out other training functions for which he says are not defined in any process
RailCorp	Station Masters	21-Mar-2004	1.15		Station staff were well aware of their safety responsibilities.	Interview KL06LN04, JE11KL10, JE12KL11
StateRail	Safety Executive	21-Mar-2004	1.15		There is no clear understanding about responsibilities. They are often overlapping and non specific	MB04_PO_IG with x 11th Feb. Docs DRMB20, DRMB43-47-48-49, reg 03993, 04229 Despite the Rule Book rewrite, the introduction of risk management approach (compared to prescription), the new SMS initiatives, there is no clear accountabilities or specific KPIs, although it is envisaged this will occur
StateRail	Station Operations	21-Mar-2004	1.15		Training supplied at Petersham every 16 weeks Includes some elements of the required training to ensure staff who are safeworking qualified understand its roles and responsibilities	Training records in the DART database confirm that this training takes place and that all safeworking qualified employees attend WAUD.007.005.0294
StateRail	Corporate Safety	21-Mar-2004	1.15		There is confusion about roles and responsibilities of the SRA Fire Services Unit at least over the last 12 months, potentially leading to risk exposures in the fire safety area.	Audit reports undertaken by SateRail Safety Division auditors of Central Station and North Strathfield station Feb 2003 [04482] and Central Station Nov 2003 [04540] note that the "certificates of compliance... for maintenance of essential services... are out of date...but this issue is out of control of station managers.... this matter must be addressed by State Rail Fire Services and Corporate Safety". According to discussions with State Rail Fire Services [NI22JE24] and a RailCorp Review of Fire Safety Roles and Responsibilities Resulting from the transfer of the fire protection unit to the NSW Fire Brigade Jan 2004, these responsibilities do not reside with the Fire services unit.
RailCorp	Train Services Operations	21-Mar-2004	1.16	Effective means of providing line management and workforce involvement and ownership of safety program*	An SRA senior manager could not demonstrate good knowledge of safety leadership	Interviewee mentioned that there are too many meetings that prevent interviewee from spending more time in the field. When asked what he does to promote the safety message the reply was "I talk safety" and "push the safety barrow". Could not provide any concrete examples of consistent and effective behaviors that reinforce the importance of safety to line managers and the workforce apart from appointment of a safety person in the area in 2001. The safety person referred to was later interviewed [NI08JE09]. This safety person was a former Network Ops Superintendent who did not have a position description and did not have formal safety qualifications.
RIC	Corporate	21-Mar-2004	1.16		Anecdotal evidence indicates that strong safety leadership backed up by a credible risk management program was established in the peiod 1989-1996 in State Rail.	Interviewees described implementation of the risk management program during the period 1989 - 1996. Priority hazards were determined and effectiveness of critical controls wqas audited and reported to senior management and the board. Anecdotal evidence indicates that good audit scores were acknowledged by senior management and poor audit scores not tolerated. Doc [04316] Safety Management and Hands On Approach, O.R Henry 1993; notes these benefits of the system that existed during this time.
RailCorp	Station Operations	21-Mar-2004	1.16		Anecdotal evidence that drivers refused reasonable requests to man trains during the time of the response to the gas leak on 5 Feb exacerbating the crisis and placing public safety at risk.	According to interviewee, he personally asked drivers to man trains during the gas leak response on 5 Feb. Drivers claimed that they were on a break or found other excuses not to drive trains. He also claimed that some drivers stopped trains at inner suburban stations to exeacerbate the situation.
RailCorp	Safety Corporate	21-Mar-2004	1.16		Anecdotal evidence that drivers refused reasonable requests to man trains during the time of the response to the gas leak on 5 Feb exacerbating the crisis and placing public safety at risk.	Interviewee claimed that drivers had not cooperated with reasonable requests to run trains to an existing plan that had worked well in the past. Eg at the Olympic closing ceremony and during redfern bomb scare.
StateRail	Safety Executive	21-Mar-2004	1.16		Extensive consultation should have engendered ownership, but change of CEO and other initiatives lead to cynicism and ownership across the organisation was not achieved	MB04_PO_IG with x 11th Feb. DRMB42 reg 04229 3 CEOs in a short period, change to Rail Safety Act, 2 Regulators, 3 Board changes, Exec group changes, rewriting of Rule Book
RailCorp	Fire Services (ex)	21-Mar-2004	1.16		Implementation of safety systems in SRA is not always effective	Interviewee could not recall been informed when network incident response plan was posted on the intranet [WAT.002.050.0001] and had no knowledge of newly drafted incident response manual [WAUD.007.001.0416]. The interviewee was in a role (Fire Services) that should have had some knowledge of the current draft of incident response plans.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	1.16		No substantial evidence was detected	
StateRail	Central Station	21-Mar-2004	1.16		Safety (OHS) on agenda at Station Operations Area Managers' meetings.	Reviewed agenda's for Area Managers' meetings [docs 04087,3] for 22/12/03, 19/11/03, 15/1/04, 11/9/03. Three of the four meetings included station safety issues.
RailCorp	Rail Management Centre (RMC)	21-Mar-2004	1.16		Strong indication from Level 2, 3 and 4 managers in Train Operations indicating they do not rate highly the importance of safety planning and do have not had ownership of safety plans in the past	Interviewee was asked if he had a safety plan for his operation. He replied that he was aware of a plan but he knew very little about it and we should talk to appropriate Safety support person about the plan. In other interviews [NI05JE06] and [LN22CD01] these managers indicated very little knowledge about the SRA Safety Plan 2002-5 [WCOM.003.004.0017] that was current at the time of Waterfall.
RailCorp	Station Masters	21-Mar-2004	1.16		Thereis no effective means	Refer Interview KL01NB01
RailCorp	Train Crew Assignment Centre TCAC	21-Mar-2004	1.17	Asset managers understand their roles and responsibilities and are held accountable (especially as related to safety)*	Business systems currently tend to drive staff to focus on on-time running at the expense of safety in some areas of SRA	X manager has no KPIs related to safety. X manager reported that overwhelming message from boss is to keep things running. Two examples related during interview where personnel issues have not been dealt with because it is more important to keep things running. These issues related to avo+G115idance of industrial issues but were not necessarily safety issues.
RailCorp	Crew Area Management	21-Mar-2004	1.17		Business systems currently tend to drive staff to focus on on-time running at the expense of safety in some areas of SRA	IIMS debit system continues to maintain sharp focus on on time running. This system allocates all train delays to an orgnaisational unit. The unit must them account for this delay. [Doc # 03552 provides example]. Many examples of instances where crews late for safety reasons were called to account and effectively "punished". [docs 03550 , eg IIMS #25]. This system is linked to the RailCorp Customer Service Obligation of 92% on time running. There is a regular meeting to allocate delays and demand explanations.
StateRail	Train Crewing	21-Mar-2004	1.17		Capability of Crew Area Managers to deal with rising demands for improved front line leadership is questioned by Train Crewing Manager	Interviewee indicated that many of the existing CAMs (Crew Area Managers) are not capable of undertaking an effective team leadership role (in the opinion of the interviewee).
StateRail	Train Crewing	21-Mar-2004	1.17		Capability of new OSMs to deal with changes from inspector to team leader is questioned by key manager in Train Crewing	Interviewee indicated that although many OSMs had been trained in the basic tools of performance management [03551] Annual performance plan for train crew, many OSMs potentially lack the overall capability to make this transition and be effective team leaders. In the opinion of the interviewee a lot more thought needs to be given to making this OSM role change effective.
RailCorp	Rail Management Centre (RMC)	21-Mar-2004	1.17		Crew rostering systems to not promote efficient running of the network	According to interviewee drivers work different rosters to gurads. Ie drivers and gurads are scheduled as individuals not crews.
RailCorp	Rail Management Centre (RMC)	21-Mar-2004	1.17		Employment systems do not promote safe working	Interviewee claims there are 32 restrictions in drivers awards that restrict RailCorp's ability to roster crews. For example drivers are only allowed to travel certain lines once daily.

Observations	Interview/Document Review ID	Ratings for Finding
	NI08JE09	
	NI08JE09	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Emails about SMS Training for Running and Senior Supervisors in PFM INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Email Subject: SMS Training for Running and Senior Supervisors in PFM, Dated: 12/17/02 INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Two Emails Subject:SMS Training for Senior and Running Supervisors of Shunters, Dated 12/9/02 and 1/9/03 respectively INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, RE: SMS Training for Supervisors and Shunters, 12/5/02	
	NI012_BB09	
Senior management "churn" prevented settling down of process	MB04_PO _IG, DRMB20, DRMB43-47-48-49	
	MR05_BB04	
	NI28 JE29BMB?? And NI30JE30	
	NI05 / JE06	<div></div>
	NI24KL	
	NI09 BB LN BMB	
	NI11 LN 14	
	MB04_PO _IG, DRMB42	
	NI03 / JE04	
	NI 18 CG 17	
	NI01 / JE01	
	NI02 / BB03	<div></div>
	NI04 / CG04	
	NI21/JE23	
	NI21/JE23	
	NI11 LN 14	
	NI11 LN 14	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	Train Services - Train Ops - Rail Management	21-Mar-2004	1.17		In SRA, position descriptions do not currently reflect work undertaken.	No evidence of training needs analysis being conducted at RMC. The Position Description of the RMC training coordinator [04487] specifically states as #1 accountability - "underatke a Training needs analysis in all areas of the RMC.....to develop...long term training and development plan"... Similarly, no audit of training process as per accountability #7.
RailCorp	Rail Management Centre (RMC)	21-Mar-2004	1.17		Managers in SRA have not been effectively held accountable for safety performance	RMC Manager has no formal safety measures / KPIs that he has to meet. (These are in development). Position description does not include safety KPIs and contains only broad statements about safety accountabilities. [ WAUD.007.002.0419]. Discussion of safety in individual performance reviews is limited according to interviewee.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	1.17		Unable to ansewer	
RIC	Train Services - Train Ops - Rail Management	21-Mar-2004	1.17		Middle management in the RMC appear to be apathetic toward driving safety related change in the organisation	RMC has withdrawn from Safety Training and Review Committee but has not taken proactive steps with management to remedy this situation or attempt to drive change.
			2	POLICY AND OBJECTIVES		
StateRail	State Rail	21-Mar-2004	2.1	There is a published Safety Policy Statement and Objectives	State Rail has a documented procedure concerning Safety Policies	DOCUMENT REFERENCE: State Rail Safety Standard 1.001 , Safety Policies
StateRail	State Rail	21-Mar-2004	2.1		A copy of the State Rail safety policy document is evident in several state rail office buildings (eg. Lee street, Flight Centre Building) and is signed by the CEO of State Rail.	Sighted during multiple visits to Lee Street and Offices in the Flight Centre Building.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	2.1		A written policy is in place .Copies of this policy are displayed in prominent places in the workplace	
RailCorp		21-Mar-2004	2.1		Fatigue Management Policy is only Draft	Fatigue Management Policy (04352) is DRAFT. In Minutes of Fatigue Management Working Group 9 July 2003 (043520) an Action item was to investigate when the term DRAFT will be removed from the Fatigue Management Statement
StateRail	PFM	21-Mar-2004	2.1		PFM have defined safety objectives and specific actions defined to meet those objectives.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0565, Passenger Fleet Maintenance - PFM Safety Objectives 2003-2004
RIC	RIC	21-Mar-2004	2.1		RIC have a safety policy.	INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0653, Safety Policy (Signed by Gary Seabury)
RailCorp	Station Masters	21-Mar-2004	2.1		Station Masters had in their rooms, copies of the safety manual	sighted at interview
RailCorp	CEO	21-Mar-2004	2.1		There is a published safety policy and objective	Sighted and copy in registry
StateRail	Station Operations	21-Mar-2004	2.1		There is a published safety policy statement and objectives at the station	A safety policy was sighted on the notice board board at Cambpeltown
StateRail	PFM	21-Mar-2004	2.1		There is a safety and health policy for state rail.	INTERVIEW REFERENCE: BMB_09; DOCUMENT REFERENCE: WAUD.007.005.0216, Safety and Health Policy State Rail Authority of NSW
StateRail	Station Management	21-Mar-2004	2.1		There is a safety Policy	MB02_KL Safety Policy Sighted in SM's office, DRMB52 reg called "SRA Corporate Safety Policy"
RailCorp	Duty Manager	21-Mar-2004	2.1			When asked at interview MR05BB04 about the priority of safety vs on time running, x replied that he had been taught that safety was more important than on time running.
RailCorp	Duty Manager	21-Mar-2004	2.1			When asked at interview MR05BB04 if he had seen safety first in action, x replied that he seen Drivers refuse an unsafe train.
StateRail	State Rail	21-Mar-2004	2.2	It is signed by the CEO	A copy of the State Rail safety policy document is evident in several state rail office buildings (eg. Lee street, Flight Centre Building) and is signed by the CEO of State Rail.	Sighted during multiple visits to Lee Street and Offices in the Flight Centre Building.
RailCorp	Safeworking Policy 16 Nov '03	21-Mar-2004	2.2		New State Rail Safeworking Policy 16 Nov 2003 not signed by CEO	StateRail Safeworking Policy dated 16 Nov 2003. WAUD.007.012.1010 at 1014
RailCorp	RailCorp Corporate Staff	21-Mar-2004	2.2		Policy is signed by CEO.	
StateRail	Station Operations	21-Mar-2004	2.2		Signed safety policy displayed on notice board at stations	A signed safety policy was sighted on the notice board board at Cambpeltown
StateRail	Station Management	21-Mar-2004	2.2		The document is signed	MB02_KL ,DRMB52 "SRA Corporate Safety Policy"5th Feb,
RailCorp	CEO	21-Mar-2004	2.2		The document is signed by the CEO	Document was sighted
RIC	RIC	21-Mar-2004	2.2		The RIC Safety Policy is signed by the CEO (Acting CEO).	INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0653, Safety Policy (Signed by Gary Seabury)
StateRail	PFM	21-Mar-2004	2.2		The safety and health policy for state rail is signed by the CEO.	INTERVIEW REFERENCE: BMB_09; DOCUMENT REFERENCE: WAUD.007.005.0216, Safety and Health Policy State Rail Authority of NSW
RailCorp	Station Masters	21-Mar-2004	2.2		yes	sighted
RailCorp	RailCorp Corporate Staff	21-Mar-2004	2.3	The safety policy and objectives align appropriately with other organisational policies	Auditor not familiar with all of the other organisational policies	
RailCorp	OH&S	21-Mar-2004	2.3		Daily Rostering limits in Safety Standard 12.023 Fatigue Management (04283), Fatigue Rostering Principles and Workplace Guidelines and Updating Daily Roster (04284) not consistent with Fatigue Management Policy (04352)	Fatigue Management Policy (04352) states that the policy will be applied to all rosters. It sets a target FMI of 80 and specifies action to be taken if for FMI > 80. Safety Standard 12.023 Fatigue Management (04283) sets FMI limit not greater than 100 and Fatigue Rostering Principles and Workplace Guidelines (04238) specifies a FMI less than 100. Neither Updating Daily Roster (04284) nor Fatigue Rostering Principles and Workplace Guidelines (04238) specify FMI limits for daily rosters. Otherwise the policy documents are consistent.
RailCorp	Safeworking Policy 16 Nov '03	21-Mar-2004	2.3		New StateRail Safeworking Policy internally inconsistent	StateRail Safeworking Policy dated 16 Nov 2003. WAUD.007.012.1035 identifies RMS Shift manager as person to determine Incident Level. Policy WAUD.007.012.1032 Describe RMS Shift manager as person to determine level of culpability.
StateRail	Safety Executive	21-Mar-2004	2.3		On-time running had potential to remove focus from Safety and encourage potentially unsafe situations, other objectives were not sufficiently defined to conflict	MB04_PO _IG with x 11th Feb Focus in management reporting with on-time running, morning meeting, Executive Groups Verbal advice from X only, no morning meeting minutes have been sourced
RailCorp	Safeworking Policy 16 Nov '03	21-Mar-2004	2.3		State Rail Safework Policy for SMS training not consistent with Safety Management System elements	New Safework Policy SMS training WAUD.007.012.1043 does not make any reference to Safety Management System elements WAUD.006.011.0180 (04225)
RailCorp	Health Stds	21-Mar-2004	2.3			When asked about Senior Management commitment to safety (MR01BB01) response was that although the commitment was there it was overshadowed by operational commitments--however safety is not a separate topic.
StateRail	Station Operations	21-Mar-2004	2.4	There is an effective process to communicate safety policy to all staff and visitors	There is an effective process to communicate safety policy to all staff and visitors	Induction package which includes the safety policy given to all employees and visitors. Registry Number 04337
RailCorp	CEO	21-Mar-2004	2.4		An effective process to communicate to all staff and visitors exists.	Safety Policy sighted in all subsequent inspections of workplace.
StateRail	Safety Executive	21-Mar-2004	2.4		Communication is widespread, through sfaety committees and newsletters	MB04_PO _IG with x 11th Feb Safety Committee structure, newsletters DRMB18&19 reg 03993
StateRail	ART	21-Mar-2004	2.4		Communication of Safety Policy: The key step in the process - communication through instruction - is possibly less than optimal. Ensuring the highest level of Instructor Suitability for this requirement, is dysfunctional given that unsuitable instructors are all but impossible to remuster..	Awaiting evidence from Dir of Training regarding effort to replace an ineffective driver. Evidence was unable to be sourced.
StateRail	Station Management	21-Mar-2004	2.4		Some communication is used	MB02_KL Notice Board display, safety evacuation induction for visitors implemented on interviewers





Observations	Interview/Document Review ID	Ratings for Finding
These policies were not prominently displayed and a newly trained employee was unaware of them Interview JE16_BB14	BB11_JE16 BB12_JE17 BB13 -JE18 BB14_JE19 BB15_JE20	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_09; DOCUMENT REFERENCE: WAUD.007.005.0218, Notice to Staff and All Visitors to Mortdale Maintenance Centre	
Staff Induction records kept up to date	3587	
New Safework Policy not explained to responsible manager.	WAUD.007.012.1010, MR16BB23	
New Safeworking Policy was communicated to staff	MR18JE31	
		
	NI21/JE23	
The plan was not implemented, nor are KPI specifically allocated	MB04_PO _IG, DRMB20, DRMB27	
There may be a lack of awareness of the State Rail Safety standards across State Rail (might have some pockets that are aware). For example, in one specific case of an interview with a safety officer who has been in the safety game in state rail since 2001 he didn't even know that State Rail Safety standards actually existed. Their is a suspicion that this may be a systemic issue across the board and warrants further investigation to verify.		
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	KL02/NB02/PO OB1	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_22	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_10	
	Documents: RailCorp Draft Organisational Charts reg # 3423 RailCorp Presentation to SCOI 5 Mar 04	
	DRMB20, DRMB48	
	KL01/NB01/PO 01	
		
	KL01/NB01/PO 01	
RailCorp is only beginning to get a grasp of what integrated Safety Management Systems are, and the roles and accountabilities of individual managers within such systems	Interview: MN1/MR2 Documents: PD GM Safety & Environment, Train Services Division draft, Reg # 4392 PD Manager Safety, Train Services Division draft, Reg # 4392 PD Manager Safety Performance, Train Services Division draft, Reg # 4392 PD Manager Safety Improvement, Train Services Division draft, Reg # 4392 PD Manager Network Safety, Train Services Division draft, Reg # 4392 PD Executive Safety Officer, Train Services Division draft, Reg # 4392 PD Manager Workplace Safety, Train Services Division draft, Reg # 4392 PD Safety Facilitator, Train Services Division draft, Reg # 4392 PD Safety Performance Information Officer, Train Services Division draft, Reg # 4392 PD Safety Performance Analyst, Train Services Division draft, Reg # 4392	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	Train Operations	21-Mar-2004	2.4		SRA had not ensured all staff operating in the train crew grades are aware of safety policies	Policies and objectives are NOT published in the Train Operations Manual WAUD.007.012.0144 to WAUD.007.012.0552 and Operator Specific Procedures WAUD..007.012.0553 to .0774 these manuals are directed at traincrew and other safety critical workers
RailCorp	RailCorp Corporate Staff	21-Mar-2004	2.4		There is a process in place that requires safety induction for visitors when visiting the work place.Safety training for staff is conducted at the Petersham training facility.	
StateRail	PFM	21-Mar-2004	2.4		There is a published notice concerning safety for visitors to the Mortdale Maintenance Facility. The notice is published in the fleet managers office where visitors are required to report to on arrival at the maintenance facility. The document contains details for the Mortdale Maintenance facility evacuation zones, wardens and safety rules for the maintenance facility, contractors & visitors safety requirements.	INTERVIEW REFERENCE: BMB_09; DOCUMENT REFERENCE: WAUD.007.005.0218, Notice to Staff and All Visitors to Mortdale Maintenance Centre
RailCorp	Station Masters	21-Mar-2004	2.4		Visitors are given induction trainings, on initial entry to the station. This induction training included safety and emergency procedures	Underwent the induction train on visit to Wollongong, Blacktown, Penrith, Hornsby, Townhall, Wynnard, Martin Place.
RailCorp	Duty Manager	21-Mar-2004	2.4			Staff Induction form 03587
RailCorp	Safeworking Policy 16 Nov '03	21-Mar-2004	2.4			At interview MR16BB23 it was stated that although he signed for the Safework policy its distribution was not accompanied by any briefings or other information to explain the content.
RailCorp		21-Mar-2004	2.4			At interview MR18JE31 reported that managers were briefed on the New Safeworking Policy WAUD.007.012.1010 "
RailCorp	Safeworking Policy 16 Nov '03	21-Mar-2004	2.5	There is a process to periodically review safety policy for effectiveness and relevancy	RMC Manager does not/cannot perform activities in new StateRail Safeworking Policy	At interview MR16BB23 it was stated that he does not and cannot carry out the culpability determination as specified in WAUD.007.012.1032.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	2.5		Unable to answer	
StateRail	Train Crewing	21-Mar-2004	2.6	Objectives are appropriate for key risks	Position descriptions not refelective of actual role	Interviewee noted that Position description was not reflective of actual role. Main concern of interviewee was making changes to the organisation to effect greater focus on crewing issues, in particular interviewee was keen to restructure the group and remove TCAC from under direct control to another manager. Other key point was that PD showed number of indirect reports as 32. Interviewee has line responsibility for crews (more than 2000 people). Interviewee noted key areas of accountability as crew performance, injury rates, on time running, absence management and overtime.
StateRail	Safety Executive	21-Mar-2004	2.6		Safety Plan and PD addressed some KPIs for key risks	MB04_PO _IG with x 11th Feb Safety Plan, GMSafetyPD. DRMB 20 reg 03993 & DRMB27 reg 04110
RailCorp	RailCorp Corporate Staff	21-Mar-2004	2.6		There does not appear to be a effective risk evaluation system in place.	Registered document #04110 .This document has a"State Rail Plant Risk Assessment" checklist
			3	<b>SAFETY REPRESENTATIVE AND PERSONNEL</b>		
StateRail	State Rail	21-Mar-2004	3		State Rail has a documented procedure concerning Developing and Implementing Personal Safety KPI's	DOCUMENT REFERENCE: State Rail Safety Standard 3.002 , Developing and Implementing Personal Safety KPI's
StateRail	State Rail	21-Mar-2004	3		State Rail has a documented procedure concerning Safety Responsibilities A	DOCUMENT REFERENCE: State Rail Safety Standard 2.001 , Safety Responsibilities A
RailCorp	Group General Manager	21-Mar-2004	3.1	There is a safety manager on staff	level 2 safety manager.	Auditors interviewed safety manager
StateRail	Capital Works	21-Mar-2004	3.1		Capital Works has a safety manager on staff.	INTERVIEW REFERENCE: BMB_22
StateRail	PFM	21-Mar-2004	3.1		PFM has a dedicated safety manager on staff	INTERVIEW REFERENCE: BMB_10
RailCorp	SRA	21-Mar-2004	3.1		RailCorp has various levels and titles of Safety manager throughout the organisation. There is a GGM Safety & Environment Corporate Safety , GM Safety and Human Factors (unfilled) and GM's Safety and Environment for Train Services , Infrastructure and Customer Services Groups . They also have a plethora of Manager positions with the word safety in them, eg in train Services Group there is a Manager Safety Systems, Manager Safety Performance, Executive Safety Officer, Safety Standards Manager, and Manager Safety Improvement. Many of the above position are unfilled or a being staffed by incumbents in an Acting Position at this time however. The structure is yet to be permanently established.	Documents: RailCorp Draft Organisational Charts reg # 3423 RailCorp Presentation to SCOI 5 Mar 04
RailCorp	RailCorp Corporate Staff	21-Mar-2004	3.1		There is a person nominated as the Group General Manager Corporate Safety.	senior management organisation chart
StateRail	Safety Executive	21-Mar-2004	3.1		There is a safety manager on staff	MB04_PO _IG with x 11th Feb Following Glenbrook a new safety executive was established DRMB20 reg 03993 and is current to this day DRMB48 reg 04229
RailCorp	CEO	21-Mar-2004	3.1		There is a safety manager on staff.	Sighted PD and Interviewed actual safety manager
RailCorp	RailCorp Corporate Staff	21-Mar-2004	3.2	The safety manager's role is appropriate	Position description For the GMCS States that "safety qualifications are desirable but not necessary". This factor indicates the safety managers role may not be appropriately scoped	GGMCS position description
RailCorp	CEO	21-Mar-2004	3.2		Role is Appropriate.	PD sighted and interview established roles.
RailCorp	SRA	21-Mar-2004	3.2		Safety Managers' roles appear generally appropriate however PDs are predominately drafts and are subject to change or confirmation. They are generally in need of some refinement.	Interview: MN1/MR2 Documents: PD GM Safety & Environment, Train Services Division draft, Reg # 4392 PD Manager Safety, Train Services Division draft, Reg # 4392 PD Manager Safety Performance, Train Services Division draft, Reg # 4392 PD Manager Safety Improvement, Train Services Division draft, Reg # 4392 PD Manager Network Safety, Train Services Division draft, Reg # 4392 PD Executive Safety Officer, Train Services Division draft, Reg # 4392 PD Manager Workplace Safety, Train Services Division draft, Reg # 4392 PD Safety Facilitator, Train Services Division draft, Reg # 4392 PD Safety Performance Information Officer, Train Services Division draft, Reg # 4392 PD Safety Performance Analyst, Train Services Division draft, Reg # 4392

Observations	Interview/Document Review ID	Ratings for Finding
These policies were not prominently displayed and a newly trained employee was unaware of them Interview JE16_BB14	BB11_ JE16 BB12_JE17 BB13 -JE18 BB14_JE19 BB15_JE20	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_09; DOCUMENT REFERENCE: WAUD.007.005.0218, Notice to Staff and All Visitors to Mortdale Maintenance Centre	
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	KL02/NB02/PO OB1	
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	Documents: RailCorp Draft Organisational Charts reg # 3423 RailCorp Presentation to SCOI 5 Mar 04	
	DRMB20, DRMB48	
	KL01/NB01/PO 01	
		
	KL01/NB01/PO 01	
RailCorp is only beginning to get a grasp of what integrated Safety Management Systems are, and the roles and accountabilities of individual managers within such systems	Interview: MN1/MR2 Documents: PD GM Safety & Environment, Train Services Division draft, Reg # 4392 PD Manager Safety, Train Services Division draft, Reg # 4392 PD Manager Safety Performance, Train Services Division draft, Reg # 4392 PD Manager Safety Improvement, Train Services Division draft, Reg # 4392 PD Manager Network Safety, Train Services Division draft, Reg # 4392 PD Executive Safety Officer, Train Services Division draft, Reg # 4392 PD Manager Workplace Safety, Train Services Division draft, Reg # 4392 PD Safety Facilitator, Train Services Division draft, Reg # 4392 PD Safety Performance Information Officer, Train Services Division draft, Reg # 4392 PD Safety Performance Analyst, Train Services Division draft, Reg # 4392	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
RailCorp	Group General Manager	21-Mar-2004	3.2		The role is appropriate, but the incumbent is not appropriately qualified or experienced in system safety	PD adequately describes the role of the Safety manager, the incumbent stated that he had no safety qualifications
StateRail	Safety Executive	21-Mar-2004	3.2		The safety manager's role addresses key safety policy and implementation roles	DRMB48 reg 04229 indicates responsibilities and role of GGM Safety & Environment, however specific KPI targets are not included
RailCorp	SRA	21-Mar-2004	3.3	The safety manager's roles and responsibilities are defined and documented, including interrelationships with other key personnel	The majority of the Safety managers' PDs are still draft and subject to change. They are generally in need of some refinement in terms of roles, responsibilities and interrelationships with other key personnel	Documents: PD GM Safety & Environment, Train Services Division draft, Reg # 4392 PD Manager Safety, Train Services Division draft, Reg # 4392 PD Manager Safety Performance, Train Services Division draft, Reg # 4392 PD Manager Safety Improvement, Train Services Division draft, Reg # 4392 PD Manager Network Safety, Train Services Division draft, Reg # 4392 PD Executive Safety Officer, Train Services Division draft, Reg # 4392 PD Manager Workplace Safety, Train Services Division draft, Reg # 4392 PD Safety Facilitator, Train Services Division draft, Reg # 4392 PD Safety Performance Information Officer, Train Services Division draft, Reg # 4392 PD Safety Performance Analyst, Train Services Division draft, Reg # 4392
StateRail	Safety Executive	21-Mar-2004	3.3		The safety manager's roles and responsibilities are defined and documented, including interrelationships with other key personnel	DRMB48 reg 04229 indicates responsibilities and role of GGM Safety & Environment, however specific KPI targets are not included
RailCorp	RailCorp Corporate Staff	21-Mar-2004	3.3		There is a position description for the GGMCS	GMCS position description
StateRail	Capital Works	21-Mar-2004	3.3		There is an existing Position Description for the Capital Works safety manager that defines the roles and responsibilities of the position, including interrelationships.	INTERVIEW REFERENCE: BMB_22; DOCUMENT REFERENCE: TBA, Position Description for Capital Works Safety Manager
StateRail	PFM	21-Mar-2004	3.3		There is an existing Position Description for the PFM safety manager that defines the roles and responsibilities of the position, including interrelationships.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: TBA, Position Description for PFM Safety Manager
RailCorp	CEO	21-Mar-2004	3.3		Yes the roles, and responsibilities are defined and documented.	PD sighted and interview established roles.
StateRail	Capital Works - Vigilance Project	21-Mar-2004	3.4	There is an effective process for the safety manager to communicate with staff and senior management	The new Vigilance project has an extensive communications plan in place for the project engaging all the major players including safety management staff and senior management.	INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: NSW State Rail Authority Vigilance Control for Outer Suburban Train Project (VC Project) Communications Plan
RailCorp	Group General Manager	21-Mar-2004	3.4		There is a process in place. Effectiveness of this process could not be ascertained	Group general manager safety is a formal member of the senior management group which meets at least once a week, normally on Monday mornings. Meeting minutes sighted by other auditors
RailCorp	RailCorp Corporate Staff	21-Mar-2004	3.4		There is a process in place.It was not possible to assess its effectiveness.	
StateRail	Safety Executive	21-Mar-2004	3.4		There is an effective process for the safety manager to communicate with staff and senior management	Communications via the "Safety Steering Committee" DRMB01, and the "Board Safety Committee" DRMB02 as well as the newsletters DRMB18 reg 03993 and newspaper DRMB19 reg 03993
RailCorp	CEO	21-Mar-2004	3.4		There is effective process	Safety Manager attends all senior level meetings and holds a level two position
RailCorp	SRA	21-Mar-2004	3.4		Various processes are in place or are under development for communication of safety information/issues from the safety managers up and down the organisation. These include Safety Committee meetings, the intranet, newsletters, training courses , incident reporting systems and presentations. Validation of the effectiveness of these processes is yet to be demonstrated by RailCorp.	Interviews: MN1/MR2 MN13/JE24 MN9/KL17
RailCorp	RailCorp Corporate Staff	21-Mar-2004	3.5	The safety manager has sufficient and adequate access to senior managers to freely and openly discuss safety issues*	Group General Manager is considered a member of the CEO top management team. As such he attends senior management meetings.At these meetings he is given opportunity to place safety items on the meeting agenda.	Interviews
StateRail	PFM	21-Mar-2004	3.5		The PFM safety manager has access to the GM PFM and other corporate safety personnel to discuss safety issues. Note that the safety Manager PFM has a dedicated speaking time allocated at the GM PFMs meetings.	INTERVIEW REFERENCE: BMB_10
StateRail	Safety Executive	21-Mar-2004	3.5		The safety managers status, authority and physical access to other Executive Team Members is appropriate	DRMB48 reg 04229 indicates responsibilities and role of GGM Safety & Environment, however specific KPI targets are not included
RailCorp	CEO	21-Mar-2004	3.5		Yes there was evidence to show that the safety manager attended the senior level management meetings e.g. Monday operations meetings,	Observation of meeting.
RailCorp	Training & Development	21-Mar-2004	3.6	All personnel have written position descriptions that accurately reflect current activities	03497 Position Description of Director Training and Development is not up to date	03497 Position description Director Training and Development. Described reporting relationships not consistent with ART organisation chart 5/02/2002 (03497). PD contains many items to be removed. Tertiary qualifications in education and training only "Desirable".
StateRail	Safety Executive	21-Mar-2004	3.6		All personnel do not have written position descriptions that accurately reflect current activities	All PDs inspected were out of date, referred to past organisation structures, were uncontrolled, and were a selection document rather than a PD, did not have KPI targets clear enumerated DRMB20 reg 3993, DRMB43,47,48,49 reg 04229
RailCorp	SRA	21-Mar-2004	3.6		Many PDs are new drafts or are outdated and they do not accurately reflect current activities. Eg PD for is out of date waiting transition.	
StateRail	State Rail	21-Mar-2004	3.6		Nearly all of the State Rail personnel interviewed as part of the audit had position descriptions reflecting their current activities.	DOCUMENT REFERENCE: TBA, Analysis of Position Descriptions of Personnel Interviewed as part of Stage 2 Audit
StateRail	Signalling	21-Mar-2004	3.6		No position description is provided for the position Centre manager at Sydnam	Interview NI12_BB09 The interviewee indicated that the current position description was for a NOSA which was his previous position. He has no position description that reflects his current role
StateRail	Station Operations	21-Mar-2004	3.6		Partially found. There is a generic document produced which is not specific to the working environment at the station	Position Description for a Station Support Officer at Station Reg 04578
RailCorp	ART	21-Mar-2004	3.6		Personnel Description provided is not that of current job	At interview MR08CG11 provided a copy of his PD (03815) dated one day prior to the interview. As interviewee is "on transfer" to ART the PD provided is for interviewee's previous position not the current position.
RailCorp		21-Mar-2004	3.6		Position Description for Crew Manager Safety does not does not accurately reflect position requirements	Position Description Crew Safety Manager (04498) identifies responsibility for several safety functions. Selection Criteria do not include the requirement of any experience or training in safety.
StateRail	PFM	21-Mar-2004	3.6		Position descriptions in PFM with respect to Safety, Environment and Health responsibilities need to be clarified (cleared up).	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0529, Draft State Rail Passenger Fleet Maintenance - Future Directions dated October 2003
RailCorp	RailCorp Corporate Staff	21-Mar-2004	3.6		Safety persons had Position Descriptions.	These PDs were generic and did not reflect what the safety people stated their duties were when interviewed
RailCorp	Duty Manager	21-Mar-2004	3.6			Position description 03587 was generic but seemed to be a fair description of his duties



Observations	Interview/Document Review ID	Ratings for Finding
	KL02/NB02/PO OB1	
The PD is written to a formula with little about specific measurable key performance indicators	DRMB48 reg 04229	
	Documents: PD GM Safety & Environment, Train Services Division draft, Reg # 4392 PD Manager Safety, Train Services Division draft, Reg # 4392 PD Manager Safety Performance, Train Services Division draft, Reg # 4392 PD Manager Safety Improvement, Train Services Division draft, Reg # 4392 PD Manager Network Safety, Train Services Division draft, Reg # 4392 PD Executive Safety Officer, Train Services Division draft, Reg # 4392 PD Manager Workplace Safety, Train Services Division draft, Reg # 4392 PD Safety Facilitator, Train Services Division draft, Reg # 4392 PD Safety Performance Information Officer, Train Services Division draft, Reg # 4392 PD Safety Performance Analyst, Train Services Division draft, Reg # 4392	
The PD is written to a formula with little about specific measurable key performance indicators	DRMB48 reg 04229	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_22;	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_10;	
	KL01/NB01/PO 01	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: NSW State Rail Authority Vigilance Control for Outer Suburban Train Project (VC Project) Communications Plan	
	KL02/NB02/PO OB1	
Whilst there are mechanismsavailable it is not possible for management to judge the effectiveness of the communication except via long term trends. The trends as shown in the Priority Hazard Lists reported each month through the Board Safety Committee do not show an improving trend and the number of Plans shown to improve the trend is insufficient to effect an improving trend	newsletters DRMB18 reg 03993 and newspaper DRMB19 reg 03993	
	KL01/NB01/PO 01	
	Interviews: MN1/MR2 MN13/JE24 MN9/KL17	
		
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_10	
Whilst there is a web published and freely available statement of accountabilities the target KPIs are not shown	DRMB48 reg 04229	
	KL01/NB01/PO 01	
	3497	
The use of a template that doubles as a selection tool and a PD has whitewashed the PD in terms of positions specific accountabilities	DRMB20 reg 3993, DRMB43,47,48,49 reg 04229	
Under the current massive organisational change situation RailCorp is struggling to put the detail into place such as updated and accurate PDs for staff. In many cases the organisational structure is yet to be confirmed and positions filled.		
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	DOCUMENT REFERENCE: Analysis of Position Descriptions of Personnel Interviewed as part of Stage 2 Audit	
	NI12_BB09	
Generic PD's do not take into account localised tasks or functions	MR05_BB04	
	MR08CG11, 03815	
	MR18JE31	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0529, Draft State Rail Passenger Fleet Maintenance - Future Directions dated October 2003	
The position description provided by x seemed to be a fair description of his responsibilities	3587	












StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	State Rail	21-Mar-2004	3.7	Where appropriate, position descriptions clearly define safety roles and responsibilities for staff*	An analysis of position descriptions for the State Rail personnel interviewed as part of the audit shows that they reflect core activity but not accountability	DOCUMENT REFERENCE: <b>TBA</b> , Analysis of Position Descriptions of Personnel Interviewed as part of Stage 2 Audit
StateRail	Station Operations	21-Mar-2004	3.7		Partially found. There is a generic document produced which is not specific to the working environment at Station	Position Description for Station Support Officer at Station Registered Number 04578
StateRail	PFM	21-Mar-2004	3.7		PFM have developed safe work method statements and are continuing to do so. The Safe Working Method Statements Developed by PFM are formally approved (with signatures). SWMS have qualifications and required experience explicitly identified.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Safe Work Method Statement, Emergency Coupler Test
StateRail	Safety Executive	21-Mar-2004	3.7		Position descriptions do define safety roles and responsibilities for staff	Position descriptions at DRMB20 reg 03993, DRMB43,47,48,49 reg 04229 show safety responsibilities & roles
RailCorp	RailCorp Corporate Staff	21-Mar-2004	3.7		Read item 3.6	
StateRail	PFM	21-Mar-2004	3.7		There is a process in place within PFM for developing SWMS and is linked to the state rail standard for SWMS.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Safety Steps, Summary No.1 Safe Method Statements (SWMS)
StateRail	State Rail	21-Mar-2004	3.7		There is a standard in place for developing Safe Work Method Statements in State Rail.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Safety Standard 10.0003 - Safe Work Method Statements
RailCorp	RailCorp Corporate Staff	21-Mar-2004	3.8	There is a documented process in place that describes the organisation structure and is adequately communicated to staff	There is a document in place.If it was adequately communicated to staff was not determined	Registered document #
StateRail	Train Operations	21-Mar-2004	3.8		There was no communication to Traincrews at Central Station as to the location of an Organisation Chart	Interviews BB11_ JE16 BB12_JE17 BB13 -JE18 BB14_JE19 BB15_JE20 Question 3 of a prepared set of questions Q3. Do you know were to find an organisation chart and have yo ever looked at it
			4	<b>SAFETY COMMITTEE</b>		
StateRail	State Rail	21-Mar-2004	4		State Rail has a documented procedure concerning Employ, Contractor, and Union Consultant Safety Matters	DOCUMENT REFERENCE: State Rail Safety Standard 5.001 , Employ, Contractor, and Union Consultant Safety Matters
StateRail	State Rail	21-Mar-2004	4		State Rail has a documented procedure concerning Occupational Health and Safety Committees	DOCUMENT REFERENCE: State Rail Safety Standard 5.002 , Occupational Health and Safety Committees
StateRail	Station Operations	21-Mar-2004	4.1	There is a safety committee, comprised of appropriate staff representation and it includes OH&S personnel	· There is a safety committee at the station, comprised of appropriate staff representation and it includes OH&S personnel	
StateRail	Station Management	21-Mar-2004	4.1		A safety committee is present at the station	MB02_KL Minutes of meeting sighted DRMB24 reg 04110
StateRail	Safety Executive	21-Mar-2004	4.1		Safety Committees at a number of levels operated	MB04_PO _IG with x 11th Feb "Consultation Statement"
StateRail	Train Operations	21-Mar-2004	4.1		Safety committees exist in the traincrew areas at the station	Staff believed they had unfettered access to their Reps and thus to the committee Interviews JBB11_ JE16 BB12_JE17 BB13 -JE18 BB14_JE19 BB15_JE20 Question 4 of a prepared set of questions Q4. Have you access to the safety committee (OH&S
RailCorp	Station Masters	21-Mar-2004	4.1		Safety committees were in place for every station visited, these comprised of appropriate staff, ie, station manager, signallers, shunters, platform staff.	Sighted minutes from these meetings - WAUD (registry no: 04110)
StateRail	PFM	21-Mar-2004	4.1		There are a range of safety committees operating within PFM including 'tool box' meetings and OH&S committees. The committee structure within PFM extends from the shop floor all the way up the management chain.	INTERVIEW REFERENCE: BMB_10
RailCorp	Group General Manager	21-Mar-2004	4.1		There are numerous OH& S committees .	Minutes sighted in workplace
RailCorp	RailCorp Corporate Staff	21-Mar-2004	4.1		There are several safety committees throughout the organisation	4110
RailCorp	SRA	21-Mar-2004	4.1		There are various safety committees cascading at levels through RailCorp, some of which include OHS. Staff representation appears to be appropriate at each level. Committees include: Board Safety Cttee Safety Steering Cttee Joint Consultative Cttee SRA Corporate Risk Cttee Safety Reform Agenda Cttee Fire and Life Cttee SUSEMP cttee OHS cttees	Interviews: MN1/MR2 MN13/JE24 Documents: Safety Reform Agenda meeting minutes 17 Feb 04 reg 4224 WAUD.006.001.0018 14-Mar-2002 Joint Boards Safety Liaison Committee Meeting 2002/01 Minutes WAUD.006.001.0006 1-Aug-2003 Joint Boards Safety Liaison Committee Meeting 2003/01 Minutes WAUD.006.001.0002 21-Nov-2003 Joint Boards Safety Liaison Committee Meeting 2003/02 Minutes WWAT.002.337.0207 24-Sep-2001 Meeting of the Executive Advisory Committee Meeting No 6 Minutes WWAT.002.387.0080 13-Feb-2002 Meeting of the Executive Advisory Committee Meeting No 8 Minutes WWAT.002.386.0250 25-Mar-2002 Meeting of the Executive Advisory Committee Meeting No 9 Minutes WWAT.002.386.0322 26-Apr-2002 Meeting of the Executive Advisory Committee Meeting No 10 Minutes WWAT.002.386.0199 5-Jun-2002 Meeting of the Executive Advisory Committee Meeting No 11 Minutes WWAT.002.386.0160 18-Jul-2002 Meeting of the Executive Advisory Committee Meeting No 12 Minutes
						WWAT.002.396.0281 30-Aug-2002 Meeting of the Executive Advisory Committee Meeting No 13 Minutes WWAT.002.427.0011 21-Nov-2002 Meeting of the Executive Advisory Committee - Meeting No 14 Minutes WAUD.006.001.0163 21-Aug-2002 Meeting of the State Rail Board Safety Committee Agenda 3371 WAUD.006.001.0284 11-Feb-2003 Meeting of the State Rail Board Safety Committee Agenda 3371

Observations	Interview/Document Review ID	Ratings for Finding
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	DOCUMENT REFERENCE: , Analysis of Position Descriptions of Personnel Interviewed as part of Stage 2 Audit	<div><div></div></div>
	MR05_BB04	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Safe Work Method Statement, Emergency Coupler Test	
Some PDs are template based and repeat information making the PD not specific, rather generic	DRMB20 reg 03993, DRMB43,47,48,49 reg 04229	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Safety Steps, Summary No.1 Safe Method Statements (SWMS)	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Safety Standard 10.0003 - Safe Work Method Statements	
		<div><div></div></div>
	BB11_JE16 BB12_JE17 BB13-JE18 BB14_JE19 BB15_JE20	
There may be a lack of awareness of the State Rail Safety standards across State Rail (might have some pockets that are aware). For example, in one specific case of an interview with a safety officer who has been in the safety game in state rail since 2001 he didn't even know that State Rail Safety standards actually existed. Their is a suspicion that this may be a systemic issue across the board and warrants further investigation to verify.		
There may be a lack of awareness of the State Rail Safety standards across State Rail (might have some pockets that are aware). For example, in one specific case of an interview with a safety officer who has been in the safety game in state rail since 2001 he didn't even know that State Rail Safety standards actually existed. Their is a suspicion that this may be a systemic issue across the board and warrants further investigation to verify.		
Interview MR05_BB04 the While being shown around the person about to be interviewed shoed through the station where the results of the OH&S committee was discussed but it was not recorded as part of the interview	MR05_BB04	<div><div></div></div>
	MB02_KL, DRMB24	
	MB04_PO _IG	
	BB11_JE16 BB12_JE17 BB13-JE18 BB14_JE19 BB15_JE20	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_10	
	KL02/NB02/PO OB1	
	Interviews: MN1/MR2 MN13/JE24 Documents: Safety Reform Agenda meeting minutes 17 Feb 04 reg 4224 WAUD.006.001.0018 14-Mar-2002 Joint Boards Safety Liaison Committee Meeting 2002/01 Minutes WAUD.006.001.0006 1-Aug-2003 Joint Boards Safety Liaison Committee Meeting 2003/01 Minutes WAUD.006.001.0002 21-Nov-2003 Joint Boards Safety Liaison Committee Meeting 2003/02 Minutes WWAT.002.337.0207 24-Sep-2001 Meeting of the Executive Advisory Committee Meeting No 6 Minutes WWAT.002.387.0080 13-Feb-2002 Meeting of the Executive Advisory Committee Meeting No 8 Minutes WWAT.002.386.0250 25-Mar-2002 Meeting of the Executive Advisory Committee Meeting No 9 Minutes WWAT.002.386.0322 26-Apr-2002 Meeting of the Executive Advisory Committee Meeting No 10 Minutes WWAT.002.386.0199 5-Jun-2002 Meeting of the Executive Advisory Committee Meeting No 11 Minutes WWAT.002.386.0160 18-Jul-2002 Meeting of the Executive Advisory Committee Meeting No 12 Minutes WWAT.002.396.0281 30-Aug-2002 Meeting of the Executive Advisory Committee Meeting No 13 Minutes WWAT.002.427.0011 21-Nov-2002 Meeting of the Executive Advisory Committee - Meeting No 14 Minutes WAUD.006.001.0163 21-Aug-2002 Meeting of the State Rail Board Safety Committee Agenda 3371 WAUD.006.001.0284 11-Feb-2003 Meeting of the State Rail Board Safety Committee Agenda 3371	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
RailCorp		21-Mar-2004	4.1			At interview MN01MR02 x described the membership of the Joint consultative committee
RailCorp	Group General Manager	21-Mar-2004	4.2	The safety committee addresses both OH&S issues and system safety issues*	Emphasis is on OH&S with a smaller emphasis on the Systems safety	PD's and committees sighted in various workplaces
RailCorp	Station Masters	21-Mar-2004	4.2		From the minutes sighted it is evident that committees have addressed these issues	Registry number 04110
RailCorp	RailCorp Corporate Staff	21-Mar-2004	4.2		Safety committees do address ohs issues. System safety issues do not have the same profile	
StateRail	Safety Executive	21-Mar-2004	4.2		The executive safety committee Addresses/d both operational and OH&S	MB04_PO _IG with x 11th Feb Minutes of ESC & BSC DRMB01 "StateRail Safety Steering Committee 23 Jan 2003"
RailCorp	SRA	21-Mar-2004	4.2		The safety committee addresses both OH&S issues and system safety issues	Interviews: MN1/MR2 MN13/JE24 Documents: Safety Reform Agenda meeting minutes 17 Feb 04 reg 4224 WAUD.006.001.0018 14-Mar-2002 Joint Boards Safety Liaison Committee Meeting 2002/01 Minutes WAUD.006.001.0006 1-Aug-2003 Joint Boards Safety Liaison Committee Meeting 2003/01 Minutes WAUD.006.001.0002 21-Nov-2003 Joint Boards Safety Liaison Committee Meeting 2003/02 Minutes WWAT.002.337.0207 24-Sep-2001 Meeting of the Executive Advisory Committee Meeting No 6 Minutes WWAT.002.387.0080 13-Feb-2002 Meeting of the Executive Advisory Committee Meeting No 8 Minutes WWAT.002.386.0250 25-Mar-2002 Meeting of the Executive Advisory Committee Meeting No 9 Minutes WWAT.002.386.0322 26-Apr-2002 Meeting of the Executive Advisory Committee Meeting No 10 Minutes WWAT.002.386.0199 5-Jun-2002 Meeting of the Executive Advisory Committee Meeting No 11 Minutes WWAT.002.386.0160 18-Jul-2002 Meeting of the Executive Advisory Committee Meeting No 12 Minutes
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StateRail	Station Management	21-Mar-2004	4.2		The safety committee addresses hazards in the workplace or other operational hazards	MB02_KL Hazard identification and risk assessment sighted DRMB 26 reg 04110
RailCorp	RailCorp Corporate Staff	21-Mar-2004	4.3	The safety committee is appropriately trained*	Unable to answer	
RailCorp	Station Masters	21-Mar-2004	4.3			
RailCorp	Duty Manager	21-Mar-2004	4.3			At interview MR05BB04 it was reported that they had an OH&S committee and that the members on is had been trained.
StateRail	Safety Executive	21-Mar-2004	4.4	Safety committee findings and corrective actions are communicated to senior management for decision*	Representation of the Safety Committee included line managers with authority	MB04_PO _IG with x 11th Feb Minutes of local committees DRMB24 reg 04110
RailCorp	RailCorp Corporate Staff	21-Mar-2004	4.4		Safety committees findings are communicated to higher levels of management.Decisions are made as to if the communication is valid.	
RailCorp	Station Masters	21-Mar-2004	4.4		The distribution list of the safety committee minutes include senior management	Registry number 04110
RailCorp	Group General Manager	21-Mar-2004	4.4			Interview with line staff.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	4.5	Safety committee deliberations have a positive impact on reducing risk*	Unable to answer	
RailCorp	RailCorp Corporate Staff	21-Mar-2004	4.6	Safety committees are created and implemented at the front-line staff level*	All work sites visited had ohs committees.	4110 as an example of minutes of these committees.
RailCorp	Station Masters	21-Mar-2004	4.6		Committees are created and implemented at frontline staff level	Registry number 04110
StateRail	Safety Executive	21-Mar-2004	4.6		Safety Committees created at the front line staff level	MB02_KL Minutes of meeting sighted DRMB24 reg 04110
RailCorp	Group General Manager	21-Mar-2004	4.6		Yes - safety committees are in place at front line staff level	Minutes sighted at Railway stations
RailCorp	RailCorp Corporate Staff	21-Mar-2004	4.7	Safety committees have adequate visibility with management and authority to implement and track safety issues to closure*	OHS committees are visible.Workcover audited their effectiveness as high.Main feature of these committees is OHS.	Registered document # 04110. Copies of OHS committee minutes.
StateRail	Safety Executive	21-Mar-2004	4.7		Safety committees exist but there is Variable implementation and ill-defined authority to act	MB04_PO _IG with x 11th Feb Minutes of local committees referred DRMB24 reg 04110
RailCorp	RailCorp Corporate Staff	21-Mar-2004	4.8	Safety committees are effective*	Committees are effective in matters of occupational health and safety.Safeworking procedures address the safe operation of trains on a daily basis.Apart from the theoretical statements and presentations given by senior staff resident in LEE st little evidence was available in the workplace that there was a comprehensive understanding of safety management systems.	Interviews K2, K5 ,K6 ,K10 ,K11 ,K17 ,
StateRail	Train Operations	21-Mar-2004	4.8		Safety committees that are used in the traincrew area in the Station are effective	Staff Indicated that they saw tangible improvements to lighting and walkways as results of these meetings Interviews BB11_ JE16 BB12_JE17 BB13 -JE18 BB14_JE19 BB15_JE20 Question 5 of a prepared set of questions Q5. Does anything effective come from
StateRail	Safety Executive	21-Mar-2004	4.8		Safety committees do work for minor issues but appear to be less effective for endemic or cultural issues	MB04_PO _IG with x 11th Feb Safety Committees at stations deal mainly with OH&S and have trend information DRMB24 reg 04110

Observations	Interview/Document Review ID	Ratings for Finding
Joint consultative Cttee (pre Waterfall) includes GM Safety, Mgr OH7S, Safety Managers, Workplace reps	MN1MR02	
	KL02/NB02/PO OB1	<div><div></div></div>
	DRMB01	
	Interviews: MN1/MR2 MN13/JE24 Documents: Safety Reform Agenda meeting minutes 17 Feb 04 reg 4224 WAUD.006.001.0018 14-Mar-2002 Joint Boards Safety Liaison Committee Meeting 2002/01 Minutes WAUD.006.001.0006 1-Aug-2003 Joint Boards Safety Liaison Committee Meeting 2003/01 Minutes WAUD.006.001.0002 21-Nov-2003 Joint Boards Safety Liaison Committee Meeting 2003/02 Minutes WWAT.002.337.0207 24-Sep-2001 Meeting of the Executive Advisory Committee Meeting No 6 Minutes WWAT.002.387.0080 13-Feb-2002 Meeting of the Executive Advisory Committee Meeting No 8 Minutes WWAT.002.386.0250 25-Mar-2002 Meeting of the Executive Advisory Committee Meeting No 9 Minutes WWAT.002.386.0322 26-Apr-2002 Meeting of the Executive Advisory Committee Meeting No 10 Minutes WWAT.002.386.0199 5-Jun-2002 Meeting of the Executive Advisory Committee Meeting No 11 Minutes WWAT.002.386.0160 18-Jul-2002 Meeting of the Executive Advisory Committee Meeting No 12 Minutes WWAT.002.396.0281 30-Aug-2002 Meeting of the Executive Advisory Committee Meeting No 13 Minutes WWAT.002.427.0011 21-Nov-2002 Meeting of the Executive Advisory Committee - Meeting No 14 Minutes WAUD.006.001.0163 21-Aug-2002 Meeting of the State Rail Board Safety Committee Agenda 3371 WAUD.006.001.0284 11-Feb-2003 Meeting of the State Rail Board Safety Committee Agenda 3371	
	MB02_KL, DRMB26	
		<div><div></div></div>
The OH&S committee members are trained	MR05BB04	
	MB04_PO _IG, DRMB24	<div><div></div></div>
Committee findings are sent to senior management for corrective action, interview personnel however, stated that the process might not be carried out	KL02/NB02/PO OB1	
		<div><div></div></div>
		<div><div></div></div>
	MB04_PO _IG	
	KL02/NB02/PO OB1	
		<div><div></div></div>
	MB04_PO _IG, DRMB24	
		<div><div></div></div>
	BB11_ JE16 BB12_JE17 BB13 -JE18 BB14_JE19 BB15_JE20	
Safety Committees operate universally but they are subject to cynicism because some big issues aren't dealt with	MB04_PO _IG, DRMB24	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	PFM	21-Mar-2004	4.8		The safety committees at PFM may be ineffective in ensuring that OH&S issues raised by staff are addressed to the satisfaction of staff. The AMWU was engaged due to a lack of confidence by staff in the process to conduct an independent safety audit and work cover are carrying out spot inspections at the facility in relation to concerns raised by some of the line staff. It could not be determined whether this issue was due to genuine concerns not being addressed appropriately or due to other industrial related issues.	INTERVIEW REFERENCE: BMB_19
StateRail	Safety Executive	21-Mar-2004	4.9	Safety committees include representatives from all appropriate areas of the organisation *	All appropriate areas represented	MB04_PO _IG with x 11th Feb Minutes of local committees DRMB24 reg 04110
RailCorp	Station Masters	21-Mar-2004	4.9		Safety committees well respresented, and include a variety of station staff.	Registry number 04110
RailCorp	RailCorp Corporate Staff	21-Mar-2004	4.9		Station OHS committees have representation from all levels of staff.	Minutes from station OHS reflect the membership of the committes.EG registered document #04110
			5	MANAGEMENT REVIEW		
RailCorp	RailCorp Corporate Staff	21-Mar-2004	5.1	Management regularly reviews the effectiveness of the SMS	During interview KL5 it was stated by a senior safety executive "that SMS was in its early stages and open to criticism", as such formal review process has yet to be developed.At the presentation given by RailCorp on the 05/03/04 it was stated [slide # 13, 14, 15 ] that an internal and external process was planned.Audits had been conducted by, WorkCover, ITSRR , SAI Global Assurance Services and Ministry of Energy and Utilities.A further review was planned to look at the adequacy of current and proposed systems.	Audit/review documents not received at time of report
StateRail	ART	21-Mar-2004	5.1		Review of Effectiveness: Effectiveness of workplace trainer at RMC has not been evaluated.	NI4/JE7 Statement by RMC Workplace Trainer.
StateRail	Safety Executive	21-Mar-2004	5.1		Reviews conducted of individual items, overall performance unknown	MB04_PO _IG with x 11th Feb Minutes of ESC & BSC DRMB01 "StateRail Safety Steering Committee 23 Jan 2003"
RailCorp	Duty Manager	21-Mar-2004	5.2.1	There is a documented process for management review that also includes periodicity of review*		Station Operations 2004 SMS Checklist 03587
StateRail	Safety Executive	21-Mar-2004	5.2.2	The review cycle is adequate*	Review of the SMS as such, and its effectiveness, unknown	MB04_PO _IG with x 11th Feb Minutes of ESC & BSC DRMB01 "StateRail Safety Steering Committee 23 Jan 2003"
StateRail	Safety Executive	22-Mar-2004	5.2.3	It is followed*		
StateRail	Safety Executive	23-Mar-2004	5.3	Results of this review affect policy*	RailCorp has varied the elements of the safety management system based on analysis of StateRail and RIC safety management systems.	
StateRail	Safety Executive	24-Mar-2004	5.4	Management review meeting minutes are adequately documented and there is an effective process in place for monitoring corrective actions	Safety Committee records did not provide a clear indication of an effective review process with regards to the state of maturity or effectiveness of the safety management system	Document Ref 03414 Exec & safety Steering Committee Meeting Minutes Document Ref 03371 Safety Committee Meeting minutes
StateRail	Safety Executive	21-Mar-2004	5.5	Management review is adequate and includes review of audit and accident investigation findings (both internal and external to the organisation), status of corrective and preventative actions, resource planning, safety data and analysis, and review of policy and performance towards safety objectives	Audit and investigation findings are brought to the senior Safety Committes	MB04_PO _IG with x 11th Feb Minutes of ESC & BSC DRMB01 "StateRail Safety Steering Committee 23 Jan 2003"
StateRail	Corporate Safety	21-Mar-2004	5.5		Glebrook recommendation 14 reagrding implementation of team leader role and increasing ratios of team leaders to drivers not complete - and management reporting of this issue is inaccurate	Management report SRA Glenbrook Monthly Report Summary and Actions by Recommendation 15 March 2004 [04482] indicates that action to implement team leader position and improve ratio of OSMs to crew is 100% complete. This is not correct - the action progress update indicates that the process is not complete but the % complete rating is 100%. Evidence from this audit eg [NI4CG4] confirms this is not complete.
StateRail	Corporate Safety	22-Mar-2004	5.6	There is an adequate process that links all relevant data into this review	No formal process identified	
StateRail	Corporate Safety	23-Mar-2004	5.7	There is an adequate process that communicates the results of this review across the organisation and up to executive management	Only communication across organisation is the issue of draft documents on the intranet.	
			6	TRAINING AND EDUCATION		
StateRail	PFM	21-Mar-2004	6		A number of safety training courses being delivered by ART are not meeting the safety training needs of Passenger Fleet Maintenance.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, OHS Content of ART Training Courses for PFM Staff INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Re: Emergency Procedures Training
StateRail	ART	21-Mar-2004	6		Comment Only	ART seem overly focussed on competency training - possibly with some misunderstanding of what it truly is. Should be noted that a TNA should be used to determine if a competency assessment is the most appropriate strategy. Comment Only.
StateRail	ART	21-Mar-2004	6		Comment Only	Observations documented at CG15/MN10 and CG16/MN11
StateRail	ART	21-Mar-2004	6		Observation Only	SRA/RIC brief of 5 Mar 2004
StateRail	ART	21-Mar-2004	6		Observation Only	Interview CG 18/MR12
StateRail	PFM	21-Mar-2004	6		PFM have no overall training plan.	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper



Observations	Interview/Document Review ID	Ratings for Finding
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_19	
	MB04_PO _IG, DRMB24	
		
Concern - RMC claims that there has been no Auditing of Assessment. Courses should be reviewed every 3 years (minimum) according to the Policy and Procedures Manual Section 2.	NI4/JE7	
	MB04_PO _IG , DRMB01	
Station Operations 2004 SMS checklist is in a visible location, up to date and signed by the general manager Station Operations	3587	
	MB04_PO _IG , DRMB01	
		
		
		
		
	DRMB01	
	NI28 JE29BMB?? And NI30JE30	
		
		
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, OHS Content of ART Training Courses for PFM Staff INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Re: Emergency Procedures Training	
Concern: Is competency based training always appropriate – does it promote excellence or entrench a ‘past - the post’ learning culture?		
Concern: During a classroom observation it was noted how the train drivers would engage and disengage depending upon the teaching strategy. The quality of delivery of SMS 2.4 in this case appeared marginal. A second observation of a 'contracted' course on 'train the trainer' seemed much more satisfactory. The role of the instructor in delivering the safety message (and all other training) effectively should not be underestimated. A full and valid assessment to determine the quality of instruction across SRA (ART and the various Workplace Trainers) would require a sizeable amount of effort in order to assess each instructor for competence. This was not achieved during the audit.	CG15/MN10 and CG16/MN11	
Concern: Advice is that Country Link is developing its own CRM program. Concern that this course is being developed in isolation outside the approved training regime. Quality, correctness, reporting etc are all of concern.		
Concern: There are moves to devolve training back to each business element - so called Business Demand - Training. Uncertain as to why this is occurring: possibly due to lack of response from ART? ART possibly having no further capacity? Funding?		
	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	ART	21-Mar-2004	6		Quality of Courseware: Probably adequate - requires further analysis.	WAUD.007.012.1336 (SMS 2.4 Facilitator Guide). WAUD.007.012.1452 (Safe working Course Assessment For Recertification in Propelling)
StateRail	ART	21-Mar-2004	6		Quality of Instruction: ART has developed Facilitator Guides for its instructors. Instructors use them appropriately.	WAUD007.012.1336 is the Facilitator Guide.
StateRail	ART	21-Mar-2004	6		SMS Training General: SMS training does not have an 'on the job' training component.	Item #04482 for Glenbrook recommendation status. Interview CG18/MR12 for response from Manager ART.
StateRail	State Rail	21-Mar-2004	6		State Rail has a documented procedure concerning Competency – Based Safety Training	DOCUMENT REFERENCE: State Rail Safety Standard 6.005 , Competency – Based Safety Training
StateRail	State Rail	21-Mar-2004	6		State Rail has a documented procedure concerning Contractor Training	DOCUMENT REFERENCE: State Rail Safety Standard 6.004 , Contractor Training
StateRail	State Rail	21-Mar-2004	6		State Rail has a documented procedure concerning Management Safety Training	DOCUMENT REFERENCE: State Rail Safety Standard 6.003 , Management Safety Training
StateRail	State Rail	21-Mar-2004	6		State Rail has a documented procedure concerning Planned Safety Training and Records	DOCUMENT REFERENCE: State Rail Safety Standard 6.001 , Planned Safety Training and Records
StateRail	State Rail	21-Mar-2004	6		State Rail has a documented procedure concerning Safety Induction	DOCUMENT REFERENCE: State Rail Safety Standard 6.002 , Safety Induction
RIC	ATRICS	21-Mar-2004	6		The ATRICS project develops operator guidance in the form of users manual as part of the development process for ATRICS. The manuals are comprehensive and user friendly in their layout and presentation.	INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0002, RCS Workstation User Guide
RIC	ATRICS	21-Mar-2004	6		The ATRICS project develops training documentation as part off the ATRICS Project to train the operators.	INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0287, ATRICS Workstation Operator Course Trainee Handout Booklet
RIC	ATRICS	21-Mar-2004	6		The ATRICS project develops training documentation as part off the ATRICS Project to train the trainers.	INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0197, ATRICS Workstation Operator Course Trainer Guide
RailCorp		21-Mar-2004	6			At interview CG18MR12 when asked about the content of SMS training interviewee responded that although a number of safety elements are covered many are not considered relevant to the driver/guards jobs. Further, following a MOT audit it was observed that SMS training did not have enough emphasis on Safeworking. As a result in SMS2.5 they were required to return the emphasis to Safeworking. Interviewee emphasises the need to change from a focus on Safeworking to that of Safety Standards.
StateRail	ART	21-Mar-2004	6		Observation only	WAUD.007.012.1468 is a remedial safe working assessment illustrates the type of exercise that a suspended 'Safe Worker' may need to undertake.
StateRail	ART	21-Mar-2004	6		Observation Only	Interview CG20/MR12
RailCorp		21-Mar-2004	6.1	All key personnel, including the safety manager, have received adequate training in the SMS (including induction and ongoing safety related training)	Incumbent A/GM Safety and Environment has no formal Safety Science training	At interview MN01MR02 x responded that although he has attended many safety and safety related courses, he has not received any formal Safety Science (SMS) training.
StateRail	ART	21-Mar-2004	6.1		Changes to training: Process for making official changes to training uses the 'Stop Press' process.	Interview CG08/BB07
RailCorp		21-Mar-2004	6.1		Crew Safety Manager has not received SMS training	At Interview MR18JE31 stated that he has not received and SMS training.
StateRail	ART	21-Mar-2004	6.1		Driver SMS Training: As at 8 Mar, 1165 of 1227 Guards had completed SMS round 2.4	Proof of training is captured in DART Graphs of Driver training (Item 04351)
RailCorp	RailCorp Corporate Staff	21-Mar-2004	6.1		Interviewee stated during interview KL2 and during the RailCorp presentation given on the 05/03/04 by RailCorp corporate safety personel that he had no formal safety qualifications	Record of interview KL2. Transcript of 05/03/04 presentation.
RailCorp	CEO	21-Mar-2004	6.1		Group general manager safety had no formal safety qualifications.	Verbal verification by the safety manager
StateRail	ART	21-Mar-2004	6.1		Guard SMS Training: As at 8 Mar, 946 of 978 Guards had completed SMS round 2.4	Proof of training is captured in DART Graphs of Guard training (Item 04351)
RailCorp		21-Mar-2004	6.1		Incumbent General Manager Training and Development has not received SMS training	At interview MR04CG01 X responded that they had not had any SMS specific training
RailCorp		21-Mar-2004	6.1		Incumbent Project Manager Health and Standards has not received adequate SMS training	At interview MR01BB01 X responded that he has had only ad hoc safety training.
RailCorp	ART	21-Mar-2004	6.1		Incumbent Safeworking Standards Manager had little understanding of the concept of error tolerance	At interview MR08CG11 when asked about the SMS training response was that X has not received any SMS specific training.
StateRail	Safety Executive	21-Mar-2004	6.1		Individual competence training occurs for discrete classifications of employees but training in SMS "science" does not occur	MB04_PO _IG with x 11th Feb SMS training
RIC	Train Services	21-Mar-2004	6.1		Induction of senior managers inadequate and adhoc	Interviewee had to prompt staff for induction. Had to prompt staff about his role in crisis management.
RailCorp		21-Mar-2004	6.1		Key personnel have not received adequate SMS training	At interview MR04CG01 responded that there was no SMS specific training for managers
StateRail	Signalling	21-Mar-2004	6.1		Key personnel in the signal box at Sydhams have not received adequate refresher or update training in the changes to the ATRICS system and their implications to safeworking	Interview NI12_BB09 His training is for a different position that of a nossa He has no position description that reflects his current role
RailCorp	Station Masters	21-Mar-2004	6.1		Key personnel including the station manager have received safety training, the adequacy of the SMS training could not be ascertain. There is no specific safety manager at the stations.	Registry number 04110



Observations	Interview/Document Review ID	Ratings for Finding
Good: Various ART Instructors documents such as guides, examinations and facilitator plans were reviewed for format, structure and content - generally adequate eg: resource identification, learning outcomes, applicable regulations etc. Examination questions could be improved. An in-depth review of all SMS materials could not be undertaken in the time frame as they were delivered late to SCOL.	WAUD.007.012.1336 and WAUD.007.012.1452	
Good: The instruction observed at SMS 2.4, appears to have followed the instructions contained in the Facilitators Guide for the training of the particular module.	WAUD007.012.1336	
Concern: In the Glenbrook monthly report, ART claims to have 100% satisfied recommendation 2iv. In part this has been attained by providing a practical component to SMS training. According to the Manager ART this aspect has infact not been achieved - accordingly SMS is predominantly a knowledge based assessment.	#04482 and CG18/MR12	
There may be a lack of awareness of the State Rail Safety standards across State Rail (might have some pockets that are aware). For example, in one specific case of an interview with a safety officer who has been in the safety game in state rail since 2001 he didn't even know that State Rail Safety standards actually existed. Their is a suspicion that this may be a systemic issue across the board and warrants further investigation to verify.		
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Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0002, RCS Workstation User Guide	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0287, ATRICS Workstation Operator Course Trainee Handout Booklet	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0197, ATRICS Workstation Operator Course Trainer Guide	
SMS does not reflect Safety Elements	CG18MR12	
Concern: Are the people at Petersham qualified to make an assessment of a workplace incident and devise a - costly and possibly time wasting 'corrective course' of action? Difficult to see how such exercises could be beneficial in the case where a safe working breach is found to be the fault of other contributing factors rather than the driver.		
Concern: ART and RIC training institutions were one entity which was split approximately 3(?) years ago. - Latest rumour is that the two entities will once again unite. This process needs to be analysed and planned if it is to be successful and effective.		
	MN1MR02	
Good: Instructors can be delivered any important amendments to procedures and the like through the 'Stop Press' process. Due to time constraints, this process was not interrogated.	CG08/BB07	
	MR18JE31	
Good: Evidence from DART illustrates how ART has been satisfying the requirement to meet Driver SMS training.	(Item 04351)	
	KL01/NB01/PO 01	
Good: Evidence from DART illustrates how ART has been satisfying the requirement to meet Guard SMS training.	(Item 04351)	
	MR04CG01	
	MR01BB01	
	MR08CG11	
This assessment is made specifically to x	MB05	
	NI07JE08	
	MR04CG01	
	NI12_BB09	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
RailCorp	Group General Manager	21-Mar-2004	6.1		No evidence of adequate sms training could be produced, safety manager had not received any significant SMS training.	Verbal verification by the safety manager
StateRail	ART	21-Mar-2004	6.1		OSM SMS Training: As at 8 Mar, 53 of 65 OSM's had completed SMS round 2.4	Proof of training is captured in DART Graphs of OSM SMS training (Item 04351)
StateRail	PFM	21-Mar-2004	6.1		PFM have a backlog of safety critical and technical training.	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper
RIC	Train Services - Train Ops - Rail Management	21-Mar-2004	6.1		Planning for training is not effective at RMC	No evidence of training needs analysis being conducted at RMC. The Position Description of the RMC training coordinator [04487] specifically states as #1 accountability - "underatke a Training needs analysis in all areas of the RMC.....to develop...long term training and development plan"....
StateRail	ART	21-Mar-2004	6.1		Quality and relevance of training from Petersham: Audit interviews suggest there is a level of dissatisfaction with training. A full analysis of comments is currently being undertaken.	Sample Reality Centre critique results (SMS 2.4) refer to WAUD.007.012.1568. For Interview comments refer to #04575.
StateRail	Capital Works	21-Mar-2004	6.1		The Capital Works safety manager has a high level of training in SMS issues.	INTERVIEW REFERENCE: BMB_22
StateRail	PFM	21-Mar-2004	6.1		The PFM safety manager has a high level of training in SMS issues.	INTERVIEW REFERENCE: BMB_10
StateRail	PFM	21-Mar-2004	6.1		There are critical training deficiencies within PFM. There is a shortage of staff in PFM depots to meet both operational demands and training needs. A significant portion of PFM staff have not completed mandator safety training. Training practices in PFM have not enabled PFM to comply with legal legislative and regulatory requirements.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0571, Passenger Fleet Maintenance - Training Interim Report
RailCorp		21-Mar-2004	6.1		There is no program or plan to provide SMS training for middle and upper level management	When asked at interview CG21MR13 about SMS training for middle and upper level managers X responded that there has been no SMS training for these persons and at this time there is no plan to provide this training. X added that such a plan would require a directive from the CEO. NOTE the Safety Reform Agenda (04437) makes reference to Safety Science (?) training for Senior and middle management but this is only a draft plan at this time.
RailCorp	SRA	21-Mar-2004	6.1		There is no SMS training for management at present though it is planned to introduce some as part of the Safety Reform Agenda program.	Documents: Safety Reform Agenda meeting minutes 17 Feb 04 reg 4224
StateRail	Train Operations	21-Mar-2004	6.1		Traincrew at Central Station believed they were fully accredited for tasks they carried out	Safety cards produced for Safeworking training records as per example in WAUD.007.005.0294
StateRail	Station Operations	21-Mar-2004	6.1		Training is supplied to key station staff	Training records in the DART database confirm that this training takes place and that all safeworking qualified employees attend See WAUD.007.005.0294
RailCorp	Duty Manager	21-Mar-2004	6.1			When asked at interview MR05BB04 about SMS training x replied that training at Petersham is very Safework focussed, not SMS focussed
RailCorp	Duty Manager	21-Mar-2004	6.1			When asked at interview MR05BB04 about the quality of SMS training x replied that 95% of people believe that SMS training at Petersham is a waste of time
RailCorp		21-Mar-2004	6.1			At interview CG18MR12 when asked about the SMS training responded that there was a requirement to focus on SMS training from the Top down. Mangers need to provided with a list of their obligations and responsibilities. "I Cannot for example hold the risk if people have not shown up for rostered training".
StateRail	ART	21-Mar-2004	6.1		Management SMS Training: No internal SMS training for Managers - focus is solely on Safe working personnel. SMS training for SRA staff is sourced from outside the organisation from suppliers such as Qantas - but this is not commonly occurring.	Interview CG1/MR4 with X.
StateRail	ART	21-Mar-2004	6.2	This training is appropriately updated for changes in the SMS*	Process for Recurrent Training: The process is in place to ensure recurrent SMS training is conducted on a continuous basis. Current 16 week cycle is being achieved by ART, but is a burden on operations. 16 Week cycle based on benchmarking rather than Training Needs Analysis.	Statement regarding Benchmarking refer to interview with X (CG21/FL14). Email suspending SMS (Yet to be delivered from ART Petersham).
RailCorp	Station Masters	21-Mar-2004	6.2		There is adequate process to ensure that personnel receive initial and recurrent training on a regular basis, however it can not be stated whether the training provided is appropriate	Registry number 04110
RailCorp	Group General Manager	21-Mar-2004	6.2		There is an adequate process.	Records were sighted at Petersham - showing that safety training was given every 16 weeks. It was not ascertained whether this training was appropriate or adequate
StateRail	ART	21-Mar-2004	6.2		SMS Updates: An adequate process is in place to capture updated changes to SMS training.	WDOT.005.001.0898 for SMS training Management Flowchart.
RailCorp	Human Resources	21-Mar-2004	6.2.1	There is an adequate process to ensure that these personnel receive initial and recurrent training on a regular basis*	Accountability for organisatioual training needs analysis is not well defined	Interviewee indicated that they were unhappy with the way RailCorp dealt with training needs analysis and validated auditors' thought that responsibility for training needs analysis is not defined for the organisation. Refer to Policy and Procedures Training and Development Manual. [WAUD.007.003.0207] This document does not define how organisational training needs are developed. Section 2, Procedures alludes to working with "customers" to define training requirements but there is no part of this manual that deals with an overall strategic training needs analysis. Inerveiwee plans to address this issue.
StateRail	Train Crewing	21-Mar-2004	6.2.1		Annual assessment of train crew (part of accreditation process) is reported to be behind schedule	Interviewee noted that accreditation of drivers is behind schedule because of the shortage of OSMs.
RailCorp	Crew Area Management	21-Mar-2004	6.2.1		Competency of OSMs questionable	Interviewee claims that OSMs are not able to train both inter city and suburban crews. Most OSMs can only train one group of crew members. Goal is to have OSMs able to train all crew to allow greater flexibility.
StateRail	Station Management	21-Mar-2004	6.2.1		Initial and recurrent training is provided, however the relvance of the SMS training is questioned by many staff	MB02_KL personnel records sighted DRMB28 reg 04110
RIC	Train Services - Train Ops - Rail Management	21-Mar-2004	6.2.1		Process for training and assessment of train controllers is not fully developed	Evidence from X indicates that assessment process is in constant flux. Process of accreditation is poorly documented -no evidence of a doicumented process at this time. Shortage of trainers and asessors to maintain ongoing assessment requirements for train controllers. Variuos assessment records provided [eg WAUD.007.004.0138, but no plan that ties all of thesde assessments together. New assessments developed - Eg [WAUD.007.004.0011] Safeworking Cource exercises rules and procedures. There is evidence of ongoing coaching to complement the assessment process , for example daily review of train controllers graphs, but not part of an overall training and development process or plan. Note example of follow up coaching with controller [para 43 of interview NI06JE07]

Observations	Interview/Document Review ID	Ratings for Finding
	KL02/NB02/PO OB1	
Good: Evidence from DART illustrates how ART has been satisfying the requirement to meet OSM SMS training. However, the charts reveal a downward trend where OSM's attendance has been falling away.	(Item 04351)	
	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper	
	NI06JE07	
Concern – is Petersham delivering the course as per the Pilot? The strong negativity felt about Petersham courses from the field suggests raises questions about the validity of the Pilot Courses. Auditors requested data relating to 'end of course feedback' (course critique) forms for SMS training - the results provided were favourable for both the SMS training and the reality centre scenarios. This contrasts with the reports from audit interviews. This conflict of results is perplexing to some degree and cannot be validated without expending considerable time and resource to evaluate the training situation.	WAUD.007.012.1568	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_22	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_10	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0571, Passenger Fleet Maintenance - Training Interim Report	
	CG21MR13	
	Documents: Safety Reform Agenda meeting minutes 17 Feb 04 reg 4224	
	BB11_JE16 BB12_JE17 BB13 -JE18 BB14_JE19 BB15_JE20	
This assessment is made specifically to C/Town Station.	MR05_BB04	
SMS training is heavily focussed on Safework	MR05BB04	
SMS training at Petersham is not well regarded	MR05BB04	
	CG18MR12	
Concern: SMS training is currently only scheduled for those personnel conducting Safe working tasks. Accordingly it was assumed that managers were not receiving SMS training. This was confirmed by X. Some personnel (unidentified ) had received SMS training externally through organisations such as Qantas.	CG1/MR4	
Concern: Train Crewing consider SMS rostering as a drain on their primary resource (up to 5,500 personnel every 16 weeks according to X). The 16 Week cycle was determined using benchmarking from other railways. According to X, benchmarking indicated that there should be a daily intervention 3 to 4 times per year, hence the 16 week cycle. Given that SMS training has now been suspended until June 1 it would seem that SRA cannot support a continuous 16 week cycle. Perhaps benchmarking was developed in isolation and did not assess the risk associated with human resource implications? This may have been avoided had a full Training Needs Analysis and risk assessment been conducted to validate the effect on benchmarking?	(CG21/FL14)	
	KL02/NB02/PO OB1	
Good: As the current SMS training system is on a 16 week cycle, there is ample opportunity to update the information on an as required basis. The process for developing each SMS module is based on a number of inputs to the Safe working training committee. This includes incident data, Risk data, safe working rules, operator specific procedures, and OH&S. Although the committee meeting Minutes have yet to be received, it is difficult to confirm that what is detailed in the SMS training management flowchart is being implemented. Not withstanding this fact, the process as detailed and described to the auditors seems to have been designed to capture updates.	WDOT.005.001.0898	
	NI16 MB07	
	NI23BB22	
	NI04 / CG04	
	MB02_KL, DRMB28	
	NI06JE07	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
RailCorp	Crew Area Management	21-Mar-2004	6.2.1		Resources for effective safety management inadequate and do not meet Glenbrook recommendation 14 regarding ratio of inspectors / OSMs to crew	OSMs are required to conduct performance management interventions (training, coaching and competency assessment) at least 4 times annually on all crew. Numbers presented to auditors indicate that this is a near impossibility in this area [03546 Business Requirements - handwritten note]. OSMs have a variety of duties they are required to fulfil. CAM claims that OSMs are unable to fulfil these duties effectively.
StateRail	Train Operations	21-Mar-2004	6.2.1		Responses from traincrew at Central Station indicated that they had currency and training both refresher and changes to SMS was carried out every 16 weeks	Safety cards produced for Safeworking training these cards can only be held if all training and retraining requirements are met Training records WAUD.007.005.0294
RIC	Train Services - Train Ops - Rail Management	21-Mar-2004	6.2.1		Training regime at Petersham does not meet the needs of its customers	Interviewee unhappy with Petersham training arrangements. NO Training needs analysis done by Petersham to his knowledge. Petersham is an awkward place to get to for RMC staff according to interviewee - they prefer to be trained at the RMC. If trainees dont arrive exactly on time to ART for training they are not allowed to undertake the training. Training developed under direction from ART and given to RMC trainer one day and expected to deliver the training the next day. Topics of training developed by Petersham do not meet RMC needs. RMC has developed own training and assessment regime. Training records maintained at RMC under 2 categories - Safeworking training - SMS (Petersham required), and Safeworking training Other (RMC specific) [WAUD.007.004.0068-71]. RMC specific assessments developed. Eg [WAUD.007.004.0011] Safeworking Course Exercise Rules and procedures 6/2/04. Trainees do not like being mixed up with Drivers and Guards in their training. There is not enough quality time allowed for training according to interviewee. Petersham trainers lack relevant expereince according to interviewee.
RIC	Train Services - Train Ops - Rail Management	21-Mar-2004	6.2.1		Training regime at Petersham does not meet the needs of its customers	RMC have withdrawn from the Safety Training and Review Committee because interviewee has lost faith in effectiveness of this committee. No evidence of follow up action to try to remedy situation. Reasons for this withdrawal due to composition of committee (mostly union reps and little management representation) and perception that agreements in this committee are not followed through in training that is developed.
RailCorp	Rail Management Centre (RMC)	21-Mar-2004	6.2.1		Training regime at Petersham does not meet the needs of its customers	Suggestion by interviewee that training of RMC controllors needs to be organised differently. Informal feedback from controllers when they attend training at Petersham is that training was a waste of time because mixing drivers and controllers does not help his controllers address their specific problems. Quote " controllers have a higher level of knowledge than drivers"... " drivers pull controllers down to their level rather than getting controllers to hash their issues.. to a higher level of understanding".
RailCorp	Train Services Operations	21-Mar-2004	6.2.1		Training regime at Petersham does not meet the needs of its customers	Interviewee noted that Petersham training facility is unable to meet the needs of the organisation. Also needs specialist training such as advanced incident investigation that preferred provider is external agency.
StateRail	Safety Executive	21-Mar-2004	6.2.2	This training is appropriately updated for changes in the SMS*	DART training database tracks needed and recurrent training available to all managers, training is updated	MB05 11th Feb DART database example output reports DRMB53 reg 03727
StateRail	Signalling	21-Mar-2004	6.2.2		The recurrent training for signallers at Sydnam Signal Box is not focussed on the ability of the employee to carry out a task using the training but rather their ability to memorise something and regurgitate it immediately after learning it	Interview NI12_BB09 the interviewee indicated that no assement of signallers were carried out in the workplace to ensure they can use the knowledge they get from Petersham in a practical sense
RailCorp	Rail Management Centre (RMC)	21-Mar-2004	6.2.2		Training regime for train controllers exists	In-house training conducted for train controllers. Workbook assessment conducted every 2 months. Training day built into roster. No documentation gathered.
StateRail	Train Operations	21-Mar-2004	6.3	All staff are aware of the SMS and their role and responsibilities in relation to the system	None of the traincrew at X Station questioned showed any real knowledge of a SMS	Interviews BB11_ JE16 BB12_JE17 BB13 -JE18 BB14_JE19 BB15_JE20 Question 8 of a prepared set of questions Q 8. Can you explain what a safety Management system is?
StateRail	PFM	21-Mar-2004	6.3		SMS Training for Supervisors and Running Foreman of shunters in PFM may not be providing them with the necessary knowledge to make them aware of their safety responsibilities.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Emails about SMS Training for Running and Senior Supervisors in PFM INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Email to , Subject: SMS Training for Running and Senior Supervisors in PFM, Dated: 12/17/02 INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Two Emails INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, RE: SMS Training for Supervisors and Shunters, 12/5/02r Subject:SMS Training for Senior and Running Supervisors of Shunters, Dated 12/9/02 and 1/9/03 respectively
StateRail	Safety Executive	21-Mar-2004	6.3		Staff are aware of SMS, their role in regard to the overall operation of the SMS is not defined except where specific training modules prescribe behaviour. Conceptual and context knowledge is lacking	MB05 11th Feb Rigorous training regime for specific modules DART database example output reports DRMB53 reg 03727
RailCorp	Training & Development	21-Mar-2004	6.3		Staff are not aware of the SMS and their SMS responsibilities.	At interview MR04CG01 responded that staff have not been trained in SMS. RailCorp uses SMS as a convenient term for Safework training
RailCorp		21-Mar-2004	6.3			At interview MR01BB01 X (manager) could not describe the elements of SRA's SMS
StateRail	ART	21-Mar-2004	6.4	All levels of staff are appropriately trained with regard to hazards they face in their work place*	Appropriate Levels of Training (Drivers and Guards): Training requirements including competencies for drivers and guards is documented. However the detail contained in the Assessment Record Book is less than optimal in terms of behavioural markers.	Item 04542 Assessment Record Book - Rail Operations Guards (Pg 44 for Driver Incapacitated). WAUD.007.012.0553 for OSP 19
StateRail	Train Operations	21-Mar-2004	6.4		Element partially demonstrated but only in that traincrew at Central Station could identify risk as presented to them at a low level	Interviews BB11_ JE16 BB12_JE17 BB13 -JE18 BB14_JE19 BB15_JE20Question 8 of each Interviewees cited examples of when they used it which demonstrated an knowledge and application of risk Management
RailCorp	Group General Manager	21-Mar-2004	6.4		From the Sample of staff interviewed there were some who were aware of the alleged SMS training and their roles and their responsibilities.	Interviews across 'board' and the presentation given on the 5th of March
SRA	ART	21-Mar-2004	6.4		Hazard/Risk Training: Training in risk management has been provided by ART as follows: Year 2000, 220 personnel (WO38). Year 2001: 34 pers (WO38),660 pers (WO41). Year 2002: 245 pers (WO38), 223 pers (WO41), Year 2003:350 pers (WO38), 56 (WO41), 27 (WO38), Year 2004: 18 pers (WO41).	Document # 04351 for Risk Course listed in DART and course descriptions as per SRA Intranet.
StateRail	Station Management	21-Mar-2004	6.4		Hazards are identified with at least on-the-job training	MB02_KL , sighted hazard manual DRMB25&26 reg 04110
StateRail	Station Operations	21-Mar-2004	6.4		Local training supplied by site management at Station	Interview MR05_BB04 the person being interviewed indicated in the interview that he carried out training of staff at Station
RailCorp	Duty Manager	21-Mar-2004	6.4			When asked at interview MR05BB04 if he was trained for all of his tasks, x responded that he was.
StateRail	ART	21-Mar-2004	6.4		Appropriate Levels of Training (Drivers and Guards): Drivers and Guards undertake a practical assessment at Everleigh during TMS training. Non-crew safe working only receive theoretical training in Emergency Door Release due to a lack of train assets.	SMS 2.4 Facilitator Guide: WAUD.007.012.1346 for level of instruction in SMS training. Interview CG26/MD15 for clarification advice on who receives practical training and who does not.

Observations	Interview/Document Review ID	Ratings for Finding
	NI04 / CG04	
	BB11_ JE16 BB12_JE17 BB13 -JE18 BB14_JE19 BB15_JE20	
	NI06JE07	
	NI06JE07	
	NI01 / JE01	
	NI05 / JE06	
	MB05	<div></div>
	NI012_BB09	
	NI01 / JE01	
	BB11_ JE16 BB12_JE17 BB13 -JE18 BB14_JE19 BB15_JE20	<div></div>
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Emails about SMS Training for Running and Senior Supervisors in PFM INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Email Subject: SMS Training for Running and Senior Supervisors in PFM, Dated: 12/17/02 INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Two Emails INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, RE: SMS Training for Supervisors and Shunters, 12/5/02r Fairfax to , Subject:SMS Training for Senior and Running Supervisors of Shunters, Dated 12/9/02 and 1/9/03 respectively	
	MB05	
	MR04CG01,MN01MR02	
No real understanding of SMS	MR01BB01	
Noted: The Guards Assessment Record simplifies competency and does not assist the assessor by providing behavioural markers (what does he/she look for when assessing??). Eg: the section 'Assessment Records Driver Incapacitated' identifies 7 competencies. In the sub-section related to Task Completion the assessor is asked 'Can the trainee explain the procedure for driver incapacitated and pilot valve failure' also 'Follow relevant procedures for powering, controlling and braking the train' - where are the behavioural markers for assessing level of competency? Furthermore, the relevant procedure (which is not referenced in the Assessment record book) is probably OSP19 (?) entitled Responding To An Incapacitated Driver. This procedure provides instructions for dealing with train that stops unexpectedly due to incapacitation, rather than accelerating (as per Waterfall). Although OSP 19 cross refers to 'Trains in Danger' (OSP 34), which procedure(s) applies in this case? The Assesment Record Book is a step in the right direction but requires a higher level of maturity for assessment of safety critical tasks.	<div></div>	
Risk Management as cited here by traincrews was of the type used when carrying out a job Safety Analysis as required under Workcover Regulations	BB11_ JE16 BB12_JE17 BB13 -JE18 BB14_JE19 BB15_JE20	
	KL02/NB02/PO OB1	
Good: Results suggest that SRA currently offers 5 Risk type courses. WO38 (Reducing Personal Risk - 3.5 hours), WO41 (Risk Assessment Awareness - no data available on intranet), WR01 (Workplace Risk Assessment and Control - 16 hours), WR02 (Risk Assessment Tools Application and Systems 16 hours) and WR 15 (Risk Assessment For PFM Supervisors - no data available on Intranet). Risk is also taught integral to SMS training courses, but as the packages were delivered late these have not been fully assessed by the auditors.	# 04351	
	MB02_KL, DRMB25,DRMB26	
	MR05_BB04	
Training is adequate	MR05BB04	
Concern: During a classroom presentation on Emergency Door release (SMS 2.4), there was no evidence of a practical component to accompany the knowledge based instruction. Clarification with Manager Petersham confirmed that only Train Crew receive practical training on the TMS course at Eveleigh. Non train crew are unable to receive such training because of lack of train resource. Perhaps an emergency door simulator could be procured with each new carriage so that all safe working personnel including emergency services etc could receive competency based training in this emergency evacuation procedure.	WAUD.007.012.1346 and CG26/MD15.	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
RailCorp	CEO	21-Mar-2004	6.5.1	Staff adequately trained to fulfil their safety roles and responsibilities*	Adequacy of training was not established - direct labour staff do receive refresher training. Unable to estalish whether staff received new safety information	Interview and later the training records were sighted at Petersham.
RailCorp		21-Mar-2004	6.5.1		Supplementary Crewmembers i.e. (Driver Observers), not trained to recognise driver incapacitation	Supplementary crewmember assessment form (WAUD.007.044.0239) shows that training focuses on brake pipe operation, communications and admonishment not to distract driver. No training is provided as to how driver incapacitation is to be determined or at what level of incapacitation the Observer should act.
StateRail	ART	21-Mar-2004	6.5.1		Adequacy of OSM Training: The claim that 40 of 60 OSM are partially incompetent, whilst being subjective, may be justified. If true, this represents a potentially serious gap in driver ongoing assessment. If correct, OSM's are not adequately trained for the tasks they have been assigned to do.	For comment from Interviewee refer to CG1/MR4. For OSM training Report refer to Item #4543 document 17.
StateRail	Station Management	21-Mar-2004	6.5.1		Initial and recurrent training is provided that includes SMS updates	MB02_KL training records sighted. DRMB28 reg 04110
StateRail	PFM	21-Mar-2004	6.5.1		SMS Training for Supervisors and Running Foreman of shunters in PFM may not be providing them with the necessary knowledge to make them aware of their safety responsibilities.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Emails about SMS Training for Running and Senior Supervisors in PFM INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Email from Roger Fairfax to , Subject: SMS Training for Running and Senior Supervisors in PFM, Dated: 12/17/02 INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, RE: SMS Training for Supervisors and Shunters, 12/5/02
StateRail	Safety Executive	21-Mar-2004	6.5.1		There is prescribed training for all safety roles, refresher training with updates	MB05 11th Feb DART database indicates need and completion status DRMB53 reg 03727
StateRail	Station Management	21-Mar-2004	6.5.1		train drivers and guards are assessed on a yearly basis for their field competence	MB03_KL - 5th February, with train driver OSM driver assessment conducted every year DRMB37 reg 04228
StateRail	Signalling	21-Mar-2004	6.5.1		Traincrew at Central Station are not adequately trained to fulfil their safety roles	Interview NI13_BB10 Interview stated he had never been trained on how to put in place a stop and block on the panel (Network rules this procedure is known as Controlled Signal Block NWT 308
StateRail	Station Management	21-Mar-2004	6.5.1		Traincrew at Central station are not trained for new safety information or changes to the SMS	Interview NI13_BB10 Interviewee stated he had never been trained on the ATRICS systems procedures for operations of the system however he was shown how to boot and reboot the system
StateRail		22-Mar-2004	6.5.2	Staff receive periodic refresher training*		
StateRail	Signalling	21-Mar-2004	6.5.3	Staff are trained for new safety information or changes to the SMS*	Traincrew at Central Station do receive periodic safety training at Petersham	Interview NI12_BB09 the interviewee indicated that training took place on a regular basis at Petersham and this training was recorded
RailCorp		21-Mar-2004	6.6	Training requirements for all staff are documented, including competencies, standards and recurrent training	Business Demand Training is developed and delivered outside of and independent of ART	When asked at interview CG21MR13 about Business Demand Training X responded that the purpose of this training was to have business units assume some responsibility for their own training. Interviewee acknowledged that quality control including task analysis and training validation was problem is Business Demand training.
StateRail	ART	21-Mar-2004	6.6		Competency Documentation (RMC): In terms of competency, personnel are either (a) not completing the associated paper work correctly, or (b) being deemed competent without the appropriate level of assessment. In the latter case, documentation does not reflect the true competence level of personnel.	WAUD.007.004.0130 (Reg #03687) For incomplete form. WAUD.007.004.0138 For correctly completed form.
StateRail	ART	21-Mar-2004	6.6		Documenting Training requirements (Drivers and Guards): Training requirements including competencies for drivers and guards is well documented.	Eg: Signal recognition Assessment 1 (WAUD.007.012.1504) utilised for knowledge based assessment, complimented by the practical assessment requirements detailed in the Driver Assessment Record Book (item #04542).
StateRail	Signalling	21-Mar-2004	6.6		The recurrent training is not focussed on the learning requirements of signallers (Sydney Signal Box)	Interview NI12_BB09 the interviewee indicated that training took place on a regular basis at Petersham but indicated it was not focused to a particular set of tasks but a generic set of rules
StateRail	Safety Executive	21-Mar-2004	6.6		Training requirements are documented, including competencies, standards and recurrent training	MB05 11th Feb DART database indicates need and completion status DRMB53 reg 03727
StateRail	ART	21-Mar-2004	6.7.1	There are processes in place that periodically review the effectiveness of training	Measuring Training Effectiveness: SRA Training Policy and Procedures Manual is incomplete - Section 5 Course Evaluation is non-existent.	WAUD.007.003.0207-0411 Section 5 Course Evaluation, (Policy and Procedures Manual Version 5 AL0) is void of any procedures. This was unable to be provided such when requested.
StateRail	ART	21-Mar-2004	6.7.1		Review of training effectiveness: Course critiques deemed to be the primary mechanism for determining and correcting effectiveness of training courses.	WAUD.007.003.0207 - 0411 and interview CG18/MR12 for comments regarding training review by Mgr ART Petersham.
RIC	Train Services - Train Ops - Rail Management	21-Mar-2004	6.7.1		No evidence of audit of training effectiveness at RMC	RMC training coordinator's PD calls for audits of training (accountability #7 in [04487 Position Description])). No evidence these audits have been conducted. Interviewee was asked direct question about auditing of assessment system - interviewee said there was no such auditing. No evidence of analysis of assessments to identify any opportunities for training improvements.
StateRail	PFM	21-Mar-2004	6.7.1		OH&S training requirements for PFM are reviewed as part of a formal process.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, OH&S Training Review Committee INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Item 4.8 Apprentice Training - Safety (OH&S) Training Review Committee Minutes INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Re: Item 4.8 Apprentice Training - Safety (OH&S) Training Review Committee Minutes
RailCorp	SRA	21-Mar-2004	6.7.1		Training effectiveness is measured through course critique (happy sheets) but not validated on the job. This is unsatisfactory and creates a skewed response giving a falsely positive result to training effectiveness perception by ART, compared with a very negative response by attendees in the field.	Interviews: MN15/CG23 Documents: WAUD.007.012.1532, 27-Feb-04, ART Training evaluation sheet WAUD.007.012.1568, 27-Feb-04, Reality Cente Questionnaire results, SMS 2.4
RailCorp	SRA	21-Mar-2004	6.7.2	This review includes all training and verifies that safety issues have been properly addressed and are relevant*	Not all training is conducted at ART, for example Stations run their own evacuation practice training	Interviews: MN9/KL17 MN13/JE24
RailCorp		22-Mar-2004	6.8.1	There is a process for informing and training personnel on new work practices, procedures, policies and standards		
StateRail	Signalling	21-Mar-2004	6.8.2	This process assures that appropriate safety issues are included*	The process used for traincrew at Central Station appears to be adhered to on an ad hoc basis	Interview NI13_BB10 The interviewee stated the he signed for documents when they were explained to him by his supervisor but this did not happen very often
RailCorp		21-Mar-2004	6.9	Training personnel have appropriate competencies	Manager Training at ART is apptropriately qualified	At interview CG18MR12 when asked about qualifications responded that she/he has completed: Advanced Certificate in Management , Cert 3 in Frontline Leadership, 7 modules of the Senior Management Development program at UWS, RISKe training, Dupont Safety Traning, Saftywise Incident Investigation training and is a Cert 4 Qualified trainer (Old Cat 2 RPL)



Observations	Interview/Document Review ID	Ratings for Finding
	KL01/NB01/PO 01	
	WAUD.007.004.0239	
Concern: Interviewee suggested that of the 60 workplace assessors (Team Leaders/OSM's) 40 were partially incompetent. Difficulties associated with OSM training is evidenced in the Operations Standards Managers Report on Initial Training. The report is quite forthright and damning (refer to #04543 dated 16/11/03). Issues identified by the trainee OSM's include: include lack of resources, lack of time, lack of support, poor assessment practices, etc. The author of the correspondence states 'while the responses were overwhelmingly biased toward negative factors, this is quite normal and is not in itself anything about which to be concerned'. Unfortunately the letter is unsigned (but contains a note of action to, presumably, to ).	CG1/MR4 and 4543 document 17	
	MB02_KL, DRMB28	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Emails about SMS Training for Running and Senior Supervisors in PFM INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Email Subject: SMS Training for Running and Senior Supervisors in PFM, Dated: 12/17/02 INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, RE: SMS Training for Supervisors and Shunters, 12/5/02	
	MB05, DART reports	
	MB03_KL, DRMB37	
There seems to be no specific follow up training designed specifically for Signallers	NI1_BB17	
	NI1_BB17	
	NI012_BB09	
	CG21MR13	
Concern - The poor quality of Competency Assessment documentation (probably developed in isolation at RMC) is clearly evident outside ART. Samples of Assessment forms from RMC show a lack of configuration and origin. Indeed one sample Assessment form is incomplete and yet the candidate has been signed off as Competent - this is an interesting sample as half the form is not filled out yet the result was a determination of competence. No explanation given by interviewee as to why this was the case. An example of how the form should be correctly filled out was also obtained.	#03687 and WAUD.007.004.0138	
Noted: Competencies for Guards and Drivers is documented in the Assessment Record Book. From a training perspective, drivers and guards must complete both a Knowledge based assessment (conducted at Petersham) and a skill based component as Per the Assessment Record Book. The Assessment Record Book provides evidence to ART that the competency requirements are being satisfied. Whether or not the 'Driver Trainers' in the field are applying competency assessment satisfactorily could not be objectively evidenced.	(WAUD.007.012.1504 and item #04542.	
	NI12_BB09	
	MB05, DART reports	
Concern – Critical section of the Policy and Procedures Manual (Section 5 Evaluation) is missing. ART personnel are able to describe the evaluation of courses at the 'Pilot' stage which is also identified in Section 2 of the Manual. however, a procedure for formally conducting evaluation does not exist. Instructors seem to believe that the pilot course together with endof course critiques amount to a valid evaluation. Formal course evaluation should be considered for all Safety Critical training.	WAUD.007.003.0207-0411	
Good: 'Course Critiquing' is provided at the completion of each training course. Interviewee stated that various courses are also reviewed from time to time but this could not be validated given Section 5 (Course evaluation) does not exist in the Policy and Procedures Manual.	WAUD.007.003.0207 - 0411	
	NI06JE07	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, OH&S Training Review Committee INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Item 4.8 Apprentice Training - Safety (OH&S) Training Review Committee Minutes INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Re: Item 4.8 Apprentice Training - Safety (OH&S) Training Review Committee Minutes	
	Interviews: MN15/CG23 Documents: WAUD.007.012.1532, 27-Feb-04, ART Training evaluation sheet WAUD.007.012.1568, 27-Feb-04, Reality Cente Questionnaire results, SMS 2.4	
	Interviews: MN9/KL17 MN13/JE24	
Staff in this signal box did not seem to know or care to look at any written procedures where they existed	NI1_BB17	
	CG18MR12	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	Station Operations	21-Mar-2004	6.9		Staff at Station do not have all the required competencies to carry out on site training	Interview MR05_BB04 in response in the interview indicated that he carried out training of personell but the interviewee had no fomal training as a trainer
RailCorp	SRA	21-Mar-2004	6.9		Training personnel have either safeworking or trainer qualifications, and have done a train the trainer course through ART. However they have not been trained adequately in SMS, Risk and HF theory.	Interviews: MN15/CG23 Observations: CG15/MN10 SMS2.4 training MN11/CG16 train the trainer
StateRail	ART	21-Mar-2004	6.10	There is a process to inform training personnel of changes in the system that could affect training*	Changes to training: There is no formal process for reporting training concerns by staff. Personnel can provide input through various channels ranging from written to advising supervisors.	Interview CG14/KL15 – interviewee described a system for reporting training deficiencies. Evidence from interview was that there was no formal structured system in place.
StateRail	ART	21-Mar-2004	6.11	There is an adequate process in place to maintain training records, monitor them, and update when appropriate	Maintenance of Training Records: Nil finding. Auditors awaiting deliverable from ART Petersham.	Awaiting data pack including a summary of Glenbrook recommendations from Mr Ron Devit. Nil record on DART confirmed with another (telecon CG#24).
StateRail	ART	21-Mar-2004	6.11		Maintenance of Training Records: There is an adequate system for recording training results at ART - known as DART. However the training records for personnel outside ART jurisdiction (driver recurrences, OSM assessments etc) are on the SRA HR data base (MIMS).	ID 04351 is a collection of plots illustrating the Actual, Variance and Target training numbers for SMS. WAUD.007.005.024 (ID 03727) is a sample printout of current courses.WAUD.007.005.0281 is a sample print list of courses delivered since Jan 03. WAUD.007.005.0295 is a list of drivers requiring SMS recertification. WAUD.007.005.0294 (Pg 1 of 26) is an SMS Rounds Report.
RIC	Train Services - Train Ops - Rail Management	21-Mar-2004	6.11		Records of training/ assessment inadequate at RMC	Assessments sampled [eg WAUD. 007.004.0138] show incomplete sign off, incomplete fill out of all required fields (eg no reassessment date noted).
StateRail	Safety Executive	21-Mar-2004	6.11		The is an adequate process in place to maintain training records, monitor and update	MB05 11th Feb DART database indicates need and completion status DRMB53 reg 03727
StateRail	ART	21-Mar-2004	6.11		Maintenance of Training Records: The ART training record data base has been tested (Test and Evaluation plan not requested). No operator manual - deemed unnecessary as the data base is a standard Commercial off the shelf item.	Interview MR15/CG22.
RailCorp		21-Mar-2004	6.12	Safety training aligns with identified hazards in safety assessments, audits, or accident reports (especially newly identified hazards)*	Safety training for Supplementary Crew did not align with safety hazards	At interview MR04CG01 X reported that training for Guards to sit in the front cab with drivers was developed outside the authority of the Director. This statement was accompanied by a Supplementary Crew Assessment form WAUD.007.004.0239...
RailCorp	SRA	21-Mar-2004	6.12		SMS training does incorporate aspects of relevant hazards from accidents such as the Hexham accident, issues from Waterfall and Glenbrook.	Observations: CG15/MN10 SMS2.4 training Documents: WAUD.007.012.1336, 4-Oct-03, SMS 2.4 Facilitator guide WAUD.007.012.1524, 5-Feb-04, SMS 2.5 Train crew lesson plan
RailCorp	SRA	21-Mar-2004	6.13	Training programs adequately cover human factors issues (e.g., driver performance)*	Current SMS training programs do not adequately cover human factors issues. Trainers do not adequately understand the issues, course content needs refinement, and delivery is not made relevant to the job context.	Observations: CG15/MN10 SMS2.4 training Documents: WAUD.007.012.1336, 4-Oct-03, SMS 2.4 Facilitator guide WAUD.007.012.1524, 5-Feb-04, SMS 2.5 Train crew lesson plan
RailCorp	Training & Development	21-Mar-2004	6.13		There is no HF training for RailCorp employees	At interview MR04CG01 X reported that at this time there was no Human Factors training for RailCorp employees
StateRail	ART	21-Mar-2004	6.13	hkklj;lk	SMS for Human Factors: SMS training is strongly focussed on OH&S and Track Safety. SMS has tried to broaden its scope into CRM and HF (Swiss cheese model in round 2.4 for example).	Refer to interviews BB7/CG8 and MR8/CG11 where the SMS instructors describe SMS. Still awaiting SMS course materials for a broader examination of the extent to which the 15 elements are being instructed.
RailCorp	SRA	21-Mar-2004	6.14	There is adequate team-based training that includes important principles of crew resource management, management, and safety-critical decision making*	Current team based training initiatives are inadequate. "Team concepts" are briefly addressed in the SMS recurrent training modules. Initial attempts at CRM training through the SAVE program were stopped after successful trial. There are plans to resurrect this training program in the Country link network through Customer services division.	Interviews: MN1/MR2 MN2/BB2 MN03/LN13 V2 Observations: CG15/MN10 SMS2.4 training Documents: WAUD.007.012.1336, 4-Oct-03, SMS 2.4 Facilitator guide WAUD.007.012.1524, 5-Feb-04, SMS 2.5 Train crew lesson plan 5-Mar-04, RailCorp Safety Management Presentation, reg # 4197
StateRail	ART	21-Mar-2004	6.14		Team based training: No effective CRM program evidenced..	CRM Train Crew Lesson Plan for SMS 2.5 (WAUD.007.012.1524) illustrates the current status. Contract with Werner Naif (ref #04338) is being drafted.
StateRail	ART	21-Mar-2004	6.14		Team based training: Training has been traditionally conductedin isolation between groups. Communication is encouraged, but no formal CRM program exists.	Interview with X (BB19/CG19) which states there is no link between driver and guard in the three year post grad phase of training.
RailCorp	Training & Development	21-Mar-2004	6.14			At interview MR04CG01 X reported that the initial trial of CRM training for drivers and guards was found to be inadequate. It was pitched at too high a level and was not sufficiently adapted for the rail environment.
StateRail	ART	21-Mar-2004	6.14		Team based training: Effective team based training (CRM) remains in its formative stages to date.	SMS 2.5 Train Crew Lesson Plan (WAUD.007.012.1524)
StateRail	ART	21-Mar-2004	6.14		Training and HF: CRM is being formally introduced using personnel with appropriate knowledge and background. Results of training should commence in the coming months.	Contract (evidence #04338)
RailCorp	SRA	21-Mar-2004	6.15	Contractors and visitors are appropriately trained in safety before entering hazardous areas*	Auditor visits to rail facilities were given appropriate safety briefings before entering hazardous areas	Observation: Visit to Everleigh by audit team 20 jan 04
StateRail	State Rail	21-Mar-2004	6.15		State Rail has a documented procedure concerning Contractor and Visitor Safety	DOCUMENT REFERENCE: State Rail Safety Standard 11 , Contractor and Visitor Safety
StateRail	Station Operations	21-Mar-2004	6.15		There is appropriate training for visitors and contractors entering hazardous areas at Station	Interview MR05_BB04 upon arrival to carry out the interview a site induction was carried out however it was fairly generic
StateRail	Station Management	21-Mar-2004	6.15		Visitors are familiarised with emergency evacuation	MB02_KL Interviewers were asked to familiarise themselves with the evacuation details



Observations	Interview/Document Review ID	Ratings for Finding
	MR05_BB04	
	Interviews: MN15/CG23 Observations: CG15/MN10 SMS2.4 training MN11/CG16 train the trainer	
Good: Users have channels to report training deficiencies up the chain to Petersham. However this was confirmed as an informal arrangement. Interviewee stated that there is no structured system, staff raise issues in writing. Training Standards Unit also provides a channel for feedback.	CG14/KL15	
Concern: The training Data Base, does not keep track of the recurrent training requirement for ART trainers to spend time back in the field. Glenbrook Training Recommendation 3, states that Trainers of Safety Critical Staff should have and maintain operational experience. Would seem logical that this requirement be recorded on DART, but it is not. Auditors are attempting to seek the information through Training Manager Petersham.		
Good: The current system for maintaining training records is DART (D is for David Chapman, the person who developed the data base). A demonstration of the Data Bases' capability suggested that the database provided a broad range of options ranging from tables through to plots.	ID 04351, WAUD.007.005.024 (ID 03727), WAUD.007.005.0281, WAUD.007.005.0295., WAUD.007.005.0294.	
	NI06JE07	
	MB05, DART reports	
Concern: Is DART approved/certified for use? The issue of IP together with Test and Evaluation of DART was discussed. DART was developed by Mr Chapman in response to an organisational need. Mr Chapman stated that there were no IP issues - the design belonged to SRA because it was created by him whilst at work in SRA time. He also claimed there was a series of tests undertaken where a series of scripts were developed by IT personnel who manage MIMS. No procedures manual was developed for DART - argument being that it is a standard commercial off the shelf data base.	MR15/CG22.	
	MR04CG01, WAUD.007.004.0239	
	Observations: CG15/MN10 SMS2.4 training Documents: WAUD.007.012.1336, 4-Oct-03, SMS 2.4 Facilitator guide WAUD.007.012.1524, 5-Feb-04, SMS 2.5 Train crew lesson plan	
	Observations: CG15/MN10 SMS2.4 training Documents: WAUD.007.012.1336, 4-Oct-03, SMS 2.4 Facilitator guide WAUD.007.012.1524, 5-Feb-04, SMS 2.5 Train crew lesson plan	
	MR04CG01	
Concern: SMS training seems to be a combination of OH&S plus track safety rather than the broader 15 elements. Need to consider the organisational impact of not educating in the notion of a broader SMS?	BB7/CG8 and MR8/CG11	
	Interviews: MN1/MR2 MN2/BB2 MN03/LN13 Observations: CG15/MN10 SMS2.4 training Documents: WAUD.007.012.1336, 4-Oct-03, SMS 2.4 Facilitator guide WAUD.007.012.1524, 5-Feb-04, SMS 2.5 Train crew lesson plan 5-Mar-04, RailCorp Safety Management Presentation, reg # 4197	
Concern: In the Glenbrook monthly report, ART claims to have 100% satisfied recommendation 2v1 which stated that training should place an emphasis on the importance of team work in rail operations. Difficult to see how there have been any significant improvements in communication between (say) drivers and guards based on the training provided to date. Auditors could not find any evidence of a legitimate CRM training program in response to Glenbrook. What is contained in SMS 2.5 (which has been placed on hold) is an elementary familiarisation.	WAUD.007.012.1524 and #04338	
Concern: Senior Driver Trainers focus on Drivers alone. There does not appear to be any focus on true CRM in the field during the 36 month probation period for driver training by the Driver training Standards Unit - instruction limited to encouragement of communication between driver and guard.	BB19/CG19	
Trial CRM training was not appropriate content and level for drivers/guards	MR04CG01	
Concern: A level of CRM was to be introduced in SMS 2.5 (delivery suspended until further notice). The standard may have been effective for familiarisation purposes but would certainly require enhancements to create a observable change in CRM behaviour in the field. SMS 2.5 Train Crew Lesson Plan (WAUD.007.012.1524) demonstrates the high level approach currently being implemented. Learning outcomes were: Define CRM, Identify skills for effective CRM, Communicate info and ideas clearly and concisely, Identify poor authority gradient, Explain procedures for random drug test. Time allocated Approximately 1 day.	WAUD.007.012.1524	
Good: Intention is to introduce CRM. The process will utilise the services of Werner Naif. 1 contract is signed and a second is in draft.	#04338	
	Observation: Visit to Everleigh by audit team 20 jan 04	
There may be a lack of awareness of the State Rail Safety standards across State Rail (might have some pockets that are aware). For example, in one specific case of an interview with a safety officer who has been in the safety game in state rail since 2001 he didn't even know that State Rail Safety standards actually existed. Their is a suspicion that this may be a systemic issue across the board and warrants further investigation to verify.		
	MR05_BB04	
	MB02_KL	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	Station Management	21-Mar-2004	6.16	SMS adequately supports the training regime*	The system adequately supports the identified training needs	MB02_KL Recurrent and initial refresher courses arranged for staff DRMB28 reg 04110
			7	<b>HAZARD IDENTIFICATION AND RISK MANAGEMENT</b>		
StateRail	State Rail	21-Mar-2004	7		State Rail has a documented procedure concerning Hazard and Risk Registers	DOCUMENT REFERENCE: State Rail Safety Standard 4.002 , Hazard and Risk Registers
StateRail	State Rail	21-Mar-2004	7		State Rail has a documented procedure concerning Hazard Identification and Risk Evaluation	DOCUMENT REFERENCE: State Rail Safety Standard 4.001 , Hazard Identification and Risk Evaluation
RailCorp	Station Masters	21-Mar-2004	7		Stations have a plant risk assessment document, (SRA Plant Safety Program dated April 2003 - uncontrolled when printed) This document specifically looks at the hazard of plant personnel, eg: entanglement	Documen was sighted
StateRail	Central Station	21-Mar-2004	7.1	There is an adequate process in place for identifying and reporting hazards	Central Station Security has been reviewed	[doc 04087, 9] Central Station Security Review Plan 2003, authored by Executive Station Manager makes several recommendations to improve security aspects of the station including: 1. improved fire inspections of doors and exit signs, 2. improved resourcing to give additional crowd control capability during periods of high security alert, 3. photo ID of all staff, 4. improved secirity patrols and 5. expansion of the fire management system 6. Review of City rail station emergency procedures to align with State Rails Network Incident Response Plan - especially terminology and alignment of responsibilities. NOTE: This 6th recommendation has not been followed up on. The evidence under 14.1 for the same interview highlights the inconsistencies that were identified by this review.
StateRail		21-Mar-2004	7.1		Existing Safety analysis standard in SRA does not adequately deal with organisational safety analysis and is focussed at the divisional level and below	Safety Standard 4.001 - hazard identification and risk evaluation WCOM.003.001.0128 deals with requirements for hazard identification in State Rail. The standard deals with hazard identification requirements in the dicisions but does not deal with organisational safety analysis and has no requirement for development of an organisational risk profile.
StateRail	ART	21-Mar-2004	7.1		Hazard Reporting to ART: Observation only - personnel have a means of communicating with Petersham but chooses not to use it.	Interview CG14/KL15 – interviewee admits there is a system but he does not use it.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	7.1		If the hazard idetification system includes a regular review was not determined.	
RIC	Corporate	21-Mar-2004	7.1		In SRA and RIC there is no effective process for systematic and proactive identification of hazards.	Process of systematic and proactive hazard identification in place from approximately 1989 to 1996. This process is summarised in a paper [doc04316] Safety Management and Hands On Approach, O.R Henry 1993. A process described as a fault tree analysis was used to identify hazards (modes, causes and reasons), contributing factors and controls. The identification process attempted to identify and rate "every imaginable" safety event in a brainstorming session involving managers and operators. No such systematic approach exists currently or at the time of Waterfall. Priority hazards are assesed annually in booth SRA and RIC [docs QEST, RIC plans] but the process is limited and is not based on a systematic and comprehensive safety analysis that existed previously.
RailCorp	Human Resources	21-Mar-2004	7.1		Organisational ability to readily identify sources of high impact risk is limited and gets clouded by industrial issues	Interviewee quoted example of datalogger installation "stalling" as an example of this. Interviewee thought that the safety imperative of installing this equipment was lost in the "fog" of industrial issues surrounding their use. There is a need to cut through the industrial "fog" when high impact risk issues arise and the organisation must be able to readily and objectively identify these issues.
RIC	Project Management	21-Mar-2004	7.1		Risk Register developed for Fire and Life Safety risks across SRA and RIC	Documents sighted during interview - shows evidence of hazard analysis and definition of critical controls and who has responsibility for the controls across SRA/RIC. Requested this document but it has not been received as of 18/3/04.
RailCorp	Station Operations	21-Mar-2004	7.1		Risk register for station ops in development	interviewee noted that a risk register for station ops was being developed by Julie Wills
RailCorp		21-Mar-2004	7.1		RMC Shift Manager does not have a process to identify data or trends on SPADS	At interview MR16BB23 when asked about SPAD trend information (SPAD Hot Spots) responded that RMC did not copllect and analyse data on SPADS. The interviewee said that this was the responsibility of thw engineers.
StateRail		21-Mar-2004	7.1		Safety analysiis is not effetively carried out to develop the organisational risk profile in SRA.	State Rail Authroity Safety Management System version 3 4/3/02 in element 4 decribes safety analysis methods. Section 4.1 hazard identification claims that state rail continues to use fault tree analysis techniques developed in 1989. No evidence has been found to substantiate this. The fault tree analysis is now only applied to coding incidents. The Safety Incident Database Manual WWAT.002.663.0001 describes the coding system based on the fault tree analysis. The SAD database WWAT.002.635.001.xls is a collection of incident data coded to the incident coding system. This has been the basis for the development of the priority hazard list in the past.
StateRail	Train Services	21-Mar-2004	7.1		Safety analysis is not currently being applied and used as a management tool in Train Services.	Interviewee noted that priority hazards were not clearly developed. Interviewee validated that such a priority or "top ten" list should exist for the area of responsibility. Interviewee noted that Train Services improvement plan [WAUD.007.013.0003] provided some focus although admitted the plan was very big and wideranging. There is no evidence of a risk basis for priorities established by the prevuios incumbent to this role.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	7.1		Station proceedures have in place a plant hazard identification checklist. There is also a "JUDGEMENT OF NEEDS INCIDENTS " committee/group that is conducted by THE DEPARTMENT OF TRANSPORT with attendance by rail organisation people.This appears to conduct a post incident risk assessment.	Registered Documents # 005.001.1148 and # 04110
RailCorp	Station Masters	21-Mar-2004	7.1		Stations have a plant risk assessment document, (SRA Plant Safety Program dated April 2003 - uncontrolled when printed) This document specifically looks at the hazard of plant personnel, eg: entanglement	Registry number 04110
StateRail	Station Management	21-Mar-2004	7.1		There is a process in place for identifying and reporting hazards at the local level	MB02_KL hazard register and safety committee meetings sighted DRMB24 & 25 reg 04110
RIC	Corporate	21-Mar-2004	7.1		There is little evidence to indicate that significant gains in organisation wide risk management have been made since Glenbrook.	Proactive and systematic identification, assessment and control of risk was most developed in period 1989 -1996 according to available evidence. Docs [04316] Safety Management and Hands On Approach, O.R Henry 1993; Rail Safety Audit System Safety Plans 1993/94 Part A Hazard Control Outlines Cityrail; Rail Safety Audit System Safety Plans 1993/94 Part B Register of Controls; Rail Safety Audit Group System Safety Risk Management Methods and Procedures - provide evidence of a systematic process that involved proactive identification, assessment and control along with monitoring and auditing of control effectiveness.
						Glenbrook final report [WCOM.002.018.0001 pages 54 to 77 ] examined the shortfalls of this approach (particularly the strong engineering focus and the weak focus on human factors) but established that it could have been expanded and updated as the core of an effective safety risk management system. There has been some development in risk management processes since Glenbrook but these processes are not established at the organisational level. Refer to examples of risk management application at site / division level.

Observations	Interview/Document Review ID	Ratings for Finding
	MB02_KL, DRMB28	
There may be a lack of awareness of the State Rail Safety standards across State Rail (might have some pockets that are aware). For example, in one specific case of an interview with a safety officer who has been in the safety game in state rail since 2001 he didn't even know that State Rail Safety standards actually existed. Their is a suspicion that this may be a systemic issue across the board and warrants further investigation to verify.		
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	NI 18 CG 17	
	doc review only	
Concern: Users seem prepared to complain about the quality but not necessarily report their concerns to management and subsequent consideration to Petersham.	CG14/KL15	
	NI24KL??	
	NI16 MB07	
	NI27JE28	
	NI09 BBLN BMB	
	MR18BB23	
	doc review only	
	NI29LN28	
	MB02_KL, DRMB24 & DRMB25	
	NI24KL	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	Signalling	21-Mar-2004	7.1		There is no adequate process for the reporting hazards at Station	interview NI13_BB10 The interviewee had no clear understanding of how reporting was to be carried out
RailCorp	SRA	21-Mar-2004	7.1		While there are various levels of hazard identification and reporting processes in existence throughout the organisation effectiveness is patchy.	Interviews: MN15/CG23 MN6/JE15 MN2/BB2 MN9/KL17 MN13/JE24
RailCorp	Health Stds	21-Mar-2004	7.1			When asked at interview MR01BB01 X responded that hazards were identified mostly from the OH&S Committee and post accident investigation.
RailCorp	Duty Manager	21-Mar-2004	7.1			At interview MR05BB04 X reported that risks are recorded in their hazard log book.
RailCorp	Duty Manager	21-Mar-2004	7.1			When asked at interview MR05BB04 about the a risk register X replied that his Risk Register was in his head.
RailCorp	Operational Safety	21-Mar-2004	7.1			When asked at interview MR07LN07 about the appropriateness of sending drivers to Petersham interviewee responded that some drivers out there need go to Petersham, most do not.
RailCorp	Corporate	22-Mar-2004	7.2	There is an adequate risk management process	Risk management practices vary greatly throughout RIC and StatRail. RailCorp faces a major challenge to develop an integrated, organisation wide risk management framework. The review team did not identify a comprehensive understanding of acceptable risk, justifiable risk or affordable risk.	LN22CD01_26.2.04, MN01MR02, NI29LN28_12.3.04, AR05LN06_5.2.04,meetings with CEO, Board, RailCorp Presentation to Review Team
			7.3	This process is documented	Other than in discrete elements of StareRail and RIC, an acceptable Risk Management Plan at the Corporate Level or Divisional Levels was not identified.	LN22CD01_26.2.04, meetings with CEO, Board
StateRail	Fire Services Unit	21-Mar-2004	7.4	There is a method in place that determines the effectiveness of risk treatment and controls	Fire and life safety management of underground assets may not be currently effective	Interviewee indicated that fire equipment maintenance, certificates of compliance may not be current. G2
RailCorp	RailCorp Corporate Staff	21-Mar-2004	7.4		Controls and defences are not periodically verified for effectiveness. Some controls are reviewed as part of incident investigations, but the incident management systems tend to imply that 'all is well' and that controls are ok.	Document WWAT.633.0001, WITS.416.001.0597
RailCorp	RailCorp Corporate Staff	21-Mar-2004	7.5	Appropriate staff are involved in the process	Both safety staff and line management are involved in the process.Qualifications of these staff members was not determined	Interview K3
StateRail	Station Management	21-Mar-2004	7.5		Local staff are involved in the local process	MB02_KL Safety Committee meetings DRMB 24 reg 04110
RailCorp	Health Stds	21-Mar-2004	7.6	All relevant staff have received adequate and appropriate training in risk management	Risk Management Training of incumbent Project Manager Health and Safety standards not adequate	At interview MR01BB01 X responded that he has received formal risk management training but that it was bout five years ago.
StateRail	Signalling	21-Mar-2004	7.6		Staff at station did not appear to understand the principles of risk management	Interview NI12_BB09 the interviewee failed to respond to a question specifically requiring a response indicating a knowledge of risk principles
RailCorp	SRA	21-Mar-2004	7.6		There is very little training in risk management in the organisation at all levels. What there is as part of the SMS recurrent training for safeworkers is inadequate for the purpose.	Interviews: MN15/CG23 MN6/JE15 MN2/BB2 MN9/KL17 MN13/JE24
RailCorp	RailCorp Corporate Staff	21-Mar-2004	7.6		Was not determined	
RailCorp	Station Masters	21-Mar-2004	7.7	Formalised safety or risk assessment process in place and documented*	Formalised plant risk assessment, is documented	Registry number 04110
StateRail	Station Management	21-Mar-2004	7.7		Local staff are involved in the local process	MB02_KL Safety Committee meetings DRMB 24 reg 04110
RailCorp	RailCorp Corporate Staff	21-Mar-2004	7.7		Safety and risk assessment processes are based on OH&S workplace safety risk methods.	WAT.002.022.0001
RailCorp	RailCorp Corporate Staff	21-Mar-2004	7.8	This includes methodical, systems-based hazard identification protocols are in place*	No protocols were sighted, the only hazard technique identified at a systems level was fault tree analysis which appeared to be applied using an event tree technique.	
StateRail	Station Operations	21-Mar-2004	7.9	Hazard inspection and abatement in place*	A Hazard inspection and abatement regime is in place at Stations and other work sites but is not applied at an organisational level with a focus on whole of organisation system safety hazards	The check list and daily inspection book for X station was Sighted and it was noted that it was correctly filled out and current
StateRail	Station Operations	21-Mar-2004	7.9		Duty Manager at carries out a daily inspection to ensure all current controls to identified hazards in place and functioning as they should and this inspection is also to used to check for emerging hazards	The check list and daily inspection book for X station was Sighted and it was noted that it was correctly filled out and current
RailCorp	Fire Services (ex)	21-Mar-2004	7.9		Effective Fire prevention inspection regime is not in place - contractors engaged for fire inspections possibly not being monitored for performance	Concerns raised by interviewee that fire inspection regime has not been conducted effectively since it was contracted out in 2001. No objective evidence available
StateRail	Station Management	21-Mar-2004	7.9		Hazard inspection and abatement is in place	MB02_KL Hazard Register, that includes an action list for resolution of hazards, Plant Risk Assessment DRMB 24&25 reg 04110
RailCorp	RailCorp Corporate Staff	21-Mar-2004	7.9		Refer 7.1 and 7.2	
StateRail	Station Management	21-Mar-2004	7.10.1	Adequate hazard resolution process in place*	Hazard resolution is actioned at local level where local resources can implement, but appears to be harder for large hazards to be resolved beyond local level	MB02_KL 5th Feb Hazard Register, that includes an action list for resolution of hazards, Plant Risk Assessment DRMB 24&25 reg 04110
StateRail	Station Operations	21-Mar-2004	7.10.2	This includes regular review of hazard and risk registers*	Hazard and risk registers at kept at Divisional level but do not track systemic or low frequency high consequent risk. There was no hazard Risk register in place at Station to identify and record local hazards	WAUD.006.018.0026 There was a response in the interview MR05_BB04 that the risk registerfor Station was in in his head. There was no indication from him that a more accessible version existed
RIC	Project Management	21-Mar-2004	7.11.1	There is appropriate management oversight of the process*	Review committee and Project Control Group established for fire and life safety across SRA and RIC	Have requested documents to show evidence of minutes of these committees - sighted during interview but not received as of 18/3/04.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	7.11.1		Appeared to be left up to Level 3 management.	LN22CD01_26.2.04, meetings with CEO, Board







Observations	Interview/Document Review ID	Ratings for Finding
Reporting seems to be adhoc	NI1_BB17	
	Interviews: MN15/CG23 MN6/JE15 MN2/BB2 MN9/KL17 MN13/JE24	
Hazards identified post incident investigation	MR01BB01	
hazard log book is kept	MR05BB04	
The risk register is not formal	MR05BB04	
Some drivers should be sent to Petersham, most should not	MR07LN07	
		
		
	NI21 JE	
		
	MB02_KL, DRMB24	
	MR01BB01	
	NI12_BB09	
		
	MB02_KL, DRMB24	
		
	MR05_BB04	
	MR05_BB04	
	NI03 / JE04	
	MB02_KL, DRMB24 & DRMB25	
	MB02_KL, DRMB24,DRMB25,	
	MR05_BB04	
	NI27JE28	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
RailCorp	Rail Management Centre (RMC)	21-Mar-2004	7.11.1		Senior managers do not have a sense of priority or criticality of risk controls and are not effectively monitoring critical risk controls	Interviewee asked about what he thought were the most critical aspects of safety that the RMC impacts? Interviewee replied "everything the RMC does affects safety". Interviewee could not articulate when further questioned the critical safety aspects of functions under his control. Interviewee was later asked how effective he thought the current safety program was- interviewee replied that he thought it was very effective with the exception of some aspects of controller training.
RailCorp	Rail Management Centre (RMC)	21-Mar-2004	7.11.1		Senior managers do not recognise the importance of safety planning and do not have ownership of safety plans	Interviewee was asked if he had a current safety plan for his operation. Interviewee replied that he/she was aware of a plan but he/she knew very little about it and we should talk to Safety support person about the plan. There is a current plan dealing with organisation transition . Safety Validation Statement and Safety Transition Plan Oct 2003 V1] - Interviewee had a copy of this document.
RailCorp	Station Operations	21-Mar-2004	7.11.1		Station Operations General Manager has a clear understanding of key high impact risks facing his organisation.	Interviewee was mainly concerned with public safety in relation to gas leak that occurred 5th Feb. Apart from being very concerned about the need for evacuation plans, the interviewee reported that he was concerned about controlling movement of people in and around stations to minimise risk of a crush developing. Most of the response plans centred around crowd control.
RailCorp	Rail Management Centre (RMC)	21-Mar-2004	7.11.2	Senior managers are informed of system risks*	Monitoring of train controllers in place and includes safety aspects	Management monitoring methods reviewed at RMC. Sighted daily controllers "graphs" that were signed off by controllers and reviewed by their manager. There is a checking process and issues followed up with controller if necessary. Manager also monitors incidents off the IIMS system. Ops control officers also keep diary.
RailCorp	Train Services Operations	21-Mar-2004	7.11.2		Senior managers do not have a sense of priority or criticality of risk controls and are not effectively monitoring critical risk controls	Interviewee asked about critical safety requirements in area of responsibility gave a general answer "comply with standards"
			7.11.3	This process is documented*	Some evidence of RIC standards but not in StateRail, nor any confidence that RIC processes will be effectively captured in RailCorp.	
RailCorp	RailCorp Corporate Staff	21-Mar-2004	7.12	Senior managers are responsible for accepting risk rationale* There is a process in place that holds them accountable*	RailCorp has recently issued accountability statements for L2 and L3 managers. However, risk acceptance strategy and rationale could not be identified. Acceptance strategies appeared to be left up to individual operating units rather than being a corporate wide strategy.	LN22CD01_26.2.04, meetings with CEO, Board,WAUD.003.001.0072,
RailCorp	Duty Manager	21-Mar-2004	7.13	Safety assessments are performed and updated regularly*	Safety assessments conducted at workplace level, safeworking functions and security and passenger on station levels. No evidence of a whole of system safety assessment to baseline the organisation, at StateRail or RailCorp, even as part of the Safety Reform Agenda.	Daily Safety checklist 03587, WAUD.006.011.2009
RailCorp	Duty Manager	21-Mar-2004	7.13			At interview MR05BB04 x reported that he personally completes daily safety inspections
			7.14	System changes and deviations are analysed for safety impacts*	The findings in the SCOI Interim Report, analysis of several other accident investigation reports, and review of consultancy reports indicate that StateRail did not have effective or mature change management processes, both at a technical level or an organisational level. Safety system changes and rolling stock changes have been introduced without benefit of effective organisational, configuration or documentation change control processes.	WITS 416.001.0597, WAUD007.017.0209, WITS514.001.0033, Glenbrook Accident Report,
			7.15	System exists that verifies that safety controls are adequate and in place*	None Identified	
RailCorp		21-Mar-2004	7.16	All workplace hazardous operations have been safety assessed*	Hazard control for self report fatigue not safety assessed.	When asked at interview MR11BB18 what would happen if a person had no sick leave remaining interviewee responded that they would have to take leave without pay--they are adults and they decide how to manage their lives.
RailCorp		21-Mar-2004	7.16		Hazard control for self report fatigue not safety assessed.	When asked at interview MR17BB24 what would happen if a person self-identified as fatigued and had no sick leave remaining X responded that the Fatigue Management policy 04352 had not been completely thought through.
RailCorp	Belmore	21-Mar-2004	7.17	Network hazards have been risk assessed*	Hazard Assessment: Network hazards have been assessed and are documented as Process Control Plans (PCP's).	Process Control Plans (sample Restore Ballast Profile) #04259. The full list of PCP's are on the RIC Intranet Site within HAZAN database..
SRA	ART	21-Mar-2004	7.17	Includes both train scheduling and entire safe movement of trains, equipment, staff, contractors onto the right of way and network*	Hazard Assessment: Network hazards have been assessed and are documented as Safe Working Method Statements (SWMS).	Safe Working Method Statement WAUD.007.012.1450
			7.18	There is a process in place to effectively control Network Hazards	Network Rules, Network Procedures and Operator Specific Procedures focus on the control of Network Hazards	
StateRail	Station Management	21-Mar-2004	7.19	Safety assessments take into consideration all characteristics of transit property (i.e. facilities, equipment, procedures, environment, etc.)*	Safety assessments take into consideration characteristics of transit property	MB02_KL Hazard Register, that includes an action list for resolution of hazards, Plant Risk Assessment DRMB 25&26 reg 04110
StateRail	Station Operations	21-Mar-2004	7.19		Safety assessments which takes into consideration all characteristics of transit property are being carried out at Station	The check list (which is updated as required) and daily inspection book for Syation was Sighted and it was noted that it was correctly filled out and current
			7.19		Safety assessments are limited to known rail hazards such as safeworking, OH&S, access and infrastructure issues. They do not include a wide and comprehensive range of hazard identification methodologies and hence do not provide effective analysis of defenses and controls.	
RailCorp	RailCorp Corporate Staff	21-Mar-2004	7.20	Hazards, undesired events, and causes are identified in safety assessments*	A system is in place that attempts to identify hazards.This system is called "SAFETY AUDIT DATA BASE" [SADB].Information is programed into the system using information derived from "TRIP SHEETS".This resulted in a list giving the top ten hazards.SADB needs update.	Trip sheets sighted.Output from SADB/ANALYSIS not sighted. Interview KL3
RailCorp	Station Operations	21-Mar-2004	7.20		Cross town tunnel under construction poses risk to rail underground tunnel	Interviewee noted that new tunnel under construction passes close to rail network and they "expect trouble"
RIC	Project Management	21-Mar-2004	7.20		Fire and life safety project in place but evidence not available as of 18/3 to determine effectiveness of risk management	Review of fire and life safety by Arnold Dix and history of fire and life safety project described in interview. Documents requested that give overview of this process and detail on risk analysis and current risk management methods but not received as of 18/3/04.






Observations	Interview/Document Review ID	Ratings for Finding
	NI01 / JE01	
	NI01 / JE01	
	NI09 BBLNBMB	
	NI01 / JE01	
	NI05 / JE06	
		
		
Daily Safety checklist is visible and kept up to date	3587	
Personally do daily safety inspections	MR05BB04	
		
		
	MR11BB18	
	MR17BB24	
Good: RIC provides employees with hazard identification data/training for tasks through Process Control Plans (PCPs). PCPs can be accessed by RIC employees through the HAZAN Data base located on the RIC intranet. PCPs typically contain data such as required PPE, task steps, cross references, hazard ID, control method, equipment and cross references to competency requirements. Auditors were led to believe that PCPs have been developed over a 5 year period are were extensive. The sample PCP provided seems reasonably adequate for job tasking. Process for their development was not assessed due to time constraints.	CG20/MR12	
Good: SRA provides employees with hazard identification data/training through Safe Working Method Statements (SWMs). SWMS typically contain data such as procedure, hazards, and safety controls. Auditors were led to believe that PCPs have been developed over a 5 year period are were extensive. The sample PCP provided seems reasonably adequate for job tasking. Process for their development was not assessed due to time constraints.		
		
	MB02_KL, DRMB25,DRMB26	
	MR05_BB04	
		
	NI09 BBLNBMB	
Suspect some gaps and potential high risk issues that have not been given adequate priority in relation to other SRA risks but no evidence to support this thought at this time.	NI27JE28	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
RIC	Project Management	21-Mar-2004	7.20		Fire and Life Safety standards for SRA and RIC are out of date and there is no evidence that fire and life safety risks are assessed againsty these standards	Standard Gudelines for Fire and Life Safety in the Construction of Underground Railway Facilities (amendended April 1992) [04294] have not been reviewed since 1992. Interviewee was not sure who had ownership of these standards and did not think that SRA or RIC worked closely to therse standards
StateRail	Station Management	21-Mar-2004	7.20		Hazards, undesired events, and causes are identified in safety assessments	MB02_KL Hazard Register, that includes an action list for resolution of hazards, Plant Risk Assessment DRMB 25&26 reg 04110
StateRail	Corporate Safety	21-Mar-2004	7.20		In SRA there is not a clearly defined acceptable level of risk.	Interviewee confirmed that there is not a clearly defined level of acceptable risk for the organisation. Noted that there are a variety of tools and approaches used by internal and external providers. Interviewee noted the existence of a Corporate Risk Standard [not obtained] but that this standard is not widely used or applied through the organisation.
StateRail	Corporate	21-Mar-2004	7.20		Prioritisation processes for follow up to Waterfall inquiry in RailCorp not based on risk assessment.	There is no evidence of an objective prioritisation process (ie risk assessment) for following up to Waterfall recommnedations. Interviewee also noted that Train Services Safety Improvement Plan [WAUD.007.013.0003] was originally developed in anticipation to Waterfall inquiry report and actions were not prioritised using an objective risk assessment.
StateRail	ART	21-Mar-2004	7.20		Risk Management Process: Risk Analysis for Guard Training is not being undertaken adequately.	Item #04542 Report of The Outcomes From The Intercity's Guard's Course Risk Workshop of 11 November 2003 (for Risk Analysis).
RailCorp	SRA	21-Mar-2004	7.20		The current risk management process is inadequate. While staff believe they use risk assessment as part of their normal processes, scrutiny reveals that they do not. Partly this is because the processes are not integrated, and partly because the understanding of staff of hazard assessment is poor. Also hazard registers are often not adequate for assessment and mitigation of risk, and formal risk matrix methodology is not followed to assess risks iaw hazard likelihood and consequence. There are many examples where risk management has not occurred from training development through to daily operational procedures through to implementation of new technology or practices.	Interviews: MN15/CG23 MN6/JE15 MN2/BB2 MN9/KL17 MN13/JE24 Documents: Report of outcomes from the Intercity Guard's Course Risk Workshop 11th Nov 03 reg # 4542 SMS 2.4 Curriculum Development Report Draft v.03 # 4542 SMS review meeting minutes # 4542 WAUD.007.001.1337 9-Apr-2003 Technical Report - Qualitative Risk Assesment of the Implementation of SAVES Program to all StateRail Services for StateRail WAUD.007.001.0811 10-Jul-2003 Tangara Access and Egress Design Study WAUD.007.001.1166 1-Aug-2003 Passenger Train Fire Risk Assessment-Management Review - Prepared for State Rail - Revision 0 WAUD.007.001.0609 1-Aug-2003 Arnold Dix of Counsel WAUD.007.001.1442 24-Sep-2003 Preliminary Human Factors Assesement of the Proposed Driver Interface for Mitsubishi Train Operating System for State Rail WAUD.007.001.1063 3-Feb-2004 Emergency Evacuation Procedures from SRA Trains WAUD.007.001.1204 ATRICS, ARS and Signaller Workload - Preliminary Analysis WAUD.007.001.1197 Metropolitan Signaling Project: Consequences of ATRICS for operations personnel
					Outside reports with identified risks do not appear to have been actioned eg TOS, ATRICS workload, SPAD management. Risk mitigation programs such as the SAVE driver/guard communication training initiative have not progressed from trial stage. They do not include a wide and comprehensive range of hazard identifiaction methodologies and hence do not provide effective analysis of defenses and controls.	
StateRail	Station Management	21-Mar-2004	7.20		There is a risk management process	MB02_KL Plant Risk Assessment manual, Hazard Register, Emergency & Evacuation Preparedness Plan sighted DRMB21-22-23-24-25-26-27-28-29 reg 04110
StateRail	Station Management	21-Mar-2004	7.21	Hazard severity and event probability are assessed*	Hazard severity and event probability are assessed	MB02_KL Hazard Register, , Plant Risk Assessment that include a severity and probability assessment DRMB 25&26 reg 04110
			7.22	Safety assessments state whether risks should be eliminated or controlled (or accepted, with or without attendant contingency plans)*	This is practiced in varying degrees of effectiveness in StateRail and RIC but not consistently. Without a clear Corporate definition of acceptable risk and appropriate assignement of accountability and authority to judge acceptability, it cannot be effectively implemented across RailCorp.	
			7.23	Safety assessments address corrective actions to eliminate or control hazards*	RailCorp has adopted the Safety Incident Database Coding Specification and the Incident Database used by RIC and StateRail. Whilst this system is based on an extensive hazard analysis, it is not regularly validated. Also controls are identified for all the hazards and consequences listsed, but due to the limited knowledge and experience in hazard and risk management in complex systems, many staff assume that the controls listed are all that is required and no further action is taken once the incident is entered in the database.	
			7.24	Safety assessments validate that controls are verified to be adequate*	No evidence of this in StateRail or RailCorp	
			7.25	Safety assessments verify that hazards are tracked till closure and give adequate rationale of how closed (e.g., appropriate hazard and risk registers)*	Once entered in the database, most incidents and the controls are assumed to be 'taken care off' by most employees and management. Senior management look at trend reports but do not appear to question effectiveness of controls.	LN22CD01_26.2.04, meetings with CEO, Board
			7.26	There is a pre-determined responsibility/authority for hazard closure*	No evidence of this. In fact entry of a particular incident in the data base is sometimes left up to a clerk, with no one taking particular responsibility for monitoring analysis.	LN22CD01_26.2.04




Observations	Interview/Document Review ID	Ratings for Finding
	NI27JE28	
	MB02_KL, DRMB24, DRMB25,DRMB26	
	NI28 JE29BMB?? And NI30JE30	
	NI26/GMC	
Concern: To what extent is Risk Analysis being conducted for new training courses? An interview with a (Tertiary Qualified) Curriculum Developer, revealed risk assessment to be a 'meeting' of the Course Committee - the output was a Minute detailing perceived risks which were then incorporated into the course by the curriculum developer. In the MoT Report into Waterfall it was highlited (Pg 64) that SRA was using a risk based approach to curriculum development and SRA's risk based approach was ineffective because it should have adressed the hazard created by Authority Gradients - training to mitigate this risk could have prevented Waterfall. The Minutes in this case (Intercity Guards Course Risk Workshop) obtained by the Auditors demonstrates that risk assessmentis not being defined in terms of the probability and consequence. The Minutes do not identify issues such as Authority Gradient (a contributor at Waterfall) yet they state 'the crew need to work well together as a team'. . This level of Risk Assessment is simplistic for Safety Critical tasks.		
	Interviews: MN15/CG23 MN6/JE15 MN2/BB2 MN9/KL17 MN13/JE24 Documents: Report of outcomes from the Intercity Guard's Course Risk Workshop 11th Nov 03 reg # 4542 SMS 2.4 Curriculum Development Report Draft v.03 # 4542 SMS review meeting minutes # 4542 WAUD.007.001.1337 9-Apr-2003 Technical Report - Qualitative Risk Assesment of the Implementation of SAVES Program to all StateRail Services for StateRail WAUD.007.001.0811 10-Jul-2003 Tangara Access and Egress Design Study WAUD.007.001.1166 1-Aug-2003 Passenger Train Fire Risk Assessment-Management Review - Prepared for State Rail - Revision 0 WAUD.007.001.0609 1-Aug-2003 Arnold Dix of Counsel WAUD.007.001.1442 24-Sep-2003 Preliminary Human Factors Assesement of the Proposed Driver Interface for Mitsubishi Train Operating System for State Rail WAUD.007.001.1063 3-Feb-2004 Emergency Evacuation Procedures from SRA Trains WAUD.007.001.1204 ATRICS, ARS and Signaller Workload - Preliminary Analysis WAUD.007.001.1197 Metropolitan Signaling Project: Consequences of ATRICS for operations personnel	
The risk management process consists of disjointed elements of hazard identification, procedures, reporting and investigation	MB02_KL, DRMB21-22-23-24-25-26-27-28-29	
Probability are qualitative and no guidelines exist to indicate levels of acceptability. Assessments performed for ranking severity	MB02_KL, DRMB25,DRMB26	
		
		
		
		
		

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
RailCorp	RailCorp Corporate Staff	21-Mar-2004	7.27	Risk ranking is pre-defined and risk prioritisation protocol in place*	RailCorp uses the risk assessment and ranking methodology set up by StateRail, it uses a weighted, likelihood and consequence matrix to assigne a risk score and ranking. Surprisingly, most of the top risks are those that would have a major impact on train operations against schedule.	WAT.002.022.0001, WAUD.006.018.0035
RailCorp	SRA	21-Mar-2004	7.28	Risk acceptance and rationale documented and signed by senior executives*	There is a lack of evidence to support appropriate risk acceptance and sign off procedures are being followed. Eg Safeworking Policy s5, p12 states that State Rail must ensure that any change or removal of existing Safeworking roles does not have an impact on StateRails capability to run its operations. Any change must be subject to a risk assessment and be authorised by StateRail's Risk and Safety committee supported by the recommendations from the Executive Director Safety and the respective senior officer of the division where the safeworking is located.	RailCorp was asked to provide evidence of who signed off the change to the safeworking role to put observers beside drivers on selected train services in lieu of Vigilence system implementation, along with documentation of the risk assessment, new policy and procedures and associated training and assessment of driver observers. This evidence has not been supplied.
			7.29	Risk management process based on recognized standards (e.g., AS 4360)*	AS4360 is used as the basis for risk understanding in StateRail, RIC and RailCorp	
StateRail	Station Management	21-Mar-2004	7.30	Risk management system considers audit and investigation reports*	A process is documented but lossely controlled	MB02_KL A process tying in the various hazard register, evacuation plan and risk assessments called the Safety Plan 2002 was sighted DRMB27 reg 04110
RailCorp	Station Masters	21-Mar-2004	7.30		Documentation exists	refer to 7.1
RailCorp	Fire Services (ex)	21-Mar-2004	7.30		Fire safety guidelines exist but are possibly out of date	Interviewee indicated that Fire Safety Guidelines had been drafted in 1992 [04294] - largely in response to Kings Cross (UK) underground fire. There was a review of fire safety after the Kings Cross fire.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	7.30		No documentation was sighted nor did we ask to see it.	
RailCorp	RailCorp Corporate Staff	21-Mar-2004	7.30		Refer to element 7.1.This "NEEDS COMMITTEE" uses audit reports to determine "THE NEEDS".	05.001.1148
StateRail	ART	21-Mar-2004	7.30		Risk Identification Process for Training Course development: Guidance to training Course Committees regards Training Risk Analysis could not be found.	Item #04542 Report of The Outcomes From The Intercity's Guard's Course Risk Workshop of 11 November 2003 (for Risk Analysis). WAUD.007.003.0207 (Policy and Procedures Manual) Section 11.
RailCorp	Rail Management Centre (RMC)	21-Mar-2004	7.30		RMC specific procedures and protocols not well documented	RMC protocols manual is no more than a collection of presentations that were collated and presented when RMC first formed about 18 months ago. [WAUD.007.003.0428, WAUD.007.003.0010 ]. RMC is bound to comply with other existing documents such as Network Rules and Incident Management procedures.
			8	<b>DOCUMENT CONTROL</b>		
StateRail	State Rail	21-Mar-2004	8		State Rail has a documented procedure concerning Document Hierarchy. However, there was sufficient uncontrolled documentation to indicate that the procedure is not enforced.	DOCUMENT REFERENCE: State Rail Safety Standard 9.001 , Document Hierarchy
StateRail	Train Crewing	21-Mar-2004	8.1	There is an adequate process in place for maintaining and controlling documents, including manuals, (both internal and external)	A process exists to distribute safety critical information to train crews	MB13 10/3/04 indicates bulk distribution to stations for subsequent location by OSMs or station staff for Weekly Notices, General Orders, OSPs, SAFE notices and Network Rules and Procedures. V4 & V5 validated this mechanism
StateRail	Train Crewing	21-Mar-2004	8.1		A process exists to record acceptance of Weekly Notices and General Orders	MB10_KL With V4 & V5 on 4 March 2004 where a system was sighted and documentation received ( DRMB38 reg 04228) controlling document distribution
StateRail	Station Operations	21-Mar-2004	8.1		Station had system in place to control documentation that pertained to the area	The documents being controlled were sighted and the process was explained. This occurred while a tour of the facility was being undertaken
StateRail	ART	21-Mar-2004	8.1		Document Sign-off: SRA Training Policy and Procedures Manual is not signed.	WAUD.007.003 (Policy and Procedures Manual Copy 1 of 5 Pg 1)
StateRail	Capital Works - Vigilance Project	21-Mar-2004	8.1		Documentation Control is being practiced as part of the new Vigilance Project. The samples identified as part of the evidence demonstrate that revision control of documents does exists via the version identifiers on the documents.	INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: NSW State Rail Authority Vigilance Control for Outer Suburban Train Project (VC Project) Project Management Plan INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: NSW State Rail Authority Vigilance Control for Outer Suburban Train Project (VC Project) Communications Plan INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: NSW State Rail Authority Vigilance Control for Outer Suburban Train Project (VC Project) Project Quality Plan
RailCorp	RailCorp Corporate Staff	21-Mar-2004	8.1		During interview KL 5 safety manuals and worksafe documentswere examined and assessed as current	Documents sighted at interview.
StateRail	PFM	21-Mar-2004	8.1		PFM developed Safe Work Method Statements have Revision Control.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Safe Work Method Statement, Emergency Coupler Test
StateRail	PFM	21-Mar-2004	8.1		PFM engineering instructions are version controlled and have explicit sign off authorities approving the instructions for use. The document cited in evidence is an example of such a case.	INTERVIEW REFERENCE: BMB_01; DOCUMENT REFERENCE: Reg # 3534, Engineering Instruction EI 116, Minimum Standards for Electric Trains entering and operating in revenue service
StateRail	PFM	21-Mar-2004	8.1		PFM QTS have approved procedures under the ISO 9001:200 framework for the structure and relationships between documents used by QTS extending beyond the quality procedures to technical procedures. PFM QTS section is a formally accredited ISO 9001 accredited organisation for or the provision of Engineering and Technical Services for State Rails Rolling Stock; through the establishment and updating of standards, policies and procedures, and the auditing of maintenance activities.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0779, Quality Manual for Quality and Technical Support, 12/11/02 INTERVIEW REFERENCE: BMB_05; WAUD.007.012.0778, State Rail Authority of NSW Quality and Technical Support, ISO 9001:2000 Certificate of Registration, 9 December 2002
StateRail	Corporate	21-Mar-2004	8.1		Rules and procedures are periodically reviewed to assure that latest safety information has been incorporated*	SAFE notices, General Order, Weekly Notices and OSP updates occur on a weekly as required basis and any changes are incorporated into the Network Rules and Procedures updates on a 3 to 6 month basis vide MB14
RIC	ATRICS	21-Mar-2004	8.1		The ATRICS project document control for user manuals is well established and practiced.	INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0002, RCS Workstation User Guide
StateRail	Corporate	21-Mar-2004	8.1		The Network Rules and Procedures and the SAFE update notices used by SRA staff are controlled through the distribution arrangements at RIC	MB14 interview verified distribution arrangements under controlled conditions. DRMB51 (reg TBA) verifies control procedure

Observations	Interview/Document Review ID	Ratings for Finding
		
		
		
	MB02_KL, DRMB27	
	NI03 / JE04	
Concern: Does SRA know or understand how to conduct an appropriate Risk Analysis for safety critical training? Based on the Minutes of the Intercity Guard's Risk Workshop (dated 11 Nov 2003) - probably not. The ART Policy and Procedures Manual has a 1 page statement on Risk Management (Section 11). The content is deficient and does not provide Curriculum developers with any guidance on the significance and procedure for assessing risk in courseware development. There is also no clear guidance on the qualifications required of those making Risk Assessments.	#04542, WAUD.007.003.0207	
	NI01 / JE01	
There may be a lack of awareness of the State Rail Safety standards across State Rail (might have some pockets that are aware). For example, in one specific case of an interview with a safety officer who has been in the safety game in state rail since 2001 he didn't even know that State Rail Safety standards actually existed. Their is a suspicion that this may be a systemic issue across the board and warrants further investigation to verify.		
A number of areas distribute to train crews including Train Crewing and RIC, and Special Train Notices Production areas. There is obviously room to rationalise the distribution. Only Network Rules and Procedures appear to have a document control process	MB13, MB10	
Some crew are not signing for the notices, some crew throw the notice into the bin, some OSM's may not keep accurate records	MB10_KL??, DRMB38	
	MR05_BB04	
Concern – Policy and Procedures Manual is not signed (although it does have an introductory letter from the director). None of the 3 (of 5) copies of the Policy and Procedures Manual are signed off.	WAUD.007.003	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: NSW State Rail Authority Vigilance Control for Outer Suburban Train Project (VC Project) Project Management Plan INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: NSW State Rail Authority Vigilance Control for Outer Suburban Train Project (VC Project) Communications Plan INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: NSW State Rail Authority Vigilance Control for Outer Suburban Train Project (VC Project) Project Quality Plan	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Safe Work Method Statement, Emergency Coupler Test	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_01; DOCUMENT REFERENCE: Reg # 3534, Engineering Instruction EI 116, Minimum Standards for Electric Trains entering and operating in revenue service	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0779, Quality Manual for Quality and Technical Support, 12/11/02 INTERVIEW REFERENCE: BMB_05; WAUD.007.012.0778, State Rail Authority of NSW Quality and Technical Support, ISO 9001:2000 Certificate of Registration, 9 December 2002	
	MB14	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0002, RCS Workstation User Guide	
The information given in SAFE notices and other safeworking procedure updates is incorporated into the next version of the Network Rules and Procedures documents. The updates are provided in bulk to Train Crew and distributed at the local level. This system relies on local arrangements to get updates to Train Crew and this is not a failsafe system. Becuase of this the distribution officer at RIC is not provided with individual notification that Train Crew have the updates	MB14, DRMB14	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	Station Management	21-Mar-2004	8.1		There is a process in place for maintaining and controlling documents, including manuals( internal ) on the IntraNet however there is no sign off, date, or validation controls	MB02_KL IntraNet has some controls over documents
SRA	ART	21-Mar-2004	8.2	This procedure is documented and followed	Document Control Procedure: A procedure for document control in SRA Training (Policy and Procedures Manual Section 8).exists but in many instances is not followed.	Example:WAUD.007.003.0207-0411 (Policy and Procedures) is listed as Version 3. However the footer in Section 4 states October 2003 Version 4. Section 10 States October 2003 Version 5.
SRA	ART	21-Mar-2004	8.2		Document Control Procedure: A procedure for document control in SRA Training (Policy and Procedures Manual Section 8).exists.	WAUD.007.003.0207-0411 (Policy and Procedures Manual) Section 8.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	8.2		There was no evidence of a document control system similiar to that required by ISO9004.	
RIC	ATRICS	21-Mar-2004	8.2		The ATRICS project document control for user manuals is well established and practiced.	INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0002, RCS Workstation User Guide
StateRail	PFM	21-Mar-2004	8.2		PFM QTS have approved procedures under the ISO 9001:2000 framework for Documentation Control. PFM QTS section is a formally accredited ISO 9001 accredited organisation for or the provision of Engineering and Technical Services for State Rails Rolling Stock; through the establishment and updating of standards, policies and procedures, and the auditing of maintenance activities.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0779, Quality Manual for Quality and Technical Support, 12/11/02 INTERVIEW REFERENCE: BMB_05; WAUD.007.012.0778, State Rail Authority of NSW Quality and Technical Support, ISO 9001:2000 Certificate of Registration, 9 December 2002
StateRail	Corporate	21-Mar-2004	8.2		The procedure for updates is documented in the Network Rules and Procedures	MB14 verified distribution arrangements under controlled conditions. DRMB51 (reg TBA) verifies control procedure
StateRail	PFM	21-Mar-2004	8.2		PFM developed Safe Work Method Statements have Revision Control.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Safe Work Method Statement, Emergency Coupler Test
StateRail	PFM	21-Mar-2004	8.2		PFM engineering instructions are version controlled and have explicit sign off authorities approving the instructions for use.	INTERVIEW REFERENCE: BMB_01; DOCUMENT REFERENCE: Reg # 3534, Engineering Instruction EI 116, Minimum Standards for Electric Trains entering and operating in revenue service
StateRail	Corporate	21-Mar-2004	8.2			DRMB51 (reg TBA) is a notice of updating the control register
StateRail	Corporate	21-Mar-2004	8.3	There is a formal process for amendment of controlled documents, including review and approval of changes	Some documents are controlled	Only two documents are believed to be controlled, they being the Network Rules and Procedures controlled by RIC. SRA does not identify any documents as being controlled although safety critical documents including the Weekly Notice reg 04228 and General Orders reg 04364 are distributed by SRA.
StateRail	Station Management	21-Mar-2004	8.3		The Rail Safety Plan is uncontrolled	DRMB27 reg 04110
RailCorp	RailCorp Corporate Staff	21-Mar-2004	8.3		There is a process in place for amending safety documentation including safeworking manuals. There were amendment pages that required signatures and date of amendment entry.	Documentation examined during interview.K5 K3.
StateRail	Corporate	21-Mar-2004	8.4	There is a regularly maintained controlled document distribution list	The distribution list for the SAFE notices, Network Rules and Procedures, Weekly Notices, General Orders and safety critical information is regularly maintained	MB14 verified distribution arrangements under controlled conditions. DRMB51 verifies control procedure. Interview StateRail confirms the distribution list update procedure at MB13
StateRail	Station Management	21-Mar-2004	8.4		There is a regularly maintained controlled document distribution list for Network Rules and Procedures	DRMB51 reg "Control Documentation of Network Rules"
RailCorp	RailCorp Corporate Staff	21-Mar-2004	8.4		There was a list of people who were holders of manuals. Amendments were distributed to these people.	Documentation examined during interview.K5 K3.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	8.5	There is a process for confirming/recording of distributed, controlled documentation	No process was sighted or asked for.	
StateRail	Corporate	21-Mar-2004	8.5		There is a process recording of distributed controlled information	MB14 verified distribution arrangements under controlled conditions. DRMB51 verifies control procedure
RailCorp	RailCorp Corporate Staff	21-Mar-2004	8.6	The process that ensures that changes to documentation are communicated to all relevant personnel is adequate	Elements 8.6 to 8.10 were not addressed	
StateRail	Corporate	21-Mar-2004	8.7	There is a process for retrieval of obsolete documentation	Acknowledgement of receipt of new information and disposal of old information is required for Network Rules and Procedures updates. In addition safety critical information is required acknowledgement	MB14 verified distribution arrangements under controlled conditions. DRMB51 verifies control procedure. In addition V4&V5 4th March MB10_KL Verifies signatures required for safety critical information DRMB40 reg 04228
StateRail	Corporate	21-Mar-2004	8.8	There is a process for personnel to submit feedback on documentation	Feedback can be provided via the IntraNet, emails and the Safeworking HotLine, all of which are advertised in the Weekly Notice	MB14 verified feedback possibilities.
			8.9	There is an adequate process for configuration control of all safety critical documents There is an adequate process for configuration control of all safety critical documents	Other than Network Rules and Network Procedures, there was not sufficient evidence to indicate that StateRail or RailCorp identify safety critical documents, let alone control change of such documents.	
			8.10	Rules and procedures are periodically reviewed to assure that latest safety information has been incorporated*	RIC had responsibility for Network Rules and had recently updated them based on Glenbrook recommendations and an internally identified need to simplify the rules.	
			9	RECORD CONTROL		
RailCorp	Station Masters	21-Mar-2004	9			
StateRail	State Rail	21-Mar-2004	9.1	There is a documented process for control of records	State Rail has a documented procedure concerning Safety Record Control	DOCUMENT REFERENCE: State Rail Safety Standard 9.002 , Safety Record Control
StateRail	State Rail	21-Mar-2004	9.1		State Rail has a documented procedure concerning Safety Record Management	DOCUMENT REFERENCE: State Rail Safety Standard 9.003 , Safety Record Management

Observations	Interview/Document Review ID	Ratings for Finding
	MB02_KL	
Good – Policy and Procedures Manual. Section 8 is dedicated to Document Control; but judging by the status of documentation in general, this is not being followed.	WAUD.007.003.0207-0411	
Good – ART have an overarching Policy and Procedures Manual. Section 8 is dedicated to Document Control and includes Authorisation, Review, Version control etc.	WAUD.007.003.0207-0411	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0002, RCS Workstation User Guide	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0779, Quality Manual for Quality and Technical Support, 12/11/02 INTERVIEW REFERENCE: BMB_05; WAUD.007.012.0778, State Rail Authority of NSW Quality and Technical Support, ISO 9001:2000 Certificate of Registration, 9 December 2002	
	MB14, DRMB14	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Safe Work Method Statement, Emergency Coupler Test	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_01; DOCUMENT REFERENCE: Reg # 3534, Engineering Instruction EI 116, Minimum Standards for Electric Trains entering and operating in revenue service	
	DRMB14	
	DRMB40 reg 04228, DRMB50 04364	
There appears to be document control at all with documents emanating from SRA	DRMB27	
The distribution for Train Crew is bulk to Crew Area Manager	MB14, DRMB51, MB13	
Documents used by SRA but delivered by RIC are controlled	DRMB51	
		
Train Crew are provided with bulk copies of safety critical information and the procedure relies on local CAM controlled distribution which is not fail safe	MB14, DRMB51, MB13	
		
V4 & V5 confirmed difficulties in getting sign off from train drivers. Bulk distribution to CAMs is not fail safe and therefore it is not possible to confirm all personnel have up to date information	MB14, DRMB reg TBA, DRMB40 reg 04228	
	MB14	
		
		
There may be a lack of awareness of the State Rail Safety standards across State Rail (might have some pockets that are aware). For example, in one specific case of an interview with a safety officer who has been in the safety game in state rail since 2001 he didn't even know that State Rail Safety standards actually existed. Their is a suspicion that this may be a systemic issue across the board and warrants further investigation to verify.		
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StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	PFM	21-Mar-2004	9.1		PFM QTS have approved procedures under the ISO 9001:2000 framework for Records Management. PFM QTS section is a formally accredited ISO 9001 accredited organisation for or the provision of Engineering and Technical Services for State Rails Rolling Stock; through the establishment and updating of standards, policies and procedures, and the auditing of maintenance activities.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0779, Quality Manual for Quality and Technical Support, 12/11/02 INTERVIEW REFERENCE: BMB_05; WAUD.007.012.0778, State Rail Authority of NSW Quality and Technical Support, ISO 9001:2000 Certificate of Registration, 9 December 2002
RailCorp	RailCorp Corporate Staff	21-Mar-2004	9.2 - 9.3	The procedure defines the regulatory/legal/company requirements to keep records There is an adequate process for identification, storage, protection, retrieval, retention time, and disposal of records	Elements not reviewed	
			10	INTERNAL AUDIT		
RailCorp	Station Masters	21-Mar-2004	10			
StateRail	State Rail	21-Mar-2004	10.1	There are documented audit procedures which include standards and checklists	State Rail has a documented procedure concerning Operational audits	DOCUMENT REFERENCE: State Rail Safety Standard 15 , Operational audits
StateRail	State Rail	21-Mar-2004	10.1		State Rail has a documented procedure concerning Safety management audits	DOCUMENT REFERENCE: State Rail Safety Standard 15 , Safety management audits
RailCorp	RailCorp Corporate Staff	21-Mar-2004	10.1		.Audit process within RailCorp in particular audit observation is well structured.It has been difficult to establish what analysis process takes place This is in no way the fault of RailCorp ,but rather the constraints of time and the distance required to be travelled to conduct interviews.	Previouse statement made on the basis of material looked at ,and interviews conducted
StateRail	Central Station	21-Mar-2004	10.1		Basic first and second party audit regime exists in Station Operations	Docs[04087, 6] show are recent audit reports undertaken by Central Station staff and Station Operations Safety Auditors. Audits are undertaken against a set of criteria based on the 15 elements of the SRA safety system.
StateRail	Central Station	21-Mar-2004	10.1		Internal audits undertaken by Station staff at Central station are not thorough.	Close examination of records of two audits undertaken by station staff and safety auditors [doc04087, 6] indicate that reports use the same or very similar wording in many instances. It appears as though successive audits use electronic records of previous audits as their basis. This is evident throughout all scetions of all 3 reports.
StateRail	PFM	21-Mar-2004	10.1		PFM QTS have approved procedures under the ISO 9001:2000 framework for QMS audits (a number of these audits include assessing safety processes and the condition of safety critical rolling stock assets. PFM QTS section is a formally accredited ISO 9001 accredited organisation for or the provision of Engineering and Technical Services for State Rails Rolling Stock; through the establishment and updating of standards, policies and procedures, and the auditing of maintenance activities.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0779, Quality Manual for Quality and Technical Support, 12/11/02; DOCUMENT REFERENCE: WAUD.007.012.0778, State Rail Authority of NSW Quality and Technical Support, ISO 9001:2000 Certificate of Registration, 9 December 2002
RailCorp	RailCorp Corporate Staff	21-Mar-2004	10.1		There is an internal audit process	WAT.002.021.001.Audit manual dated 06/06/2002.There is a 16 page A4 list relavent to audit documentation.
RailCorp	RIC	21-Mar-2004	10.2	There is an approved audit schedule which includes scope and frequency The audit schedule is followed*	Approved Audit Schedule: RIC is a Registered Training Organisation which is externally audited to maintain accreditation.	Item #04388 Application Approval and Audit Report Dated 11/09/02
SRA	ART	21-Mar-2004	10.2		Approved Audit Schedule: SRA is a Registered Training Organisation which is externally audited to maintain accreditation.	Certificate of Registration as provided in #04543
RailCorp	RailCorp Corporate Staff	21-Mar-2004	10.2		There are several safety audit schedules	Registered document ww.at.002.366.0055 Chart Safety Division SafetyManagementSystem Audit Schedule.
StateRail	Corporate Safety	21-Mar-2004	10.2		There is an approved audit schedule but resources are threatenming the completion of this schedule, especially in the Passenger Fleet Manintenance Area	Safety Division Audit and Accreditation Unit Overall Safety Audit Plan 2004;[04482] outlines audit schedule for 2004. Evidence of audits completed in 2003 provided - audit reports [04482] and Audi NCRs Report - Detailed. Exec. Manager noted that they do not currently have an auditor in the Passenger Fleet Mainteance Area and this may compromise the planned schedule in this area.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	10.3	The internal audit frequency is adequate*	Audit frequency is considered adequate	There are numerous audit reports listed in the 16 page A4 document relavent to audits EG.Registerd document #WWAT.002.042.0011. dated03/12/2002. OH&S audit summary-Network Operations Summary-CBD w/e08/11/02-28/11/2002
RailCorp	RailCorp Corporate Staff	21-Mar-2004	10.4	There are system safety audits as part of the audit program Audit program is risk focused (including both safety systems and other systems that can affect safety)* Audit program includes work practices that could affect safety such as joiner rights*	What has to be considerd is that some employees of RailCorp are confused regarding OH&S and SMS.During interview K5 a senior safety profesional, who understands what a SMS is made comment that RailCorp had a long way to go before they could say they had a true SMS in place.It must be acknowledged there are elements of SMS contained within this audit program	Registered document # WWAT.002.o99.oo24 report OH&S Management Systems Audits 14/02/03. A large number of workplace audits support this item.
StateRail	Corporate Safety	21-Mar-2004	10.4		Safety system audit program in SRA focusses priomarily on OHS documentation and conditions and there is no evidence of work practice audits in the sample reviewed.	Audit reports [04540 and 04482] very focussed on OHS conditions and documentation. No evidence of observation of practices in the samples reviewed covering stations and Crew Area Managers. Exec manager Safeworking noted that work practices of crew for example are primarily audited by OSMs.
StateRail	Corporate Safety	21-Mar-2004	10.4		The internal audit frequency is beginning to be established on a risk basis although allocation of resources to the overall program does not appear to be on a risk basis	Safety Division Audit and Accreditation Unit Overall Safety Audit Plan 2004;[04482] includes an assesment of risk in each area of focus. For example, stations audit schedule is determined by location, interchange area, frequency of services, passenger level and region. However, there is no evidence that allocation of audit resources has been done on a risk basis. For example, there are four auditors and one is full time dedicated to stations.
StateRail	Capital Works	21-Mar-2004	10.4		Capital Works conduct external safety audits of infrastructure projects – but are primarily focused on the dimensions of a SWE and OH&S Issues.	INTERVIEW REFERENCE: BMB_22; DOCUMENT REFERENCE: WAUD.007.015.0816, External Safety Audit Reports (Various)
RailCorp	RailCorp Corporate Staff	21-Mar-2004	10.5	There is an adequate process to communicate audit results to management for review and action	Review of these audits will indicate where corrective action is required	Perusal of the 16 page A4 document indicates audit reports are sent to appropriate levels of management.
StateRail	Capital Works	21-Mar-2004	10.6	This process includes causal analysis and risk assessment of findings	Audits conducted by capital works contain some degree of causal analysis.	INTERVIEW REFERENCE: BMB_22; DOCUMENT REFERENCE: WAUD.007.015.0816, External Safety Audit Reports (Various)
RailCorp	RailCorp Corporate Staff	21-Mar-2004	10.6		There is analysis of the audit reports.It would appear there is also an informal risk assessment.This is a grey area	

Observations	Interview/Document Review ID	Ratings for Finding
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0779, Quality Manual for Quality and Technical Support, 12/11/02 INTERVIEW REFERENCE: BMB_05; WAUD.007.012.0778, State Rail Authority of NSW Quality and Technical Support, ISO 9001:2000 Certificate of Registration, 9 December 2002	
There may be a lack of awareness of the State Rail Safety standards across State Rail (might have some pockets that are aware). For example, in one specific case of an interview with a safety officer who has been in the safety game in state rail since 2001 he didn't even know that State Rail Safety standards actually existed. Their is a suspicion that this may be a systemic issue across the board and warrants further investigation to verify.		
There may be a lack of awareness of the State Rail Safety standards across State Rail (might have some pockets that are aware). For example, in one specific case of an interview with a safety officer who has been in the safety game in state rail since 2001 he didn't even know that State Rail Safety standards actually existed. Their is a suspicion that this may be a systemic issue across the board and warrants further investigation to verify.		
	NI 18 CG 17	
	NI 18 CG 17	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0779, Quality Manual for Quality and Technical Support, 12/11/02; DOCUMENT REFERENCE: WAUD.007.012.0778, State Rail Authority of NSW Quality and Technical Support, ISO 9001:2000 Certificate of Registration, 9 December 2002	
Good - RIC is an accredited training provider and undergo regular independent audits to retain accreditation. In so doing it has satisfied the requirements of the Australian Quality Training Framework.	#04388	
Good - SRA is an accredited training provider and undergo regular independent audits to retain accreditation. In so doing it has satisfied the requirements of the Australian Quality Training Framework.	#04543	
	NI28 JE29BMB?? And NI30JE30	
	NI28 JE29BMB?? And NI30JE30	
	NI28 JE29BMB?? And NI30JE30	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_22; DOCUMENT REFERENCE: WAUD.007.015.0816, External Safety Audit Reports (Various)	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_22; DOCUMENT REFERENCE: WAUD.007.015.0816, External Safety Audit Reports (Various)	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	Corporate Safety	21-Mar-2004	10.6		No evidence of causal analysis of audit findings but evidence of risk assessment of findings exists in Safety Division SRA audits.	Audit reports [04540 and 04482] very focussed on OHS conditions and documentation. There is a risk assessment process for ranking the criticality of findings but there is no evidence of causal analysis. Typical finding is "there is still an issue with getting all staff to sign for safety critical documentation". It is left to the auditee to address the issue and no causal analysis and associated recommendation is attempted in the audit report. Risk assessment basis is arguable - for example, staff not getting safety critical documentation is rated only as a moderate risk.
StateRail	Capital Works	21-Mar-2004	10.7	There is an adequate process that monitors actions, follows-up and tracks to closure	Capital Works have a system in place for infrastructure projects fro tracking the disposition of safety actions.	INTERVIEW REFERENCE: BMB_22; DOCUMENT REFERENCE: WAUD.007.015.0687, Completion of Safety Transition Plan
RailCorp	RailCorp Corporate Staff	21-Mar-2004	10.7		There is a process that monitors action. There is correspondence listed in the 16 page A4 document relavent to audit that indicates actual audit reports do get a respose.	
StateRail	Corporate Safety	21-Mar-2004	10.7		There is a process to monitor follow up from audit reports in the Safety Division Audit Group but reponse to audit corrective actions is up to 4 months behind in some cases.	Audit reports are communicated back to the manager responsible for the area. For example, station audit reports are sent to the station manager. [doc 4540] Audit non conformance and observations response memo 16th March 2004. This was in response to an audit conducted in Nov 2003.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	10.8	There is an adequate process that reviews that actions are appropriate and effective	There is a process in place that reviews the audit document. As RailCorp is self insured WorkCover would also conduct an or at the least insist on a desktop audit. Whilst some ISO9000 qualified auditors question the value of desktop audits the penalties for giving false or misleading information is severe and will result in loss of insurance licence. This in turn means that external insurance companies will double even triple their standard premium rate.	Registered Document WWAT .002.027.0001 01/08/2000 report WorkCover NSW Self Insurer OHS&R Quality System Model Desktop Self Audit Findings
RIC	Corporate	21-Mar-2004	10.9	Auditors receive appropriate training to perform the audit	An appropriate audit program appears to have been in place in StateRal from 1989 -1996.	Evidence of a systematic audit process linked to controls for priority hazards from 1989-1993, [docs 04316] Safety Management and Hands On Approach, O.R Henry 1993; Rail Safety Audit System Safety Plans 1993/94 Part A Hazard Control Outlines Cityrail; Rail Safety Audit System Safety Plans 1993/94 Part B Register of Controls; Rail Safety Audit Group System Safety Risk Management Methods and Procedures. This audit process was scored and reported to senior management. Anecdotal evidence indicates that this was a credible and effective process of auditing.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	10.9		Disssussion with reviewer reveal that RailCorp auditors complete a 5 day auditors course at the University of Western Sydney.	M.R. interview
StateRail	Corporate Safety	21-Mar-2004	10.9		Auditors in the Safety Division of SRA are trained in OHS systems auditing but only one has formally sought and achieved Lead Auditor Status.	Records of auditors attending a five day safety systems auditing course available [docs 04482] Certificates of attendance at OHS auditing courses run by NSCA or UNSW for 4 auditors. Only one auditor has sought and achieved Lead auditor status. Records not available at time of audit to provide objective evidence of this because auditor was away until 29th march 2004 and only available evidence was QSA Lead Auditor card. This is not in compliance with the Safety Audit Protocol [04482] that states " those who take on the role of audit team leader must have gained certification from QSA as an OHS auditor".
StateRail	Corporate Safety	21-Mar-2004	10.10	There is an adequate process in place to measure the effectiveness of the audit program	There is a documented internal audit procedure including standards and checklists in the Safety Division of SRA.	Safety system audit program in the Safety Division of SRA exists [docs 4482] - StateRail Safety Management Systems Audit Protocol Aug 2002; StateRail OHS Audit Checklist; StateRail Self Assessment System Matrix; Safety Division Audit and Accreditation Unit Overall Safety Audit Plan 2004; Safety Division Safety Management System Audit Scope ; Untilted details of each audit element; Audit reports; Safety Division Safety Management System Audit Schedule. There are four auditors in the audit group that focus on specific functional areas such as stations.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	10.11	Results of audits are fed back into the safety management system in a closed-loop corrective action process*	Did not establish this factor.	
			11	<b>INCIDENT/ACCIDENT REPORTING SYSTEM</b>		
StateRail	State Rail	21-Mar-2004	11		State Rail has a documented procedure concerning Incident (Injury) Reporting	DOCUMENT REFERENCE: State Rail Safety Standard 7.001 , Incident (Injury) Reporting
RailCorp	Rail Management Centre (RMC)	21-Mar-2004	11.1	There is a formal process for identifying, reporting, and recording incidents and accidents (across the organisation and within each department)	Confusion about which incident management plan is current	Interviewee showed the auditors 2 versions of the SRA incident management plan (SRA Network Incident Management Manual Draft version 2 Sept 2003 and document of same title dated Dec 2002). [WAT.002.050.0001 and WAUD.007.001.0416]
RailCorp	SPAD Management	21-Mar-2004	11.1		RailCorp document "Managing Signals Passed at Danger" v4.0 Jan 2004, not complete.	Document "Managing signals Passed at danger" v4.0 Jan 2004, WAUD.007.014.1247 not complete: "Manage railway safety workers return to work process"--process and interfaces yet to be defined".
StateRail	Station Management	21-Mar-2004	11.1		There is a process for identifying, reporting, and recording incidents and accidents (across the organisation and within each department)	MB02_KL The IIMS and SAD databases record this information however the SM has no access to the information DRMB 22 reg 04110
RailCorp	RailCorp Corporate Staff	21-Mar-2004	11.1		There is a formal accident /incident reporting system. This system applies across the organisation.	KL1 KL2 KL 3 KL5
StateRail	Station Operations	21-Mar-2004	11.1		There is a formal process for identifying, reporting and recording incidents and accidents. Identification is at the simplest level and does not assist in subsequent causal factor analysis.	IIMS reporting shown in MB2_KL In DRMB22 reg 04110, a template is given for the recording of the information
StateRail	Station Operations	21-Mar-2004	11.1		There is a formal process for identifying, reporting, and recording incidents and accidents	There is a no blame reporting hot line known as Confidential Safety Information Reporting Scheme (CSIRS)
RailCorp	Station Masters	21-Mar-2004	11.1		There is a system in place for reporting of accidents and incidents	Registry number 04110
StateRail	Train Crewing	21-Mar-2004	11.1		In the opinion of Train Crewing, defect reporting is currently "dysfunctional".	Interviewee reported that in her/his opinion the reporting of defects from crew through to maintenance was not working effectively at the moment. Service is poor in his opinion, and there is a lack of trechnical expertise in the people currently engaged in the RMC filling this role.
RailCorp	Train Crew Assignment Centre TCAC	21-Mar-2004	11.2	There is an open-reporting policy and it is effectively communicated to staff	Management response to crew performance related incidents does not always adequately assess safety impacts	Interviewee provided evidence [WAUD.007.014.1377-1392] of crew member that took control of train without checking location of previous driver. Management response was crew member counselling rather than proper investigation of potential safety impacts
RailCorp	RailCorp Corporate Staff	21-Mar-2004	11.2		Reporting policy is not open.	KL5. Interviw with direct labour staff reveals high levels of distrust toward management Note; See Harvey ball analysis STATION MANAGERS.
StateRail	Train Crewing	21-Mar-2004	11.2		There is an open reporting policy but management give mixed messages about the use to which the reporting is made, thereby making it less effective and restraining the openness	V4, V5 and driver indicate the no blame reporting is not effective













Observations	Interview/Document Review ID	Ratings for Finding
	NI28 JE29BMB?? And NI30JE30	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_22; DOCUMENT REFERENCE: WAUD.007.015.0687, Completion of Safety Transition Plan	<div><div></div></div>
	NI28 JE29BMB?? And NI30JE30	
		<div><div></div></div>
	NI24KL?? ; NI 26/GMC	<div><div></div></div>
	NI28 JE29BMB?? And NI30JE30	
	NI28 JE29BMB?? And NI30JE30	<div><div></div></div>
		<div><div></div></div>
There may be a lack of awareness of the State Rail Safety standards across State Rail (might have some pockets that are aware). For example, in one specific case of an interview with a safety officer who has been in the safety game in state rail since 2001 he didn't even know that State Rail Safety standards actually existed. Their is a suspicion that this may be a systemic issue across the board and warrants further investigation to verify.		
	NI01 / JE01	<div><div></div></div>
	3581, MR07LN07	
The process consists of a reporting template. No formal process setting out the actual process of reporting has been sighted	MB02_KL, DRMB22	
SM Hornsby does not have access to online reporting, but can print off appropriate forms	MB02_KL?? DRMB22	
	MR05_BB04	
	NI23BB22	
	NI02 / BB03	<div><div></div></div>
Concern by interviewees that the no blame policy is not no blame	MB3_KL??, MB9_KL??	


StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
RailCorp	RailCorp Corporate Staff	21-Mar-2004	11.3.1	There is an independent confidential reporting system	A internal "NO BLAME" icident reporting system is in place.Whilst this system purports to not apportion blame it still requires accountability as a consequence invalidates its self.Office Of Transport Safety Investigation has recently introduced aConfidetial Safety InformationReporting Scheme.This scheme is yet to be proven.	Poster obtained from workplace.OTSI pocket card
RailCorp	Station Masters	21-Mar-2004	11.3.1		The Office of Transport Safety Investigation Confidential Safety Information Reporting Scheme is available to all railway persons as well as the general public.	1 800 180 828 OTSI Contact number to access the scheme
RailCorp		21-Mar-2004	11.3.1			At interview MR18JE31 reported that she/he was not aware of any policy document supporting the "No Blame Incident Reporting "
StateRail	Train Crewing	21-Mar-2004	11.3.1		There is no independent confidential reporting system rather it is the no blame policy operated by SRA	V4, V5 and indicate the no blame reporting is not effective
StateRail	Train Crewing	21-Mar-2004	11.3.2	There is a system in place that adequately protects confidentiality	There is no confidential reporting system rather it is the no blame policy operated by SRA	V4, V5 and indicate the no blame reporting is not effective. Driver reporting paper in the controller was challenged
RailCorp	RailCorp Corporate Staff	21-Mar-2004	11.4	There is an appropriate feed-back process for staff who report hazards and incidents	No feed back system could be detected other than informal one. Bruce Hall stated it was an objective of his to ensure staff who report safety items received feed back.	KL 2
RailCorp	RailCorp Corporate Staff	21-Mar-2004	11.5	Accidents and near misses are rapidly and accurately reported to senior management*	Major accidents and incidents are reported to senior managemment in aprompt manner.KL1 informed the auditors he is addressing this item.	KL1
StateRail	Station Operations	21-Mar-2004	11.6	No blame assigned to those who report accidents, incidents, or near misses*	At a local level in the Station workers felt they could draw the attention of an unsafe practice to their superiors and superiors would give their support	This was substantiated by a response to a question in Interview MR05_BB04 Q If you refused to act, R Yes, I expect I would be supported.
RailCorp		21-Mar-2004	11.6		Individuals who report as unfit for duty due to fatigue will be required to take leave without pay.	Fatigue Management Policy (04352) states that employees who self-identify fatigue are to take sick leave for that shift. It does not specify what is to happen if they do not have any sick leave remaining. When asked at interview MR11BB18 what would happen if a person had no sick leave remaining interviewee responded that they would have to take leave without pay--they are adults and they decide how to manage their lives.
StateRail	Corporate	21-Mar-2004	11.6		Issues arising from Waterfall investigations are being closely tracked.	Docs [04359 February 04 Progress Report on implementation and action ....arising from..waterfall] provided by interviewee show that issues from the Stage 1 Waterfall report and MoT report recommendation responses are being tracked and reported.
RIC	Train Services - Train Ops - Rail Management	21-Mar-2004	11.6		Response to incident investigation is not risk based and is inappropriate in some cases	Interviewee noted that "everyone gets castrated" if they incur a SPAD regardless of the circumstances and risk. This is driving reporting underground and is definitely not promoting a no blame culture. Gave specific examples.
StateRail	Train Crewing	21-Mar-2004	11.6		There is no independent confidential reporting system rather it is the no blame policy operated by SRA which is perceived to be ineffective as an operable no blame policy	V4, V5 and indicate the no blame reporting is not effective
RailCorp	RailCorp Corporate Staff	21-Mar-2004	11.6		This is not an accurate statement. Application of blame is present	KL6 ,KL6 ,KL7 ,KL8 ,KL9 ,KL10 ,KL11 ,KL12 ,KL13KL17 ,KLi9 ,KL20 ,KL21 ,KL22
RailCorp		21-Mar-2004	11.6		Thos who use the "No Blame" Incident reporting system can still be held accountable for an error or circumvention.	At interview MR18JE31 reported that the "No Blame Incident Reporting "System did not imply no accountability.
RailCorp	Senior Coordinator Operational Safety	21-Mar-2004	11.6			At interview MR07LN07 it was reported that a person who had recently reported having made a SPAD was sent to Petersham.
RailCorp	Operational Safety	21-Mar-2004	11.6			When asked at interview MR07LN07 about the appropriateness the management of drivers who report their own errors, response was that they would be sent to Petersham.
StateRail	Train Crewing	21-Mar-2004	11.7	There is an appropriate process for handling whistle blowing*	There is no appropriate process for handling whistle blowing	V4, V5 and driver indicate the no blame reporting is not effective
RailCorp	RailCorp Corporate Staff	21-Mar-2004	11.7		There is no proceedure for this element	
			12	INCIDENT AND ACCIDENT INVESTIGATION		
StateRail	State Rail	21-Mar-2004	12		State Rail has a documented procedure concerning Accident and Incident Investigation	DOCUMENT REFERENCE: State Rail Safety Standard 7.002 , Accident and Incident Investigation
RailCorp	Station Masters	21-Mar-2004	12.1	There is a formal, documented process in place for investigating reported incidents, accidents, serious near misses, and hazards	A formal accident and incident investigation process is in place	Registry number 04110
StateRail	Capital Works	21-Mar-2004	12.1		Capital Works have a detailed incident reporting system in place that not only records incidents but also analyses the cause of incidents.	INTERVIEW REFERENCE: BMB_22; DOCUMENT REFERENCE: WAUD.007.015.0884, Incident Reports
RIC	Train Services - Train Ops - Rail Management	21-Mar-2004	12.1		Response to incident investigation is not risk based and is inappropriate in some cases	Interviewee noted that "everyone gets castrated" if they incur a SPAD regardless of the circumstances and risk. This is driving reporting underground and is definitely not promoting a no blame culture. Gave specific examples.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	12.1		There is a formal accident/incident investigation process.	registerd document # WAUD.007.012.1032.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	12.1		This element could not be determined.	
RailCorp	RailCorp Corporate Staff	21-Mar-2004	12.2	This process includes causal analysis and risk assessment	Contained in the "SAFEWORKING POLICY MANUAL" is a risk analysis process. This process is based on Australian and New Zealand standards.	Registerd Document WAUD.007.012.1020
RailCorp	RailCorp Corporate Staff	21-Mar-2004	12.3	The process includes preventative and corrective actions	Safeworking document if looked at in total could be assessed as meeting this element.Chapter 9.deals with the worker involved in the incident .Accident/incident reports make recommendations.As in aviation it was stated during interview KL3 items discovered during the investigation that require urgent rectification would be brought to the notice of the accounttable manager or supervisor immediately these urgent items were dicovered.	KL3
RailCorp	RailCorp Corporate Staff	21-Mar-2004	12.4	Results of investigations are communicated to relevant staff	Results of investigations go to management.Itwas alleged by direct labour they often did not get feedback relavent to incidents they were invoved in.	KL17KL10
RailCorp		21-Mar-2004	12.4		RMC Shift Manager does not receive feedback on the results of investigations	At interview MR16BB23 when asked about feedback on incidents where he was the first point of contact and completed the first level of investigation reply was that he does not receive feedback on any incidents in which he has had an involvement.

Observations	Interview/Document Review ID	Ratings for Finding
The "No Blame Incident Reporting" system is not supported by written policy	MR18JE31	
Concern by interviewees that the no blame policy is not no blame	MB3_KL??, MB9_KL??	
Concern by interviewees that the no blame policy is not no blame	MB3_KL??, MB9_KL??	
	MR05_BB04	
	MR11BB18	
	NI26/GMC	
	NI06JE07	
Concern by interviewees that the no blame policy is not no blame	MB3_KL??, MB9_KL??	
	MR18JE31	
Recently a person reported a SPAD and was sent to Petersham for evaluation	MR07LN07	
Those who report their own errors are treated as though they were at fault.		
Concern by interviewees that the no blame policy is not no blame	MB3_KL??, MB9_KL??	
There may be a lack of awareness of the State Rail Safety standards across State Rail (might have some pockets that are aware). For example, in one specific case of an interview with a safety officer who has been in the safety game in state rail since 2001 he didn't even know that State Rail Safety standards actually existed. Their is a suspicion that this may be a systemic issue across the board and warrants further investigation to verify.		
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_22; DOCUMENT REFERENCE: WAUD.007.015.0884, Incident Reports	
	NI06JE07	
	MR16BB23	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
RailCorp	RailCorp Corporate Staff	21-Mar-2004	12.5	There is an appropriate system to monitor reported hazards and incidents, including actions	There is a system that monitors reported hazards and incidents.Effectivness of this system could not be determied at these interviews.	KL 2 KL 3
RailCorp	RailCorp Corporate Staff	21-Mar-2004	12.6	There is an appropriate process for follow-up and closure of actions	Key word in this element is "APPROPRIATE".This element could not be determined.	
RailCorp	RailCorp Corporate Staff	21-Mar-2004	12.7	A methodical recording and record keeping system is adequate and in place*	Observation of records during these interviews indicated methodical record keeping..	KL2 ,KL3.
StateRail	Station Operations	21-Mar-2004	12.7		The IIMS system collects information about incidents, however it is not causal factor oriented	Interview MB02_KL With 5/02/04 & DRMB22 reg 04110 shows a system able to collect data
RailCorp	RailCorp Corporate Staff	21-Mar-2004	12.8	Investigation teams are comprised of competent staff that have been appropriately trained*	Investigation staff have attended the QANTAS Corporate Safety Department 5 day accident/incident investigation course.	KL3
RailCorp		21-Mar-2004	12.8		Crew Safety Manager has not received adequate investigation training	At interview MR18JE31 reported that the only accident investigation training he had completed was the Qantas 3 day Investigation for Managers course
RailCorp	RailCorp Corporate Staff	21-Mar-2004	12.9	Investigation reports appropriately assess safety implications and how they affect the entire organization*	Investigation reports are of a high standard.	"FINAL REPORT SUBIBAN TRAIN DERAILMENT KINGSGROVE NSW 6 OCTOBER 2000, andBARGO YERRINBOOL DERAILMENT AND COLLISION 1 AUGUST 2002.are examples examined.Whilst these documents are issued under transport NSW letterhead RailCorp investigation unit played a major role in its production.
		22-Mar-2004	12.10	Investigation results are appropriately input into the safety management system (especially training and goal setting)*	StateRail did not have, and RailCorpo is yet to develop an effective, integrated safety management system	
			13	<b>ANALYSIS AND MONITORING</b>		
StateRail	State Rail	21-Mar-2004	13		State Rail has a documented procedure concerning Injury Classification and Trending	DOCUMENT REFERENCE: State Rail Safety Standard 7.003 , Injury Classification and Trending
StateRail	PFM	21-Mar-2004	13.1	There is a process for analysis and monitoring of safety-related incidents, accidents, and hazards	There are monitoring mechanisms in place to track the status of safety initiatives in state rail.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Email Subject: Initiatives Program - PFM, Dated: 7 Feb 03
RailCorp	RailCorp Corporate Staff	21-Mar-2004	13.1		There is a process in place.Safety Audit Data Base.[SADB] is what it refered to.There was an attempt being made to intergrate this system with similar systems positioned RIC.Further workis planned to enhance the datd baseThis system was used to identify the ten top hazards.It was stated There other data bases within the new RailCorp that may be utilised when the merger is complete.	KL 2 KL 3
StateRail	Capital Works	21-Mar-2004	13.1		Capital Works conduct external safety inspections of infrastructure projects – but are primarily focused on the dimensions of a SWE and OH&S. The safety inspections provide a mechanisms for monitoring of hazards.	INTERVIEW REFERENCE: BMB_22; DOCUMENT REFERENCE: WAUD.007.015.0823, Safety Inspections (Various)
StateRail	Capital Works	21-Mar-2004	13.1		Capital Works conduct regular and detailed reviews of SWMS	INTERVIEW REFERENCE: BMB_22; DOCUMENT REFERENCE: WAUD.007.015.0854, SSMP and SWMS Review for Projects
RIC	Train Services	21-Mar-2004	13.2	There is an adequate process for monitoring safety-related trends	Management monitoring and board reporting of performance not risk based and does not provide good indication of status of critical controls	Sighted RailCorp February Board reporting template [WAUD.007.004.0231]. Safety KPIs are SPADS attributable to train services and no. of incidents reported to wrokcover relating to train services. Interviewee noted that KPIs will be reviewed.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	13.2		On the information given there did not appear to be clear understanding of trend analysis and how it is used.Process appeared to be inadequate.	KL 2 , KL 3
StateRail	PFM	21-Mar-2004	13.2		PFM conducts detailed trend analysis and pareto analysis as part of its maintenance reviews of maintenance depots (some of the trend analysis conducted can provide indicators of safety related issues).	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0819, Passenger Fleet Maintenance Quality and Technical Support Maintenance Review Summary for Periods 4,5 &6 2003/4
StateRail	Train Services	21-Mar-2004	13.2		There is a process at various levels for monitoring safety related trends	Reporting by the GGM Safety to the Board safety Committee Meeting DRMB54 reg WAUD.006.001.0319 to 0336 indicates trend infomation for the Priority Hazard List. In addition the Area North Safety Committee Minutes DRMB24 reg 04110 shows trends for OH&S in that area
RailCorp	RailCorp Corporate Staff	21-Mar-2004	13.3	There is an adequate process that monitor audits and their results	This element could not be determined.	KL 2 ,KL3 ,KL4.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	13.4	There is an adequate process in place for management to regularly review results of data analysis	This element could not be determined.	KL2 ,KL3 ,KL4.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	13.5	Uncorrected vs. corrected safety discrepancies are tracked*	This element could not be determined.	KL2 ,KL3 ,KL4.
StateRail	Corporate	21-Mar-2004	13.6	Safety performance compared over time*	There is a process at various levels for monitoring safety related trends	Reporting by the GGM Safety to the Board safety Committee Meeting DRMB54 reg WAUD.006.001.0319 to 0336 indicates trend infomation for the Priority Hazard List. In addition the Area North Safety Committee Minutes DRMB24 reg 04110 shows trends for OH&S in that area
RailCorp	RailCorp Corporate Staff	21-Mar-2004	13.6		This element could not be determined.	KL2 , KL3 ,KL4 .
RailCorp	RailCorp Corporate Staff	21-Mar-2004	13.7	Safety performance of contracted goods and services are trended*	This element could not be determined.	KL2 ,KL3 ,KL4.
StateRail	Corporate	21-Mar-2004	13.8	Trending is conducted for safety-related incidents, accidents, and hazards*	There is a process at various levels for monitoring safety related trends	Reporting by the GGM Safety to the Board safety Committee Meeting DRMB54 reg WAUD.006.001.0319 to 0336 indicates trend infomation for the Priority Hazard List. In addition the Area North Safety Committee Minutes DRMB24 reg 04110 shows trends for OH&S in that area
RailCorp	RailCorp Corporate Staff	21-Mar-2004	13.8		This element could not be determined.	KL2 ,KL3 ,KL4.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	13.9	Results of safety or risk assessment analyses are incorporated into the safety management system*	This element could not be determined.	KL2 ,KL3 ,KL4.
			14	<b>EMERGENCY RESPONSE PROCEDURES</b>		
StateRail	State Rail	21-Mar-2004	14		State Rail has a documented procedure concerning Emergency Access / Egress from Buildings &	DOCUMENT REFERENCE: State Rail Safety Standard 8.003 , Emergency Access / Egress from Buildings &
StateRail	State Rail	21-Mar-2004	14.1	There is a documented emergency response action plan	State Rail has a documented procedure concerning Emergency Preparedness and Response	DOCUMENT REFERENCE: State Rail Safety Standard 8.001 , Emergency Preparedness and Response

Observations	Interview/Document Review ID	Ratings for Finding
		
		
		
Station Master claims not to have access to the IIMS system in order to interrogate and effect on-line input. The SM at X was bemused by this claim who doesn't have any problems accessing the system	MB02_KL?? DRMB22	
		
	MR18JE31	
		
		
There may be a lack of awareness of the State Rail Safety standards across State Rail (might have some pockets that are aware). For example, in one specific case of an interview with a safety officer who has been in the safety game in state rail since 2001 he didn't even know that State Rail Safety standards actually existed. Their is a suspicion that this may be a systemic issue across the board and warrants further investigation to verify.		
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Email Subject: Initiatives Program - PFM, Dated: 7 Feb 03	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_22; DOCUMENT REFERENCE: WAUD.007.015.0823, Safety Inspections (Various)	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_22; DOCUMENT REFERENCE: WAUD.007.015.0854, SSMP and SWMS Review for Projects	
	NI07JE08	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0819, Passenger Fleet Maintenance Quality and Technical Support Maintenance Review Summary for Periods 4,5 &6 2003/4	
Data certainly is collected, but its use is patchy with what seems to be little application or communication across the system	DRMB54 reg WAUD.006.001.0319 DRMB24 reg 04110	
		
		
		
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StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	State Rail	21-Mar-2004	14.1		State Rail has a documented procedure concerning First Aid Equipment and Services	DOCUMENT REFERENCE: State Rail Safety Standard 12.01 , First Aid Equipment and Services
StateRail	Central Station	21-Mar-2004	14.1		Central Station has two emergency response plans possibly creating confusion.	Two emergency plans for the Central Station precincty exist. [doc registry 04087]. (1) "Central Precinct Emergency Plan, April 2003" and (2) "Emergency & Evacuation Preparedness Plan - Central Station, Nov 2003". Comments on the plans are as follows: The relationship and difference in scope between the plans is not clear. Plan (1) , section 2.1 states "these procedures were formulated to meet ...AS3745...the principle function of these emergency procedures is to ensure the safety of all occupants of the central station precinct." The scope of this plan is the whole central station precinct. Plan (2) also cites AS3745, and states that it "sits under the framework of the central station precinct fire and emergency procedures" and " incorporates the Network Incident Management Plan, Major Incident and Emergency Protocols, First 5 minute response, network rules and pcedures, operator specific procedures, and city rail station manual".
StateRail	Central Station	21-Mar-2004	14.1		Central Station has two emergency response plans possibly creating confusion.	Different emergency control organisations are cited in each plan and the relationship between the two is not clear. Plan (1) cites Fire wardens for each of the buildings and precincts, Plan (2) cites the emergency command structure cited in the Network Incident Resposne Plan [WAT.002.050.0001]. No relationship between the two structures is drawn in either plan. There is some cross over between plans: For example both plans cover gas leaks, bomb threats, chemical leak, civil disorder. Plan (1) also covers building damage and medical emegrencies. Plan (2) includes crowd congestion / control. Where there is cross over, similar information is provided but in a different format.
RailCorp	Station Operations	21-Mar-2004	14.1		Contingency for RMC failure exists	Interviewee noted that Queen St premises and equipment provide back up for the RMC
RailCorp	Fire Services (ex)	21-Mar-2004	14.1		Emergency preparedness has a disjointed history that threatens the effectiveness of emergency response	Fire Services has been disbanded 3 times and resurrected twice over the past 14 years. Currently it is being disbanded and will be handed over to state emergency services. Interviewee is recent incumbent of manager fire services division and is concerned that there is inadequate knowledge by external services of particularly the underground network.
StateRail	PFM	21-Mar-2004	14.1		Evacuation procedures are not in place in some maintenance depots.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0529, Draft State Rail Passenger Fleet Maintenance - Future Directions dated October 2003
RailCorp	Station Masters	21-Mar-2004	14.1		Evidence indicated that staff were aware of current emergency plans. It was not possible to establish the situation regarding external emergency services as they were not contacted .	Registry number o4110.Additionally staff interviews from platforms and barriers established their knowledge of current emergency plans.
RailCorp	Security Strategy	21-Mar-2004	14.1		RailCorp security plan potentially inadequate	Interviewee noted that railCorp security plan had been in draft for for several months and that it had not been signed by the CEO of railCorp. There are no KPIs or internal reporting mechanisms in RailCorp to cover the area of security. The RailCorp plan according to the interviewee does not cover CountryLink and the reason for this is not clear.
RailCorp	Safety Corporate	21-Mar-2004	14.1		State Rail Incident Management Plan exists and Rail Corp incident response plan is in development.	Doc WAT.002.050.0001 State Rail Network Incident Management Plan details the corporate response to incidents / emergencies. This plans are reported to be consistent and aligned with state DISPLAN
RailCorp	Safety Corporate	21-Mar-2004	14.1		State Rail Incident Management Plan exists and Rail Corp incident response plan is in development.	Doc WAT.002.050.0001 State Rail Network Incident Management Plan details the corporate response to incidents / emergencies. This plans are reported to be consistent and aligned with state DISPLAN
RailCorp	Station Masters	21-Mar-2004	14.1		There are local emergency plans in place at all stations visited.These plans were detailed and took into accountt local conditions.	Plans were formulated in accordance with State Rail Safety Plan 2002-3mk2 Reg doc04110
RailCorp	RailCorp Corporate Staff	21-Mar-2004	14.1		There is a document in placeJohn Evens is commenting on item/element 14	
StateRail	Station Management	21-Mar-2004	14.1		There is an emergency evacuation preparedness plan	MB02_KL Sighted in SM's office DRMB 29 reg 04110
StateRail	Station Operations	21-Mar-2004	14.1		There is an emergency plan for Station which icludes for example passenger evacuation fire procedures etc	The emergency plan was sighted on the safety notice board at Station
StateRail	Signalling	21-Mar-2004	14.1		There is no documented emergency response plan in place if the ATRICS system goes down completely in the Sydnam Signalling Box	Interview NI13_BB10 The interviewee stated the he was not aware of any such procedure
StateRail	Signalling	21-Mar-2004	14.1		There was a folder at Sydnam Signal Box which contained the Emergency plans for the centre	A folder which contained the Emergency plans for the centre was sighted
StateRail	Fire Services	21-Mar-2004	14.1		A Coordinator has been appointed to develop and administer emergency preparedness. Although whilst the State Rail Network Incident management plan clearly defines the Chief Operations Manager for emergencies Staff in general are not aware of who performs this role.	It was indicated by x that the coordinator appointed to develop and administer emergency preparedness was either Chief of Operations or Executive General Manager Safeworking
StateRail	Train Operations	21-Mar-2004	14.1		Executive General Manager Safeworking is the Emergency Response Coordinator Manager Train Operations is the representative on site although this role has now been delegated to a number of incident Commanders, the Manager Train Operations is to act as the liaison Officer	
StateRail	Station Operations	21-Mar-2004	14.1		Station staff do not know who the emergency coordinator is in an emergency.	The Station Master at X city station indicated that he did not know who the coordinator was from SRA for emergency response
StateRail	Station Operations	21-Mar-2004	14.1		The Chief Executive Officer was nominated as the Emergency Coordinator in an Emergency. The Chief Operations Manager is the Emergency Coordinator in an Emergency.	It was indicated that a coordinator had been appointed to develop and administer emergency preparedness but this person was the CEO
StateRail	Train Operations	21-Mar-2004	14.1		The Chief Operations Manager is the person nominated as the Incident Management Coordinator as per the Staterail Network Incident Management Plan	Interviews indicated that Chief Operations Manager was the Incident management coordinator in an emergency as per the State Rail Network Incident Management Plan
StateRail	Train Operations	21-Mar-2004	14.1		14.1A coordinator has been appointed to develop and administer emergency preparedness and this is the Chief Operations Manager.	Driver indicated that Chief Operations Managers was the Incident management coordinator in an emergency as per the State Rail Network Incident Management Plan
StateRail	Ambulance Services	21-Mar-2004	14.1			Not Aware of State Rail's
RailCorp	Rail Management Centre (RMC)	21-Mar-2004	14.2	This document is appropriately controlled, including distribution	Confusion about which incident management plan is current	Interviewee showed the auditors 2 versions of the SRA incident management plan (SRA Network Incident Management Manual Draft version 2 Sept 2003 and document of same title dated Dec 2002). [WAT.002.050.0001 and WAUD.007.001.0416]
RailCorp	Rail Management Centre (RMC)	21-Mar-2004	14.2		Confusion about which incident management plan is current	Interviewee indicated that latest incident response plan was dated dec 2002. SRA Network Incident Management Manual Dec 2002). [WAT.002.050.0001] Sighted this document on the SRA intranet in interviewees office. Conflicts with evidence of RMC manager. Interviewee provided history of incident repose plan development.
RailCorp	Safety Corporate	21-Mar-2004	14.2		Confusion about which incident management plan is current	Interviewee had no knowledge of updated State Rail Incident Management Plan [WAT.002.050.0001]

Observations	Interview/Document Review ID	Ratings for Finding
There may be a lack of awareness of the State Rail Safety standards across State Rail (might have some pockets that are aware). For example, in one specific case of an interview with a safety officer who has been in the safety game in state rail since 2001 he didn't even know that State Rail Safety standards actually existed. Their is a suspicion that this may be a systemic issue across the board and warrants further investigation to verify.		
The 2 plans are probably driven from different quarters. Plan (1) appears to be OHS driven and is mostly focussed on evacuation of SRA staff from buildings. Plan (2) is the "standard" template that exists at all stations and is more aligned with the Network Incident Response Plan.	NI 18 CG 17	
	NI 18 CG 17	
	NI09 BBLNBMB	
	NI03 / JE04	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0529, Draft State Rail Passenger Fleet Maintenance - Future Directions dated October 2003	
	NI15 KL	
	NI10 BB? LN 10 BMB??	
	NI10 BB? LN 10 BMB??	
The emergency response plan is limited to evacuations. An incident response plan, prepared by RIC is used by SRA staff and is in good working order	MB02_KL, DRMB29	
	MR05_BB04	
	NI1_BB17	
	NI12_BB09	
There appears to be some confusion with regards to who is fulfilling the role of coordinator . Refer to Page 21 Incident Management Plan which states that the coordinator is the Chief Operations Manager	Refer to document No WAT.002.050.0001 JE 25 N121	
Executive General Manager Safeworking is the Emergency Response CoordinatorManager Train Operations is the representative on site although this role has now been delegated to a number of incident Commanders the Manager Train Operations is to act as the liaison Officer	JE 21 BM 13	
This links to Manager Train Operations response which stated that Executive General Manager Safeworking Executive Manager Safety was the overall Emergency Coordinator	JE 22 KL 16	
There appears to be some confusion over who is the person responsible for this position. The State rail Network Incident management plan dated December 2002 (refer table 7.5.1) and the Draft version of the incident Management plan V 2.1 Refer table 6.2.	Refer to document no WAT.002.050.0001 JE 24 MN13	
Whilst this is stated in the State Rail Network Incident Management Plan Dated December 2002 (Refer Table 7.5.1 document number WAT.002.050.0001) a multitude of staff who should have known the roles and responsibilities of the overall emergency coordination	WAT.002.050.0001)	
Whilst this is stated in the State Rail Network Incident Management Plan Dated December 2002 (Refer Table 7.5.1) a multitude of staff who should have known the roles and responsibilities of the overall emergency coordinator were not aware or indicated other persons who fulfill this role. There appears to be a communication issue with regards to understanding as to who's role this is. The overall coordinator would need to be a person who has sufficient authority and access to the senior management team. This requirement is to make sure that emergency response is fully addressed and properly resourced.	Refer to Document No WAT.002.050.0001 JE29_NI28	
	JE23_MT	
	NI01 / JE01	
	NI03 / JE04	
	NI10 BB? LN 10 BMB??	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
RailCorp	Station Masters	21-Mar-2004	14.2		Station emergency plans were ditributed around the stations,EG Barriers and platforms.Master local plan was kept in station managers office	Plans were formulated in accordance with State Rail Safety Plan 2002-3mk2 Reg doc04110
StateRail	Train Operations	21-Mar-2004	14.2		14.2 Departmental/section coordinators not been formally appointed to develop and administer emergency preparedness in their area of responsibility. This is an infomal process and is not contained in any Position Description or appointment in writing.	Interviewee indicated that these were as per the Network Incident Management Plan Dated December 2002. Interviewee also stated that the Security Division is taking more of an active role in emergency preparedness. The question was again asked have departmental/section coordinators been appointed to develop and administer emergency preparedness in their area of responsibility. To which he responded that this had not been formalized in writing.
StateRail	Fire Services	21-Mar-2004	14.2		A departmental/section coordinator has not been appointed to develop and administer emergency preparedness in their area of responsibility	No coordinator has been appointed for SRA Fire Services at Redfern. It was also indicated that there was no evacuation plan for the station.  There are no current positions descriptions for the Fire Services Group, there are draft position descriptions
StateRail	Train Operations	21-Mar-2004	14.2		The process for develop and administering emergency preparedness by Managers is informal. But this has not been formalized	interviews indicated that these were as per the Network Incident Management Plan Dated December 2002. It was stated that the police headquarters was the command centre for emergency services. This centre provided for overall liaison and has links but this was an informal process whereby managers develop and administer emergency preparedness. But this has not been formalized
StateRail	Station Operations	21-Mar-2004	14.2		This is stated in the State Rails Incident Management Plan dated December 2002, responsibilities are highlighted but not the authority	See State Rails Incident Management Plan dated December 2002 for details of responsibilities.  Note: This states responsibilities but no authorities
StateRail	Station Operations	21-Mar-2004	14.2			Speak to Director Station Operations
RailCorp	Safety Corporate	21-Mar-2004	14.3	It specifies responsibilities/authorities allocated to personnel	Co-ordination between Rcorp security staff at RMC and customer services staff needs to be improved.	Coordination between Rcorp security staff at RMC and customer service was not good during the gas leak incident of 5 Feb according to interviewee.
RailCorp	Station Masters	21-Mar-2004	14.3		Plan listed specific individual responsibilities	Plans were formulated in accordance with State Rail Safety Plan 2002-3mk2 Reg doc04110
RIC	Train Services	21-Mar-2004	14.3		Senior management role in crisis management not clearly defined for a new senior manager	Senior manager (VG report) asked about role in crisis management when commencing this role. Reply was that his role was not clearly defined but that he could "play interference" with external stakeholders.
StateRail	Station Management	21-Mar-2004	14.3		The preparedness plan specifies responsibilities and accountabilities but is not targetted at named individuals	MB02_KL Sighted in SM's office DRMB 29 reg 04110
StateRail	Train Operations	21-Mar-2004	14.3		Training is not done at senior management level. An example of this is the Manager Train Operations who is the liaison Officer for State Rail in the Emergency Centre.	Interviewee stated some coordinators have had basic training but had not been trained in responsibilities, accountabilities and administration of emergency preparedness. At some levels of senior management they have received no training what so ever in emergency preparedness.
StateRail	Fire Services	21-Mar-2004	14.3		Coordinators have not been appropriately trained in emergency preparedness. But SRA Fire services have had comprehensive training for all.	Interviewee indicated that Fire Services training is comprehensive but had no comment to make with regards to coordinators in general.
StateRail	Train Operations	21-Mar-2004	14.3		Training is not done at senior management level. Coordinators should have a sound knowledge and understanding of the types of emergencies from an SRA point of view and how responses should be acted on given the nature of the emergency.	Interviews stated some coordinators have had basic training but had not been trained in responsibilities, accountabilities and administration of emergency preparedness. At some levels of senior management they have received no training what so ever
StateRail	Station Operations	21-Mar-2004	14.3		Upper management have not been trained to the appropriate level in Emergency Preparedness	At a lower level coordinators have been trained. But manager believes that Senior Managers have not.
RailCorp	Station Operations	21-Mar-2004	14.4	There is adequate periodic testing and auditing of the emergency response plan	Emergency drills in relation to stations have been run regularly	Handwritten histroy of major drills conducted over the last 3 years [03691] shows that these exercises have been run regularly.
RailCorp	Safety Corporate	21-Mar-2004	14.4		Emergency preparedness exercise planning is ad hoc and not integrated.	Desk top exercises reported to have been run but interviewee reported that not everyone would be aware of desk top exercises. That is, station emergency response exercises are not linked to exercises testing corporate response.
RailCorp	Fire Services (ex)	21-Mar-2004	14.4		Emergency response arrangements are not adequate	Interviewee related experience of waterfall incident - Fire services staff responded but were not fully provisioned to fulfil their role as they understood their role to be. Fire services staff were trying to provide liaison and support with railway staff and e-services but had few provisions such as shelter, equipment to adequately fulfil this role. One satellite phone they provided was available and was widely utilized by e-services.
RailCorp	Station Operations	21-Mar-2004	14.4		Stations need to conduct emergency drills regularly because of the high level of staff turnover.	Interviewee reported that level of emergency preparedness on sattions is quite good in his opinion but maintenance of this level of preparedness via induction and emergency drills is difficult because of the level of tunrnover.
RailCorp	Fire Services (ex)	21-Mar-2004	14.4		Testing of emergency response is informal and irregular	Some exercises have been performed but there is nothing in place to dictate requirements for ongoing testing and improvement of emergency response. Exercise "Blue rattler" held in 1997-8.
StateRail	Fire Services Unit	21-Mar-2004	14.4		There is an established regime for training station staff in emergency preparedness resposne.	Sight doc [04294] Checklist for Workplace Assessment for SF03. This is a checklist used by the Fire Services Trainer to document the results of emergency prep. Knowledge of station staff. Checks include fire equipment use and procedure for exiting smoke filled room. Interviewee conducts testing once per week.
RailCorp	Station Masters	21-Mar-2004	14.4		Whilst testing of the plan had been carried out using "desk top exercises" Station Managers indicated they would like to see more "real time" exercises.Underground station managers were very vocal on this subject.	No documented evidence was produced to verify this item.Note all station managers interviewed were of this opinion.
StateRail	Train Operations	21-Mar-2004	14.4		14.4 The organisation has developed an emergency response action plan which is currently under review.	driver indicated that the State Rail Network Incident Management Plan Dated December 2002 was the current document.
StateRail	Station Operations	21-Mar-2004	14.4		A state Rail Incident management plan has been developed and is currently under review. Other supporting documentation ( Emergency & Evacuation Preparedness Plan for stations) is also being reviewed.	Incident management plan dated December 2002 and is currently under review. The draft version V 2.1 has been incorporated into the emergency preparedness plan for all stations. A copy of the Emergency & preparedness plan for Wynyard Station which will shortly be approved from the EGM Safeworking area (Executive General Manager Safeworking). It was also indicated that this may be approved before the new version of the plan is issued.
StateRail	Station Operations	21-Mar-2004	14.4		No version number on the document (Emergency & Evacuation Preparedness Plan Town Hall Station Dated June 2000). Document control is an issue for StateRail	State Rail Network Incident Management Plan





Observations	Interview/Document Review ID	Ratings for Finding
Informal process whereby managers develop and administer emergency preparedness. But this has not been formalized.	Refer to Document No WAT.002.050.0001 JE29_NI28	
Comment 1: The Fire Services at Redfern is the centre where training in emergency procedures and fire management is carried out. If they are promoting emergency preparedness then as part of their training it would be paramount to ensure that all trainees are aware of the emergency evacuation procedures for the building. This is indicative of most places where auditors have carried out interviews. Signing in and out is not paramount nor is the emergency evacuation procedures explained. there is no current version of the position descriptions for the fire services personnel.	JE 25 N121	
Refer to State Rails Incident Management Plan dated December 2002 Reference document numbered 14.2	Refer to Document No WAT.002.050.0001 JE 22 KL 16	
These are covered in the Incident Management plan	JE 24 MN13	
	NI10 BB? LN 10 BMB??	
	NI07JE08	
	MB02_KL, DRMB29	
Training is not done at senior management level. Coordinators should have a sound knowledge and understanding of the types of emergencies from an SRA point of view and how responses should be acted on given the nature of the emergency. State Rail will need to ensure that training is commensurate with State Rail's needs and the requirement to minimize loss. Training of coordinators should include as a minimum, emergency communications, environmental issues and response, terrorist activities, hazardous substances. the NSW disaster response plan, legislative and internal/external reporting requirements and energy control e.g. fire, gas.	JE29_NI28	
This is indicative of most places where auditors have carried out interviews. Signing in and out is not paramount nor is the emergency evacuation procedures explained.	JE 25 N121	
Training is not done at senior management level. Coordinators should have a sound knowledge and understanding of the types of emergencies from an SRA point of view and how responses should be acted on given the nature of the emergency. State Rail will		
Upper management have not been trained in Emergency Preparedness	JE 24 MN13	
	NI09 BBLNBMB	
	NI10 BB? LN 10 BMB??	
	NI03 / JE04	
	NI09 BBLNBMB	
	NI03 / JE04	
	NI21 JE	
The Network Incident Management Plan states responsibilities the local emergency plans for stations cover reporting, requirements, evacuations, detailed instructions for fire, emergency procedures etc, hazardous materials, a coordination centre and search and rescue requirements. However, the plans do not address search & rescue adequately. In relation to the underground the search and rescue plan should adequately address site layouts, the risks associated with an underground environment, practiced search & rescue techniques and a good working knowledge of site emergency plans. This also includes the control of people not involved in the actual emergency. As stated by the State Rail fire services the plans for Town Hall gas leak were not available at the time of the emergency and this caused unnecessary delay to the plans from SRA fire services headquarters.	(Refer to Document No WAT.002.050.0001 JE29_NI28	
: The emergency preparedness plans for stations should not be issued until the overall plan has been approved and issued	JE 24 MN13	
No version number on the document (Emergency & Evacuation Preparedness Plan Town Hall Station Dated June 2000) refer document numbered 14.2 so therefore it cannot be verified which is the current version other than the word of the Station Master at Town	Refer to Document No WAT.002.050.0001 JE 22 KL 16	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	Train Operations	21-Mar-2004	14.4		The Network Incident Management Plan states responsibilities the local emergency plans for stations cover reporting, requirements, evacuations, detailed instructions for fire, emergency procedures etc, hazardous materials, a coordination centre and search and rescue requirements. However, the plans do not address search & rescue adequately.	Interviewee indicated that the State Rail Network Incident Management Plan Dated December 2002 was the current document.
StateRail	Fire Services	21-Mar-2004	14.4		The incident management plan dated December 2002 does not assign any responsibilities to the SRA fire services Unit when in fact they provide a vital link with NSW Fire services particularly in the underground.	Interviewee also indicated that at the time of the Town Hall Gas Leak that he was dispatched to Wynyard Station where she/he assisted with the evacuation.. Interviewee was then called to Town Hall station. On arrival at town Hall Station there was a problem due to the fact that the Operational commander did not have a copy of the plans for the underground network. State Rail was requested to provide these and they couldn't. Interviewee then proceeded back to Redfern to obtain these plans. It was indicated that these plans are normally available through the Rail Infrastructure Representative but for some reason they were unavailable on the day.
StateRail	Ambulance Services	21-Mar-2004	14.4			State Rail has not consulted the ambulance with regards to their Network Incident management plan. An interface risk management plan has not been developed. Certainly one that should have included the Ambulance Service. State Rail have a problem with the number of departments and who is responsible for what.
RailCorp	Station Masters	21-Mar-2004	14.5.1	The emergency response plan is regularly reviewed and updated	Due to the operating environment and changing workplace there is a constant need to upgrade the station emergency plans.Notwithstanding no evidence was produced to verify this requirement.	No documented evidence was produced to verify this item.Note all station managers interviewed were of this opinion.
StateRail	Station Operations	21-Mar-2004	14.5 .1		A state Rail Incident Management Plan has been developed	See Executive General Manager Safeworking for identification and evaluation of current incident management plan.
StateRail	Ambulance Services	21-Mar-2004	14.5 .1		Emergency response action plan needs have not been identified and evaluated with regards to emergency services roles and responsibilities based on any risk analysis.	There have been a number of exercises carried out which have involved State Rail and other Emergency Services including Ambulance services. The need to identify and evaluate Emergency response action plan should have addressed the following issues  Emergency Response Role is mainly supportive of police/fire Emergency Response unit's success depends on other organisations co-operation usually very good  There is a certain amount of criticism with regards the Emergency Response at waterfall. Any action plan should have addressed the problem of access to the network. For example, Fire Services and trucks blocking access There was also a problem of everyone waiting to get in there and help – instead of standing back  There was a need to prioritize help based on the needs of the people involved in the waterfall accident.  Access/conveyance was still a big problem Establishment of a marshalling area away from the site
						It was also stated that it would be invaluable for State rail to provide an access trial mapping system  A number of priorities were also stated such as Cleaning the track and getting patients moving The establishment of a defined marshalling area There appeared to be to many police on site and whilst these persons were for all good intents and purposes trying to help in some cases they were more of a hindrance.  The access to sites needs to be established quickly as in the case of Waterfall a police van was blocking ambulance access  Communication was poor and requires immediate attention.  There was no continual trail into waterfall. The emergency Services were fortunate in that the trail was close to accident. Clearly defined trails need to be established and roads accessing most parts of the track should be established  Phil also indicated that he had no knowledge of SRA coordinator
						In the case of Town hall the ambulance provided water SRA first aid staff did not know water pallets existed no communication and staff didn't know what resources existed.initial response by Ambulance dispatched vehicle/supervisor to Town Hall thought handled very well, everyone cleared quickly knew that gas was not noxious as no-one was adversely affected next step to support fire brigade – resources by ambulance provided established liaison with appropriate officers Town Hall re-opened at 5.30 State Rail has not consulted the ambulance with regards to their Network Incident management plan. An interface risk management plan has not been developed. Certainly one that should have included the Ambulance Service. State Rail have a problem with the number of departments and who is responsible for what.
StateRail	Fire Services	21-Mar-2004	14.5 .1		SRA Fire Services have not been consulted on the Network Incident Management Plan Draft Versions 2.1	Interviewee indicated that there used to be a person to update emergency plans for stations and that person was specifically designated in the organisation. Interviewee said it's now up to station managers to keep their own plans updated and he said that he didn't think that was being done particularly well. Interviewee is currently on a project to manage the transition from State Rail Fire Service across to the New South Wales Fire Department.
StateRail	Train Operations	21-Mar-2004	14.5 .1		The emergency response action plan needs have been identified and evaluated. However they are currently in draft form and draft is being used by staff	The State Rail Network Incident Management Plan. This is also currently in daft as Version 2.1 and has incorporated Rail Infrastructure Corporation and State Rail Authority requirements into one document.
StateRail	Station Operations	21-Mar-2004	14.5 .1		The plan has taken into account what is required for Town Hall Station the evaluation process is yet to be ratified.	State Rail Network Incident Management Plan
StateRail	Central Station	21-Mar-2004	14.5.1		Improvement action following the Feb 5 gas leak has been identified for Central Station	Doc [reg#04087 , 10]. Reviewed document highlighting recommended improvements authored by Executive Station Manager at Central. Improvements include (1) management improvements - clarifying chain of command with other groups in RailCorp and other external agencies, and ensuring support staff allocated to the station in case of emergency report in and are given clear instruction and induction, and have basic training in crowd control; (2) Capital funding improvements highlighted include - public address system upgrade, passenger information system upgrade, station entrance modification to allow for flexible barricading, staff communication systems upgrade.
RailCorp	Station Masters	21-Mar-2004	14.6.1	There is an adequate process to make staff aware of the plan (including location and how to access it)	.when questioned by auditors station staff demonstrated a thorough knowledge of local emergency plans	Interview is the most relavent method to verify this element

Observations	Interview/Document Review ID	Ratings for Finding
The Network Incident Management Plan states responsibilities the local emergency plans for stations cover reporting, requirements, evacuations, detailed instructions for fire, emergency procedures etc, hazardous materials, a coordination centre and search and rescue requirements. However, the plans do not address search & rescue adequately. In relation to the underground the search and rescue plan should adequately address site layouts, the risks associated with an underground environment, practiced search & rescue techniques and a good working knowledge of site emergency plans. This also includes the control of people not involved in the actual emergency. As stated by the State Rail fire services the plans for Town Hall gas leak were not available at the time of the emergency and this caused unnecessary delay to the plans from SRA fire services headquarters.	(Refer number WAT.002.050.0001)	
Comment 1: The incident management plan dated December 2002 does not assign any responsibilities to the SRA fire services Unit when in fact they provide a vital link with NSW Fire services particularly in the underground. If this responsibility is and has been provided to external emergency agencies, then the role should have been clearly identified and suitable responsibilities assigned.	Refer to Document WAT.002.050.0001 JE 25 N121	
	JE23_MT	
		●
	Refer to Document no WAT.002.050.0001 JE 24 MN13	
No risk assessments have been carried out to identify the risks associated with emergency preparedness. Any controls developed to this point are invalid as the overall risk exposure has not been addressed. No interface Risk Management Plan was available and certainly not one that covered the interface issues of emergency services.	JE23_MT	
Comment 1: Given the fact, for example, that the SRA Fire Services did at the time of Waterfall provide expertise from a rail perspective, then as part of the emergency response action plan needs identification and evaluation, there should have been recognition of the responsibilities for SRA Fire Services or at the very least included in the review process of the incident management plan. Comment 2: No risk assessments carried out to determine how the risk of changeover was to be managed in the future confirmed in the interview with X Senior management.	Refer to Document WAUD.007.001.0416 JE 25 N121	
whilst this is commendable document control is an issue as some staff are using the draft version in the workplace.	JE29_NI28	
The plan has taken into account what is required for Town Hall Station the evaluation process is yet to be ratified. Refer to document numbered 14.2	Refer to document numbered WAUD.007.009 JE 22 KL 16	
	NI 18 CG 17	
		●

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	Ambulance Services	21-Mar-2004	14.6.1		The Ambulance Services In house procedures have been aligned with the State disaster plan. Their copy of the NSW Displan is not up to date. .	The NSW State Disaster Plan has been reviewed and we have developed our own in house procedures
StateRail	Train Operations	21-Mar-2004	14.6.1		There is no formal process. There is a need for Corporate Counsel (Legal) to review legislation and filter this information down to the areas where document review takes place.	Interviewee indicated that the audit team could verify that legislation has been considered by checking the review stages. This should include any considerations with regards to legislative requirements
StateRail	Station Operations	21-Mar-2004	14.6.1			The Station Master indicated that he did not know
StateRail	Station Operations	21-Mar-2004	14.6.1			See Executive General Manager Safeworking for identification and evaluation of current incident management plan.
StateRail	Fire Services	21-Mar-2004	14.6.1			
RailCorp	Fire Services (ex)	21-Mar-2004	14.7	Staff have been adequately trained on the emergency procedures	Emergency response arrangements are not adequate	interviewee indicated that there are only informal arrangements with external e services to familiarise them with rolling stock, tunnels etc.... Occasionally e services visit Redfern and look over rolling stock but no formal ongoing process to keep knowledge current
RailCorp	Train Services Operations	21-Mar-2004	14.7		Emergency response arrangements are not adequate	interviewee indicated that there are only informal arrangements with external e services to familiarise them with rolling stock, tunnels etc.... Interviewee was clear about his role when an incident occurs but was not happy with that role. Wanted to be closer to the cola face. Meeting held day before waterfall changed his role. [documented evidence not received as 18/3/04]
RailCorp	Station Masters	21-Mar-2004	14.7		See item 14.6	See item 14.6
RailCorp	Fire Services (ex)	21-Mar-2004	14.7		Staff not adequately trained for incident response	Interviewee indicated that RMC personnel never assume the worst when incidents occur. Gave eg of waterfall when electrical system had to trip 3 times before the issue was escalated.
StateRail	Fire Services	21-Mar-2004	14.7		14.7 emergency response analysis no been reviewed extensively. In particular the any analysis of risk for transfer of the SRA Fire Services to the NSW Fire services.	The question was asked if there had been a risk assessment of the change of the organisation from Fire Services to New South Wales Fire Brigade. Interviewee noted that someone had come and talked the interviewee and asked a few questions about it, but the interviewee has not seen any report.
StateRail	Ambulance Services	21-Mar-2004	14.7		Emergency Response analysis for State Rail Authority has not been reviwed in conjunction with Ambulance services.	<p>The gathering of analysis and reviewing of this analysis should identify key areas of concern and make sure that controls are in place to manage issues such as</p> <p>Where are passengers injured – first – then in the case of tunnels, check the tunnel to make sure it is totally safe</p> <p>The role SRA fire Services with regards to liaison with other emergency service. This will be lost if Rural Fire Services go to NSW Fire Service</p> <p>The need to provide orientation to train ambulance in safety in tunnels. This was being carried out but was then stopped SRA charged ambulance service for the orientation.</p> <p>The issue of difficulty in getting access to Tangara trains in tunnels. There is a need to at least make emergency services conversant with door releases or a master key</p> <p>consultation – form a Ambulance Services point of view there was no real need to debrief in the Gas Leak scenario Training officers from case &amp; disaster unit provided to Ambulance Emergency Response Service</p>
						Various practical tabletop exercise courses in emergency management memos sent. All training is voluntary and there is a need to make sure that all supervisors attend training sessions
StateRail	Train Operations	21-Mar-2004	14.7		There has been no risk analysis of emergency response as part of the review process	indicated that this has not been done.
StateRail	Station Operations	21-Mar-2004	14.7			The Station Master indicated that he did not know
StateRail	Station Operations	21-Mar-2004	14.7			See Executive General Manager Safeworking for identification and evaluation of current incident management plan.
RailCorp	Station Masters	21-Mar-2004	14.8	Emergency preparedness plan identifies critical emergency response personnel from outside the organisation (e.g., fire, EMS, etc.)*	Emergency plans did reflect interaction with police, ambulance and fire services, it would appear the corporate state rail fire section was the corporate co-ordination authority for emergency services	Registry number 04110
StateRail	Train Operations	21-Mar-2004	14.8		Emergency preparedness is covered in Network Rules and also in the station emergency & evacuation plans for each station	interviews stated that this is covered in the Network Rules and also in the station emergency & evacuation plans for each station
StateRail	Station Operations	21-Mar-2004	14.8		There is a system in place to report emergencies	This is evidenced in the emergency response plans for all stations and the information made available to all personnel in the performance of their duties.
StateRail	Station Operations	21-Mar-2004	14.8		There is a system in place to report emergencies and these are strategically placed throughout Town Hall. They are on the wall at the sign in desk for the station operations centre and at other locations. They are available at the barriers to Town Hall Station.	At a local level at Town Hall there is a plan to manage emergency preparedness it's title is Emergency & Evacuation Preparedness Plan
StateRail	Train Operations	21-Mar-2004	14.8		There is a systems and processes in place to report emergencies	It was stated by x that this is covered in various documents such as Operational Standard Practice manuals and Emergency & evacuation Plans for Stations
StateRail	Fire Services	21-Mar-2004	14.8		There is not a system in place to report emergencies and if so what is the process for reporting emergencies. This is particularly so for Guards on Trains where their only form of communications is either via intercom to the driver or via mobile phone which has limited range.	The evacuation plans are not available for the station. It was stated by one of the Fire Services Personell that the requirement for guards to be provided with effective and reliable communications equipment has not been progressed. He stated that having come from the guards grade recently he was aware of the deficiency with regards to the limitations with communication. The guard has limited access to communications by way of a mobile. He/she has no access to the communications available on the train for emergency situations. In most cases the guard is locked out of the drivers compartment and whilst he/she has a key to the compartment, they do not have a key to access the driver's radio. Note: The guard will normally travel in a compartment at the opposite end to the direction of travel.
RailCorp	Safety Corporate	21-Mar-2004	14.8		Links with external emergency planning organisations exist	Interviewee reported that he and RMC manager are members of the state emergency planning committee.

Observations	Interview/Document Review ID	Ratings for Finding
The Ambulance services In house procedures have been aligned with the State disaster plan. A review of the State Disaster Plan (Displan) verifies that little consideration is given to Rail disasters and the need to develop a Rail displan specific to Rail Corridor and Rail Infrastructure. It was quoted in evidence that this was the case in evidence given by Jocelyn Guy on the 17/030/04. a review of the New South Wales Disaster Plan verifies that it was completely reviewed and was effective from July 2000 . Ther is no clear indication in the Manual as to when reviews are held and waht is the life cycle of the Manual. given that it is linked to and takes into account legislative changes (State Emergency & rescue Management Act 1989 as amended) the period of amendment versus complete review is not distinguished. it is noted that the Ambulance Services copy of the Displan was dated 1989 and had shown no amendments on the amendment page. As his supporting documentation is written off the NSW Displan their may potentially be some descrapancies with the current version of the NSW Displan.	JE23_MT	
This is not done through any formal process. There is a need for Corporate Counsel to review legislation and filter this information down to the areas where document review takes place.	JE29_NI28	
Nil at this time	JE 22 KL 16	
	JE 24 MN13	
	JE 25 N121	
	NI03 / JE04	
	NI05 / JE06	
	NI03 / JE04	
Given the fact that SRA Fire Services are transferring over to NSW fire services it begs the question of how they determined what responsibilities were being transferred over. It also states in the position description under dot point 5 (Ensuring in particular the risks associated with the underground rail system in the City and Inner suburbs are identified and managed. With the likelihood that SRA Fire Servivces are to be transferred over to NSW Fire services, how ththis risk to be managed given the fact that only a gap analysis has been done without consideration to the potential risk transfer. Comment 2: No risk assessments carried out to determine how the risk of changeover was to be managed in the future confirmed in the interview with senior management.	JE 25 N121	
No emergency response analysis has been reviewed that has included the Ambulance services.	JE23_MT	
It is imperative that analysis of Emergency response be conducted to identify and evaluate emergency response needs. This should include risk assessments, reviewing of legislative requirements and off site emergencies. The organisation should ensure that suitably trained staff carry out risk assessments and that off site emergencies such as transport accidents are also covered. Any analysis should also be reviewed regularly to make sure that any probable emergencies are covered in the emergency plans.	JE29_NI28	
Nil at this time.	JE 22 KL 16	
	JE 24 MN13	
		
Emergency preparedness is covered in Network Rules and also in the station emergency & evacuation plans for each station		
At stations credit should be given for the manner that key staff responded to this question. Staff knew what there responsibilities were and how to react in an emergency.	JE 24 MN13	
When staff were questioned on emergency response. They all knew here to find the emergency information and this is commendable. Emergency & Evacuation Preparedness Plan Town Hall Station Dated June 2000 covers this	JE 22 KL 16	
this was verified in the Physical conditions Tour of Stations and through document review of Operational Standard Practices  Refer to Operational Standard Practice manuals and Emergency & Evacuation Plans for Stations	Refer to Document no 04177 & 04199 JE29_NI28	
Comment: The Fire Services at Redfern is the centre where training in emergency procedures and fire management is carried out. If they are promoting emergency preparedness then as part of their training it would be paramount to ensure that all trainees are aware of the emergency evacuation procedures and for all staff to have access to emergency numbers for the building. This is indicative of most places where auditors have carried out interviews. Signing in and out is not paramount nor is the emergency evacuation procedures explained. Comment: The MOT report states that train guards be provided with effective communications equipment for use in an emergencies, with regards to the potential for one or both crewmembers becoming incapacitated. Whilst the guard is issued with a mobile phone for emergencies there is no guarantee that they will work in some areas. The on board communication system currently only allows for the guard to communicate with the driver who would then relay instructions from either the signaller or train controller to the guard where this is considered necessary. The guard cannot access the radio in the compartment he is trav	JE 25 N121	
	NI10 BB? LN 10 BMB??	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
RailCorp	Station Operations	21-Mar-2004	14.9	Hazard controls that depend on emergency response personnel are adequately addressed in the emergency preparedness plans*	Emergency response capability at central station needs improvement	Interviewee noted that one of the major failings around the gas leak response was that the PA system at central station was poor. This was confirmed by NI and CG on the day. In the open space inside central station it was not possible to hear any PA except right at the railway barriers. Interviewee noted that he is trying to gain approval for updating the PA system. Note that the interviewee reported that during the Olympic Games there was a "rolls royce" system installed at the time, but this was pulled out after the games. Interviewee also noted need to improve coordination of "reinforcements" called to assist with crowd control etc, and the need to improve barriers to regulate flow of people through entrances to central stn. Interviewee also noted that he had verbal approval to spend \$ on a new PA and barriers.
RailCorp	Fire Services (ex)	21-Mar-2004	14.9		Emergency response equipment is not adequate	interviewee reported that exercise wombat highlighted major deficiencies in manual operation of smoke clearing mechanisms on the airport line.
RailCorp	Station Masters	21-Mar-2004	14.9		Hazard substance detected on railcorp property is covered in station emergency procedures. Specific mention is made to New South Wales Fire Brigade HAZMAT service.	Registry number 04110
RailCorp	Fire Services (ex)	21-Mar-2004	14.9		RMC may not have adequate redundancy for radio communication	interviewee indicated that RMC security radio system has no back up
StateRail	Station Operations	21-Mar-2004	14.9		Evacuation points are designated in the plan but are not reviewed with a view to making sure that people are evacuated to a safe place which is commensurate with the emergency.	It was indicated that whilst the emergency plan gives an evacuation point, there was no confidence that this was adequate given the fact that a gas explosion would take out most of Town Hall. It was stated that this evacuation point should be reviewed and commensurate with the emergency.
StateRail	Fire Services	21-Mar-2004	14.9		The Fire Services at Redfern is the centre where training in emergency procedures and fire management is carried out. If they are promoting emergency preparedness then as part of their training it would be paramount to ensure that all trainees are aware	said that things like hot work permits were going to RIC Asset Maintenance, and as far as the expert guidance that they provide for people going into tunnels at the moment he wasn't sure who was going to fulfil that role. It could be the fire trainers or someone else, but he wasn't sure about that.
StateRail	Station Operations	21-Mar-2004	14.9		There is a system in place to evacuate people to evacuation points.	It is a requirement that staff and management depending on the speed required to deal with an emergency, that they assess the situation and respond in a manner commensurate with the level of emergency. This may require decisions to be made such as blocking off an exit and redirecting people to other points of egress
StateRail	Train Operations	21-Mar-2004	14.9		There is provision for people to be evacuated to safe places. The Operator Specific procedures give guidance for Traincrew. There is no on the job training provided to support application.	x indicated that OSP 16 dealt with evacuation of people to safe places
StateRail	Station Operations	21-Mar-2004	14.10	Staff and emergency services are aware of the plan in its most current revision, including contact numbers and communications protocols*	Material Safety Data sheets are not up to date and require attention.	The Emergency & Evacuation Preparedness Plan Town Hall Station Dated June 2000 covers what should be done to manage a chemical hazard/spill and the list of hazardous substances on site is also designated in the plan.
StateRail	Station Operations	21-Mar-2004	14.10		Material Safety Data sheets are not up to date and require attention.	Emergency management plans identify MSDS. A list of MSDS are kept with the Station Master and at the site of the chemicals. In general you can only find cleaning products at stations
StateRail	Train Operations	21-Mar-2004	14.10		the emergency plans do evaluate/identify the need to manage hazardous substances. The application in the field does not.	The emergency Plans at a local level address hazardous substances
StateRail	Fire Services	21-Mar-2004	14.10		Whilst it was identified during the audit deficiencies in the hazardous substances management, a commitment was given by SRA Fire services that this would be addressed immediately.	
StateRail	Station Operations	21-Mar-2004	14.11	Does the emergency plan an evaluation/identification of vital equipment and its removal	Consideration should be given to ensuring signs in books and materials stored for emergency agencies e.g. MSDS should be taken off site during an emergency	Signed off by Station Master Town Hall
StateRail	Station Operations	21-Mar-2004	14.11		This covered to some degree where the OIC is to take the station diary, copy of the plan and station worksheets and conduct a roll call. It is only generic and does not specify station needs e.g keys to the emergency room.	It was stated that items for removal may include keys for the emergency room, signs in books Material Safety Data Sheets (MSDS).
StateRail	Fire Services	21-Mar-2004	14.12	Has a designated area been identified as central control point for coordinating emergencies	A designated area has been informally identified as central control point for coordinating emergencies. In this case it is the police headquarters. No documented evidence provided for review clearly identified the police headquarters as the central control point.	The police Headquarters at Central
StateRail	Station Operations	21-Mar-2004	14.12		Central control points are verified in Chapter 2 (Key Points) of the Emergency & Evacuation Preparedness Plan Town Hall Station Dated June 2000	The emergency control centre is located in the station managers outer office
StateRail	Ambulance Services	21-Mar-2004	14.12		Central Control points such as that required for Waterfall had poor communication, and poor coordination	Interviewee indicated that there were poor communication in the waterfall area  One of the issues was the poor reception the right equipment was there  Because of the number of mobile phones being used the network was overcrowded
StateRail	Station Operations	21-Mar-2004	14.12		The overall Emergency coordination centre is the Police headquarters where all Emergency Services gather to deal with the emergency. The RMC is the focal point for day to day emergencies.	The RMC is the main area for coordinating emergencies.
StateRail	Train Operations	21-Mar-2004	14.12		The police Headquarters are the central point for all emergencies.	It was indicated by interviews that the Network Rules and also in the station emergency & evacuation plans for each station that State Rail Network Incident Management Plan Dated December 2002 covered the central control point. However whilst it was nominated in the document it did not state the exact location (Police Headquarters)
StateRail	Train Operations	21-Mar-2004	14.12		An area has been nominated but not designated as the central control point for coordinating emergencies	It was indicated by Interviewee that State Rail Network Incident Management Plan Dated December 2002 covered the central control point. However whilst it was nominated in the document it did not state the exact location (Police Headquarters)
StateRail	Fire Services	21-Mar-2004	14.13	Has a search and rescue plan been incorporated into the overall emergency preparedness considerations	As part of the search and rescue SRA's role should be expanded to cover this aspect given the fact that they provide liaison with NSW Fire Services. This has not been incorporated into the overall emergency preparedness plan.	They provide assistance to NSW Fire services and are the liaison point with State Rail authority. In search & rescue because of their intimate knowledge of the underground system they would be used to this end. Interviewee was not aware of any overarching plan that set out minimum requirements for search & rescue. Interviewee noted that the responsibility for the airport line lies with Transfield who are the operators of that tunnel, and we would need to follow up anything on the airport tunnel with Transfield. Interviewee noted that this was not taught for the station people but the training is covered in the assessments. If we wanted to check the training records for Town Hall people versus Dart records it would be course WF03 would be the code to check. According to Interviewee though the underground stations are fairly good with their compliance to this training.

Observations	Interview/Document Review ID	Ratings for Finding
	NI09 BBLNBMB	
	NI03 / JE04	
	NI03 / JE04	
Evacuation point should be reviewed to ensure that people are at a safe distance from the emergency. Emergency & Evacuation Preparedness Plan Town Hall Station Dated June 2000 covers evacuation requirements and this and it is readily available at selecte	JE 22 KL 16	
The Fire Services at Redfern is the centre where training in emergency procedures and fire management is carried out. If they are promoting emergency preparedness then as part of their training it would be paramount to ensure that all trainees are aware of the requirements.	JE 25 N121	
Staff seemed quite capable of making the right decisions and it is obvious that at stations staff are well supported by management	JE 24 MN13	
The evacuation procedures should include designated areas for muster, alarms, alternative routes and assembly points and a system in place which requires a headcount of all people that all people have been evacuated. E.g. sign in books for staff and visitors and contractors.  Action: Verify that OSP 16 covers evacuation of people to safe places. This is also covered in the individual procedures for each station.	Refer to Document no 04199 JE29_NI28	
Comment: See Chapter 26 for Chemical Hazard spills and Chapter 31 for a list of Hazardous substances on site. MSDS also provide guidance for chemicals on site and are currently being updated. Refer to document number 14.8. It was noted that MSDS were not in some cases available with the chemicals and that they were being currently updated.	Refer to document number WAUD.007.009. JE 22 KL 16	
An example for verification is contained in the section 26 Chemical Hazard Spill (Town Hall Emergency and Evacuation Plan and Appendices unit 31 list of hazardous substances.	Refer to document no WAUD.007.009 JE 24 MN13	
An example of the types of chemical/hazardous substances on site are covered in the emergency & evacuation plans for Town hall station. Material Safety Data Sheets (MSDS) were available at each site visited	(Refer to document No WAUD.007.009.0123) JE29_NI28	
Whilst it was identified during the audit deficiencies in the hazardous substances management, a commitment was given by SRA Fire services that this would be addressed immediately.	JE 25 N121	
Consideration should be given to ensuring sign in books and materials stored for emergency agencies e.g. MSDS should be taken off site during an emergency	JE 22 KL 16	
Response: This covered to some degree where the OIC is to take the station diary , copy of the plan and station worksheets and conduct a roll call. It is only generic and does not specify station needs e.g keys to the emergency room or MSDS. (Refer to Chapter 12 of the Town Hall Emergency & Evacuation Plan.)	Refer to document No WAUD.007.009. JE 24 MN13	
It is the responsibility of the Liaison Officer for SRA to act as the liaison between SRA and other external emergency services. Whilst the State Rail Network Incident Management Plan highlights responsibilities for the passenger liaison officer the plan	JE 25 N121	
This is covered in chapter 2 (Key Points) of the Emergency & Evacuation Preparedness Plan Town Hall Station Dated June 2000	Refer to document No WAUD.007.009 JE 22 KL 16	
Confirmation of this can be seen in the interview with SRA Fire Services.	JE23_MT	
The overall Emergency coordination centre is the Police headquarters where all Emergency Services gather to deal with the emergency.	JE 24 MN13	
The police Head quarters are the central point for all emergencies. There is a need to make sure that all communications are through a central point. This should be where the coordinator is located. The coordinator should be provided with up to date information so that any decision made is an informed decision	(Refer number WAT.002.050.0001).	
There is a need to make sure that all communications are through a central point. This should be where the coordinator is located. The coordinator should be provided with up to date information so that any decision made is an informed decision.	Refer to document no WAT.002.050.0001 JE29_NI28	
Comment 1: A search and rescue plan should be expanded as the current reference to search and rescue in the station plans gives little advice other than to assist. Certainly as a minimum the risks should have been identified and a plan should have put together based on those identified risks. Refer chapter 12 of Station Emergency & Evacuation Preparedness Plan. Comment 2: It should be noted that the assessments carried out by interviewee are purely knowledge based and not on application. This is indicative of all assessments carried out by SRA.. refer to document number 042924 for assessment sheets	JE 25 N121	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	Station Operations	21-Mar-2004	14.13		The search and rescue plan in the Emergency & Evacuation Preparedness Plan for stations but it does not give clear guidance when station staff are required to assist search & rescue	They are covered in the station emergency & evacuation plans
StateRail	Station Operations	21-Mar-2004	14.13		The search and rescue plan in the Emergency & Evacuation Preparedness Plan Town Hall Station Dated June 2000 Chapter 12 does not give clear guidance when station staff are required to assist search & rescue	A search and rescue plan requirements is incorporated into Emergency & Evacuation Preparedness Plan Town Hall Station
StateRail	Train Operations	21-Mar-2004	14.13		This documentation covers major incident and emergency protocols first 5 minute response. It does not address Search & Rescue requirements in an emergency. As the document suggests this is the action required in the first five minutes.	interviews suggested that the people to talk to were corporate safety. It was also covered in a manual called the First Five Minutes
StateRail	Ambulance Services	21-Mar-2004	14.13			Any Search and Rescue plan should as a matter of course identify access to the track as a key issue. Generally the ambulance is the first on the scene:
StateRail	Station Operations	21-Mar-2004	14.14	Is their a process in place to initiate a return to normal practice or re – entry into the system	Currently it is addressed in each plan for each station and is covered in the section (All Clear). This section does not cover checks to be made before reentry is allowed and who gives final approval from a station management perspective.	This is covered minimally in the emergency & Evacuation Plans for each station but it should be noted that this is improved in draft version being developed for all stations.
StateRail	Station Operations	21-Mar-2004	14.14		Re entry procedures are not comprehensive and are very generic.	Normal re entry is covered in the Emergency & Evacuation Preparedness Plan
StateRail	Train Operations	21-Mar-2004	14.14		Ther is not a detailed process in place to initiate a return to normal practice or re – entry into the system	interview stated that this was not done.
StateRail	Train Operations	21-Mar-2004	14.14		Whilst the Emergency & evacuation Plans at station level give some guidance it does not address the issue of re entry completely.	interview stated that this was not done as yet but that it was in the development stage. There are no documented procedures
StateRail	Fire Services	21-Mar-2004	14.14			
StateRail	Train Operations	21-Mar-2004	14.15	Emergency procedures allow for notification of key personnel and participation	The physical conditions tour verified that phone numbers were available and that staff knew how to access these numbers in an emergency.	These are contained in the Emergency & Evacuation Plans for Stations
StateRail	Train Operations	21-Mar-2004	14.15		There is a system in place for notification of key personnel. The Emergency & Evacuation Plans for stations are an example of the procedures in place for notification of key personnel	It was stated that these were available through a number of avenues and were contained in various manuals and documents.
StateRail	Station Operations	21-Mar-2004	14.15		14.15 The Emergency procedures do allow for notification of key personnel and participation	It was stated that the Emergency & Evacuation Preparedness Plan Town Hall Station Dated June 2000 covered this requirement.
StateRail	Station Operations	21-Mar-2004	14.15		A list is available at all stations. This was verified during the physical conditions tour	This is available at all stations and is kept up to date through regular review and audit checks.
StateRail	Fire Services	21-Mar-2004	14.15		Emergency procedures allow for notification of key personnel and participation	It was stated at SRA Fire Services that the emergency numbers are available at the front control area.
StateRail	Station Operations	21-Mar-2004	14.16	Is there a process in place to control visitors or contractors in an emeregency	It was noted that the audits checklists only verify that there is a system in place and doesn't verify compliance. The auditors were asked to sign in after part of the audit was complete and as an afterthought	There are sign in books at every station
StateRail	Train Operations	21-Mar-2004	14.16		The site commanders responsibility to manage personnel who are associated with the emergency are allowed on site is not being adhered to. The role is a coordination role in that key personnel are designated and dedicated to managing the emergency based on a priority basis and this could be better managed . Inductions of the site are not being carried out. Safety briefings at emergency sites are not being performed.	interview indicated that there was a problem with controlling visitors or contractors in an emergency. It has been evident through a number of emergencies that this is an issue and in particular persons not associated with emergencies wandering into sites. It was also stated that a key area requiring attention was that site inductions should be done before going on site.
StateRail	Station Operations	21-Mar-2004	14.16		There a process in place to control visitors or contractors in an emergency. However the adequacy/compliance to the system is questionable.	
StateRail	Fire Services	21-Mar-2004	14.16		There is a process in place to control visitors or contractors in an emergency at SRA Fire Services. However the auditors were not asked to sign in when originally entering the building.	It was stated at SRA Fire Services that the sign on book is at the front desk. It was indicated by interviewee that we should have signed in and that he was remiss in not asking us to do this.
StateRail	Train Operations	21-Mar-2004	14.16		Whilst the books are available the requirements for signing in and out are not being stringently followed. The physical conditions tour carried out by auditors verified that signing in to sites did not happen in some cases.	Sign In books are available at all locations to control Visitor and Contractor movements at each site.
StateRail	Train Operations	21-Mar-2004	14.17	Is there a list of emergency Services Telephone number , contact details of key services etc provided at suitable sites and locations	It was verified during the physical conditions tour that all staff were aware of these numbers and had copies available at key locations.	These are provided in the Emergency & Evacuation Plans for Stations. They were available at each site visited
StateRail	Station Operations	21-Mar-2004	14.17		Emergency numbers were readily available on the site and were effectively communicated to all personnel	It was confirmed that the station has a list at various locations which gives the numbers of emergency services telephone numbers, and the contact details of key services.
StateRail	Train Operations	21-Mar-2004	14.17		It was verified during the physical conditions tour that all staff were aware of these numbers and had copies available at key locations.	
StateRail	Station Operations	21-Mar-2004	14.17		There a list of emergency Services Telephone number , contact details of key services etc provided at suitable sites and locations	These are available at all stations at strategic points.
StateRail	Fire Services	21-Mar-2004	14.17		There a list of emergency Services Telephone number , contact details of key services etc provided at suitable sites and locations	It was indicated by SRA Fire services personnel that emergency services telephone numbers and contact details were available at the front desk.
StateRail	Station Operations	21-Mar-2004	14.18	Are these details reviewed on an annual basis	Details are changed on a needs basis and are not formally done on an annual basis.	It was indicated that the Emergency & Evacuation Preparedness Plan for Town Hall Station is not reviewed on an annual basis and is done add hock.







Observations	Interview/Document Review ID	Ratings for Finding
These search & Rescue plans cover little and do not deal with even generic type search & rescue plans where assistance is required for emergency services. Refer to Chapter 12 of the Town Hall Emergency & Evacuation Plan.	Refer to document no WAUD. 007.009 JE 24 MN13	
Comment: A search and rescue plan should be considered for use as a minimum for emergency preparedness. See Emergency & Evacuation Preparedness Plan Town Hall Station Dated June 2000 Chapter 12 for search and rescue procedure which is not a plan but states that staff are requested to assist. See Chapter 11 for evacuation of trains between stations.	Refer to Document No WAUD.007.009 JE 22 KL 16	
This documentation covers major incident and emergency protocols first 5 minute response. It addresses emergencies such as flood warnings & detection system protocols for the airport line, dealing with emergencies within the confines of tunnels/underground & out side tunnels. The documents are dated may 2000. It should be noted that the documents have no sign off.	(Refer Document No WAUD.007.012)	
	JE23_MT	
Currently it is addressed in each plan for each station and is covered in the section (All Clear). This section does not cover checks to be made before reentry is allowed and who gives final approval from a station management perspective.	Refer to Document No 04177 JE 24 MN13	<div></div>
Comment: Could not find evidence of re entry procedures and these should be incorporated into the plan other than chapter 12 post evacuation procedure which only states that on completion of the role call the OIC will dispatch staff to suitable positions to reopen the station when the all clear is given.	Refer to Document No WAUD.007.009 JE 22 KL 16	
Whilst the Emergency & evacuation Plans at station level give some guidance it does not address the issue of re entry completely. Any procedures for re entry should clearly state, the authorization for re entry, what checks must be made before the all clear is given, and once the all clear is given, how this will be communicated to all relevant internal/external parties.	JE29_NI28	
Whilst the Emergency & evacuation Plans at station level give some guidance it does not address the issue of re entry completely. Any procedures for re entry should clearly state, the authorization for re entry, what checks must be made before the all clear is given, and once the all clear is given, how this will be communicated to all relevant internal/external parties.		
	JE 25 N121	
The physical conditions tour verified that phone numbers were available and that staff knew how to access these numbers in an emergency.	Refer to document No WAUD.007.009.0123 JE29_NI28	<div></div>
The Emergency & Evacuation Plans for stations ( Document No WAUD.007.009.0123) are an example of the procedures in place for notification of key personnel	(Document No WAUD.007.009.0123)	
This is covered in the emergency procedures at certain locations throughout the station. Chapter 5 also states emergency services number and the information required for emergency services. Refer to document number 14.8.	Refer to Document No WAUD.007.009 JE 22 KL 16	
A list is available at all stations. This was verified during the physical conditions tour	Refer to Document WAUD.007.009 JE 24 MN13	
Refer to Station Operations 2004 SMS checklist 2004 Town Hall. And Emergency & Evacuation Preparedness Plan		
Nil	JE 25 N121	
How well these are managed is subject to audit findings. It was noted that the audits as per the Station Operations Safety Management checklist only verify that there is a system in place and doesn't verify compliance. The auditors were asked to sign in but were never given an induction .e.g evacuation procedures	Refer to Document No WAUD.007.009 WaudJE 24 MN13	<div></div>
More emphasis should be placed on the responsibility of the site commander to make sure that only personnel who are associated with the emergency are allowed on site. The role is a coordination role in that key personnel are designated and dedicated to managing the emergency based on a priority basis. Inductions of the site are paramount. Safety briefings should be a matter of course and commensurate with the emergency.		
State Rail have provided guidance for station staff with regards to visitors, contractors and security performing work on station premises. However the audit team was only requested to sign in half way through the interview. All staff interviewed knew of the process for ensuring that visitors and contractors	JE 22 KL 16	
This is indicative of most places visited whereby sign in is not a priority	JE 25 N121	
Whilst the books are available the requirements for signing in and out are not being stringently followed. The physical conditions tour carried out by auditors verified that signing in to sites did not happen in some cases. It should be noted that the sign and out for State rail Headquarters is in place and working.	JE29_NI28	
It was verified during the physical conditions tour that all staff were aware of these numbers and had copies available at key locations.	Refer to document No WAUD.007.009.0123 JE29_NI28	<div></div>
Comment: Emergency numbers were readily available on the site and were effectively communicated to all personnel and this is commendable. This was verified at the time of the audit as part of the physical conditions tour.	Refer to document No WAUD.007.009 JE 22 KL 16	
It was verified during the physical conditions tour that all staff were aware of these numbers and had copies available at key locations. (Refer to Section 24 as an example of the Station Plans document No WAUD.007.009.0123)	(Refer to document No WAUD.007.009.0123)	
Response: this has been verified through the physical conditions tour and is commendable	JE 24 MN13	
A physical conditions tour of SRA fire services verified that this was available at the front desk and placed on the notice board.	JE 25 N121	
	JE 22 KL 16	<div></div>

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	Station Operations	21-Mar-2004	14.18		Audit checklists only suggest that the list exists and not whether it has been reviewed on a regular basis.	All details are verified on a regular basis
StateRail	Fire Services	21-Mar-2004	14.18		It could be seen that changes were made to the list and were hand written, ie no formal change management	
StateRail	Train Operations	21-Mar-2004	14.18		It was verified during the physical conditions tour that all staff were aware of these numbers and had copies available at key locations	Review of the details is on a regular basis and is also covered during inspections. This is evident in the Station Operations 2004 Safety Management systems Checklist for each station where persons carrying out inspections are required to check that details are up to date regarding telephone numbers etc.
StateRail	Train Operations	21-Mar-2004	14.19	Have emergency plans been distributed and effectively communicated to staff	Emergency plans been distributed and but are not effectively communicated to staff. Staff were using draft copies of the Network Incident management plan.	The manuals relating to document the Network Incident Management Plan has been distributed and is currently in Draft.
StateRail	Station Operations	21-Mar-2004	14.19		Emergency plans been distributed and effectively communicated to staff	It was indicated that emergency plans have been distributed and effectively communicated to staff.
StateRail	Station Operations	21-Mar-2004	14.19		Emergency plans have been distributed and effectively communicated to staff	The physical Conditions tour has confirmed that these telephone numbers were readily available at locations throughout Town hall Station and that staff knew of there responsibilities regarding contacting emergency services.
StateRail	Train Operations	21-Mar-2004	14.19		major incident and emergency protocols first 5 minute response. addresses emergencies such as flood warnings & detection system protocols fo for the airport line, dealing with emergencies within the confines of tunnels/underground & out side tunnels. The documents are dated may 2000. It should be noted that the documents have no sign off.	interview suggested that the people to talk to were corporate safety. It was also covered in a manual called the First Five Minutes
StateRail	Station Operations	21-Mar-2004	14.20	Have responsibilities and authority been identified and effectively communicated to relevant personnel	Responsibilities Have been identified and communicated to relevant personnel but authorities have not.	Responsibilities are highlighted in the Network Incident management Plan
StateRail	Train Operations	21-Mar-2004	14.20		Authorities are not defined in the current Network Incident Management Plan Dated December 2002.	interview stated that the current Network Incident management plan has stated the responsibilities but no authorities. The draft version 2.1 has improved and had also covered authorities.
StateRail	Train Operations	21-Mar-2004	14.20		Authorities are not defined in the current Network Incident Management Plan Dated December 2002.	The current Network Incident management plan has stated the responsibilities. The draft version 2.1 has improved and had also covered authorities.
StateRail	Station Operations	21-Mar-2004	14.20			
StateRail	Fire Services	21-Mar-2004	14.20		Responsibilities have been effectively communicated through the training provided by trainers at Petersham for stations only.	If we wanted to check the training records for Town Hall people versus Dart records it would be course WF03 would be the code to check.
StateRail	Station Operations	21-Mar-2004	14.21	Has the emergency preparedness system been audited for evaluation of the system and effectiveness	Staff cannot distinguish between an audit of the system and confuse compliance with systems evaluation. Some audit evidence presented is more focussed at the micro level and is not a systems evaluation. Audit carried out by Steve watson & partners had more of a focus on sytems evaluation and effectiveness.	Two audit reports were presented as evidence that audits of the Emergency preparedness was commensurate with SRA requirements. The audit (Town Hall Station Safety Systems Audit Dated 29-01-04) was reviewed. The review identified that emergency preparedness was covered. The audit also identified what documentation/information should be displayed. It covered emergency evacuation procedures and plan, emergency telephone lists, first aiders and contact lists, MSDS register, fire training records etc
StateRail	Station Operations	21-Mar-2004	14.21		Emergency preparedness system has not been audited for evaluation of the system and effectiveness	Audits are carried out on a regular basis and an audit will be provided to show what audits are carried out and what is audited. It was stated that audits to evaluate the system had not happened
StateRail	Fire Services	21-Mar-2004	14.21		The emergency preparedness system has been audited spasmodically for evaluation of the system and effectiveness	Only one audit to his knowledge has been carried out since 2000. presented as evidence the audit report. On the other hand interviewee stated that the SRA fire services Group used to do fire inspections of stations, but they don't any more. This is now being done externally. Interviewee suspects that being done and in particular that the certificates of compliance are not current  Interviewee also indicated that a fire engineering test had been carried out at Town Hall and that this was about two years ago. This was performed by Don Alexander. Interviewee indicated that there was a lot of things wrong identified during the inspection, but he was not sure what the follow up was to the recommendations from that report.  It was indicated that GM Safety is the contact for the person who manages contracts for asset maintenance and might be the person to talk to.
StateRail	Train Operations	21-Mar-2004	14.21		Whilst evidence was provided through the database to show the audit program, there was no evidence provided to verify that audits were verifying the effectiveness of the system itself. Audits from corporate safety are more at a micro level and do not address whether there are appropriate systems in place to manage safety in the first place.	Audits are being done and the focus is on effectiveness.
StateRail	Train Operations	21-Mar-2004	14.21			interview indicated that it would be better to talk to Corporate Safety on this issue
StateRail	Station Operations	21-Mar-2004	14.22	Has the emergency preparedness system been reviewed on a regular basis	The emergency preparedness system has been reviewed on a regular basis. Although the information provided for the documentation will need to be signed off by Corpoarte Safety as sections of the Network Incident management Plan V 2.1 has been incorporated into the document.	It is currently under review and corporate requirements are being incorporated into station plans
StateRail	Train Operations	21-Mar-2004	14.22		The emergency preparedness system has not been reviewed on a regular basis	Interviewee indicated that this was not done regularly. No risk assessments have been carried out
StateRail	Train Operations	21-Mar-2004	14.22			interview indicated that Corporate Safety would be best able to answer this
StateRail	Station Operations	21-Mar-2004	14.22			
StateRail	Station Operations	21-Mar-2004	14.23	Have changes to emergency procedures been effectively communicated to staff	Changes to emergency procedures have been effectively communicated to staff	This is provided through initial training and ongoing training and evaluation on a 6 monthly basis.
StateRail	Station Operations	21-Mar-2004	14.23		Emergency plans have been effectively communicated to staff	The physical Conditions tour has confirmed that these telephone numbers were readily available at locations throughout Town hall Station and that staff knew of there responsibilities regarding contacting emergency services.

Observations	Interview/Document Review ID	Ratings for Finding
This could not be totally verified. Audit checklists only suggest that the list exists and not whether it has been reviewed on a regular basis.	Refer to Document No WAUD.007.009JE 24 MN13	
It could be seen that changes were made to the list and written in hand	JE 25 N121	
It was verified during the physical conditions tour that all staff were aware of these numbers and had copies available at key locations	JE29_NI28	
: Whilst documents are distributed this is not effective as people are using draft documents. The audit program does not address the issue of effectiveness of implementation.	JE29_NI28	<div></div>
Response: this was verified during the audit 's physical conditions tour Emergency Plans for stations were distributed and effectively communicated to staff	JE 24 MN13	
	JE 22 KL 16	
This documentation covers major incident and emergency protocols first 5 minute response. It addresses emergencies such as flood warnings & detection system protocols fo for the airport line, dealing with emergencies within the confines of tunnels/underg	(Refer Document No EWAUD.007.012)	
It should be noted that whilst responsibilities are highlighted in the Network Incident Management Plan, clearly definable authorities are not. The proposed draft V2.1of the Network Incident Management Plan has addressed some of the authority issues but should be reviewed to ensure that all a	Refer to document no WAUD.007.001.0416JE 24 MN13	<div></div>
Authorities are not defined in the current Network Incident Management Plan Dated December 2002.	(Refer to document No WAT.002.050.0001	
Authorities are not defined in the current Network Incident Management Plan Dated December 2002.	Refer to document No WAT.002.050.0001JE29_NI28	
	JE 22 KL 16	
	JE 25 N121	
Comment: See audit report (Safety Systems Audit Update). Comment see Audit report ( Impacts of fire and life safety audit findings at Town Hall Station for the Station Complex and the RIC Rooms.) for complete list of findings. The audit report is not dated or document controlled. It was produced by Watson & Partners. Refer to document number 14.21.  Comment: Reference is also made to the Safety audit Plan Dated 21 March 2002 which is has no approval signatures. This was included as part of the plan for Town Hall.	Refer to document no WAUD.007.009.0003JE 22 KL 16	<div></div>
Comment: Reference is made to the Stations Operations 2004 Safety Management Systems Checklist which covers the 15 elements of the Safety management system for SRA or Rail Corp. It has just been introduced and therefore may have been in place for a short time. It cannot at the time of the audit be verified the effectiveness of this checklist although it was indicated that no consultation had taken place between staff who are required to implement the requirements of the checklist and management who have developed it. Whilst this may be the case the checklist has in the opinion of the auditor much value to the organisation provided it is effectively communicated to the relevant staff. Refer to document Number 14.21 Station Operations 2004		
Audits are only done at grass roots level .	JE 24 MN13	
Certificates of compliance are an issue that needs to be confirm the validity of the certificates.  The fire engineering test should have a number of recommendations that require changes to the fire management system. This should be documented by SRA	JE 25 N121	
Whilst evidence was provided through the database to show the audit program, there was no evidence provided to verify that audits were verifying the effectiveness of the system itself. Audits from corporate safety are more at a micro level and do not address whether there are appropriate systems in place to manage safety in the first place.	JE29_NI28	
See previous comment on adopting draft incident management plan into station plans. This is fraught with danger as approval of the higher level document is paramount	JE 24 MN13	<div></div>
The review of the emergency preparedness system should be done on a regular basis and that any analysis of the emergency preparedness system continues to address the requirements of the emergency plan. Because the plan has nor been developed using clear guidelines for risk assessments, hazard identification, task analysis and critical parts and items then the overall emergency preparedness system is not based on any defined logic.	JE29_NI28	
The review of the emergency preparedness system should be done on a regular basis and that any analysis of the emergency preparedness system continues to address the requirements of the emergency plan. Because the plan has nor been developed using clear guidelines for risk assessments, hazard identification, task analysis and critical parts and items then the overall emergency preparedness system is not based on any defined logic.		
	JE 22 KL 16	
This is the case and was verified at State Rail fire Services Unit. The trainer at this centre dedicates at least one day a week to train personnel at station locations.	JE 24 MN13	<div></div>
	JE 22 KL 16	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	Station Operations	21-Mar-2004	14.24	Are training drills carried out on emergency preparedness at all levels	Inforal training drills are carried out for stations in the underground network. Most assessments are knowledge based and not application. They only deal with stations and not the underground in total.	Training drills are not practiced on any regular basis although a staff member at Town Hall indicated that the Fire Services SRA had set up an emergency at ST James station and staff were drilled on emergency preparedness. It was indicated that this happened at the Fire Services Unit at Redfern where a tunnel emergency was set up and reflected the tunnel situation at ST James.
StateRail	Station Operations	21-Mar-2004	14.24		Training drills are not carried out on emergency preparedness at all levels.	Training is carried out every 3 years on the underground system. There is to be a smoke test on the 17 March 2004. the last training drill was in 2002 and involved evacuation of ST James Station
StateRail	Fire Services	21-Mar-2004	14.24		Training drills are not carried out on emergency preparedness at all levels. This is particularly so for Traincrew	It was stated by fire services personnel who had previously involved in emergency preparedness training that traincrew have not been given in the field training to meet the needs of an emergency when it occurs. Whilst emergencies are dealt with in the network rules it does not involve it's application in the field. It is also limited to emergency responses and initial contact when an emergency occurs.  x stated that she/he has doubts about the emergency preparedness training of drivers. She/He said again, you could check records, which would be course WF05. It may be in inductions. She/He wasn't sure.
						x stated that the Fire Services often run emergency drills out with the Fire Brigade at their site, where they have a close relationship and often have exercises in their mock station that they have built. There is a lot of transfer of information between the Fire Services and the Fire Brigade.She/he said they also talk about track safety and overhead electrical safety. There is no formal programme for these drills but there is a close relationship there apparently.  x noted that there used to be a roster of exercises, they would do a serious of checks every so often but as far as she/he knows there have not been any formal exercises with the stations from his point of view for a period of time, roughly three years.  x also noted that fire training people, that is x, may go out and do some assessments and walks around, different stations, and at this point we asked to talk to x.
StateRail	Train Operations	21-Mar-2004	14.24			interview indicated that training drills are carried out but not on a regular basis. Examples were given of drills being carried out at Gosford and in the underground. But it was stated that Corporate Safety would know the answer with regards to regularity
StateRail	Fire Services	21-Mar-2004	14.25	What is the frequency rate of emergency drills	Emergency drills are not being carried out frequently. SRA fire services only carry out assessments of knowledge and not practical application.	Y is trained in emergency response and fire training. Y does assessments at the stations of the station people's knowledge of emergency response. Y does that on a six monthly basis, Y also carries out inductions for people in emergency preparedness at the site. Y showed us a document which lists all the questions he asks people to conduct as part of the induction, which is a check of their knowledge and understanding of the emergency response procedures. X usually does these tests on Fridays when Y goes around to different stations. If we wanted to check assessments of people those records were kept out of the Redfern facility and there would be a tick or a cross on the dart records according to Y.
StateRail	Train Operations	21-Mar-2004	14.25		Traincrew are not given on the job training and this is only done through theoritical training.	Whilst training drills are carried out at stations, traincrew do not have practical knowledge of dealing with emergencies. Traincrew had limited training and generally this was in the classroom. The emergency procedure covered in the Network Rules was part of training and did not give or show traincrew what to do regarding evacuation of passengers in an emergency.
StateRail	Station Operations	21-Mar-2004	14.25			
StateRail	Station Operations	21-Mar-2004	14.26	Is training provided adequate for emergency response	Emergency drills are not adequate for emergency response.	It was indicated by the Station Master and verified by staff that they carry out a desktop knowledge based test which covers the Town hall Emergency drill
StateRail	Station Operations	21-Mar-2004	14.26		The Training provided is partly adequate for emergency response. Training is carried out for stations but not for the underground.	No simulations at all stations and could this be improved. Centralized training whilst useful could be tailored to suit the environment.
StateRail	Train Operations	21-Mar-2004	14.26		Training is not adequate for traincrew in an emergency. It is based on they not practical application.	Whilst training drills are carried out at stations, traincrew do not have practical knowledge of dealing with emergencies. Traincrew had limited training and generally this was in the classroom. The emergency procedure covered in the Network Rules was part of training and did not give or show traincrew what to do regarding evacuation of passengers in an emergency. Whilst training drills are carried out at stations, traincrew do not have practical knowledge of dealing with emergencies. Traincrew had limited training and generally this was in the classroom. The emergency procedure covered in the Network Rules was part of training and did not give or show traincrew what to do regarding evacuation of passengers in an emergency.
StateRail	Fire Services	21-Mar-2004	14.27	Have fire fighting procedures been developed on an area by area basis which has considered the level of risk associated with the site/location	fire fighting procedures been not been fully implemented. The example being Waterfall where on site control was at best limited and communications poor.	Response at Waterfall  Interviewee described what happened on the morning of the Waterfall incident. Interviewee said they did not receive formal notification of the incident until well after it had happened. They found out through a wife of one of the Fire Services who had called to check that her husband was okay. He called Operations Control and they agreed to go to Waterfall and they took their truck there and monitored the Fire Brigade radio on the way to determine what the situation was. Interviewee noted the well-known problems with access to the site; he said the site was full of police blocking the entrance and in his opinion a lot of those police should not have been there. Incident command The person who was in charge at the site was the Fire Brigade inspector for south, Ted Thompson.
						Emergency response general X noted that when he arrived there was a lot of police trying to smash doors because they didn't know how to open them. There was also some doubt about whether the overhead wires had been properly isolated as well. He noted that at some stage Manager RMC arrived and he took him to the Fire Control Centre at Heathcote so he could play his controller role. X went back to assist with the rescue. Supplies X noted that one of the big shortcomings from an incident management point of view from SRA's angle was that they were poorly supplied for those facilitating the rescue (that is toilets water and food). The Fire Brigade ended up supplying this stuff for them. x was at the site for approximately 7 hours. Incident command x noted that there was some argument over who was in control at the site. There was some confusion because the police use a different control system to the Fire Brigade.
						The communication between the site and the incident control centre was poor because the control site was up above the cutting and the communication was difficult. Debrief He said there was a debrief. Y may have a copy of this, as X wasn't involved in it. Y had asked X and his staff what they wanted as part of the debrief so they were consulted for input.
StateRail	Station Operations	21-Mar-2004	14.27		Fire fighting procedures have not been been developed on an area by area basis although a generic list is available and is used to assist and assess workers which has considered the level of risk associated with the site/location	SFO3 is the designated number for fire fighting procedures.See Redfern Fire Services response for evaluation of these procedures
StateRail	Station Operations	21-Mar-2004	14.27		No documented evidence to support that a risk and hazard assessment had been carried out	It was indicated that it would be better to see SRA Fire Services Unit at Redfern for documented procedures.The only other procedures and training are with regards to use of fire extinguishers.

Observations	Interview/Document Review ID	Ratings for Finding
	JE 22 KL 16	
Whilst training is being carried out it is not enshrined at senior management level. It was verified by a senior manager that training is not done at this level.	JE 24 MN13	
Whilst SMS training (Network Rules) for traincrew addresses what to do when an emergency happens e.g who to call, how to protect the train, it does not address post emergency response. This was included in previous training and now appears to be lost. This was verified by the SRA fire Services Trainer at Redfern. Refer to recommendation 21 MOT Report.	JE 25 N121	
	JE 26 NI 24	
The assessments appear to be knowledge based and are not a true test of peoples ability to react in an emergency. The suitability, knowledge and application are paramount to successful training and given the nature of the type of emergencies that may occur in the underground then training should be more regular. Emergencies are of a safety critical nature and require more emphasis on application	JE 25 N121	
It is difficult to provide training to traincrew given the nature of their work. However if anywhere, the major risk exposure for SRA in an emergency regarding passenger trains requires fast prompt and accurate response from traincrew as the initial point of contact and actions.	JE29_NI28	
	JE 22 KL 16	
a great deal of work has been done to improve training for staff at stations and whilst there could be improvement in this area this has been acknowledged and will be reviewed as time goes on.	JE 24 MN13	
It is difficult to provide training to traincrew given the nature of their work. However if anywhere, the major risk exposure for SRA in an emergency regarding passenger trains requires fast prompt and accurate response from traincrew as the initial point of contact and actions. The theoretical training provided is only a half measure and in particular for traincrew	JE29_NI28	
As part of the risk assessment which should have been carried out on the network to determine the level and type of risks, it should have been identified who has the right of passage and priorities required in this situation. Refer to the MOT report (Recommendation 54)	JE 25 N121	
See Redfern Fire Services response for evaluation of these procedures	Refer to document No 042924      JE 24 MN13	
Comment: Reference is also made to the Safety audit Plan Dated 21 March 2002 which is has no approval signatures. This was included as part of the plan for Town Hall. Refer to audit report (Impacts of Fire & safety Audit Findings at Town Hall Station for the Station complex and the RIC Rooms) which states (carry out a risk and hazard assessment on the loaction of the fire within the station box.)	Refer to Document No WAUD.007.009      JE 22 KL 16	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	Station Operations	21-Mar-2004	14.28	Have hazardous materials been identified for each area to assist fire services in determining the type of equipment needed for the emergency	Hazardous materials been not been completely identified for each area to assist fire services in determining the type of equipment needed for the emergency.	It was confirmed that Material Safety Data Sheets are not up to date and in the event of a fire they would be in some cases useless in assisting fire services to evaluate the right type of fire fighting equipment required to fight fires if it was chemical based. An audit report was also presented to show that this had been highlighted.
StateRail	Fire Services	21-Mar-2004	14.28		Hazardous materials not been identified been identified for each area to assist fire services in determining the type of equipment needed for the emergency at the SRA Fire Services Headquarters.	MSDS are kept on site at stations and taken with station staff when they evacuate a site. It was stated that after the auditor identified a deficiency in the records of MSDS they would be rectified immediately.
StateRail	Station Operations	21-Mar-2004	14.28			See previous comments on hazardous materials
StateRail	Station Operations	21-Mar-2004	14.29	Do emergency plans consider off site emergency management	Station Operations Emergency plans do not consider off site emergency management.	Evacuation points are considered as part of the overall emergency plan.
StateRail	Station Operations	21-Mar-2004	14.29			
StateRail	Station Operations	21-Mar-2004	14.30	Are key personnel debriefed after an emergency		
StateRail	Train Operations	21-Mar-2004	14.30		14.30 Key personnel debriefed after an emergency. The debrief notes had actions for key personnel but the debrief notes had other items that require attention and it was not evident what would happen to these.	Debriefings are carried out and are dependent on the type of emergency. The debrief into the Town Hall Gas Leak was documented.
StateRail	Ambulance Services	21-Mar-2004	14.30		14.30 The Ambulance Service received no debriefing from SRA for key personnel after the Town Hall Gas Leak emergency.	Ambulance services – received no debriefing process from SRA, however a number of improvements should be made such as  Track to tread personnel carriers (military) A dedicated communications van  Triage  There is a need to improve Communications This was a big problem in that there was no complete radio coverage  There is also a need for a command vehicle which provides a mobile command post for different organisations.
StateRail	Station Operations	21-Mar-2004	14.30		Key personnel are debriefed after an emergency. This is dependent on the level of the emergency	Using the gas leak as an example debriefs occurred at different levels of the organisation.  From this an action list is developed and responsibilities assigned where this is necessary
StateRail	Fire Services	21-Mar-2004	14.30		SRA Fire Services do not usually receive debriefs after an Emergency.	In relation to waterfall x stated that there was a debrief. Y may have a copy of this, as x wasn't involved in it. Y had asked x and his staff what they wanted as part of the debrief so they were consulted for input.
StateRail	Train Operations	21-Mar-2004	14.30		The debrief notes are captured at different levels and whilst this is fine no debrief of Town Hall was provided. Other stations had debriefings on what worked well and what did not.	interview stated that debriefings are carried out and are dependent on the type of emergency. Debriefs are carried out at different levels.
StateRail	Station Operations	21-Mar-2004	14.31	If a debrief occurs does it allow for feedback to those involved in the emergency and management to ensure lessons learnt are adequately covered	. This was confirmed on the physical Conditions Tour and also confirmed by a debriefing paper sent to the Area Manager	Evidence was provided of debriefings at stations and confirmed by staff.
StateRail	Station Operations	21-Mar-2004	14.31		Debriefs allow for input and feedback from all levels of staff involved with emergencies.	Depending on the nature of the incident as to whether feedback is provided. If it is a major incident then feedback is provided to all concerned. These feedback sessions are at different levels in the organisation.
StateRail	Fire Services	21-Mar-2004	14.31			Feed back was not given to SRA fire services at station staff level to his knowledge.
			15	<b>CHANGE MANAGEMENT</b>		
RailCorp	Station Masters	21-Mar-2004	15		No Evidence was sighted relevant to change management	Station operations concentrate on the operation of trains. Strategic planning is not a consideration
StateRail	State Rail	21-Mar-2004	15		State Rail has a documented procedure concerning Safety Validation	DOCUMENT REFERENCE: State Rail Safety Standard 2.002 , Safety Validation
RailCorp	Train Services Operations	21-Mar-2004	15.1	· There is a clearly defined process for introducing changes into the business	Analysis of changes dating back to the diagenration in 1998 and moving through the formation of RIC and now the formation of RailCorp indicates a series of poorly managed and implemented change with very little close out of issues and measurement of effectiveness.	Interviewee alluded to validation process for ATRICS system implementation when asked what change management processes were in place eg for ATRICS system.
StateRail	Train Crewing	21-Mar-2004	15.1		No evidence of change management / implementation plans for change of role of OSMs.	Interviewee could not provide any evidence of an implementation plan for the change of role of inspectors to OSMs. There is no evidence of a plan that considers all of the issues associated with such a critical change - including all of the organisational issues and structural barriers to change. Interviewee also noted that there are still arguments over how many interventions these OSMs should be doing. Also noted that ideal ratio of crew to OSMs has not been decided but there has been implicit acceptance of the Glenbrook ratio. Interviewee added that structural changes are needed to free up time of OSMs to enable them to spend time in the field, not on platforms during peak hour.
RailCorp	Health Stds	21-Mar-2004	15.1		Introduction of new health standards was not effectively managed or communicated at first.	At interview MR01BB01 X responded that there is no formal process for change management. It is addressed in other documents.
StateRail	Corporate Safety	21-Mar-2004	15.1		Risks associated with organisational changes of the Fire Services Unit of SRA have not been appropriately assessed.	[doc 4482] RailCorp Review of Fire Safety Roles and Responsibilities Resulting from the transfer of the Fire protection unit to the NSW fire brigades, Warrington Fire Research Australia, 5th Feb 04 is a consideration of what functions are currently carried out by the Fire Services Unit in SRA and who will have responsibility for these functions in the event of transfer of the FSU. The report does not assess the risk of the changes but instead simply notes that responsibilities that need to be dispersed into SRA and NSW fire brigade have been identified. For example, isolation of fire safety systems undertaken by FPU (specialists) will be transferred to the security control centre in the RMC. There is no consideration of the impact of that change and in particular whether security personnel are competent to undertake this role. No safety validation or equivalent risk analysis has been undertaken and no notification of material change has been provided to ITSRR.
StateRail	Train Driving	21-Mar-2004	15.2	· The procedures for changes are well documented	Change management processes for organisational change, configuration change in material or process change control could not be identified	MB03_KL 5th Feb, with driver "Run now altered" form reg 03742 in use and provided
RailCorp		21-Mar-2004	15.3	· Risks are adequately identified, documented (including procedures for assessing and treating risks), and regularly reviewed and monitored	Risk assessments could not be located for changes in fatigue management, organisational changes, introduction and change of ATRICS, etc	At a Fatigue Management Workshop (04133) in Dec 2000 it was decided that any shift with a FMI > 90 shall be examined from a risk perspective. When asked at interview how this or other FMI limits were determined (i.e. Fatigue Management Policy sets FMI of 80, Safety Standard 12.023 Fatigue Management (04283) sets FMI limit not greater than 100 and Fatigue Rostering Principles and Workplace Guidelines (04238) specifies a FMI less than 100) Interviewee was not able to locate a risk analysis associated with the setting of the FMI in any of these documents. Interviewee suggested however that FMI limits were determined by various Operating agreements.









Observations	Interview/Document Review ID	Ratings for Finding
See audit report (Town Hall Safety Systems Audit) MSDS to be updated in all store rooms.	Refer to Document No WAUD.007.009.0012 JE 22 KL 16	<div><div></div></div>
MSDS were not kept with chemicals.	JE 25 N121	
	JE 24 MN13	
The question was not understood by the interviewee. This is a requirement that Staterail should capture as part of any analysis of the Emergency preparedness system. Off site emergencies can be initiated by on site emergencies. For example gas leaks or chemical spills or by off site activities such as driving to a job.	JE 24 MN13	<div><div></div></div>
	Refer to Document No WAUD.007.009.0003 JE 22 KL 16	
	JE 22 KL 16	
The debrief notes are captured at different levels and whilst this is fine no debrief of Town Hall was provided. Other stations had debriefings on what worked well and what did not. The debrief did not assign actions for follow up at any level other than at senior management level and this was a definitive list of action required as per the debrief discussions.	Refer to document No 04177 JE 29 NI 28	
	JE23_MT	
See copies of debriefs to confirm discussions and actions required This debrief document is quite comprehensive although the action items of the document do not align with the actions. An example of this is the identification	Refer to document no 04177 JE 24 MN13	
was transferred to another position and the information was taken with interviewee when interviewee departed.	JE 25 N121	
The debrief notes are captured at different levels and whilst this is fine no debrief of Town Hall was provided. Other stations had debriefings on what worked well and what did not. (Refer to document No 04177 Debrief – Suspected Gas Leak 5 Feb 2004)	(Refer to document No 04177 Debrief – Suspected Gas Leak 5 Feb 2004) JE 26 NI 24	
Debriefing of staff at all levels is required as feedback can be provided to all parties concerned	Refer to document No 04177 JE 22 KL 16	<div><div></div></div>
Feedback should be cascaded up and down and at the moment this does not appear to be the case given the actions allocated out of the debrief at senior management level	JE 24 MN13	
	JE 25 N121	
There may be a lack of awareness of the State Rail Safety standards across State Rail (might have some pockets that are aware). For example, in one specific case of an interview with a safety officer who has been in the safety game in state rail since 2001 he didn't even know that State Rail Safety standards actually existed. Their is a suspicion that this may be a systemic issue across the board and warrants further investigation to verify.		
	NI05 / JE06	<div><div></div></div>
	NI21/JE23	
Change management is not formal, it is part of other documents	MR01BB01	
	NI28 JE29BMB+I829 And NI30JE30	
	MB03_KL	<div><div></div></div>
	MR11BB18	<div><div></div></div>

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
RailCorp		21-Mar-2004	15.3		Risk assessment leading to setting of Fatigue Management Index at 100 not located.	When asked at interview MR17BB24 how the FMI limits were set, xresponded that he believed it was a result of a risk assessment but he was not able to locate any document to support this contention.
RailCorp		21-Mar-2004	15.3		Risks are not adequatgely identifiedSenior commitment to Safety is weak.	At interview CG18MR12 when asked about the suspension of periodic training at ART responded that in reality this referred only to SMS training as this was the only periodic training done at Petersham. Further, this decision was done in isolation, without consideration of the risks and without any involvement or ART.
StateRail	Fire Services Unit	21-Mar-2004	15.3		Transfer of State Rail Fire Services to NSW Fire Brigade appears to be driven primarily by industrial issues and there is no evidence of consideration of risk to SRA from this change	Doc [04294] Open letter from FBEU member, and doc[04294] 16/10/2002 and 15/10/2002 letters between SRA HR and NSW council, and doc [04294] Memorandum of Understanding between RTBU and SRA HR indicate a history of industrial issues associated with the existence of the Fire Services in SRA. Refer to interview with former head of SRA Fire Services NI04JE for further history of amalgamation and disbandment of the Fire Services unit. There has not been any evidence found to date of an objective risk assessment asociated with this move. Position Descriptions [doc 04294] obtained from the Fire Services Unit indicate that this group potentially plays an important role such as maintaining appropriate standards for fire and life safety, ensuring the effectiveness of fire contingency plans, and montioring maintenance of fire safety equipment. Note: these position descriptions, dated 2000, were never implemented.
StateRail	Train Crewing	21-Mar-2004	15.4	· Changes are adequately planned  Changes are adequately tracked and managed*	Systems have allowed individuals to resist change in SRA.	Interviewee noted that barrier to change exist in the organisation. Systems have allowed individuals to effectively block change. Gave an example where GM Train Operations was blocking structural change of moving TCAC out of the crewing area to free up OSMs. Same manager stated strong opinion that crew morale will never change in meeting with Train Crewing Manager
RIC	Train Operations	21-Mar-2004	15.4		Shift handover is inadequate in signal boxes.	Interviewee claims that signallers do not get handover time between shifts and that this is an industrial issue. See also NI12BB and NI13BB for view from Sydenham signal box perosnel
StateRail	Capital Works	21-Mar-2004	15.4		There is some degree of planning for change management being exercised within capital works for the transition into the new Rail Corp Organisation.	INTERVIEW REFERENCE: BMB_22; DOCUMENT REFERENCE: WAUD.007.015.0704, Organisational Changes Proposed
StateRail	Capital Works	21-Mar-2004	15.4		There is some degree of planning for change management in State Rail and RIC as part of the transition to Rail Corp.	INTERVIEW REFERENCE: BMB_22; DOCUMENT REFERENCE: WAUD.007.015.07171, Rail Corp Global Safety Transition Plan
StateRail	Capital Works	21-Mar-2004	15.4		There is some safety validation planning being conducted as part of the change management program as Capital works transitions to the new Rail Corp Organisation.	INTERVIEW REFERENCE: BMB_22; DOCUMENT REFERENCE: WAUD.007.015.0744, Appendix 2: Safety System Checklist
StateRail	Corporate	22-Mar-2004	15.5	· Appropriate requirements are considered in the planning and risk assessment process (e.g., regulatory, safety, internal/external influences)	Evidence of effective risk analysis and management could not be identified for change programs	
StateRail	Corporate	23-Mar-2004	15.6	· There is an effective program for monitoring and measuring the effectiveness of changes	Historically, StateRail hasn't mageaged change well resulting in a non-aligned and unadaptable organisation. Evidence of measurement of effectiveness of change could not be identified. Major organisation change appears to have been a result of outside influence.	
			16	<b>SYSTEM FOR MANAGING REQUIREMENTS AND CHANGES</b>		
RailCorp	RailCorp Corporate Staff	21-Mar-2004	16.1	· There is an adequate process to identify legal, legislative, regulatory and company requirements	RailCorp have a legal department.Legal department not audited .	
RailCorp	Station Masters	21-Mar-2004	16.1		A process does exist that identifys legal and regulatory requirements relavent to train operation requirements,eg. Safe working documentation.No documentation was sighted relavent to corporate governance or corporate law.	Safe working document.
RailCorp		21-Mar-2004	16.2	There is an adequate process to identify, notify, and review requirements and changes	As identified in the Waterfall Interim Report, configuration changes in critical systems were not adequately monitored. Review of PFM processes indicated a lack of effective and formal configuration management system. StateRail has produced a new Technical Procedure for Quality and Technical Support which describes some requirements for managing change. There was not a good awareness of this document across RailCorp.	StateRail Technical Procedures Issue 6 v5 dated 08/03/04
RailCorp		21-Mar-2004	16.3	· There is an adequate process to assess, implement and manage change in the organisation	No process was identifeid. Organisation change has been badly directed, and not tracked to completion	
RailCorp		21-Mar-2004	16.4	· This process is documented	No organisational change management documents were identified.	
StateRail	ART	21-Mar-2004	16.5	· There is an adequate process to monitor and measure business processes and determine how effectively they conform and meet specified requirements	Lack of Business Process: There is a lack of process/co-operation between ART and Stations Operations regards training development.	Item #03688 (WAUD.007.004.0239) - Competency Assessment Sheet - 'Station Staff Used As Supplementary Crewmembers on Outer Suburban Tangara Rolling Stock Competency Assessment Form.
StateRail	ART	21-Mar-2004	16.5		Observation Only	WAUD.007.003.0207-0411 (Policy and Procedures Manual) Section 2.
RailCorp		21-Mar-2004	16.5		Process to monitor training effectiveness is not in the Training and Procedures Manual	When asked at interview CG21MR13 about the Status of Section 5 Course Evaluation of the Training and Development Policy and Procedures Manual WAUD.007.003.0207 X responded that it was under development.
RailCorp		21-Mar-2004	16.5		Progress on implementation of the Fatigue Management Strategies Plan(04133) is very limited	At interview MR17BB24 X was asked about progress with the implementation of the Fatigue Management Strategies Plan (04133). X responded that the "Are you OK program" has not yet been updated; Guidance material for risk managing rosters is not yet done; fatigue input to module 2, Certificate III not yet done; fit for duty input for SMS 2.3 not quality controlled; Business Units risk mitigation plans not yet done
RailCorp		21-Mar-2004	16.5		There is no structured process to obtain feedbck on training needs or errors from the field.	When asked at interview CG21MR13 about the feedback from the field on training issues X responded that there was no structured process for this feedback.
StateRail	ART	21-Mar-2004	16.6	· There is an effective process in place to make employees aware of the requirements and their responsibilities for meeting them	Making Employees aware of requirements: SRA Training Policy and Procedures Manual is incomplete - ART is providing Psychologist services. The policy and procedures regarding such are not contained in the manual. The Manual is a step in the right direction but requires further development.	WAUD.007.003.0207-0411 (Policy and Procedures Manual Version 5 AL0) is void of any procedures for the Psychologist.









Observations	Interview/Document Review ID	Ratings for Finding
	MR17BB24	
	CG18MR12	
	NI21 JE	
	NI21/JE23	<div><div></div></div>
	NI08JE09	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_22; DOCUMENT REFERENCE: WAUD.007.015.0704, Organisational Changes Proposed	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_22; DOCUMENT REFERENCE: WAUD.007.015.07171, Rail Corp Global Safety Transition Plan	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_22; DOCUMENT REFERENCE: WAUD.007.015.0744, Appendix 2: Safety System Checklist	
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Concern – extremely difficult to confirm that the certified ART training course development process is being faithfully followed across SRA. For example, Interviewee described the initiative for Station Operations Staff to be trained as supplementary crew members on outer suburban Tangara rolling stock. The aim was to allow Station Ops Staff to apply emergency braking if the driver became incapacitated. According to ART, the training was initiated by the GM Stations Operations and developed outside ART. The training was about 20 to 30 minutes duration. The assessment of competency was with the OSM's. ART were only advised of the training initiative at the last moment.	(WAUD.007.004.0239)	<div><div></div></div>
Concern – the Course Design and Development process has differing requirements for Generic and Safeworking training. The difference between the two methodologies is worth considering. For example, Why is 'Risk Analysis Data' included in step 1 of Safeworking training development but not required with generic training development? This implies that only Safeworking personnel work with risk?	WAUD.007.003.0207-0411	
	CG21MR13	
	CG21MR13	
Concern – ART have been providing Psychological services - where are the policy and procedures governing that role including reporting etc?.	WAUD.007.003.0207-0411	<div><div></div></div>

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
SRA	RMC	21-Mar-2004	16.6		Process Awareness Requirement: Training development is occurring at RMC without referral to ART and possibly the requirements of the training Policy and Procedures Manual. The Training Development Process (as per Policy and Procedures Manual) is either unknown to RMC, ineffective, or being ignored..	Teleconference(CG25) - indicated that the users are developing their own training. Interview with of RMC (NI06/JE07) para 24 where he suggests that RMC is developing its own training regime.
SRA	ART	21-Mar-2004	16.6		Staff awareness of Policy and Procedures: The process for making staff aware of the ART Policy and Procedures Manual is ineffective.	Interviews CG8/BB7 and CG11/MR8 and CG26/MN15 in which key courseware developers did not recognise the Policy and Procedures Manual (WAUD.007.003.0207) nor identify an overarching Policy and Procedures document.
RailCorp		21-Mar-2004	16.6		There is no process (procedure) to guide Psychologist and Training assessors at Petersham	When asked at interview CG21MR13 about the procedures for psychological and training evaluation at Petersham X responded that these procedures were under development.
	ART	21-Mar-2004	16.6		Making Employees aware of requirements: Training Policy and Procedures manual contains reasonable high level guidance on the steps to course design and development	WAUD.007.003.0207-0411 (Policy and Procedures Manual).
StateRail	PFM	21-Mar-2004	16.7	· Process changes & deviations analysed & modifications documented*	the standard of documented change of configuration items varies greatly through out the organisation	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0529, Draft State Rail Passenger Fleet Maintenance - Future Directions dated October 2003
			17	<b>CUSTOMER FEEDBACK</b>		
StateRail	Station Management	21-Mar-2004	17.1	· The organisation clearly understands who their customers are	clearly understands who their customers are	MB02_KL Interviewee stated that she/he clearly knows who her/his customers are, the travelling public
RailCorp	RailCorp Corporate Staff	21-Mar-2004	17.1		They recognise who there external customers are.They recognise some of there internal customers EG The government of the day.What appears to be a problem is that each individual section does not recognise departments outside their own are internal customers.	This comment is based on my contact with RailCorp during the audit process.Comparison between audit intrview notes shows a lack of understanding of what other people do.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	17.2	· There is a process in place to determine customer requirements (especially as they relate to safety)	External customer safety has a high priority on station operations and with senior management.Train operations consider on time running to be as impotant as safety.Condition of trains and evidence that engineering fail to fix notifiable defects causes doubt as to what is the first objective of this division.	This comment is made on the basis of what is stated at the hot washand my own experience of at least 2 train trips a day COMO to MARTIN PLACE to COMC and what was stated at these interviews.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	17.3	· There is a system to track changes to customer requirements	This element could not be determined.	
RailCorp	Rail Management Centre (RMC)	21-Mar-2004	17.4	· There is an adequate process in place to collect and handle customer feedback and complaints	Silos between controllers and train crews	Suggestion by Interviewee that interviewee needs to organise training of RMC controllers because RMC does not meetRMC's needs. Informal feedback from controllers when they attend training at Petersham is that training was a waste of time because mixing drivers and controllers does not help his controllers address their specific problems. Quote " controllers have a higher level of knowledge than drivers"... " drivers pull controllers down to their level rather than getting controllers to hash their issues.. to a higher level of understanding".
StateRail	Station Management	21-Mar-2004	17.4		There is a process in place to collect and handle customer feedback and complaints	MB02_KL identified the Call Centre on telephone number 131500.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	17.4		There is a telephone number [131500] that you can use to notify RailCorp of dirty carriages ,to find out why the train is stopped [if you are trapped in one and you have run out of water] And to pass comment on what you think of the RailCorp passenger service.Aye have used this number so as to comment on the lack of train services and to test the system.Telephone operators are polite and sound sincere.It is evident that RailCorp have in place "an adequate process to collect and handle customer complaints."A adequate feedback would be an improvement in there passenger sevice.As aye see no improvement in rail service aye can only assume it is a inadequate process.	This element is validated by testing the system.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	17.5	· There is an adequate process in place to review feedback and actions	This element could not be determined.	
RailCorp	RailCorp Corporate Staff	21-Mar-2004	17.6	· There is an adequate system in place to follow-up the results of customer feedback	This element could not be determined.	
RailCorp	RailCorp Corporate Staff	21-Mar-2004	17.7	· Customer service incorporates key system safety principles*	This element could not be determined.	
			18	<b>CONTRACTED GOODS AND SERVICES</b>		
RailCorp	RailCorp Corporate Staff	21-Mar-2004	18		Contracted Goods and Services is managed from Lee st	Statement from station managers.
StateRail	PFM	21-Mar-2004	18.1	· List processes that are outsourced	There are a number of processes being outsourced for PFM for professional services in support of the Train Services Safety Improvement Program: One of the processes being outsourced is: TBA	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0230, Draft Specification for Professional services, Passenger Fleet Maintenance, Project Assistance from Manager Strategic Projects. INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0209, Draft RFQ for professional services to undertake review of TMPs for the Electric fleet INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0189, DRAFT RFQ for professional services to prepare TMPs for the Diesel Passenger Fleet INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0182, DRAFT Specification for professional services, Train Services Division, Risk Assessment of Train Crew Preparation and Stabling Procedures, 27 November 2003 INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0175, Specification for professional services, Train Services Safety Improvement Program - Identification of Safety Critical Fleet Assets, 27 November 2003

Observations	Interview/Document Review ID	Ratings for Finding
Concern: Organisations such as RMC are part of the RTO (the Accreditation recognises SRA as the RTO), and as such all SRA personnel involved with training should be complying with the Policy and Procedures Manual. Evidence suggests this is not the case at all times. The fact that RMC is conducting training development in isolation was confirmed by interview.	Telecon (CG25) and (NI06/JE07)	
Concern – Certain individuals are ignorant of the existence of a Policy and Procedures Manual. For example, higher level management were aware of the Policy and Procedures manual, however instructors (at Petersham) were not. The Training Development Handbook for Trainers (Item #04510) Pg 2-1 states 'All ART staff should read and be familiar with Training and Development's Policy and Procedures Manual.....'. A lack of recognition of the Policy and Procedures Manual was observed at Interviews CG8/BB7, CG11/MR8 and CG26/MN15.The fact that only medium to upper level management staff within ART recognise the Policy and Procedures Manual suggests that the process to communicate the manuals authority and use by ART staff is ineffective below middle management.. Recognition of the manual by Workplace trainers was not assessed (strongly suspect nil recognition at that level also).	Interviews CG8/BB7, CG11/MR8 and CG26/MN15	
	CG21MR13	
Good – Section 2 of the Policy and Procedures Manual details Course Design and Development. The process identifies 12 steps (16 steps for on-line) from Initiation through to Course Review phases. Although the guidance provided is high level and requires further development, it is a step iin the right direction.	WAUD.007.003.0207-0411	
		
	MB02_KL	
		
		
	NI01 / JE01	
	MB02_KL	
		
		
		
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0230, Draft Specification for Professional services, Passenger Fleet Maintenance, Project Assistance fro Manager Strategic Projects. INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0209, Draft RFQ for professional services to undertake review of TMPs for the Electric fleet INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0189, DRAFT RFQ for professional services to prepare TMPs for the Diesel Passenger Fleet INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0182, DRAFT Specification for professional services, Train Services Division, Risk Assessment of Train Crew Preparation and Stabling Procedures, 27 November 2003 INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0175, Specification for professional services, Train Services Safety Improvement Program - Identification of Safety Critical Fleet Assets, 27 November 2003 INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0158, Specification for provision of professional services, Finalize Data Logger Specifications for the State Rail Electric Fleet, Passenger Fleet Maintenance INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0129, DRAFT RFQ for the provision of professional services, Finalize Data Logger Specifications for the State Rail Electric Fleet, Passenger Fleet Maintenance INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0150, Specification for provision of professional services, Finalize Data Logger Specifications for the State Rail Electric Fleet, Passenger Fleet Maintenance	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
						INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0158, Specification for provision of professional services, Finalize Data Logger Specifications for the State Rail Electric Fleet, Passenger Fleet Maintenance, 27 November 2003 INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0129, DRAFT RFQ for the provision of a Project Management Team for the electric fleet reliability improvement program. INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0150, Specification for provision of professional services, Review and Document a sustainable Configuration Management System, Passenger Fleet Maintenance, 25 November 2003 INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0120, Specification for Provision of Professional Services, Facilitation General Inspection Workshop, Passenger Fleet Maintenance, 12 December 2002
RailCorp	Fire Services (ex)	21-Mar-2004	18.5	· Contractor performance is adequately monitored and reviewed	Effective Fire prevention inspection regime is not in place - contractors engaged for fire inspections possibly not being monitored for performance	Concerns raised by interviewee that fire inspection regime has not been conducted effectively since it was contracted out in 2001. No objective evidence available
			18.11	· Adequate contractor and subcontractor safety oversight program in place*	No evidence to suggest such a program exists	
			19	<b>TRACEABILITY OF GOODS AND SERVICES</b>		
RailCorp	Station Masters	21-Mar-2004	19		Documentation was sighted that indicated that allowed audit of local procured supplies.	Registry number 04110
RailCorp	RailCorp Corporate Staff	21-Mar-2004	19		This element could not be determined.	
			20	<b>MEASURING EQUIPMENT AND CALIBRATION SYSTEM</b>		
StateRail	PFM	21-Mar-2004	20		PFM QTS have approved procedures under the ISO 9001:200 framework for Measurement and Calibration of equipment PFM QTS section is a formally accredited ISO 9001 accredited organisation for or the provision of Engineering and Technical Services for State Rails Rolling Stock; through the establishment and updating of standards, policies and procedures, and the auditing of maintenance activities.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0779, Quality Manual for Quality and Technical Support, 12/11/02 INTERVIEW REFERENCE: BMB_05; WAUD.007.012.0778, State Rail Authority of NSW Quality and Technical Support, ISO 9001:2000 Certificate of Registration, 9 December 2002
RailCorp	RailCorp Corporate Staff	21-Mar-2004	20		This element could not be determined.	
RailCorp	Station Masters	21-Mar-2004	20			
			21	<b>PROCUREMENT OF GOODS AND SERVICES</b>		
StateRail	PFM	21-Mar-2004	21		Interfaces between the Capital Works rolling stock areas and the in-service PFM area responsible for fleet maintenance have major interface issues. In the document specified Mgr QTS has highlighted a number of areas relating to logistic support that need to be addressed by capital works when modifications are made to the configuration of the fleet. These issues are not consistently addressed by projects (if at all). These include: (1) Compliance with state rail FE specs; (2) Drawings and Schematics; (3) Technical Manuals; (4) Analysis of Maintenance Requirements; (5) Training for Maintenance Staff; (6) Special Test Facilities Equipment and Tools; (7) Spare Parts; (8) Maintenance support infrastructure facilities;	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0777, Internal Memorandum - Fleet Configuration Logistic Support
					(9) Update of Crew Training Simulator(s) at ART Petersham where applicable; (10) Warranty Details; (11) Schedules for Implementation; (12) Update to PFM's METRE IT SYstem - modification Module. Issues relating to this level of detail are not addressed in the Capital Works Policies/procedures Manual.	
StateRail	State Rail	21-Mar-2004	21		State Rail has a documented procedure concerning Pre-Purchase Risk Assessment	DOCUMENT REFERENCE: State Rail Safety Standard 4.003 , Pre-Purchase Risk Assessment
RailCorp	Station Masters	21-Mar-2004	21		Station managers are empowered to make purchases up to a set limit.	Station managers position description.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	21		This element could not be determined.	
StateRail	Capital Works	21-Mar-2004	21.1	· There is a formal and documented process for purchasing goods and services	State Rail have a documented process for conducting procurement in the Capital Procurement Manual.	INTERVIEW REFERENCE: BMB_24; DOCUMENT REFERENCE: TBA, State Rail Procurement Manual on CD
	Volunteer 1	21-Mar-2004	21.2	· It includes the use of approved suppliers; ensuring adequate order details; and identifies and verifies delivery	Quality control of signalling system did not detect excessive alarm rate	At interview MR03LN03 the Volunteer reported a very high alarm rate that would inevitably result in an important alarm being missed.
	Volunteer 1	21-Mar-2004	21.2			At interview MR03LN03 the Volunteer reported that ATRICS software rebuilds rarely work first time.
	Volunteer 1	21-Mar-2004	21.3	· This is verified as adequate*		At interview MR03LN03 the Volunteer indicated that he was a guinea pig that will the signaller will take the heat when the system fails.
RailCorp	Organisational Psychologist	21-Mar-2004	21.5	· Products and services are regularly tested and assessed for effectiveness	OPC Assessment Rail Safety Series selection test (04481)are not being validated in the Australian environment.	At interview MR06AR06 stated that she recognised the requirement to validate the selection tests but she did not have the resources to do so.
StateRail	PFM	21-Mar-2004	21.5		There are some processes in place to review major contracts for maintenance/provision of services for state rail rolling stock.	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0018, PWC Independent Review of Maintrain Contract March 2002
StateRail	PFM	21-Mar-2004	21.5		There are some processes in place to review major contracts for maintenance/provision of services for state rail rolling stock. The maintenance arrangements with Maintrain are resulting in an improvement in availability and reliability of rolling stock being maintained by Maintrain.	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0056, PWC Independent Review of Maintrain Contract 1 July 1999 to 30 June 2001, December 2001
	Volunteer 1	21-Mar-2004	21.5			At interview MR03LN03 the Volunteer reported that at first the ATRICS would fail about 10 times a month.
			22	<b>EQUIPMENT MAINTENANCE</b>		

Observations	Interview/Document Review ID	Ratings for Finding
	NI03 / JE04	
		
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0779, Quality Manual for Quality and Technical Support, 12/11/02 INTERVIEW REFERENCE: BMB_05; WAUD.007.012.0778, State Rail Authority of NSW Quality and Technical Support, ISO 9001:2000 Certificate of Registration, 9 December 2002	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0777, Internal Memorandum - Fleet Configuration Logistic Support	
There may be a lack of awareness of the State Rail Safety standards across State Rail (might have some pockets that are aware). For example, in one specific case of an interview with a safety officer who has been in the safety game in state rail since 2001 he didn't even know that State Rail Safety standards actually existed. Their is a suspicion that this may be a systemic issue across the board and warrants further investigation to verify.		
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_24; DOCUMENT REFERENCE: TBA, State Rail Procurement Manual on CD	
	MR03LN03	
ATRIX software rebuilds never work	MR03LN03	
	MR03LN03	
	MR06AR06	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0018, PWC Independent Review of Maintrain Contract March 2002	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0056, PWC Independent Review of Maintrain Contract 1 July 1999 to 30 June 2001, December 2001	
At first the system crashed 10 times/month, now monthly	MR03LN03	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	State Rail	21-Mar-2004	22		State Rail has a documented procedure concerning Maintenance, Inspection, Testing & Modification	DOCUMENT REFERENCE: State Rail Safety Standard 10.02 , Maintenance, Inspection, Testing & Modification
StateRail	State Rail	21-Mar-2004	22		State Rail has a documented procedure concerning Prestart and periodic inspections	DOCUMENT REFERENCE: State Rail Safety Standard 14 , Prestart and periodic inspections
StateRail	Capital Works - Vigilance Project	21-Mar-2004	22		The new Vigilance System project is using FMECA as an essential input to the design of the maintenance plan.	INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: Vigilance Control Project Passenger Fleet Maintenance Train Maintenance and Risk Assessment Report on Findings
RailCorp	RailCorp Corporate Staff	21-Mar-2004	22		There is a process for the maintenance of equipment.Could not determine if that process was followed .	Accident report relevant to the maintenance of brakes on deisel passenger train. Maintenance engineer did not follow published procedure. This resulted in train moving down a slight slope from the maintenance shed onto a min line.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	22			
RailCorp	Station Masters	21-Mar-2004	22.1	· There is an adequate process for maintenance of equipment	Safety responsibilities of our managers and supervisors clearly states "Ensuring plant,equipment are, as far as practicable,safe and without risk"	Registry number 04110
RailCorp	Fire Services (ex)	21-Mar-2004	22.1		Effective Fire prevention inspection regime is not in place.	Concerns raised by interviewee that fire inspection regime has not been conducted effectively since it was contracted out in 2001. No objective evidence available
StateRail	Capital Works	21-Mar-2004	22.1		No integrated categorisation schema for asset management in place for Train Services and Infrastructure.	INTERVIEW REFERENCE: BMB_26; DOCUMENT REFERENCE: Reg #4358, Asset Categorization Draft Proposal - undated
StateRail	PFM	21-Mar-2004	22.1		Some maintenance is being conducted on safety control systems (i.e.. Vigilance and Deadman systems) for the suburban fleet using unauthorised procedures.	INTERVIEW REFERENCE: BMB_20; DOCUMENT REFERENCE: Not Applicable, Reg #04210, Engineering Instruction for the DDIC Vigilance and Deadman Safety System Test Procedure
StateRail	Crew Area Management	21-Mar-2004	22.1		Some maintenance requirements of a corrective nature, some concerning safety critical items such as brakes, are not implemented	Interview with V4, MB10_KL on 4/3/04 where it was indicated brakes were not being attended to trains originating in Sydney with a specific incidence of brakes being completely worn out on an interurban set when at Lithgow. However there is a reporting system and follow up does occur.
StateRail	PFM	21-Mar-2004	22.1		The current MIMS and METRE systems used for maintenance management throughout PFM maintenance depots are less than adequate and need to enhanced to ensure that maintenance activities are fully documented.	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper
StateRail	PFM	21-Mar-2004	22.1		The MIMS used on the work shop floor needs enhancement to include a work order system (current their are no mechanisms for individual sign offs on maintenance conducted)	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper
StateRail	PFM	21-Mar-2004	22.1		There are a number of major issues associated with fleet maintenance - a number of these being safety related. Issues being flagged that are of concern are: (a) Evacuation procedures are not in place in some maintenance depots; (b) Safe work method statements have not been developed for safety critical maintenance and facilities work; (c) Configuration managment in PFM (apart form QTS) is not institutionalised and needs strengthening; (d) Maintenance record keeping across the depots is less than adequate; (e) The formal requirements in TMPs and what happens on the shop floors is disconnected; (f) Safety critical item information is not included in TMPs; (g) Fatigue Managment in PFM has not been established; (h) Random drug and alcohol testing in PFM has not been condcuted; (i) Succession planning in PFM has not been conducted; (j) Position descriptions in PFM with respect to Safety, Environment and Heal th responsibilities need to be clarified (cleared up)	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0529, Draft State Rail Passenger Fleet Maintenance - Future Directions dated October 2003
StateRail	PFM	21-Mar-2004	22.1		Their are a number of major issues associated with fleet maintenance - a number of these being safety related. Issues being flagged that are of concern are: (1) PFM have not identified safety critical items within the fleet. (2) PFM have a backlog of safety critical and technical training. (3) PFM have no overall training plan. (4) The current MIMS and METRE systems used for maintenance managment throughout PFM maintenenc depots are less than adequate and need to enhanced to ensure that maintenance activities are fully documented. (5) The MIMS used on the work shop floor needs enhancement to include a work order system (current their are no mechanisms for individual sign offs on maintenance conducted) (6) Their are some major inadequacies in the existing maintenance plans: (a) Maintenencae plans have not been revised since 1995. (b) Maintenance plans are too theoretical in nature. (c) Maintenance Plans are not fully implemented at depots. (d) safety critical items in maintenance plans are not clearly identified	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0526, PFM Electric Fleet Change Program
StateRail	Capital Works	21-Mar-2004	22.1		There is no Integrated Asset Plan for Train Services	INTERVIEW REFERENCE: BMB_26; DOCUMENT REFERENCE: Reg #4358, AMP for Train Services - Presentation Notes dated 9/3/4
StateRail	PFM	21-Mar-2004	22.2	· The requirements for maintenance of equipment is documented	Maintenance plans are required for OSCs ad Hunter cars.	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper
StateRail	PFM	21-Mar-2004	22.2		Maintenance plans are too theoretical in nature.	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper
StateRail	PFM	21-Mar-2004	22.2		Maintenance plans have not been revised since 1995.	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper


Observations	Interview/Document Review ID	Ratings for Finding
There may be a lack of awareness of the State Rail Safety standards across State Rail (might have some pockets that are aware). For example, in one specific case of an interview with a safety officer who has been in the safety game in state rail since 2001 he didn't even know that State Rail Safety standards actually existed. Their is a suspicion that this may be a systemic issue across the board and warrants further investigation to verify.		
There may be a lack of awareness of the State Rail Safety standards across State Rail (might have some pockets that are aware). For example, in one specific case of an interview with a safety officer who has been in the safety game in state rail since 2001 he didn't even know that State Rail Safety standards actually existed. Their is a suspicion that this may be a systemic issue across the board and warrants further investigation to verify.		
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: Vigilance Control Project Passenger Fleet Maintenance Train Maintenance and Risk Assessment Report on Findings	
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	NI03 / JE04	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_26; DOCUMENT REFERENCE: Reg #4358, Asset Categorization Draft Proposal - undated	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_20; DOCUMENT REFERENCE: Not Applicable, Reg # 04210, Engineering Instruction for the DDIC Vigilance and Deadman Safety System Test Procedure	
Anecdotal information given here. There is also some concern that "Defects" are not recording reported defects properly due to rude and off-hand manner by the defects personnel on the phone.	MB02_KL+I900	
	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper	
	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0529, Draft State Rail Passenger Fleet Maintenance - Future Directions dated October 2003	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0526, PFM Electric Fleet Change Program	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_26; DOCUMENT REFERENCE: Reg #4358, AMP for Train Services - Presentation Notes dated 9/3/4	
	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper	●
	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper	
	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	PFM	21-Mar-2004	22.2		The current MIMS and METRE systems used for maintenance management throughout PFM maintenance depots are less than adequate and need to enhanced to ensure that maintenance activities are fully documented.	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper
StateRail	PFM	21-Mar-2004	22.2		The requirements for maintenance are contained in Technical Maintenance Plans for the Fleet (sighted during interviews with PFM). There are a number of major inadequacies in the existing maintenance plans: (a) Maintenance plans have not been revised since 1995. (b) Maintenance plans are too theoretical in nature. (c) Maintenance Plans are not fully implemented at depots. (d) safety critical items in maintenance plans are not clearly identified. Additionally Maintenance plans are required for OSCs and Hunter cars.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0526, PFM Electric Fleet Change Program
StateRail	PFM	21-Mar-2004	22.3	· There is an appropriate maintenance schedule for all maintained equipment	There are maintenance schedules in place (stagger charts) for the Tangara.	INTERVIEW REFERENCE: BMB_02
StateRail	PFM	21-Mar-2004	22.4	· This process is followed*	Maintenance Plans are not fully implemented at depots.	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper
StateRail	PFM	21-Mar-2004	22.4		The formal requirements in Rolling Stock TMPs and what happens on the shop floors is disconnected.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0529, Draft State Rail Passenger Fleet Maintenance - Future Directions dated October 2003
StateRail	PFM	21-Mar-2004	22.5	· Maintenance records are adequately kept and maintained	Maintenance record keeping across the depots is less than adequate.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0529, Draft State Rail Passenger Fleet Maintenance - Future Directions dated October 2003
StateRail	PFM	21-Mar-2004	22.5		PFM has details records on the modification status of the state rail rolling stock fleet.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0819, Passenger Fleet Maintenance Quality and Technical Support Maintenance Review Summary for Periods 4,5 &6 2003/4
StateRail	PFM	21-Mar-2004	22.5		The two primary systems used for maintenance management by PFM are the METRE and MIMS systems. However, the current MIMS and METRE systems used for maintenance management throughout PFM maintenance depots are less than adequate and need to enhanced to ensure that maintenance activities are fully documented. Additionally, the MIMS used on the work shop floor needs enhancement to include a work order system (current their are no mechanisms for individual sign offs on maintenance conducted)	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0526, PFM Electric Fleet Change Program
StateRail	PFM	21-Mar-2004	22.6	· Assets management system is in place and adequate*	PFM show indications of trying to proactively manage their infrastructure asset base.	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0165, State Rail Passenger Fleet Maintenance, Brief for Preparation of Preliminary Design and Indicative Costs Estimates fro a new EMU Service Centre in the Clyde Down Yard, November 2003
StateRail	PFM	21-Mar-2004	22.8	· An appropriate calibration program is in place for safety critical equipment*	PFM have not identified safety critical items within the fleet hence the assessment of any calibration process in place for fleet assets could not be determined.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0526, PFM Electric Fleet Change Program
StateRail	PFM	21-Mar-2004	22.9	· Maintenance plan and schedule is adequate to sustain safety critical subsystems*	PFM have not identified safety critical items within the fleet and safety critical items in maintenance plans are not clearly identified hence the adequacy of any maintenance plans and schedules to sustain safety critical assets could not be determined by the audit.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0526, PFM Electric Fleet Change Program
StateRail	PFM	21-Mar-2004	22.9		PFM have not identified safety critical items within the fleet.	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper
StateRail	PFM	21-Mar-2004	22.9		Safety critical item information is not included in TMPs.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0529, Draft State Rail Passenger Fleet Maintenance - Future Directions dated October 2003
StateRail	PFM	21-Mar-2004	22.9		Safety critical items in maintenance plans are not clearly identified.	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper
StateRail	PFM	21-Mar-2004	22.10	· Maintenance records are adequate and suitably archived*	Maintenance plans are too theoretical in nature.	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper
StateRail	PFM	21-Mar-2004	22.10		Maintenance plans have not been revised since 1995.	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper
StateRail	PFM	21-Mar-2004	22.10		The formal requirements in Rolling Stock TMPs and what happens on the shop floors is disconnected.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0529, Draft State Rail Passenger Fleet Maintenance - Future Directions dated October 2003
StateRail	PFM	21-Mar-2004	22.10		PFM maintenance records are maintained on the METRE and MIMS system.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0526, PFM Electric Fleet Change Program
StateRail	PFM	21-Mar-2004	22.11	· Maintenance audits are performed and are adequate*	PFM conducts detailed and regular maintenance reviews of the Flemington Maintenance Facility.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0863, Passenger Fleet Maintenance Quality and Technical Support Flemington Maintenance Review Summary for Periods 4,5 &6 2003/4
StateRail	PFM	21-Mar-2004	22.11		PFM conducts detailed and regular maintenance reviews of the Hornsby Maintenance Facility.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0854, Passenger Fleet Maintenance Quality and Technical Support Hornsby Maintenance Review Summary for Periods 4,5 &6 2003/4
StateRail	PFM	21-Mar-2004	22.11		PFM conducts detailed and regular maintenance reviews of the Mortdale Maintenance Facility.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0844, Passenger Fleet Maintenance Quality and Technical Support Mortdale Maintenance Review Summary for Periods 4,5 &6 2003/4
			23	<b>DESIGN AND DEVELOPMENT</b>		
StateRail	Capital Works - Vigilance Project	21-Mar-2004	23		The specification for the new Vigilance system does not adequately specify the reliability requirements for new Vigilance systems. The specification for the new Vigilance system does not include the specification of a Reliability measure suitable for measuring the reliability of safety ceritical systems (eg. MTBCF). The specification for the new Vigilance system fails to specify the level of confidnec to which the reliability of the system needs to be prooved by the contractor - a major issue for safety critical systems.	INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: Vigilance Control for Double Deck Rolling Stock Specification FE 082-99






Observations	Interview/Document Review ID	Ratings for Finding
	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0526, PFM Electric Fleet Change Program	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_02	
	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0529, Draft State Rail Passenger Fleet Maintenance - Future Directions dated October 2003	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0529, Draft State Rail Passenger Fleet Maintenance - Future Directions dated October 2003	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0819, Passenger Fleet Maintenance Quality and Technical Support Maintenance Review Summary for Periods 4,5 &6 2003/4	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0526, PFM Electric Fleet Change Program	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0165, State Rail Passenger Fleet Maintenance, Brief for Preparation of Preliminary Design and Indicative Costs Estimates fro a new EMU Service Centre in the Clyde Down Yard, November 2003	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0526, PFM Electric Fleet Change Program	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0526, PFM Electric Fleet Change Program	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0529, Draft State Rail Passenger Fleet Maintenance - Future Directions dated October 2003	
	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper	
	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper	
	INTERVIEW REFERENCE: BMB_06; DOCUMENT REFERENCE: WAUD.007.006.0002, Draft Agenda Paper (Board) plus Passenger Fleet Maintenance (PFM) Major Issues Paper	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0529, Draft State Rail Passenger Fleet Maintenance - Future Directions dated October 2003	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0526, PFM Electric Fleet Change Program	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0863, Passenger Fleet Maintenance Quality and Technical Support Flemington Maintenance Review Summary for Periods 4,5 &6 2003/4	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0854, Passenger Fleet Maintenance Quality and Technical Support Hornsby Maintenance Review Summary for Periods 4,5 &6 2003/4	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0844, Passenger Fleet Maintenance Quality and Technical Support Mortdale Maintenance Review Summary for Periods 4,5 &6 2003/4	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: Vigilance Control for Double Deck Rolling Stock Specification FE 082-99	



StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
					The specification for the new Vigilance system requires the contractor to undertake a FEMCA but does not specify the acceptable stds that may be used by the contractor. The specification for the new Vigilance system promotes the concept that a safety critical system can be Fail Safe. The specification for the new Vigilance system trequirements that a logic diagram be persented as the method for validating that the system is fail safe which is not a standard practice for safety critical systems due to the level of assurance required of such systems.	
RailCorp	Station Masters	21-Mar-2004	23		There was no evidence that station managers were involved with a "Design and Development process.Note: This does not mean there isnt one.	
RailCorp	RailCorp Corporate Staff	21-Mar-2004	23		This element could not be determined.	
RIC	ATRICS	21-Mar-2004	23.1	· There is an adequate process for design and development of goods/services	ATRICS employs appropriate design and development practices as part of their system development process.	INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0677, Independent Assessment of Practices and Procedures For ATRICS System Development Final Report (Lloyds) INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0834, Systems Build and Release Process INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0855, User Requirements for ATRICS Workstation INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0743, System Requirements and Design Document INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0988, ARS Software Requirements Document INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0357, ATRICS ARS - Software Design Document INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0404, ATRICS ARS - Software Design Document Appendix A Class Model INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0794, ATRICS System Test Plan INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0634, ATRICS Disabling Pre-Testing in the RCS FQT Test Descriptions
						INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0452, ST/OP Data Build 15.2A INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0462, ST RCS Data Build 3 INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0468, ST RCS Data Build 4 INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0476, RCS Software Build 15.5 INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0483, RCS Software Build 15.4 INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0492, RCS Software Build 15.3 INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0499, RCS Software Build 15.2
						INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0509, SM RCS Data Build 15.2A INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0517, SM RCS Data Build 15.4A INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0525, SM RCS Data Build 15.4B INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0567, Sydenham Release 26, Release Record INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0623, User Requirements for Disabling Pre-Testing in the RCS INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0567, Sydenham Release 26, Release Record
StateRail	ART	21-Mar-2004	23.1		Design and development of training courses; Evidence of results from formal Training Needs Analysis for course design process conceded as non-existent by Workplace Trainer at RMC. Suspect this may be typical across all Group Elements.	Interview NI4.
StateRail	ART	21-Mar-2004	23.1		Design and development of training courses; Formalised level of Training Needs Analysis is not conducted.	Interview in which the Interviewee indicated that there was no formal training needs analysis. Also at interview CG21/MR14 in which another Interviewee indicated there was no 'Text Book' Training Needs Analysis. Interview with another- concession that formal TNA was not being undertaken.
StateRail	ART	21-Mar-2004	23.1		Design and development of training courses; Learning outcomes are linked to Nationally Accredited Competencies as much as is practicable. However, the process is not defined in the Training Policy and Procedures Manual.	Interview CG26/MN15 - Process description by Interviewee.
StateRail	ART	21-Mar-2004	23.1		Design and Development of Training Courses; SMS (and generic safe working) Course Design and Development procedures exist but are not explicit enough.	Interview CG26/MN15
StateRail	ART	21-Mar-2004	23.1		Design and Development of Training Courses; Task Analysis is only being conducted informally between Curriculum developer and an SME on an as required basis.	Data forwarded to Audit as 'Task Analysis' is more like a job description. (Item # 04543)

Observations	Interview/Document Review ID	Ratings for Finding
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0677, Independent Assessment of Practices and Procedures For ATRICS System Development Final Report (Lloyds) INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0834, Systems Build and Release Process INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0855, User Requirements for ATRICS Workstation INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0743, System Requirements and Design Document INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0988, ARS Software Requirements Document INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0357, ATRICS ARS - Software Design Document INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0404, ATRICS ARS - Software Design Document Appendix A Class Model INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0794, ATRICS System Test Plan INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0634, ATRICS Disabling Pre-Testing in the RCS FQT Test Descriptions INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0452, ST/OP Data Build 15.2A INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0462, ST RCS Data Build 3 INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0468, ST RCS Data Build 4 INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0476, RCS Software Build 15.5	
Concern: Personnel in the field acting as training co-ordinators are not conducting Training Needs Analysis. A transcript of interview indicates that training development in this case is being developed in isolation and there is a high risk that it does not meet any developmental procedure. As RMC training falls under the umbrella of the Registered Training Organisation (RTO) accredited to SRA, all business units must comply with the Policy and Procedures Manual. The role of Training Co-ordinators and their activities (covert or other) requires further investigation.	Interview NI4.	
Concern - deliberation by consultative groups may only be providing a 'preference assessment' rather than a needs analysis. Needs analysis should establish the desired status of learners minus the current status to identify an educational need. Current system may be replacing this with a 'think tank' which is being accepted as a TNA. At interview CG18/MR12 an interviewee conceded that a formal Training Needs Analysis was not undertaken. At CG21/MR14 another interviewee defended current arrangements (Course Committee and Curriculum Development), stating that a 'Text Book' Training Needs Analysis was not conducted. The auditors suspect that the articulation of the Committee together with the Curriculum developers is deemed to be satisfying the Training Needs Analysis phase of course developement. Typically the Needs Analysis should also scope the performance deficiencies, instructional strategy alternatives, the consequence of doing nothing, barriers such as organisational culture, support requirements for program success etc.	CG18/MR12 and CG26/MN15	
Good: Learning outcomes are linked to national accredited competencies.		
Concern: How is the SMS training development process linking learning outcomes to National Competencies? Curriculum developers match learning outcomes to national Competencies. In cases where competencies do not exist, the Curriculum developer discusses the requirement with an SME and develops the competency requirements. The process is undocumented. The results are detailed in a Course Design Document (Curriculum Report). Where is the procedure and/or approval for alternative action (including Task analysis procedures) if a learning requirement does not align with a National Competency?		
Concern: Task analysis should be the basis for any competency based assessment (how can the steps involved in a competency based procedure be identified otherwise?) Is a formal Task Analysis being conducted? No according to a curriculum developer. However, the curriculum developer will seek the input from a SME if a procedure needs to be understood for curriculum development purposes. This approach is probably both efficient and acceptable for non safety critical tasks, however a formal task analysis should be undertaken and documented for safety critical tasks.		

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	ART	21-Mar-2004	23.1		Design and Development of Training Services: Cost benefit of the virtual reality train simulator should be scrutinised. How does this type of simulation increase operational safety margins for the Driver/Guard team? The design and development leading to its purchase should have had a specific and well documented training concept linked to a Training Needs Analysis - such analysis may have revealed a cheaper option (digital video?) or the optimal means (strategy) for its interactive usage.	Record of Conversation between (auditor) and (X) regarding Emergency Procedure Training using Reality Centre devices. (Interview # CG 23). Item #04482 for SRA response to Glenbrook recommendation.
StateRail	ART	21-Mar-2004	23.1		Design and Development of Training Services: Cost benefit of the virtual reality train simulator should be scrutinised. Why does its hybrid configuration limit its use to general scenario analysis and discussion? Does this type of simulation increase operational safety margins for the Driver/Guard team? The design and development leading to its purchase should have had a specific and well documented training concept linked to a Training Needs Analysis. As ART have been unable to provide a 'text book' training needs analysis it may be presumed that the purchase of the reality centre equipment could have been made hastily?	Record of Conversation between (auditor) and (X) regarding Emergency Procedure Training using Reality Centre devices. (Interview # CG 23).
StateRail	ART	21-Mar-2004	23.1		Design and Development of Training Services: Course development committee Minutes were received late and could not be reviewed. In time to make a judgement about this aspect.	Evidence concerning discontent/criticism in the field to be sourced from all audit interviews. Specific criticism of course development outcomes and the composition of Course Committees is mentioned by RMC Workplace Trainer in NI4/JE7
StateRail	ART	21-Mar-2004	23.1		Design and Development of Training Services: The evaluation component of training course development at ART is undocumented. Without a formal and structured evaluation the full extent of positive reaction, learning, changed behaviour and positive results in the workplace cannot be determined.	WAUD.007.003.0207-0411 (Policy and Procedures).
StateRail	ART	21-Mar-2004	23.1		Design and Development of Training Services:: Training Aids - simulators are high fidelity and provide an excellent means for Driver training provided they are utilised to their full potential.	Observation only
StateRail	ART	21-Mar-2004	23.1		Design and Development of Training Services: Remedial Training conducted at Petersham- As this activity is not scoped in the Policy and Procedures Manual, the process for design and development of this central publication requires review. The Policy and Procedures Manual is a step in the right direction however it needs to be enhanced to meet the intended need.	WAUD.007.012.1468 is a remedial safe working assessment which illustrates the type of remedial action undertaken.
StateRail	PFM	21-Mar-2004	23.2	· The process is adequately documented	PFM QTS have approved procedures under the ISO 9001:2000 framework for Design Management and Control. PFM QTS section is a formally accredited ISO 9001 accredited organisation for or the provision of Engineering and Technical Services for State Rails Rolling Stock; through the establishment and updating of standards, policies and procedures, and the auditing of maintenance activities.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0779, Quality Manual for Quality and Technical Support, 12/11/02 INTERVIEW REFERENCE: BMB_05; WAUD.007.012.0778, State Rail Authority of NSW Quality and Technical Support, ISO 9001:2000 Certificate of Registration, 9 December 2002
StateRail	PFM	21-Mar-2004	23.2		PFM QTS have approved procedures under the ISO 9001:2000 framework for Engineering Change Proposals (known as ECARS). PFM QTS section is a formally accredited ISO 9001 accredited organisation for or the provision of Engineering and Technical Services for State Rails Rolling Stock; through the establishment and updating of standards, policies and procedures, and the auditing of maintenance activities.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0779, Quality Manual for Quality and Technical Support, 12/11/02 INTERVIEW REFERENCE: BMB_05; WAUD.007.012.0778, State Rail Authority of NSW Quality and Technical Support, ISO 9001:2000 Certificate of Registration, 9 December 2002
StateRail	Capital Works	21-Mar-2004	23.2		The Capital Procurement manual only describes processes from a business perspective and contains no detailed guidance on specialist areas such as systems safety engineering programs, human engineering programs etc. that may be required to be conducted as part of the design and development activities undertaken as part of the procurement process.	INTERVIEW REFERENCE: BMB_24; DOCUMENT REFERENCE: TBA, State Rail Procurement Manual on CD
RIC	ATRICS	21-Mar-2004	23.3	· Safety requirements are considered in the design and development process	A hazard analysis has been conducted as part of the ATRICS design and Development Process.	INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0586, Hazard Analysis for ARS
RIC	ATRICS	21-Mar-2004	23.3		ATRICS practices Risk Management as part of their project.	INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0648, All Risks Summary Report
StateRail	ART	21-Mar-2004	23.4	· The process for design and development is adequately reviewed and approved at the appropriate levels of management	Design and Development of Training Services: Stakeholders are adequately involved in the review and approval process for training courses at ART and RIC.	WDOT.005.001.0898 (SMS Training Management Flowchart)




Observations	Interview/Document Review ID	Ratings for Finding
Concern – a second simulator used for risk assessment training is not interactive. Is this simulator being utilised to its full potential - could this simulator be replaced using dramatised video presentations casting real drivers? Optimally (depending on cost benefit) this simulator should be used to full potential and loaded with interactive software where students can provide group or individual decisions affecting scenario outcomes (as per Glenbrook Recommendation 2v).	Interview # CG 23 and #04482	
Concern – The 'Reality Centre' line simulator is of a hybrid configuration which may be prohibitive under certain conditions. For example, the simulator has characteristics of both the Millennium train and the Tangara. For this reason it is used for general types of training (approaching level crossings/driver response/subsequent group discussion/analysis). Advice from ART was that because the simulator was not of a fixed configuration it was used for general emergency scenario training rather than procedural emergency training. Emergency procedural training was achieved in the Cabin Simulators. Although the Reality Centre simulators were visually impressive, the cost benefit of these devices (in their current training roles) should be the subject of closer scrutiny.	# CG 23	
Questionable – are those on the Pilot Course the right people to attend the pilot course? If the pilot course was effective, why is there so much negativity toward Petersham courses from the coal face? Unfortunately various Course Committee meeting Minutes were not delivered in time to warrant full review.	NI4/JE7	
Concern - The key issue for the adult educator is to determine if the evaluation is valid. For example, does a pilot course confirm that there are positive shifts in the performance of a task at the operational level? This is not to suggest that pilot courses are non-beneficial. However, SRA claim to be utilising 'competency based training' which should have observable (and documented) outcomes in the workplace - could this be ascertained by the utilisation of a pilot course alone? The task of further investigating this (possible) discrepancy is made more difficult by the fact that Section 5 (Course Evaluation) is missing from the Policy and Procedures Manual. Discussions suggest that the 'Evaluation' and 'Validity' process is focussing on 'feedback from stakeholders'. Auditors are still awaiting the results of a course evaluation from ART.	WAUD.007.003.0207-0411	
Good – Petersham has a number of cabin simulators (specifically configured) and 2 digital 'Reality Centre' train simulators for training. The simulators provide a high level of fidelity and potential for further development.		
Concern: Petersham develops its own course of action independently from the incident investigation -(the employee is deemed to be 'excommunicated'). Policy and Procedures Manual does not contain instructions relating to the protocol and reporting requirements for a person who has been assessed following a safe working incident. Although there is a framework for processing a breach in safe working, there is no specific documentation or guidance which has been provided regarding additional 'training' (remedial safe working assessment).	WAUD.007.012.1468	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0779, Quality Manual for Quality and Technical Support, 12/11/02 INTERVIEW REFERENCE: BMB_05; WAUD.007.012.0778, State Rail Authority of NSW Quality and Technical Support, ISO 9001:2000 Certificate of Registration, 9 December 2002	
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Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_24; DOCUMENT REFERENCE: TBA, State Rail Procurement Manual on CD	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0586, Hazard Analysis for ARS	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0648, All Risks Summary Report	
Good – each new ART training course (also RIC Belmore) requires a 'Pilot Course' to be conducted. The course comprises stake holders, union members (if required) and subject mater experts.	WDOT.005.001.0898	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
RIC	ATRICS	21-Mar-2004	23.5	<p>Stakeholders are adequately involved in the review and approval process</p>	<p>ATRICS has a formal review and approval mechanisms as part of their software development process extending all the way through the development cycle up to release of data relating to software developments. The review and approval process also includes major stakeholders. In the documents cited as evidence there are sign offs shown from a disparate range of stakeholders providing evidence that such reviews do occur.</p>	<p>INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0452, ST/OP Data Build 15.2A  INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0525, SM RCS Data Build 15.4B  INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0462, ST RCS Data Build 3  INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0468, ST RCS Data Build 4  INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0476, RCS Software Build 15.5</p>
						<p>INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0483, RCS Software Build 15.4  INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0492, RCS Software Build 15.3  INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0499, RCS Software Build 15.2  INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0509, SM RCS Data Build 15.2A  INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0517, SM RCS Data Build 15.4A  INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0547, Sydenham Release 25, Release Record  INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0567, Sydenham Release 26, Release Record</p>
StateRail	ART	21-Mar-2004	23.5		<p>Design and development of training courses - Stakeholder Involvement: Training course development draws together various stakeholders and SME's . Stakeholders seem adequately involved.</p>	<p>WDOT.005.001.0898 (SMS Training Management Flowchart) identifies the various consultative groups and the source of data. WAUD.007.003.0207-0411 (Policy and Procedures Manual) Section 2 contains the Course Design and Development process including Terms of Reference for the Course Committee.</p>
StateRail	Capital Works - Vigilance Project	21-Mar-2004	23.5		<p>The new Vigilance Project has conducted a Critical Design Review as part of the Design and Development process and engaged critical stakeholders as part of this process..</p>	<p>INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: NSW State Rail Authority Vigilance Control for Outer Suburban Train Project (VC Project) Critical Design Review</p>
StateRail	Capital Works - Vigilance Project	21-Mar-2004	23.5		<p>There is a commitment to engaging specialist agencies to ensure that the issues of Industrial Relations, OH&amp;S, Ergonomics, Human Factors, Safe Working, Safety Risk Assessments and standards compliance are addressed as part of the new Vigilance project. However, in discussions with the project manager, when asked whether there was any specialist human engineering program or systems safety engineering program being implemented as part of the program he replied in the negative.</p>	<p>INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: NSW State Rail Authority Vigilance Control for Outer Suburban Train Project (VC Project) Project Management Plan</p>
RIC	ATRICS	21-Mar-2004	23.6	<p>There is an adequate process to control design and development changes</p>	<p>ATRICS has an extensive design change management process in place for design change management and development. The process enables ATRICS reported faults to be reported, tracked and traceable through to change reports and subsequent design documents.</p>	<p>INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0719, Systems Management Process  INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0601, Design Document  INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0584, ATRICS Fault Report  INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0619, Change Report  INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0598, Change Report</p>
RIC	ATRICS	21-Mar-2004	23.6		<p>ATRICS practice configuration control on software releases.</p>	<p>INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0452, ST/OP Data Build 15.2A  INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0462, ST RCS Data Build 3  INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0468, ST RCS Data Build 4  INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0476, RCS Software Build 15.5  INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0483, RCS Software Build 15.4  INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0492, RCS Software Build 15.3  INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0499, RCS Software Build 15.2  INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0509, SM RCS Data Build 15.2A  INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0517, SM RCS Data Build 15.4A  INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0525, SM RCS Data Build 15.4B  INTERVIEW REFERENCE: BMB_15; DOCUMENT REFERENCE: WAUD.010.001.0567, Sydenham Release 26, Release Record</p>
StateRail	PFM	21-Mar-2004	23.6		<p>Configuration management in PFM is not institutionalised throughout PFM and needs strengthening.</p>	<p>INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0529, Draft State Rail Passenger Fleet Maintenance - Future Directions dated October 2003</p>
StateRail	PFM	21-Mar-2004	23.6		<p>PFM has details records on the modification status of the state rail rolling stock fleet.</p>	<p>INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0819, Passenger Fleet Maintenance Quality and Technical Support Maintenance Review Summary for Periods 4,5 &amp;6 2003/4</p>



Observations	Interview/Document Review ID	Ratings for Finding
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Good – Policy and Procedures indicate that a course committee is established (with terms of reference) to determine the course coverage, structure, aim and broad content. Course committees have stakeholder/user representation.	WDOT.005.001.0898	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: NSW State Rail Authority Vigilance Control for Outer Suburban Train Project (VC Project) Critical Design Review	
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Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0529, Draft State Rail Passenger Fleet Maintenance - Future Directions dated October 2003	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0819, Passenger Fleet Maintenance Quality and Technical Support Maintenance Review Summary for Periods 4,5 & 6 2003/4	

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StateRail	PFM	21-Mar-2004	23.6		PFM QTS have approved procedures under the ISO 9001:2000 framework for Engineering Change Proposals (known as ECARS). PFM QTS section is a formally accredited ISO 9001 accredited organisation for or the provision of Engineering and Technical Services for State Rails Rolling Stock; through the establishment and updating of standards, policies and procedures, and the auditing of maintenance activities.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0779, Quality Manual for Quality and Technical Support, 12/11/02 INTERVIEW REFERENCE: BMB_05; WAUD.007.012.0778, State Rail Authority of NSW Quality and Technical Support, ISO 9001:2000 Certificate of Registration, 9 December 2002
StateRail	Capital Works - Vigilance Project	21-Mar-2004	23.7	· Safety assessments are performed and documented during design and test activities*	It could not be verified due to quality of data supplied that changes, as a result faults founds during testing of the new Vigilance System, are being effectively managed through a controlled processes.	INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: Vigilance Project Example System Functionality Change INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: Vigilance Project Sample Fault
StateRail	Capital Works - Vigilance Project	21-Mar-2004	23.7		Risk analysis is supposed to be conducted by capital works in support of design decisions on the new Vigilance Project. This is being undertaken by the project. Examples of various safety risk evaluations, FMECAs in support of risk evaluations and safety assessments the new Vigilance Project has conducted to date include: (a) The Safety risk evaluation that was conducted for the introduction of task related vigilance on T & G type train sets. (b) The safety risk evaluation of driver deadman device upgrades on intercity T and G type trains with respect to the requirements for buttons for the Vigilance System. (c) FMECA that was conducted for an element of the new Vigilance system by a sub-contractor in accordance based on a recognised international standard (IEC 812). (d) A FMECA that was conducted for the new Vigilance system by a recognised international body (Lloyds) based on the principles in recognised international standards (EN 50126 and MIL Std 1629A).	INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: Vigilance Control Project Details of Engagement INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: State Rail Authority Safety Risk Evaluation of the Introduction of Task Related Vigilance on T & G type train sets INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: Safety risk evaluation of driver deadman device upgrades on intercity T and G type trains, Safety optimization of Stage 1 vigilance installation and use INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: Vigilance Control Unit Failure Modes, Effects and Criticality Analysis for Fischer Industries INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: Main Train State Rail Vigilance Control Project FMECA And Safety Assessment Report
StateRail	Capital Works - Vigilance Project	21-Mar-2004	23.7		There is a test plan in place for testing of the new Vigilance Systems, however the adequacy of the test plan seems less than desirable by test plan standards that would be considered best practice throughout the world. For example, the Master Test Plan does not explicitly link testing activities to the requirements in the specification through a verification cross reference matrix (a passing comment is made to this in the test plan), nor does it address the critical testing issues such as the level of assurance for testing (eg. the level of assurance to ensure that reliability and safety requirements are satisfied to an appropriate assurance level, e.g. to a 90% level of confidence).	INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: NSW State Rail Authority Vigilance Control for Outer Suburbans Train Project (VC Project) Master Test Plan
			24	MANAGEMENT AND STAFF RECRUITMENT**		
RailCorp	Organisational Psychologist	21-Mar-2004	24		OPC Assessment Rail Safety Series selection tests (04481) not validated or normed on Australian population	At interview MR06AR06 Interviewee stated that the selection tests OPC Assessment Rail Safety Series 04481) she was using had not been normed or validated on an Australian population.
RailCorp	Station Masters	21-Mar-2004	24		Staff recruitment was managed from Lee st.	Statement from station managers
RailCorp	Safety & Environment Division	21-Mar-2004	24.1	· Competence focused recruitment	Incumbent A/GM Safety and Environment recruitment not based on competence	At interview MN01MR02 x responded that although he has attended many safety and safety related courses, he has not received any formal Safety Science (SMS) training.
RailCorp	Training & Development	21-Mar-2004	24.1		03497 Recruitment of Director Training and Development was based on competency	03497 CV reflects appropriate academic qualification and extensive educational experience
StateRail	ART	21-Mar-2004	24.1		Competence Focussed Recruitment: Course delivery of SMS 2.4 observed was marginally acceptable with seemingly fluctuating levels of student interaction. If this is due to poor instructors, then the selection process requires attention. If due to an inability to engage students, then a new teaching strategy is required.	Observation Reports CG#15 and CG#16.
StateRail	Corporate	21-Mar-2004	24.1		Recruitment is not based on competence, rather experience and perceived ability to do the job	MB07_NI16, DRMB20 (reg 03993) ,43,47,48,49 (reg 04229). The position descriptions for the senior executive team and the recruitment of do not indicate competencies were evaluated at the time of recruitment. In addition, the position descriptions for the Safety Team at the time x was in Safety do not indicate selection on the basis of competencies, rather experience and demonstrated ability which can be used as a substitute for competence but is not verifiable.
RailCorp	Safety & Environment Division	21-Mar-2004	24.1			At interview MN01MR02 x responded that as far as he was aware only Julie Wills has had any formal Safety Science training.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	24.1		Appointment of Group General Manager Corporate Safety to a person with no safety qualifications or experience indicates at senior manager level is not based on competency.Group General Manager Corporate Safety position description states, "safey experience considered desirable" demonstrates a complete lack of knowledge of Safety Management Systems or any other Safety Science.	KL 2 .GROUP GENERAL MANAGER CORPORATE SAFETY position description.
RailCorp	Health Stds	21-Mar-2004	24.2	· Staff advancement and rotation based on competency	Staff rotation of incumbent Project Manager Health Standards not based on competency	Interview MR01BB01.



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Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: Vigilance Project Example System Functionality Change INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: Vigilance Project Sample Fault	
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Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_21; DOCUMENT REFERENCE: NSW State Rail Authority Vigilance Control for Outer Suburbans Train Project (VC Project) Master Test Plan	
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	MN1MR02	
	3497	
Safety Training: SMS 2.4 was marginal with low levels of interaction (possibly attributable to a combination of student introversion, poor instructional strategy etc). Training provided by Workplace trainers was not assessed due to time and scope limitations.	CG#15 and CG#16	
Competencies have been developed for blue collar workers but no competencies exist or are being used for management. Consequently and since there has been no effective performance evaluation process the only method for selection is on the basis of CVs and personal experience with the person, perhaps in another rail organisation. There are anumber of management staff who have been appointed on the basis of transfer (within the government system which is easy to do provided that person is more or less on the salary grade) or through work relationships in the past.	MB07_NI16, DRMB20,43,47,48,49	
Few Sr Managers have formal safety qualifications	MN1MR02	
	MR01BB01	




StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
RailCorp	RailCorp Corporate Staff	21-Mar-2004	24.2		Senior management did not have staff succession plans	LN22CD01,
			25	<b>MEDICAL ISSUES**</b>		
StateRail	State Rail	21-Mar-2004	25		State Rail has a documented procedure concerning Communicable Diseases	DOCUMENT REFERENCE: State Rail Safety Standard 12.02 , Communicable Diseases
StateRail	State Rail	21-Mar-2004	25		State Rail has a documented procedure concerning Contract Health and Safety Specification	DOCUMENT REFERENCE: State Rail Safety Standard 11 , Contract Health and Safety Specification
StateRail	State Rail	21-Mar-2004	25		State Rail has a documented procedure concerning Drugs and Alcohol	DOCUMENT REFERENCE: State Rail Safety Standard 12 , Drugs and Alcohol
StateRail	State Rail	21-Mar-2004	25		State Rail has a documented procedure concerning Health and Occupational Hygiene Monitoring	DOCUMENT REFERENCE: State Rail Safety Standard 12 , Health and Occupational Hygiene Monitoring
StateRail	State Rail	21-Mar-2004	25		State Rail has a documented procedure concerning Health Promotion Programs	DOCUMENT REFERENCE: State Rail Safety Standard 12.01 , Health Promotion Programs
StateRail	State Rail	21-Mar-2004	25		State Rail has a documented procedure concerning Health Registers	DOCUMENT REFERENCE: State Rail Safety Standard 12.01 , Health Registers
StateRail	State Rail	21-Mar-2004	25		State Rail has a documented procedure concerning Medical Standards	DOCUMENT REFERENCE: State Rail Safety Standard 12.01 , Medical Standards
StateRail	State Rail	21-Mar-2004	25		State Rail has a documented procedure concerning Requirements and Assessment of Contract Health and Safety Management	DOCUMENT REFERENCE: State Rail Safety Standard 11 , Requirements and Assessment of Contract Health and Safety Management
StateRail	State Rail	21-Mar-2004	25		State Rail has a documented procedure concerning Trauma Assistance	DOCUMENT REFERENCE: State Rail Safety Standard 12.02 , Trauma Assistance
RailCorp	Station Masters	21-Mar-2004	25		Station managers could exercise their powers of observation in relation to the fitness of their staff to perform their duties.	Registry number 04110
RailCorp	Train Crew Assignment Centre TCAC	21-Mar-2004	25.1	· There are adequate programs that ensure that employees in safety critical positions have undergone fitness to work assessments	Crew medicals and critical training are not cancelled due to crewing pressures	Interviewee reported that pre-Waterfall crew medicals and critical training would be postponed to meet crewing pressures. Interviewee reported that such postponements have not occurred since waterfall
RailCorp	Train Crew Assignment Centre TCAC	21-Mar-2004	25.1		Joiners rights jeopardises safe running of the network	Interviewee concerned that joiners rights means that not all crew report in to the TCAC in person, bypassing the attestation process that is a check of crew readiness for duty. Interviewee passed on anecdotal evidence that suggested that when crews become aware that drug evaluation unit is on site they exercise their joiners rights even if they are outside on the platform at Central station.
RailCorp	Crew Area Management	21-Mar-2004	25.1		Joiners rights jeopardises safe running of the network	Interviewee concerned that exercise of joiners rights is an unsatisfactory practice. Anecdotal evidence that joiners rights are exercised when drug evaluation people are known to be on site. Interviewee does not have objective evidence and said that this would be very hard to prove.
RailCorp	CEO	21-Mar-2004	25.1		Mr Graham stated that he would be introducing a Drug and Alcohol program	Sighted documentation relevant to this program
RailCorp	RailCorp Corporate Staff	21-Mar-2004	25.1		Programs are being developed.	
RailCorp	Rail Management Centre (RMC)	21-Mar-2004	25.1		There are not enough controllers at the RMC to comply with fatigue management requirements	Statement made by X.
StateRail	Train crewing	21-Mar-2004	25.1		There are programs in place to ensure fitness to work for traincrew	Traincrew are currently required to undergo medical testing for fitness to work as well as alcohol testing on a random basis. Fatigue is managed by the FAID system as applied to the Master Roster. Faid document Registered Number 04283
StateRail	Train Crewing	21-Mar-2004	25.1		There is an attestation procedure implemented on a daily basis which is not fail safe since crew are able to book on without attestation	V4 and V5 on 4/3/04 with MB10_KL Indicate crew area manager staff are not always in the location where crew book on
StateRail	PFM	21-Mar-2004	25.1		There is some confusion relating to the requirements for medical assessments post-recruitment as part of the process for re-issuing of TSA Certificates to PFM staff.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Email to , Subject:Non-Issuing of TSA Certificates, Dated: 12/10/02
StateRail	Train crewing	21-Mar-2004	25.2	· There are adequate programs that ensure that fitness to work assessments are undertaken by people with appropriate competence and skills	· There are adequate programs that ensure that fitness to work assessments for traincrew are undertaken by people with appropriate competence and skills (Central Station)	Medical assessmnet Standards are in place Registry Number 04576 HR Manual Medical Practices & Procedures Reg Number 04586
StateRail	Train Crewing	21-Mar-2004	25.3	· There are adequate programs that ensure the accuracy and timeliness of the medical assessments	Medical assessments are required at regular intervals for employees to remain certified for train crewing duties	MB05,MB11, interviews (training records) and (Training) on 11/2/04 and 5/3/04 indicated drivers were not accredited or reaccredited without sighting of medical certificate. DRMB53 DART training records reg 03727

Observations	Interview/Document Review ID	Ratings for Finding
There may be a lack of awareness of the State Rail Safety standards across State Rail (might have some pockets that are aware). For example, in one specific case of an interview with a safety officer who has been in the safety game in state rail since 2001 he didn't even know that State Rail Safety standards actually existed. Their is a suspicion that this may be a systemic issue across the board and warrants further investigation to verify.		
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	NI02 / BB03	
	NI02 / BB03	
	NI04 / CG04	
	KL01/NB01/PO 01	
	NI01 / JE01	
	NI02_BB03	
Attempted but not fail safe attestation	MB10_KL??	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_10; DOCUMENT REFERENCE: Reg # 4331, Email to , Subject:Non-Issuing of TSA Certificates, Dated: 12/10/02	
	NI02_BB03	
Accuracy review is not undertaken for the purposes of Certificate of Competency (reaccreditation)	DRMB53 reg 03727	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	Station Operations	21-Mar-2004	25.4	· There are adequate programs that ensure risks to health from work related hazards are identified, assessed, controlled and recorded	Hazard and risk assessments are conducted for station operations	MB02_KL Sighted risk analysis framework DRMB 26 reg 04110 for use by station staff and hazard identification manuals and risk register DRMB25 reg 04110
StateRail	Train Crewing	21-Mar-2004	25.5	· There are adequate programs that assist individuals with work related psychological issues	Post incident reponse plans for crew are in development in Train Services.	Train Crewing have developed a post incident response plan for crews (how to deal with crew members after incidents such as SPADs) [doc 04240]. Interviewee reported that this had originally been developed by Train Crewing Safety but has been taken up by Train Services Safety. The purpose of this procedure is to detail the SafeWorking Policy, part 9 [WAUD.007.013.0003] that does not provide detail on post incident response.
StateRail	Train crewing	21-Mar-2004	25.7	· There are adequate programs that rehabilitate employees injured at work	· There are adequate programs that rehabilitate Traincrew injured at work	Registry Number 04576 HR Manual Introduction to Injury Management WAUD.012.004.0027
StateRail	Train Crewing	21-Mar-2004	25.7		Anecdotal evidence that trauma counselling system is not fully effective in train crewing	Interviewee noted that facilities for drivers who suffer trauma (eg witness suicide) are less than optimum. Interviewee has vast experience in transport industry and stated that the SRA system tends be be a "one size fits all" approach that does not encourage drivers to "get straight back on the horse" after an incident. Instead drivers are encouraged to take time off.
StateRail	Train Crewing	21-Mar-2004	25.7		Improved injury management program being developed in RailCorp.	Workplace injury Management program , dec 9 2003 [04507] indicates there are efforts underway to improve injury management services across RailCorp.
StateRail	Central Station	21-Mar-2004	25.7		RTW system forcing managers to place workers in inappropriate roles. (Station Ops)	Doc[04087, 1] provides example from interviewee regarding a worker he was expected to place in a role the interviewee was inappropriate because he was at "medium" risk of re-injury. X noted that it was the supervisors responsibility to ensure the worker observes correct manual handling techniques. The manager replied that he does not have adequate supervision resources.
StateRail	State Rail	21-Mar-2004	25.7		State Rail has a documented procedure concerning Injury Management	DOCUMENT REFERENCE: State Rail Safety Standard 12.01 , Injury Management
StateRail	Central Station	21-Mar-2004	25.7		Systems not in place to ensure lost time due to injury is minimised. (Station Ops)	Discussion with interviewee revealed frustration with internal system for RTW (return to work) system. Emails provided [doc 04087,1] outline a case where the interviewee (a manager) wanted to try to get an employee back into the workplace and offer alternative duties, but the RTW coordinator appears not to allow consideration of alternate duties because the medical certificate has already been issued. Interviewee thought the system was so rigid and RTW people were reluctant to "push" to get people back in the workplace on alternative duties. Other cases were cited in the interview but documented evidence not available.
StateRail	Train crewing	21-Mar-2004	25.8.1	· There are adequate programs that ensure that, , on a daily basis, individuals are fit to function, with specific reference to:	· There are adequate programs that ensure that, , on a daily basis, individuals are fit to function, with specific reference to: Fatigue Alcohol	Registry Number 04576 HR Manual
RailCorp	Train Crew Assignment Centre TCAC	21-Mar-2004	25.8.1		Attestment process in place at TCAC but questions about its effectiveness	Interviewee reported that unions don't fully support the attestement process and have raised questions about its credibility. Unions criticized Interviewee for not allowing crew member to work new years eve 2002 [no documented evidence provided.
StateRail	Train crewing	21-Mar-2004	25.8.1		There is an attestation procedure which is not fail safe since crew are able to book on without attestation	V4 and V5 on 4/3/04 with MB10_KL Indicate crew area manager staff are not always in the location where crew book on.
StateRail	PFM	21-Mar-2004	25.8.2	· Fatigue	Fatigue Management in PFM has not been established	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0529, Draft State Rail Passenger Fleet Maintenance - Future Directions dated October 2003
RailCorp	Train Crew Assignment Centre TCAC	21-Mar-2004	25.8.3	· Alcohol and other drugs,	Alcohol testing regime in place but questions about its effectiveness	Interviewee reported that drug testing regime is not truly random and can be by passed by crew and other staff. See finding on Joiners rights from same interview. Also Interviewee related ongoing issue with staff member who has drinking problem - this staff member always goes missing when drug testing unit around. Incidents of other (non crew) staff drinking at lunch times and being affected by alcohol on the job - anecdotal evidence only.
RailCorp	Crew Area Management	21-Mar-2004	25.8.3		Alcohol testing regime in place but questions about its effectiveness	Interviewee was concerned that exercise of joiners rights is an unsatisfactory practice. Anecdotal evidence that joiners rights are exercised when drug evaluation people are known to be on site. Interviewee does not have objective evidence and said that this would be very hard to prove. Interviewee provided thoughts on the current culture associated with drug testing - crews are scared and are dobbing in mates in fear of being accused of "cover ups" following CEO's comment related to severe consequences for those that cover up safety breaches. Some "dobbing in" also happening as retribution according to Interviewee
StateRail	PFM	21-Mar-2004	25.8.3		Random drug and alcohol testing in PFM has not been conducted.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0529, Draft State Rail Passenger Fleet Maintenance - Future Directions dated October 2003
			26	<b>HUMAN FACTORS**</b>		
RailCorp	RailCorp Corporate Staff	21-Mar-2004	26		Audit team Human Factor specialists will comment on this element.	
RailCorp	Station Masters	21-Mar-2004	26		Human factors Some station managers stated they had heard about human factors whilst attending training at "Petersham" no real understanding was detected during the interviews.	Interview out come.
StateRail	State Rail	21-Mar-2004	26		State Rail has a documented procedure concerning Office Ergonomics	DOCUMENT REFERENCE: State Rail Safety Standard 12.02 , Office Ergonomics
RailCorp	Corporate Safety	21-Mar-2004	26.1	· There is a written human factors policy	RailCorp does not have a written HF policy	Interview: MN2/BB2
StateRail	ART	21-Mar-2004	26.2	· Human factors specialists are on staff and technically qualified	Human Factors Specialists: With the exception of Werner Neif (recently contracted from Air NZ) there were no HF specialists noted within training staff.	WAUD.007.012.1528 Pg 5.
RailCorp	Corporate Safety	21-Mar-2004	26.2		RailCorp currently does not have any HF specialists on staff. SRA employed one qualified HF specialist as Manager HF. She started one week after Waterfall having been recruited from overseas in Nov 02. She resigned from RailCorp 9 Feb 04 citing frustration and lack of support as reasons to move on. RailCorp do not appear to have commenced a recruitment process to replace her.	Interview: MN2/BB2 Documents: PD Manager Human Factors WAUD.007.004.0234 CV Barbara Klampfer WAUD.007.007.0556










Observations	Interview/Document Review ID	Ratings for Finding
Not used for operational risks, only OH&S around the station relating to plant and chemicals or hazardous platform furniture	DRMB26 reg 04110  DRMB25 reg 04110	
	NI23BB22	
	NI02_BB03	
	NI21/JE23	
	NI21/JE23	
This also suggests total lack of understanding by RTW person of adequate risk control procedures - ie instruction to manager to ensure supervisor "ensures correct lifting techniques" illustrates total lack of understanding of effective risk control and violates the OHS ACT.	NI 18 CG 17	
There may be a lack of awareness of the State Rail Safety standards across State Rail (might have some pockets that are aware). For example, in one specific case of an interview with a safety officer who has been in the safety game in state rail since 2001 he didn't even know that State Rail Safety standards actually existed. Their is a suspicion that this may be a systemic issue across the board and warrants further investigation to verify.		
	NI 18 CG 17	
	NI02_BB03	
	NI02 / BB03	
Attempted but not fail safe attestation	MB10_KL??	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0529, Draft State Rail Passenger Fleet Maintenance - Future Directions dated October 2003	
	NI02 / BB03	
	NI04 / CG04	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0529, Draft State Rail Passenger Fleet Maintenance - Future Directions dated October 2003	
There may be a lack of awareness of the State Rail Safety standards across State Rail (might have some pockets that are aware). For example, in one specific case of an interview with a safety officer who has been in the safety game in state rail since 2001 he didn't even know that State Rail Safety standards actually existed. Their is a suspicion that this may be a systemic issue across the board and warrants further investigation to verify.		
Without a HF policy it is unlikely HF will be utilised appropriately in SMS	Interview: MN2/BB2	
Concern: ART do not understand CRM. Common belief that CRM is a new term for an old process. ART believe they have been 'delivering CRM for some time'. This is a quote from the SMS 2.5 Lesson Plan. Puzzling - leads one to ask what HF/CRM expertise exists in the organisation to deal with SMS.	WAUD.007.012.1528 Pg 5	
Appear to be plans to employ HF specialist in Train Services Division (RailCorp presentation to SCOI)	Interview: MN2/BB2 Documents: PD Manager Human Factors WAUD.007.004.0234 CV WAUD.007.007.0556	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
RailCorp	Corporate Safety	21-Mar-2004	26.3	· Human factors staff are used appropriately in the SMS	The Manager HF was not fully used appropriately in the SRA SMS. The Manager HF was not fully involved in the development and delivery of HF based training programs at ART such as CRM and SMS training. The Manager HF was brought in to review projects with potential HF issues belatedly, such as SPADS management, driver /guard communication training, TOS, Emergency evacuation, and ATRICS workload assessment. Completed reports and programs identifying HF issues have not been acted on or followed up, eg SPADS management, driver /guard communication training, TOS, Emergency evacuation, and ATRICS workload assessment.	Interview: MN2/BB2 Documents: WAUD.007.001.0014, 4-Jul-2003, Waterfall Issues Inventory - Status of SAVE Program
StateRail	Train Crewing	21-Mar-2004	26.4	· There is a 'just' policy on safety on staff who commit errors	Perception by crew is that the system is not just	, V4& V5 in interviews MB03_KL,MB10_KL On 5/2/04 & 4/3/04 respectively indicated the system discriminated against drivers who reported, evidence the paper in controller incident and the psychological testing performed at Petersham
RailCorp		21-Mar-2004	26.4		Referral to ART of those who make errors is not based on a "just process"	At interview CG18MR12 when asked about the process of referrals to ART for assessment (eg SPADs) X responded that some who are sent to ART are in reality disciplinary problems. Referral to Petersham was a method for transferring risk i.e. it is a way for line managers to avoid responsibility for issues.
StateRail	Train Crewing	21-Mar-2004	26.4		Systems promote persistence of blame culture in Train Crewing.	Three examples of persistence of blame culture provided. 1. IMMS debit meeting - allocates blame for delays in the organisation in an inappropriate manner. Drivers are asked to submit delay slips for visiting the toilet at stations. Focus on minor delays becomes petty and could be tracked much more efficiently according to interviewee. 2. Driver at Arncliffe stopped train when suicidal person observed in the area. Tapes available [04483] Controller pushed driver to move train but driver did risk assessment and was not willing to move. Interviewee noted that driver was "in the right". 3. Interviewee provided emails [04507] that outline an incident where a driver was asked as part of a promotional film shoot to propel a train with the guard in the front and not at the rear. The driver refused because of the safeworking breach. Police participating in the film thought the driver was unreasonable and reported to SRA three days after the shoot that they thought the driver was on drugs. The existing system was such that the driver was drug tested and found to be negative. Interviewee noted in email that contrary to police assessment the driver is probably exactly the type of driver SRA needs ie one that follows safeworking rules.
RailCorp	Operational Safety	21-Mar-2004	26.4		The determination of Culpability as a first step in the Incident Management process is not consistent with a "Just" policy about errors.	When asked at interview MR07LN07 about a No blame policy X responded that a no Blame process should not have level of Culpability WAUD.007.012.1035 as its first step.
RailCorp		21-Mar-2004	26.4		The policy concerning the determination of culpability following and error or non compliance is not documented	At interview MR18JE31 X reported that although he makes culpability determinations there was no written procedure for the determination of culpability following an incident or report.
RailCorp		21-Mar-2004	26.4		The process for managing errors is not "just"	At interview MR16BB23 when asked about the decision to send someone to Petersham X responded that in the past all were sent. Now the decision to send someone to Petersham depends on the severity of the outcome and not on the causes of the incident.
RailCorp		21-Mar-2004	26.4		The Safeworking Policy November '03 for staff who commit errors is not as "Just " as it could be	When asked at interview CG21MR13 about the procedures for Managing Incidents WAUS.007.012.1010 responded that the process placed too much emphasis for errors on the individual.
RailCorp		21-Mar-2004	26.4		The Safeworking Policy November '03 Incident Management policy for staff who commit errors is necessary and "just" (appropriate).	When asked at interview CG21MR13 about the appropriateness of procedures for Managing Incidents WAUS.007.012.1010 X responded that the process was appropriate necessary and fair. This is because drivers and guards do not know who their supervisors are and can go for months without any supervisory contact.
RailCorp	SRA	21-Mar-2004	26.4		There is a written "no blame" policy however few people know of its existence or follow it in reality	MR
RailCorp	Health Stds	21-Mar-2004	26.4			When asked about a "No Blame" policy at interview MR01BB01 X responded although he was sure that there was a no blame policy he did not know where to find it.
RailCorp	Training & Development	21-Mar-2004	26.4			At interview MR04CG01 X reported that trainers are very cynical of a NO Blame policy
RailCorp	Organisational Psychologist	21-Mar-2004	26.4			At interview MR06AR06 stated that in the interviewee's opinion the referral of drivers to Petersham following a SPAD was not consistent with a NO Blame policy.
RailCorp	Duty Manager	21-Mar-2004	26.4			At interview MR05BB04 x reported that he believed there was a NO Blame policy but that he did not know where to find it.
RailCorp	Operational Safety	21-Mar-2004	26.4			When asked at interview MR07LN07 about the effect of being rostered to Petersham x responded that it was threatening and demoralising for train crews.
RailCorp	ART	21-Mar-2004	26.4			At interview MR08CG11 response was that having Safeworking certification removed was like excommunication and that this would occur whether or not the Safeworking violation was a self-reported.
StateRail	Train Crewing	21-Mar-2004	26.5	· There is an appropriate system for staff that commit violations	Perception by crew is that the system is not appropriate	V4 & V5 in interviews MB03_KL,MB10_KL on 5/2/04 & 4/3/04 respectively indicated the system discriminated against drivers who reported, evidence the paper in controller incident and the psychological testing performed at Petersham. However there is a system but poorly implemented.
RailCorp	ART	21-Mar-2004	26.5		Referral to Petersham is justified regardless of the reason for the Safeworking violation	At interview MR08CG11 when asked about the benefit of being rostered to Petersham, response was that regardless of the reason for a Safeworking compromise all persons attending Petersham.
RailCorp		21-Mar-2004	26.5		The appropriateness of the system for staff who commit violations is questionable	Data describing RailCorp Diver SPAD Management (04571) show that from Sept 03 - Feb 04, 66 out of 97 drivers who had SPADs were sent to ART for further assessment
		21-Mar-2004	26.5		The incident management plan is not appropriate. Staff that violate procedures are stood down and sanctions determined by a disciplinary committee. The culpability assessment process is flawed and not fully understood by the staff implementing it. Written policy and procedures are not followed. Error and violation management is not clearly understood or trained in the organisation.	Documents: Safework policy and procedures Section 9 WAUD 007.012.1010 Rail Worker Post incident management procedures draft
















Observations	Interview/Document Review ID	Ratings for Finding
	Interview: MN2/BB2 Documents: WAUD.007.001.0014, 4-Jul-2003, Waterfall Issues Inventory - Status of SAVE Program	
The "language" being used by the organisation is not engendering the image of justness	MB03_KL??,MB10_KL??	
	CG18MR12	
	NI21/JE23	
	MR07LN07	
	MR18JE31	
	MR16BB23	
	CG21MR13	
	CG21MR13	
There is a written "no blame" policy however few people know of its existence or follow it in reality		
Cannot locate No Blame policy	MR01BB01	
Trainers are very cynical of a no blame policy. There is a long history of discipline which is the opposite of no blame	MR04CG01	
Direct referral of drivers to Petersham after a SPAD is a circumvention of "No Blame"	MR06AR06	
Existence of a no blame policy is yet to be confirmed. There is a no blame process but I don't know the policy	MR05BB04	
Being rostered to Petersham following a SPAD is demoralising for most drivers and train crews	MR07LN07	
Referral to Petersham occurs regardless of the reason for the Safeworking violation	MR08CG11	
The system is not appropriate because staff cannot understand why certain actions are being taken	MB03_KL??,MB10_KL??	
	MR08CG11	
	MR18JE31	
	Documents: Safework policy and procedures Section 9 WAUD 007.012.1010 Rail Worker Post incident management procedures draft	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
RailCorp		21-Mar-2004	26.5		The policy concerning the determination of culpability following violation or non compliance is not documented	At interview MR18JE31 X reported that the level of culpability assigned to an event depends on whether it is an error or violation with violations being more culpable.
RailCorp		21-Mar-2004	26.5		Violations or circumventions of safety systems are automatically treated as having a higher level of culpability than a person who makes an error.	At interview MR18JE31 X reported that the level of culpability assigned to an event depends on whether it is an error or violation with violations being more culpable.
RailCorp	Health Stds	21-Mar-2004	26.5			When asked about non-compliance management at interview MR01BB01 X responded that in the a case non-compliance would result in the creation of another rule.
RailCorp	Duty Manager	21-Mar-2004	26.5			When asked at interview MR05BB04 Would you report an unsafe but legal procedure? Interviewee responded "I'm not going to risk my safety for someone else's procedure".
RailCorp	Duty Manager	21-Mar-2004	26.5			When asked at interview MR05BB04 would you be supported if you reported an unsafe but "legal" act. Interviewee responded No one should do something they think is unsafe, perhaps they don't understand or perhaps it is unsafe.
RailCorp	Duty Manager	21-Mar-2004	26.5			When asked at interview MR05BB04 would a person report a "normal Non-compliance" action? X responded that Normal non compliance would not be reported. He gave an example: Guards often do not complete safety check due to lack of time. This event is not reported.
RailCorp	ART	21-Mar-2004	26.5			At interview MR08CG11 when asked about the Safeworking Policy Incident Management process WAUD.007.012.1010 at 1035 response was that because the rules are clear and without much ambiguity, all Safeworking compromised resulted in the person being sent to Petersham.
RailCorp	ART	21-Mar-2004	26.6	· Managers have an adequate understanding of the concept of error tolerance	Incumbent.....Manager had little understanding of the concept of error tolerance	At interview MR08CG11 when asked about the Safeworking Policy Incident Management process WAUD.007.012.1010 at 1035 response was that because the rules are clear and without ambiguity, all Safeworking compromised resulted in the person being sent to Petersham.
StateRail	Train Crewing	21-Mar-2004	26.6		Staff are exposed to very mixed messages about error tolerance. On the one hand "hanging offences" and on the other "psychological testing" to "turning a blind eye" to signing for safety critical information	V4 & V5 in interviews MB03_KL, MB10_KL on 5/2/04 & 4/3/04 respectively indicated the system discriminated against drivers who reported, evidence the paper in controller incident and the psychological testing performed at Petersham. However there is clearly some notion of error tolerance since staff are not being sacked for SPADs or other errors. See X in MB07NI16 "hanging offences".
RailCorp	Intranet	21-Mar-2004	26.8	· There is an adequate program in place to manage fatigue in all safety-critical jobs, especially at the depot level	Daily Rostering (i.e. Depot) does not take fatigue into account	Neither Updating Daily Roster (04284) nor Fatigue Rostering Principles and Workplace Guidelines (04238) specify FMI limits for daily rosters.
RailCorp	Train Crew Assignment Centre TCAC	21-Mar-2004	26.8		FAID process is not effective	Interviewee said that assigners take little or no notice of FAID score apart from those that have reached their limit (100 score). TCAC do not seek any other information about crew FAID scores when assigning crew.
StateRail	Station Operations	21-Mar-2004	26.8		There is no fatigue management in place for day to day crew rostering at Station	A traincrew roster at X Station showed back of the clock working and local staff who signed on traincrew had no idea of the traincrews fatigue score. Stated in interview MR05_BB04.
StateRail	Train Crewing	21-Mar-2004	26.8		In Train Crewing a computerised system (OpCrew) is being implemented to address known weaknesses in Fatigue Management	OpCrew being developed to enable real time application of FAID scores. According to interviewee FAID scores only apply to master roster and not the period or daily roster. This is a line item in the Train Crewing Business Plan [doc04240]. This action is behind schedule - was supposed to be implemented in TCAC by Feb 04, but interviewee reported that there are still problems with the system preventing current implementation.
StateRail	Train Crewing	21-Mar-2004	26.10	· Safety critical employees are adequately screened (including medical checks)	Medical screening is performed	MB05,MB11, interviews (training records) and (Training) on 11/2/04 and 5/3/04 indicated drivers were not accredited or reaccredited without sighting of medical certificate. DRMB53 DART training records reg 03727.
StateRail	Train crewing	21-Mar-2004	26.10		Some screening does occur however, employees are not screened for hand eye coordination ability, dexterity, mulitasking, sdecision making in stressful situations	V4& V5 in interviews,MB10_KL?? On 4/3/04. Concerned expressed that some guards who train up to drivers and some drivers do simply not have the skills to be able to drive a train in a consistently appropriate manner in terms of acceleration profile and braking profile.
RailCorp	SRA	21-Mar-2004	26.11	· There are mechanisms to incorporate human error best practices from other organisations		Contacts have been made with outside providers including aviation to incorporate human error best practices into training programs.
			27	<b>SAFETY ORGANISATION**</b>		
RailCorp	RailCorp Corporate Staff	21-Mar-2004	27.1	· The safety management system is integrated with other operational and management systems	Elements of SMS are found in some areas of RailCorp, however there is a long way to go before they reach maturity with their sms and their management systems post integration	KL4 ,and observation.
RailCorp	Station Masters	21-Mar-2004	27.1		Safety Management Systems [SMS] was not fully understood by station managers or their staff.Occupational health and safety was presented by station managers as being SMS.	Interview outcome.
StateRail	Station Operations	21-Mar-2004	27.2	· Safety employees have a viable career path in the organisation	There is a viable career path for station operations staff (Campeltown Station)	Interview MR05_BB04 the person being interviewed at X Station indicated when asked to give some background details of her/ his career that he had moved up 5 positions in 4.5 years.
RailCorp	Group General Manager	21-Mar-2004	27.2		There was a poor relationship between corporate centre and operational sites.	From the interview # JE14/KL13, carried out at the railway stations.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	27.2		This element could not be determined.	
RailCorp	RailCorp Corporate Staff	21-Mar-2004	27.2		This element could not be determined.	
RailCorp	RailCorp Corporate Staff	21-Mar-2004	27.3	· Good relationship fostered between corporate centre and operations/ sites in respect to safety issues	Fosterd,but not achieved.	KL6 ,KL6 ,KL7 ,KL8 ,KL9 ,KL10 ,KL11 ,KL12 ,KL13KL17 ,KLi9 ,KL20 ,KL21 ,KL22
StateRail	Corporate	21-Mar-2004	27.4	· There is sufficient Board involvement in safety issues	There is Board involvement in terms of review, receiving reports and addressing issues	DRMB02, "Board Safety Committee Minutes of 8 Feb 02" , as well as DRMB54, Board Safety Minutes of 11 Feb 03 (reg WAUD.006.001.0274), in which important issues are discussed and reports on trends provided
RailCorp	RailCorp Corporate Staff	21-Mar-2004	27.4		This element could not be determined.	
StateRail	Corporate	21-Mar-2004	27.5	· Safety organisation structure promotes ownership of safety issues where they should be – not with the safety dept.	An attempt has been made to ensure accountabilities and ownership is not solely with the Safety Department	DRMB54, 11 Feb 2003 Board Safety Committee (reg WAUD.006.001.0348), item 5.3 reviews safety accountabilities and resourcing where significant ownership and accountability is given to the line areas.
RailCorp	Group General Manager	21-Mar-2004	27.5		Interviewee indicated that safety organisation structres are at its infancy stages, with further development and required	Interviewee verbal verification in the interview " he was trying to meet this requirement but felt that he had along way to go"









Observations	Interview/Document Review ID	Ratings for Finding
	MR18JE31	
	MR18JE31	
Mixed understanding of violation management	MR01BB01	
A sensible approach to regulations and safety	MR05BB04	
A sensible approach to regulations and safety	MR05BB04	
Normal non compliance will not be reported	MR05BB04	
Referral to Petersham occurs regardless of the reason for the Safeworking violation	MR08CG11	
	MR08CG11	
The staff have a high disregard for the notion of the no-blame policy citing examples where staff have been unfairly treated when reporting a breach or other staff member's breach	MB03_KL??,MB10_KL??, MB10NI16	
	04284, 04238	
	NI02 / BB03	
	MR05_BB04	
	NI23BB22	
		
The mental capacity and the motor skills capacity of drivers and guards have been raised on a number of occassions. These aspects are not tested	KL10_KL??	
	Interview: CG26/MN15	
		
	MR05_BB04	
	KL02/NB02/PO OB1	
		
There is a gap in the sign off that work is completed. Action and responsibility are allocated but the minutes do not indicate if action items are complete	DRMB02, WAUD006.001.0274	
Corporate direction promotes the idea of decentralisation but at this stage the train crew area regards "petersham Training" as the central repository controlling the safety agenda	DRMB54 , WAUD.006.001.0348	
	KL02/NB02/PO OB1	






StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
RailCorp	RailCorp Corporate Staff	21-Mar-2004	27.5		This is the stated objective of the Group General Manager Corporate Safety	KL2.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	27.6	· Strategic plan addresses near/long term safety goals	Corporate plan as explained by Group General Manager Corporate Safety , did have both short term and long term planning.	KL2.
RailCorp	Group General Manager	21-Mar-2004	27.6		There is a strategic plan in place that addresses near and long term goals	Presentation given on the 5/3/04
StateRail	Safety Division	21-Mar-2004	27.7	· Effective organisation employed for assisting compliance with safety policy, process etc.	An organisation is/was in place. Measures of effectiveness are proposed and agreed at Item 2.2.1 of Feb 11 2003, Board Safety Committee	Board Safety Committee 11 Feb 2003 (reg WAUD.006.001.0287) item 2.2.1. DRMB54 indicates a safety strategy update in a documnt called StateRail Safety Strategy 2003-2005. PDs at DRMB20 for all safety divison staff
RailCorp	RailCorp Corporate Staff	21-Mar-2004	27.7		Organisation is on paper. Staff positions on this chart have not been recruited.	Corporate Safety Organisational Chart. KL2.
RailCorp	Group General Manager	21-Mar-2004	27.7		A safety mangement systems implementor had been employed	PD and Contract.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	27.8	· Safety Organisation is focused on overseeing and assuring adequate safety performance, as well as, identifying and correcting deficiencies.	Corporate Safety department is still developing. Staff within RailCorp safety state element27.8 is one of there objectives	KL2 ,KL3 ,KL4.
RailCorp	Group General Manager	21-Mar-2004	27.8		Paperwork indicates that this is so, and is the objective that workplace audits would indicate otherwise	Confere with other auditors
StateRail	Safety Division	21-Mar-2004	27.8		Safety Organisation is focused on overseeing and assuring adequate safety performance, as well as, identifying and correcting deficiencies.	Board Safety Committee 11 Feb 2003 item 5.3 (reg WAUD.006.001.0348) reviews Safety Accountabilities and Resourcing
RailCorp	RailCorp Corporate Staff	21-Mar-2004	27.9	· The safety organisation periodically reviews the SMS	This element could not be determined.	
RailCorp	Group General Manager	21-Mar-2004	27.10	· Safety program involved during the entire program life cycle (including acquisition and disposal)	The alleged SMS is in some parts of the org, however it was not possible to ascertain whether it was integrated in all parts of the organisation.	Interviews conducted after this interview, esp, with x , which established that there was a sms however, not able to ascertain whether it was intergrated fully across the org.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	27.10		This element could not be determined.	
RailCorp	RailCorp Corporate Staff	21-Mar-2004	27.11	· Safety plans motivate the organisation to reduce safety risk	Corporate Safety department is still in the development stage and as such it is hard to detect any direct workforce level ofmotivation.Atmosphere in the workforce is one Of apprehension.Job security is afear.	KL6 ,KL7 ,KL* , KL( , KL10 ,KL12 ,KL13 ,KL17 ,KL19 .KL20 ,KL21 ,KL22 .
StateRail	Station Operations	21-Mar-2004	27.11		Staff at Station are not motivated by safety plans to reduce safety at a corporate level	In Interview MR05_BB04 the person being interviewed responded as follows Q Is senior management serious about safety? R No, a lot of music, but no specific actions. Actions are being made things are blown out of
RailCorp	RailCorp Corporate Staff	21-Mar-2004	27.12	· Safety office high on organisation chart	Corporate Safety reports to the CEO	Senior Management Organisation Chart.
StateRail	Corporate	21-Mar-2004	27.12		The Safety Division reports to the CEO.	Following a review of safety after Glenbrook, a new Safety Division was created and x was appointed as detailed in MB04_PO_CD__. DRMB41 (reg 04229) indicates the position safety takes in RailCorp, reporting to CEO
RailCorp	Group General Manager	21-Mar-2004	27.12		Work directly for the CEO -	The org chart for CEO
RailCorp	Group General Manager	21-Mar-2004	27.13	· Employees understand where safety is in the organisation	Interviews established that they knew that corporate safety was position in Lee Street	Org chart and Phone Book
RailCorp	RailCorp Corporate Staff	21-Mar-2004	27.13		Some employees are aware that corporate safety reports to CEO.It is not possible at this point in time to state "" ALL" employees are aware of this factor.	Most persons interviewed were aware of the CEO new organisational structure.This was discussed in most interviews but not all.
RailCorp	Group General Manager	21-Mar-2004	27.14	· Safety management has requisite visibility and authority to sustain effective safety programs	Safety Managers PD does allow for adequate visibility to implement safety programs	Safety Managers PD
RailCorp	RailCorp Corporate Staff	21-Mar-2004	27.14		This element could not be determined.	
RailCorp	Group General Manager	21-Mar-2004	27.15	· Safety organisation does not have conflicting reporting	safety org does not have conflict in reporting	No documents could be located to ascertain any exisiting conflicts.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	27.15		This element could not be determined.	
RailCorp	RailCorp Corporate Staff	21-Mar-2004	27.16	· The process for identifying and monitoring external safety requirements is adequate	ITSR requirements are understood as is workcover.	WorkCover audit reports and the ITSR audits demonstrate understanding of their requirements
RailCorp	RailCorp Corporate Staff	21-Mar-2004	27.17	· The safety management system is integrated with other operational and management systems	This element could not be determined.	
RailCorp	RailCorp Corporate Staff	21-Mar-2004	27.18	· External safety requirements have been embedded into all appropriate business processes	Requirements of WorkCover have been implemented into train operations.	Registered Documents.There is eight and a half pages of OH&S audit reports contained in the list of registered documents supplied by the commission. First documentis WWAT.013.018.0051 on page 8 of 16 with the last report being WWAT.013.067.0097 on page16 of16.
RailCorp	Group General Manager	21-Mar-2004	27.19	· Corporate and divisional safety goal setting in place	Corporate safety goals are in place	Presentation given on the 5/3/04
StateRail	Corporate	21-Mar-2004	27.19		Mixed and confused policy across the organisation	Goal setting was in place in Feb 2003 as depicted in the Staterail safety Strategy 2003-2005 document DRMB54 reg WAUD.006.001.0287 but the PD for the GGM Safety & Environment DRMB48 reg 04228 does not mention goals for KPIs. However the CSO contract with the government indicates safety goals at DRMB36 reg 04230
RailCorp	RailCorp Corporate Staff	21-Mar-2004	27.19		There is evidence that corporate and divisional safety goals have been set.this evidence is derived from registered documents and interviews.	Registered Document. AAUD .007.012.1010. KL2 ,KL3 ,KL5 .
RailCorp	RailCorp Corporate Staff	21-Mar-2004	27.21	· Risk priorities stated and measurable results defined	This element could not be determined.	

Observations	Interview/Document Review ID	Ratings for Finding
		
	KL02/NB02/PO OB1	
Trending and proposed measures of effectiveness do not indicate whether the Board or the SMS is effective. The trend garphs shown would indicate no improvement	DRMB54 , WAUD.006.001.0287	
	KL02/NB02/PO OB1	
		
	KL02/NB02/PO OB1	
Very good strategy in making sure accountabilities are driven and responsibilities are spelled out.	DRMB54 , WAUD.006.001.0348	
		
	KL02/NB02/PO OB1	
		
	MR05_BB04	
		
	MB04_PO_CD, DRMB41	
	KL02/NB02/PO OB1	
	KL02/NB02/PO OB1	
	KL02/NB02/PO OB1	
	KL02/NB02/PO OB1	
		
		
		
	KL02/NB02/PO OB1	
Lack of linkage across the various documents and policies	DRMB54 reg WAUD.006.001.0287 , DRMB48 reg 04228, DRMB36 reg 04230	
		

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
RailCorp	RailCorp Corporate Staff	21-Mar-2004	27.22	· Appropriate safety performance measurement tools are in place	Lost time statistics are used in some areas to indicate OH&S performance.This is an appropriate measure for this safety area.	KL2 ,KL3 ,KL5 .
StateRail	Corporate	21-Mar-2004	27.22		Safety performance trends are monitored graphically and numericlly with simple graphs	DRMB54, 11 Feb 2003 Board Safety Committee (reg WAUD.006.001.0319), item 5.1 reviews Priority Hazard List trends
StateRail	Station Management	21-Mar-2004	27.22		Some safety performance measurement tools are in place	MB02_KL IIMS and SAD databases operate however the SM at X Station has no access SM at X Station's own OH&S records are in place DRMB 24 reg 04110
RailCorp	Group General Manager	21-Mar-2004	27.22		There are performance measurements in place however, they are not adequate, i.e SAD, SID Existing systems do not allow for adequate analysis.	SAD / SID sighted
RailCorp	RailCorp Corporate Staff	21-Mar-2004	27.23	· A process exists to track and incorporate safety best practices from other industries and/or countries	At the RailCorp presentation given on the 05/03/04 presenters stated the had visited organisations outside RailCorp to establish "best practice".	RailCorp Presentation 05/03/04 visual # 55 titled "RailCorp Safety Reform Agenda".
RailCorp	RailCorp Corporate Staff	21-Mar-2004	27.24	· There are systems in place that assure that operational performance does not negatively impact safety (e.g., timetabling/speed boards)*	This element could not be determined.	
			28	<b>SAFETY AWARENESS**</b>		
RailCorp	RailCorp Corporate Staff	21-Mar-2004	28.1	· Employees involved with safety meetings & on-site briefings	At the operational level there is evidence that employees are invoved in safety briefings.	See element 27.18
StateRail	Station Management	21-Mar-2004	28.1		Employees are involved with safety meetings & on-site briefings	MB02_KL Safety committee meeting records show employee involvement DRMB 24 reg 04110
RailCorp	Train Crew Assignment Centre TCAC	21-Mar-2004	28.1		Handover of safety critical information to crews is inadequate	Crews are handed safety critical information when they sign on at the TCAC. There is no process in place to ensure they understand this information. In many cases crew members receive this information via the assigner but refuse to sign for the information.
RailCorp	Train Crew Assignment Centre TCAC	21-Mar-2004	28.1		Handover of safety critical information to crews is inadequate	Interviewee confirmed that there was no process for OSMs to check that crews have understood safety critical information. CAM gets data from the TCAC about which crew members have missed safety information due to absence or joiners rights. OSM makes sure safety critical information is passed onto these people
RailCorp	Station Masters	21-Mar-2004	28.1		Occupational health and safety minutes indicate that there are good levels of employee involvement relavent to safety matters.	Registry number 04110
StateRail	Corporate	21-Mar-2004	28.1		Safety committees are held widely around the system	DRMB01"Safety Steering Committee 23 Jan 2003", DRMB02 "Board Safety Committee 8 Feb 2002", DRMB03 "Passenger Fleet Maintenance Safety Committee 24 Sept 2002", DRMB04 "Capital Works & Dev 4 Dec 2002", DRMB24 reg 04110, DRMB54 reg WAUD.006.001.0319 depict widespead use of safety committees and wide representation
RailCorp	Train Crew Assignment Centre TCAC	21-Mar-2004	28.1		Safety related (OHS) activities undertaken at TCAC	Safety targets set for TCAC staff. Monthly meetings with staff include safety. Safety register established (although no entries noted). [WAUD.007.014.1372-1374].
RIC	Train Operations	21-Mar-2004	28.1		System for communicating safety critical documentation to Train Ops staff is under review.	System for communicating safety critical documentation to Train Ops staff is under review.
RailCorp	Group General Manager	21-Mar-2004	28.1		there is some employee involvement with safey meetings and on-site briefings	The staff newspaper, and interviews on site
StateRail	Train Crewing	21-Mar-2004	28.1		GM Train Crewing is currently holding communication meetings with crew to explain key safety system related changes.	Doc [04294] Train Crewing Information Bulletin 10-2004 details the schedule and agenda for briefings conducted by the GM train crewing. These briefings include information about medical exams and drug testing. Crew handout material [doc 04240] Rail Safety Worker Health Assessment Information and Random Drug Testing Information Sheet contain factual information for crews.
StateRail	Executive	21-Mar-2004	28.2	Upper management communicates safety priorities to staff	· Upper management communicates safety issues to staff	DRMB18 & DRMB19 reg 03993, newsletters and newspapers provide articles and updates on status of safety matters in both OH&S and operational safety
RailCorp	RailCorp Corporate Staff	21-Mar-2004	28.2		CEO has stated that safety is his # 1 priority.	CEO has made this statement on the media,via staff in house news letter, and face to face briefings in the work place
RailCorp	Group General Manager	21-Mar-2004	28.2		This element is evident by the actions undertaken by the CEO, however, it should be noted that he has been in this role for the period of 8months, and it could not be ascertained whether person(s) in the position previous were communicating safety priorities to staff.	
RailCorp	Station Masters	21-Mar-2004	28.2		Upper management communicates the fact that safety is the first priority.They state the 3 hanging offences. Auditors could not determine what the priorities were that senior management had given to station staff. Station managers had their own priorities.Foremost was the need for more meaningfull communication.They wanted a stop to the endless documents that originated from Lee st.	Statement to staff from CEO.Interview outcome
StateRail	Executive	21-Mar-2004	28.3	Adequate employee' awareness of workplace hazards	· Some employee awareness of workplace hazards	MB02_KL, DRMB25, DRMB 26 reg 04110 Interview where a hazard register and a risk assessment method was shown DRMB 25&26 reg 04110
RailCorp	Station Masters	21-Mar-2004	28.3		Hazard identification and safety sineage was to a high standars.When questioned by auditors on safety concerns employees gave informed answers.	Observation by auditors.
StateRail	Station Management	21-Mar-2004	28.3		There is employee awareness of workplace hazards	MB03_KL 5th Feb, with , train driver Condition Affecting the Network (CAN) form reg 03742 with driver for information about track condition
RailCorp	RailCorp Corporate Staff	21-Mar-2004	28.3		Visits to the workplace have demonstrated that direct labor have a good understanding of OH&S matters.Safeworking policy is very visual with employees aware of its content.	AUD .007 .0012 .1010. KL6 ,KL11 ,KL17.Observation of the operation.



Observations	Interview/Document Review ID	Ratings for Finding
		
The global performance of the organisation is not being communicated to the lower levels. These levels are monitoring their own OH&S but are not aware of operation system safety trends	DRMB54 reg WAUD.006.001.0319	
Beyond local areas there is little feedback as to SRA's total performance	MB02_KL, DRMB24	
	KL02/NB02/PO OB1	
		
		
		
Commitment is evident for locally run safety committees	MB02_KL, DRMB24	
	NI02 / BB03	
	NI04 / CG04	
	DRMB01 "Safety Steering Committee 23 Jan 2003", DRMB02 "Board Safety Committee 8 Feb 2002", DRMB03 "Passenger Fleet Maintenance Safety Committee 24 Sept 2002", DRMB04 "Capital Works & Dev 4 Dec 2002", DRMB24 reg 04110, DRMB54 reg WAUD.006.001.0319	
	NI02 / BB03	
	NI08JE09	
	KL02/NB02/PO OB1	
	NI23BB22	
	DRMB18, DRMB19	
	KL02/NB02/PO OB1	
OH&S hazards well identified. The operational hazards less identified except where there are specific safeworking arrangements for hazrds, such as train separation	MB02,DRMB25, DRMB26	
	MB03_KL	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	Corporate Safety	21-Mar-2004	28.3		Management and communication of safety critical documentation in SRA requires significant improvement	Review of Safety Critical Document Management by KBR in Sept 2003 [doc 04482] highlights several deficiencies in critical document mangement. These include the need to rtationalise the large volume of safety notices and other safety critical documentation, the large number of databases that are not "user friendly" or incompatable, difficultly in tracking "joiner drivers". The report noted that the approach to safety critical documentation management is currently unstructured and ineffeicient, with a vaiety of ad hoc and stand alone systems throughout the organisation. It was reported [interview NI30JE30] that response to this report is being addressed by the General Manager, Strategy and Planning in development of an information management process in RailCorp. [doc04482] Outcome of Information Management Survey and Workshop 21 Nov 2003 summarises the results of a workshop to start to address information management issues in RailCorp.There is no evidence that any of the recommendations of the KBR report [04482] have been immediately addressed.
StateRail	Executive	21-Mar-2004	28.4	All levels of management regularly communicates safety issues to employees	· All levels of management communicates safety issues to employees	DRMB18 & DRMB19, reg 03993 newsletters and newspapers provide articles and updates on status of safety matters in both OH&S and operational safety
RailCorp	Station Masters	21-Mar-2004	28.4		Could not establish if ALL levels regularly communicated safety issues to employees.There was communication from Lee st relavent to safety	Safeworking documents
StateRail	Corporate	21-Mar-2004	28.4		Mechanisms do exist for all managers to communicate and a number of publications and meetings occur	Newsletters (reg 03993) incorporating messages from the CEO and other managers, Weekly Notices (reg 4228), General Orders(reg 04228), SAFE notices, General Appendice updates, OSP updates, Safety Committee Meetings (reg 04110)
RailCorp	RailCorp Corporate Staff	21-Mar-2004	28.4		This element could not be determined.	
RailCorp	Station Masters	21-Mar-2004	28.5	The safety recognition program is adequate	Not able to establish	
RailCorp	RailCorp Corporate Staff	21-Mar-2004	28.5		This element could not be determined.	
StateRail	Executive	21-Mar-2004	28.6	Employees can communicate safety concerns to management	· Employees can communicate safety concerns to management	MB01 MB03 , where radio protocol permits reporting of safety issues
RailCorp	Station Masters	21-Mar-2004	28.6		Employees can communicate safety problems to management	Registry number 04110
StateRail	Train Crewing	21-Mar-2004	28.6		Mechanisms exist to communicate safety concerns to management however the blame culture prevets openness	in MB03_KLExpressed concern and V4&V5 in MB10_KL Expressed concern that management use information inappropriately
RailCorp	RailCorp Corporate Staff	21-Mar-2004	28.6		There are systems and procedures in place that allow employees to communicate safety concerns	Registered document 04498,WAUD007.012.1016 ,WAUD .007.012.1021
			29	<b>SYSTEM SAFETY PROGRAM PLAN</b>		
StateRail	State Rail	21-Mar-2004	29		State Rail has a documented procedure concerning Developing and Implementing Safety Plans	DOCUMENT REFERENCE: State Rail Safety Standard 3.001 , Developing and Implementing Safety Plans
RailCorp	Station Masters	21-Mar-2004	29.1	The corporate system safety program plan adequately addresses all of the areas listed above	A corporate safety program does exist.It does not address all of the elements contained in this template	Comparison between this template and RailCorp 15 element plan.
StateRail	Central Station	21-Mar-2004	29.1		Basic OHS Management Plan exists for Central Station	Doc [04087, 5] Station Operations OH&S Plan from July 2003 to December 2004 Central Station covers reptitive activities under the 15 elements of the SRA safety system. Typical activities range from having a policy posted to conducting inspections and audits. [doc04087, 4] is a planner used by the Station Manager to schedule key safety activities such as audits and inspections. The document is more of a checklist than a plan, but maps out OHS -based activities. The checklist includes a check on emergency prep. facilities and training.
StateRail	Train Services	21-Mar-2004	29.1		Draft Buisness Plan in Train Services includes safety improvement initiatives and measures but there is no evidence that priorities are established on a risk basis and that KPIs are appropriate.	Draft Train Services Business Plan [WAUD.007.013.0006] in development. Plan references TSSIP [WAUD.007.013.0003] as key actions. KPIs for safety include number of reportable incidents, number of medium and high level SPADs and LTIFR. GGM Train Services verified that KPIs are not necessarily the right KPIs for measuring safety performance.
StateRail	City Rail Stations	21-Mar-2004	29.1		In 1999 City Rail Stations had a City Rail Stations Safety Management Plan endorsed by management. The sign off sheet cited in evidence contains signatures of a number of management staff explicitly committing the organisation and its elements to safety and satisfying the requirements of the system safety plan. Signatures on the sheet were those for personnel holding the positions off: General Manager City Rail Stations, Employee Relations Manager, Financial Services Manager, Assets Manager, Protective Services Manager, Ticketing Manager, Sector Manager South-East, Sector Manager Inner City, Sector Manager Northwest, Marketing Manager	DOCUMENT REFERENCE: WDOT.006.001.0617, City Rail Stations Rail Safety Management Plan 1999(Sign Off Sheet Only).
StateRail	PFM	21-Mar-2004	29.1		In 1999 Passenger Fleet Maintenance had a PFM Safety Management Plan endorsed by management. The sign off sheet cited in evidence contains signatures of a number of management staff explicitly committing the organisation and its elements to safety and satisfying the requirements of the system safety plan. Signatures on the sheet were those for personnel holding the positions off: General Manager Passenger Fleet Maintenance; Manager Maintenance Operations; Manager Technical Services; Director Capital Works; Manager Fleet Maintenance; FM Hornsby; FM Flemington; FM Mortdale; Diesel Service Manager; Maintenance Manager Explorer; Manager Fleet Training; Diesel Services Support Manager; Manager Human Resources; Manager MainTrain Contract Admin; Manager Fleet Projects, Assets and Contracts; Manager Maintenance Planning	DOCUMENT REFERENCE: WDOT.006.001.0616, Passenger Fleet Maintenance Rail Safety Management Plan 1999(Sign Off Sheet Only).


Observations	Interview/Document Review ID	Ratings for Finding
	NI28 JE29BMB And NI30JE30	
	DRMB18, DRMB19	
Often, staff don't want to listen	DRMB01, DRMB02, DRMB03, DRMB04, DRMB24, DRMB18, DRMB19, DRMB40, DRMB50	
		
	MB01,MB03	
Mixed messages come from management, on the one hand promoting reporting and on the other hand blaming or subjecting personnel to breath testing and psychological testing	MB03_KL, MB10_KL	
There may be a lack of awareness of the State Rail Safety standards across State Rail (might have some pockets that are aware). For example, in one specific case of an interview with a safety officer who has been in the safety game in state rail since 2001 he didn't even know that State Rail Safety standards actually existed. Their is a suspicion that this may be a systemic issue across the board and warrants further investigation to verify.		
		
	NI 18 CG 17	
	NI29LN28	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	DOCUMENT REFERENCE: WDOT.006.001.0617, City Rail Stations Rail Safety Management Plan 1999(Sign Off Sheet Only).	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	DOCUMENT REFERENCE: WDOT.006.001.0616, Passenger Fleet Maintenance Rail Safety Management Plan 1999(Sign Off Sheet Only).	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
StateRail	State Rail	21-Mar-2004	29.1		In 1999 SRA had a safety management plan endorsed by management. The sign off sheet contains signatures of a number of management staff explicitly committing the organisation and its elements to safety and satisfying the requirements of the system safety plan. Signatures on the sheet were those for personnel holding the positions off: CEO, General Manager Country Link, Chief Operations Manager, General Manager Passenger Fleet Maintenance, General Manager Organisational Development, General Manager City Rail Stations, Chief Finance Officer.	DOCUMENT REFERENCE: WDOT.006.001.0620, SRA Rail Safety Management Plan 1999/2000 (Sign Off Sheet Only).
StateRail	Country Link	21-Mar-2004	29.1		In 2000 Country Link had a specific Country Link Safety Management Plan endorsed by management. The sign off sheet contains signatures of a number of management staff explicitly committing the organisation and its elements to safety and satisfying the requirements of the system safety plan. Signatures on the sheet were those for personnel holding the positions off: General Manager Country Link, Sales and Marketing Manager, Operations Manager, Passenger Services Manager, Finance Manager, Human Resources Manager.	DOCUMENT REFERENCE: WDOT.006.001.0618, Country Link Rail Safety Management Plan 2000 (Sign Off Sheet Only).
StateRail	Operations Division	21-Mar-2004	29.1		In 2000 the Operations Division had a Operations Division Safety Management Plan endorsed by management. The sign off sheet contains signatures of a number of management staff explicitly committing the organisation and its elements to safety and satisfying the requirements of the system safety plan. Signatures on the sheet were those for personnel holding the positions off: Chief Operations Manager, Deputy Chief Operations Manager, Manager Train Crewing, Manager Train Operations Country, Manager Train Operations Metropolitan, Manager Network Operations, Manager Train Planning, Senior Human Resources Adviser, Manager Finance and Administration, Operations Safety Standards Manager.	DOCUMENT REFERENCE: WDOT.006.001.0619, Operations Rail Safety Management Plan 2000 (Sign Off Sheet Only).
StateRail	Corporate Safety	21-Mar-2004	29.1		No evidence available to indicate that SRA Safety Management Plan 2002-2005 was formally authorised by the CEO and Level 2 Managers.	Interviewee (Manager) could not locate any information to show the SRA Safety Management Plan 2002-5 [WCOM.003.004.0017] was formally authorised.
RailCorp	Station Operations	21-Mar-2004	29.1		Safety Plan exist for Station Operations	Document [03691] Station Operations 2004 SMS Checklist outlines key safety improvement actions for Station Operations
RIC	Train Services	21-Mar-2004	29.1		Safety planning is being improved.	Sighted TSSIP [WAUD.007.013.0003]. Safety plan beong implemented as part of safety reform agenda.
SRA		21-Mar-2004	29.1		Safety Plans in SRA focusses predominantly on improvement activities and do not address mainteance of critical controls. One exception is arguably Station Ops.	State Rail Safety Plan 2002-5 WCOM.003.004.0017 highlights objectives and key improvement actions for SRA. Train Services Safety Improvement Plan WAUD.005.001.0025 similarly is an improvement plan that does not address maintenance of critical controls. The only plan sighted during this audit that is a maintenance plan is the Station Operations 2004 Safety Management Systems checklist [03691].
RailCorp	Rail Management Centre (RMC)	21-Mar-2004	29.1		Senior managers do not recognise the importance of safety planning and do not have ownership of safety plans	Interviewee (Manager) was asked if he had a current safety plan for her/his operation. Interviewee replied that she/he was aware of a plan but he knew very little about it and we should talk to Safety support person) about the plan.
RailCorp	Train Services Operations	21-Mar-2004	29.1		Senior managers do not recognise the importance of safety planning and do not have ownership of safety plans	Interviewee (Manager) asked if there was a safety plan or equivalent document. Response was that OSPs and SWMs and SMS are the documents / systems the organization works to. Had to be prompted about the existence of a State Rail Safety Plan 2002-5 [WCOM.003.004.0020]. Was also asked how the State Rail Safety Plan had been implemented. Reply was by making sure staff were adequately trained.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	29.1		SRA safety system elements number 15.RIC safety system elements number 19. Harvey ball elements number 29. Whilst both SRA and RIC have incorporated important elements in there SMS plans law of mathermatics states they do not conform with the above template,	Law of mathermatics
StateRail	Train Crewing	21-Mar-2004	29.1		Current safety plans in Train Services focus almost wholly on improvement actions and "initiatives" and do not address maintainance of established controls.	TSSIP [WAUD.007.013.0003], and Train Crewing Business Plan [doc 04240] are two examples where safety plans note improvement actions but do not acknowledge maintenance activities such as audits, inspections and other critical activities around maintaining the effectiveness of existing controls.
StateRail	Corporate Safety	21-Mar-2004	29.1		In SRA, safety planning has not been risk based.	Independent Review of Safety Management Plan March 2002 [04482] undertaken by QR Consulting Services in March 2002 highlighted the following: 1. "There are concerns that a risk management approach seems to be advocated..... However from a macro perspective there appears to be little cognisance of a risk tolerability framework agianst which hazards can be evaluated. This suggests effort will be expended in all areas, and forever." The Train Services Improvement Plan (TSSIP) [WAUD.007.013.0003] is a list of specific actions developed in response to the Waterall incident and has no indication of criticality atatched to the actions. The Safety Reform Agenda [WAUD.007.005.0223] has a section on Risk Management that includes identification of priority hazards, but there is no clear evidence of criticality of each element of the plan. For example, development of a safety observation process (in section 8), is running ahead of development of the revision of risk registers (section 5).
StateRail	Train Crewing	21-Mar-2004	29.1		In Train Crewing (SRA) there is a current Business Plan that incorporates safety plans	[doc04240] Train Crewing Business Plan 7 October 2003 signed off by Manager Train Crewing and direct reports. Includes links to TSSIP (Train Services Safety Improvement Plan) [WAUD.007.013.0003].
RailCorp	RailCorp Corporate Staff	21-Mar-2004	29.2	The program plan is regularly reviewed and updated	This element could not be determined.	
RailCorp	Train Crew Assignment Centre TCAC	21-Mar-2004	29.3	The program plan establishes the safety program across the entire organisation and all of its activities	Implementation of safety plans not effective	TCAC member was not aware of any safety plan or equivalent document. TCAC manager does see safety audits coming through the TCAC but described safety activities as adhoc.
RailCorp	Fire Services (ex)	21-Mar-2004	29.3		Implementation of safety plans not effective	Interviewee not aware of any safety plans pertaining to the role of manager fire services. Mentioned there was a safety audit database.
RailCorp	Train Services Operations	21-Mar-2004	29.3		Implementation of safety plans not effective	Interviewee (Manager) asked if there was a safety plan or equivalent document. Response was that OSPs and SWMs and SMS are the documents / systems the organization works to. Had to be prompted about the existence of a State Rail Safety Plan 2002-5 [WCOM.003.004.0020]. Was also asked how the State Rail Safety Plan had been implemented. Reply was by making sure staff were adequately trained.
RIC	Train Services - Train Ops - Rail Management	21-Mar-2004	29.3		Implementation of safety standards is inadequate	Interviewee is in a safety support role. Interviewee has only recently become aware of SRA Safety Standards [eg WCOM.003.001.0138]. Interviewee added that most staff are not aware of these standards.
RailCorp	RailCorp Corporate Staff	21-Mar-2004	29.3		Plan if successful will encompass entire RailCorp organisation	



Observations	Interview/Document Review ID	Ratings for Finding
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	DOCUMENT REFERENCE: WDOT.006.001.0620, SRA Rail Safety Management Plan 1999/2000 (Sign Off Sheet Only).	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	DOCUMENT REFERENCE: WDOT.006.001.0618, Country Link Rail Safety Management Plan 2000 (Sign Off Sheet Only).	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	DOCUMENT REFERENCE: WDOT.006.001.0619, Operations Rail Safety Management Plan 2000 (Sign Off Sheet Only).	
	NI28 JE29BMB?? And NI30JE30	
	NI09 BBLNBMB	
	NI07JE08	
	doc review only	
	NI01 / JE01	
	NI05 / JE06	
	NI23BB22	
	NI28 JE29BMB And NI30JE30	
	NI23BB22	
		
	NI02 / BB03	
	NI03 / JE04	
	NI05 / JE06	
	NI08JE09	

StateRail	Org Element	Date of Entry	ID	Element/Sub Element Description	Finding(s)	Audit Evidence
RIC	Train Operations	21-Mar-2004	29.3		Staff knowledge of the safety system is poor.	When asked to describe the safety system in RC the interviewee could not provide a clear answer that demonstrated that she/he had a clear model of the system. The Interviewee eventually described the system as 15 elements and a systematic approach to safety. Note, this interviewee was in a safety /safeworking support role.
StateRail	Human Resources	21-Mar-2004	29.3		Safety is included in performance development reviews for those who participate in the Performance Development Scheme but there tends to be little focus on assessing the effectiveness of tasks assigned / completed. Implementation of Safety Plans is only assigned as a divisional initiative in one area - Station Operations.	Annual performance review documents for senior managers and line managers reviewed [docs 04489, 6 reviews]. These covered the period 2002-2003. Key issues are as follows: 1. safety is included in all performance reviews - and there are a series of objectives and specific tasks assigned in all reviews examined; 2. There is no referencve to implementation of safety plans in the reviews EXCEPT for the Manager of Station Operations; 3. There is an emphasis on meeting specific targets for completion of specific tasks but there is no meaures of effectiveness applied. For example, Manager of Train Operations has tasks such as "introduce new safeworking rules , all staff trained and competent". The assessment of this task is noted as "achieved November 2002" without any reference to the effectiveness of this program. Another example is "implement period SMS training for all operational staff for one day three times a year" - this assessment of this task is noted as "achieved" - without any reference to the effectiveness of this task.
			30	Corporate Maturity		
RailCorp	RailCorp Corporate Staff	21-Mar-2004	30	What is the extant of learning, organisational capacity to adapt and change and to provide effective leadership	During any audit the auditor gains a feel for the climate that exists within the organisation he or she is auditing. RailCorp is an organisation that is suffering very high levels of stress.For some RailCorp employees this stress has inhibited their ability to clearly ansewer auditors questions.This does not make them dishonest people. It must also be appreciated that the organisation is in a state of change and as such some SMS elements will not be present. This audit did not follow a set standard Eg ISO9000 Whilst it can be argued an audit is an investigation this exercise has in my opinion been more investigation than audit. Notwithstanding all of this 900,000 NSW citizens travel on RailCorp network every working week day and they are entitled to higher safety standards than they are getting.	
Neil Isles	RailCorp	21-Mar-2004	30		Industrial arrangements hamper organisational change.	Interviewee described convoluted process that was gone through to design and implement the Performance Development Scheme. The numerous "functional agreements" with different workgroups [see doc 04085] Functional Agreements shows those workgroups that chose not to participate in the PDS and also shows how they confused the process by having different cycles for the PDS review. There are 37 different functional agreements. Interviewee gave a second example where "culutre of appeal" of promotions and dismissals slows down the organisational change processes. According to interviewee every promotion and dismissal is appealed. Most of the 98 dismissals over the last 2 years have been upheld according to interviewee.
RIC	Train Services	21-Mar-2004	30		Learning from incident investigation has not been fully effective	Example provided by interviewee of an incident at Concord West where Tangara derailed and rolled over. This was not noted in Stage 1 report.
RailCorp	Rail Management Centre (RMC)	21-Mar-2004	30		Organisation and systems are unnecessarily complex	Note: this is the opinion of the interviewee. Examples provided include the set of rules that govern the network that have evolved. A second example is the large number of role classifications for people.
RailCorp	Rail Management Centre (RMC)	21-Mar-2004	30		Organisational instability limits opportunities for sustainable change	Interviewee noted that turnover of senior management makes it very difficult to affect steady improvement in system development and implementation.
StateRail	PFM	21-Mar-2004	30		PFM have an understanding of how the elements of the SRA SMS in the SRA Safety Management Plan 2002-2005 need to be implemented within the PFM Organisation. A number of areas have been identified that need actioning - identifying shortfalls of the SMS within PFM. Target dates have been specified for achieving the actions stated.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0504, State Rail Safety Management Plan 2002-2005 - Passenger Fleet Maintenance
StateRail	PFM	21-Mar-2004	30		PFM QTS have approved procedures under the ISO 9001:200 framework for detailing specific assignment of responsibilities for different elements of the QMS. PFM QTS section is a formally accredited ISO 9001 accredited organisation for or the provision of Engineering and Technical Services for State Rails Rolling Stock; through the establishment and updating of standards, policies and procedures, and the auditing of maintenance activities.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0779, Quality Manual for Quality and Technical Support, 12/11/02 INTERVIEW REFERENCE: BMB_05; WAUD.007.012.0778, State Rail Authority of NSW Quality and Technical Support, ISO 9001:2000 Certificate of Registration, 9 December 2002

Observations	Interview/Document Review ID	Ratings for Finding
	NI08JE09	
	NI20BB??	
		
	NI20 BB17	
	NI07JE08	
	NI16 MB07	
	NI16 MB07	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_02; DOCUMENT REFERENCE: WAUD.007.014.0504, State Rail Safety Management Plan 2002-2005 - Passenger Fleet Maintenance	
Observations made as part of the audit will be synthesised into the auditor's report to be presented at the conclusion of the audit.	INTERVIEW REFERENCE: BMB_05; DOCUMENT REFERENCE: WAUD.007.012.0779, Quality Manual for Quality and Technical Support, 12/11/02 INTERVIEW REFERENCE: BMB_05; WAUD.007.012.0778, State Rail Authority of NSW Quality and Technical Support, ISO 9001:2000 Certificate of Registration, 9 December 2002	



**Special Commission of Inquiry  
Into the Waterfall Rail Accident**

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NEW SOUTH WALES

**Special Commission of Inquiry  
into the Waterfall Accident  
System Safety Review**

**ITSRR  
Safety Audit Document**



## **Special Commission of Inquiry Into the Waterfall Rail Accident**

NEW SOUTH WALES

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### **System Safety Review Methodology**

In dealing with paragraph 1 of his terms of reference, the Commissioner considered matters related to and arising under paragraphs 2 and 3 of the terms of reference. The services of Dr Graham Edkins and Dr Rob Lee, two internationally recognised experts in safety management systems, were retained to assist the Commissioner in determining the most appropriate way of addressing matters arising under paragraph 2.

Dr Edkins and Dr Lee conducted a review of documentation that described the safety management system (SMS) model applied by State Rail Authority (StateRail) at the time of the Waterfall accident. In comparison with the SMS models applied by other railways and the aviation industry, the StateRail SMS model, dated July 2001, contained 15 elements, and appeared to be a valid model. However, the two experts advised the Commissioner that StateRail's SMS model needed to be validated and the effectiveness of its implementation verified through a safety review of StateRail, Rail Infrastructure Corporation (RIC) and the rail safety regulator.

In November 2003 the SCOI selected an internationally recognised system safety specialist, Mr Nicholas Bahr from Booz Allen Hamilton in Mclean Virginia USA, to develop the safety review methodology.

The intent of the safety review process was not only to identify critical issues that affect safety but to also document those findings in a thorough fashion. The methodology was based on well-established safety audit processes and international best practices. Safety management system (SMS) audit methodologies, taken from various high-risk industries, were reviewed.

An audit tool was created for the review of StateRail/RIC/RailCorp based on 29 key system safety elements. These elements were derived from the Qantas Airlines safety management systems audit process, further developed to include more detail relevant to the NSW rail industry. Each of the 29 elements was further divided into sub-elements or protocols that specifically list key issues.

A second audit tool was created for the review of ITSRR comprising eleven elements. These elements were based on best practice elements that exist in the management structure of effective regulatory bodies and system safety management organisations.

### **Safety Review Audit Tool**






Data that was obtained through site visits, document reviews and staff and manager interviews was assembled and documented using the safety review audit tool as the means for recording data. This tool was the primary method for managing the disparate pieces of information and collating them into meaningful safety subject areas. The safety review audit tool also served as the principal method of documenting and communicating audit results to the Experts Panel.



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The collated data was then examined and a qualitative maturity score was assigned as follows:



Qualitative Score	Meaning
	<i>Element Present and Integrated</i> —indicates that the safety element was in-place, was considered fully effective and was an integrated part of the organisations management systems and operations. An organisation operating at this level would exhibit continuous improvement in safety manage systems.
	<i>Element Present but not fully Integrated</i> —indicates that the safety element is in-place, however, it was not 100 per cent effective and or was not fully integrated into the organisations management systems and operations. An organisation operating at this level would exhibit performance measurement and effective change management control.
	<i>Element Partially Present and Partially Integrated</i> —indicates that a reasonable portion of the safety element does exist and is partially deployed into the organisation. However, the effectiveness is less than acceptable, the organisation isn't measuring performance and the processes are not fully understood throughout the whole organisation.
	<i>Some Key Aspect of the Element is Missing and Not Integrated</i> —a significant part of the safety element is missing and therefore cannot be adequately deployed through the organisation. The processes are not effective in assuring or improving safety, successful application is not repeatable since the reasons for success are not understood and application through the organisation is ad hoc.
	<i>Element Not Identified During This Review</i> —indicates that either that the safety element does not exist or was so isolated within the organisation that it was evident during the review. The zero rating indicates a totally ineffective safety element.

### Data Captured in Safety Review Audit Tool

The data in the enclosed sheets is raw data and includes both findings and opinion of the safety review audit team. In some instances, findings and observations may be based on a single source and so need to be considered carefully in context of the whole review. Whilst the sheets contain opinion, it is the combined opinion of the eleven safety professionals who conducted the audit as well as Mr Bahr.





The raw data captured in the safety review audit tool was subjected to analysis and validation by a panel of safety management system experts with the subsequent results and conclusions being recorded in the panel report.

Parent Organisation	Date of Entry	Element ID	Sub Element	Finding(s)	Audit Evidence
			<b>Regulatory Independence</b>		
ITSRR	21-Mar-2004	1.1	ITSRR safety policy development and enforcement are sufficiently independent from transport operations	<p>Regulatory policy is developed within ITSRR and is subject only to review by the ITSRR Board.</p> <p>The CEO ITSRR reports to the Minister only for personal accountability, and is overseen by a Board of review with a Chairperson who also reports to the Minister.</p> <p>The CEO is appointed by the Governor on the recommendation of the Minister, however, the Minister is to consult with the Chairman before appointing the CEO.</p> <p>The legislation has been established to ensure independence by limiting the Minister for Transport Services' powers of control and direction over ITSRR and by ensuring its investigation and annual reports are tabled in parliament.</p> <p>Advisory Board members must demonstrate that there are no conflict of interest wrt transport operations. Three Board members are appointed by the Minister for Transport Services, however, The Minister is to consult with the Chairperson before appointing any person to be an appointed member of the Board.</p> <p>The Chairperson of the Advisory Board is a key adviser to the Minister for Transport Services providing the Minister with high level strategic advice on transport safety and reliability.</p>	<p>WAUD.002.003.0001 WAUD.002.003.0003 Doc #04226, ITSRR Advisory Board Arrangements WRES.001.006.0092 WRES.001.006.0114</p>
ITSRR	21-Mar-2004	1.1		ITSRR safety policy development and enforcement is generally independent of transport operations. (ITSRR reports to the same Minister as RailCorp) ITSRR has prepared various draft documents that explain how it will (does?) operate.	<p>Draft Corporate Governance Arrangements WAUD.002.003.0083 has been provided to SCOI. Have not sighted a final version and the draft does not show evidence of being subject to a document control procedure. Advisory Board Arrangements dated 5th February 20</p>
ITSRR	21-Mar-2004	1.1			DRMB07 Transport Legislation Amendment (Safety and Reliability) Act 2003 reg 04053 Clause 42C of the Transport Legislation Amendment (Safety and Reliability) Act 2003 indicates "to exhibit independence, rigour and excellence..."
ITSRR	21-Mar-2004	1.1		ITSRR reliability functions and mandates do not conflict with the ITSRR safety process.	DRMB07 Transport Legislation Amendment (Safety and Reliability) Act 2003 reg 04053 Clause 42D cites functions of ITSRR where separate reference is made to safety and reliability. If conflict of functions were to exist it is most probable to emanate in the technical panel and the reliability group.
ITSRR	21-Mar-2004	1.2	ITSRR safety managers and staff organisations do not report to transport operations	<p>(1) The ITSRR is subject to the direction and control of the Minister, except as provided by subsection (2).</p> <p>(2) The ITSRR is not subject to the direction and control of the Minister in respect of the following matters:</p> <p>(a) the exercise of a function relating to the accreditation of a person under the Rail Safety Act 2002 (including the variation, suspension or cancellation of an accreditation),</p> <p>(b) any decision to take or not to take enforcement action under any Act,</p> <p>(c) the exercise of a function relating to a rail safety inquiry or a transport safety inquiry or other inquiry under an Act into a transport accident or incident,</p> <p>(d) the outcome of any monitoring or auditing of the safety or reliability of a transport service (and any decision to carry out or not to carry out any such monitoring or auditing),</p> <p>(e) the contents of any report or recommendation of the ITSRR,</p> <p>(f) the exercise of a function under section 42I (except as provided by section 42I (5)).</p>	WRES.001.006.0092
ITSRR	21-Mar-2004	1.2		ITSRR functions do not report to 'transport operations' but the organisation reports to the Minister responsible for transport operations.	ITSRR Organisation Chart (03374)
ITSRR	21-Mar-2004	1.2		ITSRR safety managers and staff organisations do not report to transport operations	DRMB07 Transport Legislation Amendment (Safety and Reliability) Act 2003 reg 04053 Clause 42C, 42I(1)







Observations	Issues	Interview/Document Review ID	Ratings for Finding
<p>Many of the staff within ITSRR were previous employees of the transport operators.</p> <p>Both the CEO and Chairperson are appointed on recommendation of the Minister for Transport Services. The CEO is subject to the direction and control of the Minister for Transport Services except with respect to Regulator duties. The Chairperson to the Board is a 'key adviser to the Minister for Transport Services'.</p> <p>Although the Chairman and the CEO reported to the Minister and the Minister had responsibility for delivery of transport services, the Act specifically did not allow him (the Minister) to take any role in the critical activities of ITSRR (RC).</p> <p>CEO started working for Chairperson one week after the Waterfall initial report and was asked by the Minister to help set up ITSRR.</p> <p>CEO reports direct to the Minister monthly with respect to her personal accountability.</p> <p>The Chairperson has an input into appointment of the CEO, the CIO, and the Board: Chairperson was asked by the then Minister in March 03 to set up a new regulatory arrangement.</p>	<p>true independence would be difficult given the personal bias of ITSRR staff and their involvement in network rules and safeworking.</p> <p>Although legislation prevents direct involvement of the Minister in ITSRR's affairs, the fact that both the Chairperson and the CEO are appointed on the Minister's recommendation and that the other three Board members are appointed by the Minister must bare on the strength of independence.</p> <p>CEO ITSRR negotiates an annual Performance Agreement with the Minister</p> <p>Interviewee accepted the point that even 'perceived' conflict of interest could be damaging to ITSRR.</p>	<p>LN17/MR9 LN16/AR AR10/LN20 Doc #04226, ITSRR Advisory Board Arrangements WRES.001.006.0092</p>	
<p>Almost all of the ITSRR documents seen are drafts in various stages of finality. This makes an objective assessment difficult</p>		AR10/LN20	
		DRMB07	
		DRMB07	
<p>The Minister for Transport Services is also responsible for the principle operator RailCorp.</p> <p>On the topic of the Minister and the CEO's relationship, the Interviewee advised that s/he thinks the minister understands. Basically, CEO reports direct to the Minister monthly with respect to CEO's personal accountability</p>	<p>The fact that the Minister is responsible for RailCorp and ITSRR gives the perception that independence is only a paper concept.</p> <p>Interviewees not entirely convinced the Minister understands the relationship.</p>	<p>WRES.001.006.0092 LN17/MR9</p>	
	<p>The issue may be one of perceived rather than actual conflict of interest - the Corporate Governance Arrangements does highlight this - 'conflicts of interest, or the perception that they have arisen can do great damage to the reputation of ITSRR</p>	AR10/LN20	
		DRMB07	










Parent Organisation	Date of Entry	Element ID	Sub Element	Finding(s)	Audit Evidence
ITSRR	21-Mar-2004	1.3	Safety policy decisions are made in an environment free from transport operations conflict	<p>The legislation has been established to ensure independence by limiting the Minister for Transport Services' powers of control and direction over ITSRR and by ensuring its investigation and annual reports are tabled in parliament.</p> <p>ITSRR staff report to the CEO, who upon advise from the Chairperson and Board, reports to the Government. OTSI staff report to the Chief investigator who reports to the Chairperson.</p> <p>Constitution of Transport Advisory Group            (1) The Minister is to establish a Transport Advisory Group.            (2) The Group is to consist of the following part-time members:            (a) the Chairperson of the Independent Transport Safety and Reliability Advisory Board, who is to be Chairperson of the Group,</p>	<p>WRES.001.006.0109            WRES.001.006.0104            Doc #04226, ITSRR Advisory Board Arrangements            WAUD.002.003.001</p>
ITSRR	21-Mar-2004	1.3		ITSRR safety policy decisions are made in an environment free of actual conflicts with operations but not necessarily free of perceived conflicts.	ITSRR Organisation Chart (03374)
ITSRR	21-Mar-2004	1.3		Safety policy decisions should be able to be made in an environment free from transport operations conflict	<p>DRMB07 Transport Legislation Amendment (Safety and Reliability) Act 2003 reg 04053            The evidence tendered in 1.1 with the exception that the Minister, as the ultimate report of RailCorp, having influence over funding</p>
ITSRR	21-Mar-2004	1.4	Safety funding is sufficiently independent from transport operations funding	ITSRR funding is set by the Treasury	
ITSRR	21-Mar-2004	1.4		Funding of ITSRR is via an annual budget managed by the CEO. Technically ITSRR functions do not report to 'transport operations' but the organisation reports to the Minister responsible for transport operations	Position Description for ITSRR CEO (03365)
ITSRR	21-Mar-2004	1.4		Safety funding is sufficiently independent from transport operations funding	<p>DRMB07 Transport Legislation Amendment (Safety and Reliability) Act 2003 reg 04053            The evidence tendered in 1.1 with the exception that the Minister, as the ultimate report of RailCorp, having influence over funding.</p>
ITSRR	21-Mar-2004	1.5	Safety monitoring and reporting is independent from transport operations	The ITSRR is not subject to the direction and control of the Minister in respect of the contents of any report or recommendation of the ITSRR .	WRES.001.006.0104
ITSRR	21-Mar-2004	1.5		ITSRR as such does not have any 'transport operations'. Reporting on safety and 'reliability' will both be done through ITSRR CEO.	ITSRR Organisation Chart (03374)
ITSRR	21-Mar-2004	1.5		Safety monitoring and reporting should be able to be independent from ITSRR transport operations	<p>DRMB07 Transport Legislation Amendment (Safety and Reliability) Act 2003 reg 04053            The Transport Legislation Amendment (safety and Reliability) Act 2003, does not assist in determining this level of independence. However Clause 42E(2) indicates "The ITSRR</p>
ITSRR	21-Mar-2004	1.5		OTSI have setup a structure for independent safety monitoring, with processes on the use of associated information and data, and a confidential reporting system with checks and balances to ensure operational separation from ITSRR compliance and accreditation	<p>Interviews:            MN5/LN12,            MN7/LN15,            AR15/MN 14            Documents:            'Relationship between the OTSI and the TSR' Reg # 4217: Unsigned position paper that outlines proposed relationship between the two operational arms of ITSSR</p>
ITSRR	21-Mar-2004	1.6	ITSRR is sufficiently independent to adequately investigate rail accidents and incidents	<p>The ITSRR is to have a division called the Office of Transport Safety Investigations.</p> <p>The head of the Office of Transport Safety Investigations is to be the Chief Investigator.            (2) The Chief Investigator is to be appointed by the ITSRR on the recommendation of the Chairperson of the Board.            (3) The employment of the Chief Investigator may be terminated by the ITSRR only on the recommendation of the Chairperson of the Board.            (4) The salary, wages and conditions of employment of the Chief Investigator are to be fixed by the ITSRR on the recommendation of the Chairperson of the Board.</p> <p>For the purposes of exercising functions relating to a rail safety inquiry or a transport safety inquiry, the Chairperson may arrange for the use of any staff or facilities of the ITSRR.</p>	<p>WRES.001.006.0106            WRES.001.006.0108</p>
ITSRR	21-Mar-2004	1.6		OTSI has been set up as a separate part of ITSRR to conduct investigations	ITSRR Organisation Chart (03374)

Observations	Issues	Interview/Document Review ID	Ratings for Finding
CEO and Chairperson believe they have a charter to make findings free of conflict from the Minister  To continue to grow the relationship with operators, ITSRR needs clear, unambiguous and transparent processes to win over senior management by convincing them that the regulator is not trying to regulate the how of operations, merely the safety.	Yet to be demonstrated  ITSRR and the Transport Advisory Group have the same Chairperson. This muddies the concept of independence from operations given the influence the Chairperson has over ITSRR.  In trying to win over operators, ITSRR may tread too lightly at first.	WRES.001.006.0092 LN17/MR9 AR10/LN20	
		DRMB07	
			
		DRMB07	
			
	It has not been made clear to the Audit Team just what parameters of reliability will be recorded and reported. It has therefore not been possible to determine any conflict with safety reporting		
		DRMB07	
Interviewees expressed reservations about practical and effective separation of roles within the ITSRR, and did not believe org structure was the ideal. Appears to be compromise based on financial constraints.	Issue is medium to long term appropriateness and effectiveness of current organisational structure for compliance and accreditation role versus investigation role.	MN5/LN12, MN7/LN15, AR15/MN 14 Document 'Relationship between the OTSI and the TSR' Reg # 4217 ITSRR Org chart 22 Jan 04	
Most of the ITSRR investigation staff are ex operator employees Chairman of the Board has a lot of influence over the Chief Investigating Officer. most positions so far had been filled 'by appointment' rather than any detailed recruitment exercise.	Independence is contingent upon independence of Chairperson	LN17/MR9 AR10/LN20 LN17AR08 WRES.001.006.0092	
	OTSI is linked to the rest of ITSRR via the Chair and the Advisory Board and uses common resources		







Parent Organisation	Date of Entry	Element ID	Sub Element	Finding(s)	Audit Evidence
ITSRR	21-Mar-2004	1.6		ITSRR should be able to be sufficiently independent to adequately investigate rail accidents and incidents	DRMB07 Transport Legislation Amendment (Safety and Reliability) Act 2003 reg 04053 Clause 42D(g) "to investigate and report on accidents and incidents involving transport services"
ITSRR	21-Mar-2004	1.6		OTSI have setup processes for independent functioning on accident and incident investigation within ITSRR	Interviews: MN5/LN12, MN7/LN15, AR15/MN 14 Documents: 'Relationship between the OTSI and the TSR' Reg # 4217: Unsigned position paper that outlines proposed relationship between the two operational arms of ITSRR
ITSRR	21-Mar-2004	1.7	ITSRR is sufficiently independent to report findings and recommendations from rail accidents and incidents	Before publishing a report (whether under this or any other Act) or giving a report to the Minister, the ITSRR must refer the report to the Board and consider any advice of the Board relating to the report.	WRES.001.006.0101
ITSRR	21-Mar-2004	1.7		Technically ITSRR is sufficiently independent to report findings & recommendations from rail accident, but OTSI (ITSRR) sits in the Ministry responsible for transport operations	ITSRR Organisation Chart (03374)
ITSRR	21-Mar-2004	1.7		ITSRR should be able to be sufficiently independent to report findings and recommendations from rail accidents and incidents	DRMB07 Transport Legislation Amendment (Safety and Reliability) Act 2003 reg 04053 Clause 42D(g) "to investigate and report on accidents and incidents involving transport services"
ITSRR	21-Mar-2004	1.7		OTSI have setup processes for independent functioning on accident and incident investigation within ITSRR	Interviews: MN5/LN12, MN7/LN15, AR15/MN 14 Documents: 'Relationship between the OTSI and the TSR' Reg # 4217: Unsigned position paper that outlines proposed relationship between the two operational arms of ITSS
ITSRR	21-Mar-2004	1.8	ITSRR elevates key safety issues to the Minister in a timely and appropriate manner	The ITSRR is to report to the Minister on the result of any audit of compliance with requirements under section 42F.	WRES.001.006.0101
ITSRR	21-Mar-2004	1.8		ITSRR are able to elevate key safety issues to the Minister in a timely and appropriate manner	DRMB07 Transport Legislation Amendment (Safety and Reliability) Act 2003 reg 04053 Clause 42D(2)(d) "to advise the Minister.....about any matter related to the safe operation of transport services...." No definition relating to "key" provided in the legislati
ITSRR	21-Mar-2004	1.9	ITSRR does not receive undue pressure from outside groups that can affect safety	the Chairperson of the Independent Transport Safety and Reliability Advisory Board, is to be Chairperson of the Transport Advisory Group,	WRES.001.006.0104 WRES.001.006.0118
ITSRR	21-Mar-2004	1.9		ITSRR should not receive undue pressure from outside groups that can affect safety	DRMB07 Transport Legislation Amendment (Safety and Reliability) Act 2003 reg 04053 The evidence tendered in 1.1 with the exception that the Minister, as the ultimate report of RailCorp, having influence over funding.Clause 42T indicates that the ITSRR Ad
ITSRR	21-Mar-2004	1.10	ITSRR reliability functions and mandates do not conflict with the ITSRR safety process	Objectives of ITSRR (1) The principal objective of the ITSRR is to facilitate the safe operation of transport services in the State. (2) The ITSRR also has the following objectives: (a) to exhibit independence, rigour and excellence in carrying out its regulatory and investigative functions, (b) to promote safety and reliability as fundamental objectives in the delivery of transport services.	WRES.001.006.0098
ITSRR	21-Mar-2004	1.10		The ITSRR reliability functions and mandates are covered in very general terms in the Act	ITSRR Organisation Chart (03374) NSW Transport Legislation Amendment (Safety & Reliability) Act 2003 WAUD.002.003.0073
			<b>Regulatory Mandate</b>		
ITSRR	21-Mar-2004	2.1	ITSRR has sufficient regulatory authority to effectively monitor safe rail transport	ITSRR has clearly defined high level authority to monitor rail safety. ITSRR operates under various statutes of legislation and the Transport Legislation Amendment (Safety & Reliability) Act 2003 outlines the regulatory authority of ITSRR	Draft Corporate Governance Arrangements WAUD.002.003.0083 has been provided to SCOI. Have not sighted a final version and the draft does not show evidence of being subject to a document control procedure. NSW Transport Legislation Amendment (Safety & Rel
ITSRR	21-Mar-2004	2.1		42F Auditing of transport authorities and owners and operators of transport services (1) The ITSRR may conduct audits of the compliance of transport authorities and owners or operators of transport services	WRES.001.006.0209
ITSRR	21-Mar-2004	2.2	Appropriate mechanisms are in place to assure no future conflicts	No evidence was seen of any formal mechanisms to assure no future conflicts (in terms of the 'Regulatory Mandate')	

Observations	Issues	Interview/Document Review ID	Ratings for Finding
		DRMB07	
OTSI is currently underresourced for this role. Staffing positions are vacant, staff are not fully trained or qualified for the role, the investigation procedures are not complete, and the budget is not transparent or within the control of the Chief Investigator	Reporting lines of ITSRR and OTSI to same minister is an issue of credible and perceived independence. OTSI will potentially be investigating both the operator and the regulator in an investigation with resulting recommendations being potentially difficult	MN5/LN12, MN7/LN15, AR15/MN 14 Documents 'Relationship between the OTSI and the TSR' Reg # 4217. OTSI Investigation Manual v3 , regn # 4217, undated working draft. ITSRR Org chart 22 Jan 04	
Board is not a decision making body but would be aware of all key activities of ITSRR and would see all output.	ability to report freely will depend on influence of Chairperson and Board.	AR10/LN20 WRES.001.006.0092	
	Chief Investigator reports to ITSRR Chair, who reports to the Minister		
		DRMB07	
	Reporting lines of ITSRR and OTSI to same minister is an issue of credible and perceived independence. OTSI will potentially be investigating both the operator and the regulator in an investigation with resulting recommendations being potentially difficult	Interviews: MN5/LN12, MN7/LN15, AR15/MN 14 Documents: 'Relationship between the OTSI and the TSR' Reg # 4217: Unsigned position paper that outlines proposed relationship between the two operational arms of ITSS	
Yet to be demonstrated		WRES.001.006.0092	
		DRMB07	
The Chairperson and Board may be in a position to place pressure on the ITSRR as well as OTSI		AR10/LN20 WRES.001.006.0092	
		DRMB07	
We asked the Interviewee about their views about the Reliability function of ITSRR and whether they saw managing service reliability and safety under the one roof as a conflict. The Interviewee did not see it as a conflict because her view of the Reliability function is that it is not there to record and track service reliability but is there to provide expert advice on the health of materiel and processes of the transport system to government. Its function will include seeking asset management advice from the operators to help explain why operators are failing to meet service reliability targets. The Interviewee did not see ITSRR setting the service reliability targets. Its function is to provide a predictive tool focusing on the technical integrity and health of the transport systems	Reliability staff are collecting and trending data that should be done by the operators and only for RailCorp  there is a disconnect between management's intentions and the staff building the capability. Without strong direction this function will not develop	LN17/MR9 MR10LN18	
	The 'mandates' may need to be clarified through regulations or ITSRR internal process		
	It is too soon to know whether ITSRR has sufficient regulatory authority - the legislation is fairly general in what it says and the detailed processes needed to ensure effectiveness have yet to be finalised and implemented.		
		WRES.001.006.0181	
			

Parent Organisation	Date of Entry	Element ID	Sub Element	Finding(s)	Audit Evidence
ITSRR	21-Mar-2004	2.2		There is still a possible conflict with the DG Rail in MoT, " The Director-General is to take all steps as are, within available financial resources, necessary to ensure the provision of safe, efficient, adequate and economic passenger services"	WRES.001.006.0206 WRES.001.006.0210
ITSRR	21-Mar-2004	2.3	ITSRR is sufficiently empowered to advise the Minister on key safety issues	The Act provides empowerment for ITSRR to advise the Minister	NSW Transport Legislation Amendment (Safety & Reliability) Act 2003 (03347)
ITSRR	21-Mar-2004	2.3		42E ITSRR may advise on and monitor safety and reliability (1) The ITSRR is to advise the Minister with respect to: (a) the performance of transport authorities in connection with the exercise of their functions relating to the safe operation of transport services, and (b) the performance of transport authorities in connection with the exercise of their functions relating to the reliability of funded transport services.	WRES.001.006.0209
ITSRR	21-Mar-2004	2.4	Appropriate rail entities are accredited	Some 70+ 'rail entities' are currently accredited in NSW	ITSRR list of Accredited Rail Organisations WAUD.002.003.0142
ITSRR	21-Mar-2004	2.4		A draft rail operator accreditation model v4.2 feb 03 exists	Documents: draft rail operator accreditation model v4.2 feb 03 reg #3716
ITSRR	21-Mar-2004	2.4		The principal functions of the ITSRR are as follows: (f) to accredit operators of railways under the Rail Safety Act 2002  ITSRR has developed a Rail Accreditation model under the Rail Safety Act 2002  ITSRR has an accreditation ckeck list and draft accreditation guidelines.  Under the NSW Rail Safety Act 2002, all railway operators must be accredited.	WRES.001.006.0208 WAUD.002.003.0140 WAUD.002.002.0007 WAUD.002.001.0003 Doc#04476 Letter to Accredited Operators WAUD.002.003.0122 WAUD.002.003.0139 WAUD.012.001.0374 WAUD.002.003.0155
ITSRR	21-Mar-2004	2.5	ITSRR has sufficient budget to adequately complete its obligations		
ITSRR	21-Mar-2004	2.5		ITSRR has a current year budget of \$17m which the CEO believes is sufficient.	LN17/MR9
ITSRR	21-Mar-2004	2.6	Key ITSRR staff positions are filled to perform regulatory mandate	The ITSRR Organisational Chart, dated 22 January 2004 appears to be a final version and was agreed as such by various interviewees. A number of the key positions are filled by contracted or seconded personnel and some positions are not yet filled.	ITSRR Organisational Chart (03374)
ITSRR	21-Mar-2004	2.6		Some key positions are filled with appropriately qualified and experienced people but many are not. There is an ongoing process of advertising to fill positions currently filled with acting staff. ITSRR is planned to be staffed at approximately 85 people,	MN4/LN11
ITSRR	21-Mar-2004	2.6		ITSRR is currently in a recruiting cycle with staff levels at about 60%. The two direct reports to the Chief investigator are yet to be filled. The ExecDir Transport Safety Regulation has stated that the organisation is eveloving to be top heavy and tha	MN07LN15 LN17AR08 WAUD.002.003.0001 WAUD.002.003.0078
ITSRR	21-Mar-2004	2.7	Other ITSRR non-rail safety groups do not dilute rail safety authority and responsibility	ITSRR is responsible for modes of public transport other than rail and the Organisation Chart does not indicate any segregation	ITSRR Organsiation Chart (03374)
ITSRR	21-Mar-2004	2.7		ITSRR's Reliability section has the potential to distract attention from safety to asset management and on-time running.	MR10LN18 WRES.001.006.0208 WRES.001.006.0209
ITSRR	21-Mar-2004	2.8	ITSRR is adequately managing their transition	A draft Corporate Plan is under development but has not been sighted A draft Project Plan was sighted, covering the period to 2007	
ITSRR	21-Mar-2004	2.8		All ITSRR position descriptions have tertiary qualifications or equivalent experience listed as desirable.  ITSRR has an implementation plan that describes a 3 phase process resulting in organisation maturity in 2007	Doc # 03712 PD ExecDir Corporate Strategy WAUD.002.002.0065 ITSRR Doc Building an Effective Transport Safety Regulator
			<b>Policy and Objectives</b>		
ITSRR	21-Mar-2004	3.1	ITSRR policy and regulations are clearly written, understandable, and easy to follow	Most Policy is still under development but there does not appear to be any process currently in place to ensure that Policy is clearly written, understandable and easy to follow (as might be stated in a Document Control Procedure)	
ITSRR	21-Mar-2004	3.1		Many policy and procedure documents are still in draft format. ITSRR is developing policy and procedures as quickly as it can and aim for clear understandable documentation.	Interviews: MN4/LN11 Documents: Rail Safety Act 2002 Compliance and Enforcement Policy draft V4, reg # 3715







Observations	Issues	Interview/Document Review ID	Ratings for Finding
Although legislation provides the power to restrict or suspend rail operations, there is very little doubt that a NSW Regulator will never actually suspend metro operations so this will always create a conflict	Regulator needs to develop a strategy where by the operator has restrictions enforced that require the involvement of an independent 3rd party until such time as the operator can verify competency.	WAUD.012.001.0379 WRES.001.006.0181	
			
		WRES.001.006.0181	
	Whilst 'appropriate' rail entities are accredited, it has been done under the previous, possibly flawed, process		
	Hard to determine if appropriate rail entities accredited without accreditation policy in place	Documents: draft rail operator accreditation model v4.2 feb 03 reg #3716	
		WAUD.002.003.0198 WAUD.002.001.0005	
			
The current year budget was awarded most likely on the shock value of Waterfall. Next FY budget will need to be assessed. Director Corporate Strategy believes the current resourceing level is appropriate.	Given the infant state of ITSRR, any estimate of resource needs will be guess work.	LN17/MR9 MN04LN11	
The 'regulatory mandate' lacks clarity. It sits in Section 42C/D of the Act as objectives and functions but no indication is given as to how they might be achieved	The Organisation Chart (03374) shows the contracted, seconded and vacant positions. Not all positions are currently filled and several key positions are filled by secondees or contractors.		
Some key positions are filled with appropriately qualified and experienced people but many are not. There is an ongoing process of advertising to fill positions currently filled with acting staff.	Ensuring that appropriately qualified and experienced people are recruited into key ITSRR staff positions, and that a clear understanding of the regulatory role is established.	MN4/LN11 AR11/MN12	
The strategy for building ITSRR appears to be bringing on high level (SES) staff to provide a basis for developing policy and legislation, and to give executive credibility with CEOs of rail operators. There appears to be a delay/lag in getting the accreditation staff in place.	ITSRR is still developing as a reactive regulator, waiting for the operators to present their safety systems, report issues and notify issues. ITSRR has no inherent capability to conduct proactive vulnerability analysis.	Doc#03769 PFM Training Interim Report MN07LN15 LN17AR08	
	It is possible that, from time to time, resources will be drawn away from rail to deal with urgent matters elsewhere		
The reliability section appears to be duplicating the operational statistics responsibilities of RailCorp. There was little evidence that the focus would be on other rail entities. The competencies of staff were focused on 'on-time running' statistics.		MR10LN18 LN17/MR9 AR10/LN20	
			
Little consultation with respect to (wrt) the new ITSRR structure or for direct report staff selections. ITSRR hasn't addressed the deficiencies in the previous regulator wrt risk and safety system skills and adequate qualifications	Lack of tertiary quals or industry equivalent is cause for concern wrt ITSRR's ability to conduct judgement of significance regarding complex system risk. Given the ineffectiveness of the previous regulatory structure, establishing credibility and effective systems will be critical	LN17/MR9 AR10/LN20 LN17AR08	
It was noted that there are plans to seek accreditation under ISO9000 and there is a Project Officer in place to manage this Status unknown, however that is all in the future	ITSRR does not yet have a Document Control Procedure or Process	AR7/LN16/MN8	
		Interviews: MN4/LN11 Documents: Rail Safety Act 2002 Compliance and Enforcement Policy draft V4, reg # 3715	

Parent Organisation	Date of Entry	Element ID	Sub Element	Finding(s)	Audit Evidence
ITSRR	21-Mar-2004	3.1		ITSRR are seeking ISO9000 accreditation as QA process for policy development. Project officer is Andrew Schofield. Ops Staff in Terry Poynton's area will be used to litmus test.	Interviews: AR7/LN16/MN8
ITSRR	21-Mar-2004	3.1		New accreditation documentation is well written and contains flow charts to clarify process.	WAUD.002.003.0083 WAUD.002.003.0117 WAUD.002.003.0120 WAUD.002.003.0137 WAUD.002.003.0140
ITSRR	21-Mar-2004	3.2	ITSRR strives to communicate how the regulatory environment works and provides guidance on how to comply	A draft Rail Operator Accreditation Model, Version 3, Aug 20 2003 exists and the industry has been provided with some briefing on it.	Rail Operator Accreditation Model, Version 3, Aug 20 2003 (Registry Number not given)
ITSRR	21-Mar-2004	3.2		ITSRR are yet to send out a letter to operators regarding their obligations as an accredited operator as of 2 Mar 04	Documents: email reg # 4165
ITSRR	21-Mar-2004	3.2		ITSRR is involved with other State Regulators on "National Framework Activity" coord by National Transport Commission to develop business processes for industry to understand their obligations.	Interviews: AR7/LN16/MN8
ITSRR	21-Mar-2004	3.2		A draft rail operator accreditation model v4.2 feb 03 exists	Interviews: AR7/LN16/MN8 Documents: Rail Safety Act 2002 Compliance and Enforcement Policy draft V4, reg # 3715
ITSRR	21-Mar-2004	3.2		ITSRR has developed several accreditation process guidelines and is developing guidelines for specific topics such as fatigue management ITSRR has an informative web site	WAUD.002.003.0120 WAUD.002.003.0137 WAUD.002.003.0140 WWW.transportregulator.nsw.gov.au
ITSRR	21-Mar-2004	3.3	ITSRR provides technical assistance to the rail authority to support guidance on the regulatory process	No evidence seen	
ITSRR	21-Mar-2004	3.3		ITSRR has established a Technical Panel to provide both an internal capability and external capability to provide technical assistance.	WAUD.002.003.0001
ITSRR	21-Mar-2004	3.4	Policies and regulations are periodically reviewed and updated	Since all policies are currently in draft form it is too early to assess this, but no evidence has been seen of a defined periodical review requirement.	
ITSRR	21-Mar-2004	3.4		N/A ITSRR has only been in existence since Jan 04	WAUD.002.003.0003
ITSRR	21-Mar-2004	3.5	Policy is based on a system safety model	It is not clear that policy is based on a 'system safety model'. One 'model' used is AS4292 Railway SafetyManagement	Rail Operator Accreditation Model Version 3, Aug 20 2003
ITSRR	21-Mar-2004	3.5		No clear system safety model has yet been identified upon which to base policy. Baseline appears to be old and dated AS4292.	Interviews: AR7/LN16/MN8 MN4/LN11 AR11/MN12
ITSRR	21-Mar-2004	3.5		Although regulation requires operators to exhibit an SMS it appears that ITSRR policy is yet to establish a foundation SMS for the regulator. Regulation is IAW the Safety Act 2002 which was amended to remove the need for a formal system safety plan	WAUD.012.001.0371
ITSRR	21-Mar-2004	3.6	The safety policy takes an approach of verifying that system safety is integrated into rail authority business practices	No documented evidence has been found as to how ITSRR would determine that system safety is integrated into SRA/RIC/RailCorp business practices. It has been said at interview that it would be for the Operator to 'convince' ITSRR.	
ITSRR	21-Mar-2004	3.6		draft Safety Policy requires operators to submit SMS in accreditation application (see Rail Safety Act 2002 Compliance and Enforcement Policy draft V4 page 5),	Interviews: MN4/LN11 Documents: Rail Safety Act 2002 Compliance and Enforcement Policy draft V4, reg # 3715
ITSRR	21-Mar-2004	3.6			
ITSRR	21-Mar-2004	3.7	ITSRR conducts safety research and development	No documented evidence has been found regarding any specific safety research and development projects within ITSRR although there was some suggestion at interview that consideration was being given to it	
ITSRR	21-Mar-2004	3.7		ITSRR plan to conduct safety research and development. They have employed a short-term contractor to identify key areas for research (Robert Oliver). The RO position will be advertised as a permanent position. ITSRR have also seconded Janet Peters to deve	Interviews: AR7/LN16/MN8
ITSRR	21-Mar-2004	3.7		ITSRR has established positions for position titled Manager, Data, Research & Analysis	WAUD.002.003.0078











Observations	Issues	Interview/Document Review ID	Ratings for Finding
		Interviews: AR7/LN16/MN8	
All documentation is being newly developed and needs to be tested in the field for clarity and comprehension.		LN17/MR9 AR10/LN20	
	No programme was seen for industry contact or briefing sessions		
Interview indicated that letter would be sent to industry within days, not weeks.	Accredited operators are unsure of their obligations	Interviews MN4/LN11 Documents email reg # 4165	
This is a long term plan. Immediate guidance to operators is lacking.	Accredited operators are unsure of their obligations	Interviews: AR7/LN16/MN8	
		Interviews: AR7/LN16/MN8	
There appears to be a significant communication issue in that there is very little understanding wrt what constitutes a change requiring submission of Material Change documentation, or what represents a significant potential hazard .	There has already been instances where significant changes in safety processes have been actioned without reference to ITSRR	LN17/MR9 AR10/LN20 LN17AR08	
			
		LN17/MR9 AR10/LN20 LN17AR08	
			
	There may be an issue concerning the use of an appropriate system safety model. AS4292 is overdue for a review and is quality based rather than a 'system safety model'	AR7/LN16/MN8	
Projects are ongoing to identify world best practice and adapt into ITSRR policy	Policy not based on clear system safety models A system safety program plan or safety case or any other such structured model would assist in the accreditation process.	Interviews: AR7/LN16/MN8 MN4/LN11 AR11/MN12	
ITSRR claims its policy framework has been developed around AS4292, but also AS4360 and AS4804	still in draft	LN17/MR9 AR07LN16MN08	
	Comment as above	AR7/LN16/MN8	
	Policy not yet signed off and implemented	Documents: Rail Safety Act 2002 Compliance and Enforcement Policy draft V4, reg # 3715	
No evidence that this has been or is currently the case.		LN17/MR9 AR10/LN20 LN17AR08 AR07LN16MN08	
		AR17/MC2	
Medium to long term plans		Interviews: AR7/LN16/MN8	
The Interviewee discussed the types of research & analysis programs ITSRR is planning to undertake.	Yet to be demonstrated	AR07LN16MN08	











Parent Organisation	Date of Entry	Element ID	Sub Element	Finding(s)	Audit Evidence
			<b>Organisation and Function</b>		
ITSRR	21-Mar-2004	4.1	ITSRR is appropriately organised to effectively monitor rail authority safety	The new ITSRR organisation has 80+ positions (including OTSI), 18 are clearly 'field' positions; 15 management; 28 policy; 14 clerical and 6 'technical'. The new organisation is not set up to favour field activity.	ITSRR Organisational Chart (03374)
ITSRR	21-Mar-2004	4.1		ITSRR does not have an inherent risk capability to conduct vulnerability analysis, or provide support to the operators.	WAUD.002.003.0001 WAUD.002.003.0078
ITSRR	21-Mar-2004	4.2	A systematic compliance regime exists that appropriately validates rail authority safety	There is a draft systematic compliance regime. The question is does it 'appropriately validate rail safety'? The regime has yet to be tested.	Rail Safety Act 2002 ITSRR Compliance & Enforcement Policy, Draft Version 4.1, dated 16 Feb 04 (Registry number not given) ITSRR Rail Safety Compliance Manual Section 2 Compliance Issues, Draft Version 3.0 26 Feb 04
ITSRR	21-Mar-2004	4.2		There is no transparent system for accreditation. The amendment to the Rail Safety Act 2002 removed the need for a System Safety Plan and id not replace it with an easily definable and verifiable model for tracking accreditation against.	No evidence of documented process for how ITSRR (or MoT previously) undertook the accreditation process. In particular there is no evidence of an tool for objective assessment of accreditation. Reviewed accreditations for late 2003, and late 2002 (just p
ITSRR	21-Mar-2004	4.2		ITSRR has a draft Compliance and Enforcement Policy and have engaged QEST to develop a Compliance Management Audit Protocol	WAUD.002.003.0189 WAUD.002.003.0120
ITSRR	21-Mar-2004	4.3	ITSRR appropriately liases with non-rail entities that can affect rail authority safety (e.g., fire, police, EMS)	No evidence of direct liaison or proactive interface development	
ITSRR	21-Mar-2004	4.4	ITSRR staff understand their roles and responsibilities in the regulatory process	At interview there was a range of understanding of roles. PDs exist, role definition is still underway, a range of training is underway - it is too early to adequately assess this. The PDs were developed by an external agency using the CullenEgan Dell fo	Initial Training Needs Analysis, October 2003 (Registry number not given) Position Descriptions have been provided for all ITSRR positions, staff are aware of them at interview
ITSRR	21-Mar-2004	4.4		Role and priorities of regulator personnel not clear.	Auditee reported that he was confused about priorities and had a reactive stance. Investigations were still being referred from OTSI and appeared to be inappropriate, low level issues. Auditee confirmed that follow up to 2001 and 2002 accreditation was
ITSRR	21-Mar-2004	4.5	ITSRR staff have the appropriate competencies to perform their job	Competencies are not well defined at the level of individual positions and no evidence has been seen that indicates a systematic approach to determining required competencies. Position Descriptions provided all follow a standard format	See all ITSRR PDs
ITSRR	21-Mar-2004	4.5			MB12 11-3-04 and DRMB32 reg 04365 Encumbent has training and experience in risk management principles as applied to railway environments and applicable for the particular task assigned to her/him.
ITSRR	21-Mar-2004	4.5		ITSRR are still seeking to fill lower level positions with appropriately qualified and competent staff. Some staff in place appear appropriate but others do not. Many are still in acting positions with permanent positions yet to be advertised and filled.	Interviews: AR7/LN16/MN8 MN4/LN11 MN7/LN15 AR11/MN12 AR15/MN14 PDs Exec Director Corporate Strategy (reg #3712) Chief Investigator OTSI (reg #3995) Mgr Safety Policy & Management
ITSRR	21-Mar-2004	4.5		Training needs of accreditation personnel not undertaken	No evidence of training needs analysis and clear statements of required competencies for personnel in accreditation and compliance assessment roles. Some training in investigation and auditing has occurred according to interviewee but standards not defin
ITSRR	21-Mar-2004	4.5		All PDs for ITSRR have tertiary qualifications (or equivalent experience) as Desirable. The PD for TSR does not contain any specific qualifications	WAUD.002.002.0061 WAUD.002.002.0066
ITSRR	21-Mar-2004	4.6	ITSRR are appropriately trained to perform their job	Training of various kinds is in progress based on a training needs analysis	Initial Training Needs Analysis, Oct 03 ITSRR Project Plan (no Registry number given)
ITSRR	21-Mar-2004	4.6		ITSRR has established a Training program to make up for competency shortfalls in staff.	WAUD.002.003.0318
ITSRR	21-Mar-2004	4.7	ITSRR employees have a viable career path	No evidence seen	

Observations	Issues	Interview/Document Review ID	Ratings for Finding
			
	The question is what is 'appropriately organised to effectively monitor rail safety'? 'Monitoring rail authority safety' suggests two main activities - field work and analysis of data (either provided by the rail organisation or collected by field activities)		
The accreditation process and compliance process is still predominantly focused on Safeworking Rules and OH&S. The current manned profile indicates a focus on senior management and policy as opposed to auditors and supervisors capable of judging fitness	There doesn't appear to be a capability to proactively identify management and process deficiencies that could lead significant hazards.	LN17AR08 AR07LN16MN08 LN17MR9	
			
		NI17 BB19	
Yet to be used			
			
	The training should have an assessment regime to ensure that participants have understood the material	NI19/MB	
		NI17 BB19	
	It is of some concern that few, if any, of the ITSRR PDs indicate a requirement for relevant tertiary qualifications or precise requirements for minimum industry experience. Few of the current staff have appropriate qualifications and relevant experience in system safety disciplines		
The PD provided to the auditor before the interview was not interviewee's PD. However Interviewee did have a statement issued by Natalie Pelham that was list of roles and responsibilities. General observation suggests that PD production and matching with CV's is haphazard.		MB12 11-3-04 and DRMB32	
The ITSRR recruitment process appears to consist more of appointment of "headhunted" staff than open advertised competitive selection.	Concerns that some ITSRR staff may not be suitable for positions occupied	Interviews: AR7/LN16/MN8 MN4/LN11 MN7/LN15 AR11/MN12 AR15/MN14 PDs Exec Director Corporate Strategy (reg #3712) Chief Investigator OTSI (reg #3995) Mgr Safety Policy & Management	
		NI17 BB19	
ITSRR is currently conducting a Gap analysis and training needs analysis to address competency deficiencies		LN17MR9 MN04LN11	
	It is not clear how the training needs were validated		r
Accreditation and Compliance staff have operator backgrounds with a primary focus on rolling stock and safeworking rules. There is no clear indication of appropriate safety system experience. Current training involves compliance audit processes	Yet to be demonstrated		
			









Parent Organisation	Date of Entry	Element ID	Sub Element	Finding(s)	Audit Evidence
ITSRR	21-Mar-2004	4.7		Investigation training programs for OTSI staff are being developed and put in place. Dedale Asia Pacific has run one Human Factors Awareness and Accident Investigation Techniques Course in Feb 04 for OTSI investigators.	Interviews: MN5/LN12 MN7/LN15 AR15/MN14 Documents: Memo CI to Chairman Developmental and Program Issues for OTSI reg # 3729 Human Factors Awareness and Accident Investigation Techniques Course Participant Manual reg
ITSRR	21-Mar-2004	4.7		SMS and HF training programs for ITTSR staff are yet to be put in place	Interviews: AR7/LN16/MN8
			<b>Data Analysis</b>		
ITSRR	21-Mar-2004	5.1	ITSRR retains all relevant records	It is unclear at this stage that ITSRR retains all relevant records. Records held by the ITSRR predecessor have been inherited by ITSRR and they are in the process of developing an adequate filing system to deal with historical and future records	Interview record
ITSRR	21-Mar-2004	5.1		ITTSR are developing a data acquisition strategy to manage their records in accordance with their regulatory role. The project has been titled PRISM - Performance, Regulation, Investigation and Safety Management.	Documents: ITSSR's Data Acquisition Strategy 2004-2005 Reg # 4512 PRISM project - Project execution plan Draft v.04 feb 04 Reg # 4512 Information Management and Technology Strategic Plan 2003-2006 Draft v.01 Feb 04 Reg # 4512
ITSRR	21-Mar-2004	5.2	ITSRR tracks and trends appropriate rail authority safety data	Bullet 1: A system is under development to manage the relevant data There is a system called PRISM (Performance Reliability & Investigative Safety Management) under development Bullet 2: The new system was not available for assessment	
ITSRR	21-Mar-2004	5.2		OTSI have set up a Confidential Incident Reporting System (CSIRS). Data is starting to be collected. Trend analysis will not be available in the short to medium term.	Interviews: MN5/LN12 MN7/LN15 AR15/MN14 Documents: 'Relationship between the OTSI and the TSR' Reg # 4217: Unsigned position paper that outlines proposed relationship between the two operational arms of ITSSR, regar
ITSRR	21-Mar-2004	5.2		One of the major deficiencies of the previous regulator was the total lack of appropriate records and info management systems. ITSRR has a plan to correct this but it is yet to be enacted.	WAUD.002.003.0318
ITSRR	21-Mar-2004	5.2		ITSRR plans to ensure to track and trend rail safety data through a risk management framework	MB1211-3-04 and DRMB32 reg 04365 specifically mentioned this area as a potential risk and is being dealt with accordingly, that is the obligation to trend is important and identified
ITSRR	21-Mar-2004	5.3	Trended data are fed back into the regulatory process and influence policy	It is too soon to make an assessment	
ITSRR	21-Mar-2004	5.4	Trended data effects new ITSRR safety goals	It is too soon to make an assessment	
ITSRR	21-Mar-2004	5.5	ITSRR implements its own recommendations	It is too early to consider recommendations made by ITSRR but ITSRR is implementing recommendations from its predecessor, such as the recommendations from the MoT Waterfall Investigation Report.	The 'Waterfall Spreadsheet'
ITSRR	21-Mar-2004	5.6	Appropriate prior incident/ accident recommendations applicable to the regulator have been adequately implemented	Not all of the pre-Waterfall (eg Glenbrook) recommendations have been fully implemented	ITSRR Spreadsheet (untitled, no ownership shown)
ITSRR	21-Mar-2004	5.7	ITSRR have and track compatible and comparable safety data	No evidence was seen of ITSRR tracking compatible or comparable data.	
			<b>Transition</b>		
ITSRR	21-Mar-2004	6.1	ITSRR's transition plan is appropriate and realistic	ITSRR does not have a 'Transition Plan' as such. There is a Project Plan and this appears to be realistic (time frame). It is difficult to assess if it is 'appropriate'	ITSRR Project Plan
ITSRR	21-Mar-2004	6.1		ITSRR's transition plan has a realistic timeframe (organisation maturity by June 2007) but it lacks one very important section, the risk management strategy to ensure safe operations during the period of establishing a mature organisation.	Document # 03985 'Building an Effective Transport Regulator'
ITSRR	21-Mar-2004	6.2	ITSRR appropriately identifies transition risks (how transition can adversely affect rail safety) and manages those risks	No ITSRR Transition Risk Assessment has been seen	Document # 03985 'Building an Effective Transport Regulator'
ITSRR	21-Mar-2004	6.3	ITSRR appropriately identifies RailCorp transition risks (how transition can adversely affect rail safety) and manages those risks	The Accreditation milestones appear to be the only means applied to managing RailCorp's transition risks.	

Observations	Issues	Interview/Document Review ID	Ratings for Finding
Plans exist to develop investigation training programs using outside contractors such as Dedale incorporating SMS and HF and ICAM investigatory model		Interviews: MN5/LN12 MN7/LN15 AR15/MN14 Documents: Memo CI to Chairman Developmental and Program Issues for OTSI reg # 3729 Human Factors Awareness and Accident Investigation Techniques Course Participant Manual reg	
		Interviews: AR7/LN16/MN8	
		AR17/MC2	
		Documents: ITSSR's Data Acquisition Strategy 2004-2005 Reg # 4512 PRISM project - Project execution plan Draft v.04 feb 04 Reg # 4512 Information Management and Technology Strategic Plan 2003-2006 Draft v.01 Feb 04 Reg # 4512	
		AR17/MC2	
CSIRS seems to be being well set-up and is apparently receiving a significant number of confidential reports		Interviews: MN5/LN12 MN7/LN15 AR15/MN14 Documents: 'Relationship between the OTSI and the TSR' Reg # 4217: Unsigned position paper that outlines proposed relationship between the two operational arms of ITSSR.	
Interviewees discussed a new IT system for capturing and managing records and data and to perform trend analysis. Both supported the concept that the previous regulator did not have adequate records, nor did the auditors keep appropriate rep.		AR07/LN16/MN08 MN04/LN11 LN17/MR9	
Other examples were provided and it appeared that provided to work continued on the project that risks of non-performance would be addressed		MB12 11-3-04 and DRMB32	
			
			
		AR16/MC1	
			
			
		AR10/LN20	
Training and development is not scheduled for completion until Nov 04, there is no risk strategy in the mean time. Safety Strategy is not due for completion until May 05. Plan for re accreditation of all operators by Jan 05		MN04/LN11 LN17/MR9	
There is no Executive Management Team for Risk! ITSRR does not appear to have adequately considered the transition risk of ITSRR.		MN04/LN11 LN17/MR9	
	How can a regulator that is itself in transition and reform, adequately monitor a large rail authority in transition?		

Parent Organisation	Date of Entry	Element ID	Sub Element	Finding(s)	Audit Evidence
ITSRR	21-Mar-2004	6.4	There is an adequate process to monitor RailCorp staff and managers effectiveness and performance	ITSRR identified the existence of RailCorp Transition A & B Plans (which are risk based) and is monitoring RailCorp's progress in managing implementation	RailCorp Transition Plan A/B WAUD.005.001.0465 WAUD.002.003.0140
			<b>Safety Enforcement over rail authority</b>		
ITSRR	21-Mar-2004	7.1	ITSRR's rail authority oversight process is robust, systematic, and based on system safety principles	It is not clear that the ITSRR rail authority oversight process is 'robust, systematic and based on system safety principles'. It is not clear how ITSRR would tackle serious breaches of accreditation. There is a Compliance Manual that describes philosophy	ITSRR Compliance Manual; WAUD.002.003.0218 RailCorp Accreditation Safety Milestones WAUD.002.001.0011 First Accreditation Milestones Meeting WAUD.003.001.0302 Safety Milestones Progress Chart WAUD.003.001.0308
ITSRR	21-Mar-2004	7.1		The Corporate Strategy area plans to introduce a risk management culture to ensure that a robust framework exists based on system safety principles	MB12 11-3-04 DRMB32 reg 04365 outlined the planned risk management process
ITSRR	21-Mar-2004	7.1		Compliance and enforcement policy in final draft. Implementation yet to be validated	Interviews: MN4/LN11 Documents: Rail Safety Act 2002 Compliance and Enforcement Policy (draft V4) Transport Regulation Project (Audits and Inspections) (reg # 3780)
ITSRR	21-Mar-2004	7.1		Regulation of SRA / RailCorp is not effective	Auditee confirmed that follow up to 2001 and 2002 accreditation was poor. Specifically, milestones demanded of SRA by MoT had not been followed through to completion. Interviewee said "we dropped the ball on this". Reason provided was that other priorities alway
ITSRR	21-Mar-2004	7.2	There is an appropriate escalation and sanction policy in place to react to inappropriate response from the rail authority.	There is an appropriate escalation & sanction policy	ITSRR Compliance Manual; WAUD.002.003.0218
ITSRR	21-Mar-2004	7.2		ITSRR's Accreditation and Compliance model is based on AS4292 - a QA focused std, AS4360 and AS4801 - OH&S WorkPlace Safety stds. The Coregulatory model also means that the oversight is based on the operator's SMS and Safeworking Rules.	WAUD.002.003.0140
ITSRR	21-Mar-2004	7.3	ITSRR has sufficient authority to impose sanctions if safety regulations are not met.	ITSRR has sufficient authority to impose sanctions	NSW Rail Safety Act 2002
ITSRR	21-Mar-2004	7.3		ITSRR has a draft Rail Safety Act 2002 Compliance and Enforcement Policy. It has both an Informal Enforcement Action and a Statutory Enforcement Action.	WAUD.002.003.0120
ITSRR	21-Mar-2004	7.4	ITSRR imposes the appropriate response if the rail authority does not meet requirements	It is too soon to make an assessment of this	
ITSRR	21-Mar-2004	7.4		The regulator has the authority to vary, suspend or cancel accreditation. The Director-General, the board and chief executive officer of a transport authority and an owner or operator of a transport service must: (a) co-operate with the ITSRR in exercising their functions, and (b) notify the ITSRR of all matters of which they are aware that could reasonably be expected to affect the exercise of the ITSRR's functions under this or any other Act, and (c) provide the ITSRR or the Chairperson of the Board with any information relating to their activities or any documents or other things requested by the ITSRR or Chairperson in the exercise of functions under this or any other Act, and (d) in the case of the Director-General and the Waterways Authority, comply with any direction in force under section 421.	WAUD.012.001.0379 WRES.001.006.0210
ITSRR	21-Mar-2004	7.5	ITSRR is adequately tracking and evaluating the Railcorp transition.	The recent Accreditation - Audit & Compliance Meeting Minutes indicate that the Accreditation Milestones are not being effectively tracked and evaluated. RailCorp is also changing the process of monitoring integration because the previous process wasn't	WAUD.003.001.0306 WAUD.005.001.0607 WAUD.005.001.0644 WAUD.005.001.0386 WAUD.005.001.0465 WAUD.005.001.0544
ITSRR	21-Mar-2004	7.6	ITSRR enforcement policies have become stricter post-Waterfall	Enforcement policies appear to have become stricter post Waterfall	NSW Rail Safety Act 2002 ITSRR Compliance Manual; WAUD.002.003.0218
ITSRR	21-Mar-2004	7.6		Legislation now allows for an escalation of enforcement actions which provides ITSRR with more options and hence the confidence to act.	WAUD.003.001.0392
ITSRR	21-Mar-2004	7.7	ITSRR annually reports on the adequacy of rail authority to Minister of MoT	2004 will be the first year for such a Report - too soon to assess this.	
ITSRR	21-Mar-2004	7.7		The ITSRR must report to the Minister each year on the performance of transport authorities and owners and operators of transport services in connection with the exercise of their functions relating to the safe operation and reliability of those services.	WRES.001.006.0209













Observations	Issues	Interview/Document Review ID	Ratings for Finding
The Accreditation Model does not nominate specific appointments or describe specific competencies for those specified positions. The only requirement under the Act is to nominate the individual responsible for the SMS at corporate level.	The question is, how effectively is ITSRR monitoring RailCorp - too soon to assess this.	AR16/MC1	
			
ITSRR have a long way to go to introduce and inculcate the risk management process into and across the organisation		MB12_11-3-04 and DRMB32	
ITSRRs oversight process is underdevelopment. They have inherited a flawed process from the previous regulator where individuals in compliance did not have a clear understanding of their regulatory role or the audit process from a safety systems perspective		Interviews: MN4/LN11 Documents: Rail Safety Act 2002 Compliance and Enforcement Policy (draft V4) Transport Regulation Project (Audits and Inspections) (reg # 3780)	
		NI17 BB19	
			
The purpose of System Safety analysis is to determine if the risk associated with a system has been reduced to a tolerable level. The Accreditation model has very little reference to Safety System Analysis or risk.			
			
There is still an issue around what action will the regulator be prepared to take against the metro operator.  Penalty notices can only currently be used in three circumstances. The Regulator would like a broader application.	Yet to be used in anger. Some notices have been issued for minor issues.	_LN17MR9	
			
The regulator does not have a comprehensive strategy to address major deficiencies in the prime urban operator. In the past the regulator felt powerless against the SRA and the new regulator is yet to resolve how it will deal with RailCorp for major issues.	Until such time as the regulator comes to grips with what action would be taken for a major safety breach, the operator will not be under any pressure to conform.	LN17MR9 AR10LN20 LN17AR08	
RailCorp claims to be maintaining the same level of safety and accountability through transition. Not much consolation if the prior system isn't acceptable.		AR05LN06	
			
There is still an issue around what action will the regulator be prepared to take against the metro operator.  Penalty notices can only currently be used in three circumstances. The Regulator would like a broader application.	Yet to be used in anger. Some notices have been issued for minor issues.	LN17MR9 AR10LN20 LN17AR08	
			
	Effectiveness/validity yet to be demonstrated	_LN17MR9	

Parent Organisation	Date of Entry	Element ID	Sub Element	Finding(s)	Audit Evidence
ITSRR	21-Mar-2004	7.8	ITSRR has sufficient access to all levels of rail authority	Nothing has been seen to indicate that this is not the case	
			<b>ITSRR Accident/Incident Investigation</b>		
ITSRR	21-Mar-2004	8.1	ITSRR investigations are independent of MoT transport operations and rail authority	The Act and the organisation provide the basis for independence in investigations ITSRR safety policy decisions are made in an environment free of actual conflicts with operations but not necessarily free of perceived conflicts.	NSW Transport Legislation Amendment (Safety & Reliability) Act 2003 ITSRR Organisation Chart (03374)
ITSRR	21-Mar-2004	8.1		The ITSRR is to have a division called the Office of Transport Safety Investigations. The Chief Investigator is to be appointed by the ITSRR on the recommendation of the Chairperson of the Board. Within ITSRR, the Office of the Transport Safety Investigat	WRES.001.006.0212 Doc #03713 Relationship between OTSI and the TSR
ITSRR	21-Mar-2004	8.1		OTSI have the ability to run independent investigations. However they are currently under staffed in this area . There are 5AS5022 categories of investigation, level 1-5, relating to S67 and S66 of the Rail Safety Act. OTSI may request assistance from ATS	MN5/LN12 MN7/LN15 AR15/MN14 Documents: 'Relationship between the OTSI and the TSR' Reg # 4217: Unsigned position paper that outlines proposed relationship between the two operational arms of ITSRR, regar
ITSRR	21-Mar-2004	8.2	Investigation budgets, time constraints, and control are independent of outside organizations	The Act and the organisation provide the basis for independence in investigation budgets ITSRR safety policy decisions are made in an environment free of actual conflicts with operations but not necessarily free of perceived conflicts.	NSW Transport Legislation Amendment (Safety & Reliability) Act 2003 ITSRR Organisation Chart (03374)
ITSRR	21-Mar-2004	8.2		The budget for the Office of the Chief Investigator is controlled by the CIO	
ITSRR	21-Mar-2004	8.3	Investigation staff are adequately trained (both in rail technology/operations and system safety)	Bullet 1: Several positions remain vacant at this time, however those staff in position (including secondees) appear to be adequately trained and a customised 4 day course has been prepared for all new staff Bullet 2: It is too soon to assess this	
ITSRR	21-Mar-2004	8.3		Investigation training programs for OTSI staff are yet to be put in place	Interviews: MN5/LN12 MN7/LN15 AR15/MN14 Documents: Memo CI to Chairman Developmental and Program Issues for OTSI reg # 3729
ITSRR	21-Mar-2004	8.3		ITSRR has a staff development and training schedule and are completing a training needs analysis. Unfortunatley there is not a lot of substance to indicate an emphasis on System Safety analysis training.	WAUD.002.003.0318
ITSRR	21-Mar-2004	8.4	Investigation teams have sufficient mixture of multiple disciplines	Bullet 1: It is too soon to assess this Bullet 2: It is too soon to assess this Bullet 3: It is too soon to assess this	
ITSRR	21-Mar-2004	8.4		The draft investigation manual indicates that investigations will be based on a just culture, risk-based, SMS and HF perspective. Currently no investigation reports have been completed and no training is in place. The investigation manual is in draft form	Interviews: MN5/LN12, MN7/LN15, AR15/MN 14 Documents: 'Relationship between the OTSI and the TSR' Reg # 4217: Unsigned position paper that outlines proposed relationship between the two operational arms of ITSS
ITSRR	21-Mar-2004	8.4		ITSRR is establishing a Technical Panel to provide a diversity of skills to be made available to TSR and OTSI.	WAUD.002.003.0001
ITSRR	21-Mar-2004	8.5	Investigations are thorough, systematic, rigorous, and risk-based	There is a standard investigation format in draft form (some way from finality)	Draft OTSI Investigation Procedures, Investigation Manual Version 3 (no date) - based on the approach of ATSB/AS5022/ICAM WAUD001.002.0147
ITSRR	21-Mar-2004	8.5		The draft investigation manual has a standard format to be followed. Currently no investigation reports have been completed and no training is in place. The investigation manual is in draft form only.	Interviews: MN5/LN12, MN7/LN15, AR15/MN 14 Documents: OTSI Investigation Manual v3 , regn # 4217, undated working draft.
ITSRR	21-Mar-2004	8.5		Previous investigations have not been systematic or risk based. OTSI has developed a draft Investigation Manual based on AS5022	WWAT.013.019.0245 WAUD.007.007.0578 WWAT.013.063.0139 WDOT.023.001.0001 Doc #04217 Investigation Manual
ITSRR	21-Mar-2004	8.6	Investigations determine root causes	It is too early to assess this	
ITSRR	21-Mar-2004	8.6			
ITSRR	21-Mar-2004	8.7	Investigations determine if the management and safety management systems contributed to the accident or incident	It is too early to assess this	
ITSRR	21-Mar-2004	8.7		Not demonstrated to date	WWAT.013.019.0245 WAUD.007.007.0578 WWAT.013.063.0139 WDOT.023.001.0001












Observations	Issues	Interview/Document Review ID	Ratings for Finding
			
	The question remains as to how independent it will be as a result of the ITSRR Chair and RailCorp CEO both reporting to the same Minister		
The current structure of ITSRR has the CIO reporting to the Chairperson but legislation states: The affairs of the ITSRR are to be managed and controlled by the Chief Executive.		AR10LN20 MN07LN15 LN17MR9	
OTSI has not yet completed any investigation reports		Interviews: MN5/LN12 MN7/LN15 AR15/MN14 Documents: 'Relationship between the OTSI and the TSR' Reg # 4217: OTSI Investigation Manual v3 , regn # 4217, OTSI website "www.otsi.nsw.gov.au"	
			
		MN07LN15	
		AR15/MN14	
Plans exist to develop investigation training programs using outside contractors such as Dedale incorporating SMS and HF and ICAM investigatory model		Interviews: MN5/LN12 MN7/LN15 AR15/MN14 Documents: Memo CI to Chairman Developmental and Program Issues for OTSI reg # 3729	
Training in areas such as risk and safety still have an OH&S flavour.		LN17MR9 MN04LN11	
			
Investigation manual based on ATSB model	Too early to tell	Interviews: MN5/LN12, MN7/LN15, AR15/MN 14 Documents: 'Relationship between the OTSI and the TSR' Reg # 4217: Unsigned position paper that outlines proposed relationship between the two operational arms of ITSS	
	Yet to be demonstrated	LN17MR9 MN04LN11 AR07LN16MN08	
		AR15/MN14	
Investigation manual based on ATSB model	Too early to tell	Interviews: MN5/LN12, MN7/LN15, AR15/MN 14 Documents: OTSI Investigation Manual v3 , regn # 4217, undated working draft.	
		MN07LN15	
			
Some evidence of fault tree analysis but not true root cause analysis	Yet to be demonstrated	Doc #04217 Investigation Manual MN05LN12	
			
	Yet to be demonstrated		



Parent Organisation	Date of Entry	Element ID	Sub Element	Finding(s)	Audit Evidence
ITSRR	21-Mar-2004	8.8	Investigations follow a standard format	The investigation categories are defined in the Act and OTSI procedures	Rail Safety Act 2002 Draft OTSI Investigation Manual Version 3 (no date)
ITSRR	21-Mar-2004	8.8		Draft procedures require operators to furnish "72 hour" report to determine initial facts for decision on level of investigation. Threshold appears appropriate.	Interviews: MN5/LN12, MN7/LN15, AR15/MN 14 Documents: 'Relationship between the OTSI and the TSR' Reg # 4217: Unsigned position paper that outlines proposed relationship between the two operational arms of ITSS
ITSRR	21-Mar-2004	8.8		Not previously, but the new Investigation Manual and OTSI process should address this.	WWAT.013.019.0245 WAUD.007.007.0578 WWAT.013.063.0139 WDOT.023.001.0001 Doc #04217 Investigation Manual
ITSRR	21-Mar-2004	8.9	Investigation results affect ITSRR and MoT policy	There are no prior ITSRR investigation results but prior TSB recommendations are being implemented by ITSRR	Evidence of this is scattered because of the current attempts to create an effective document system Status of Implementation (of Glenbrook) updated on 14/01/04, no evidence of ownership or control - table provided (SCOI Number 04344)
ITSRR	21-Mar-2004	8.10	Investigation results affect rail authority policy	This has been the case for Waterfall, but there was no evidence of prior influence	
ITSRR	21-Mar-2004	8.10		Confidentiality for rail employees is maintained	Draft OTSI Investigation Manual Version 3 (no date) Confidential Safety Information Reporting Scheme (CSIRS)
ITSRR	21-Mar-2004	8.11	Threshold to commence investigations is appropriate	A system is in place for rail employees and the public to report safety issues confidentially. It is too early to assess the appropriateness of the system.	Confidential Safety Information Reporting Scheme (CSIRS)
ITSRR	21-Mar-2004	8.11		OTSI have set up a Confidential Incident Reporting System (CSIRS). Good checks and balances exist to ensure confidentiality. Reports can be made online, by phone, fax or mail	Interviews: MN5/LN12 MN7/LN15 Documents: 'Relationship between the OTSI and the TSR' Reg # 4217: Unsigned position paper that outlines proposed relationship between the two operational arms of ITSS
ITSRR	21-Mar-2004	8.11		Thresholds are based on AS5022	Doc #04217 Investigation Manual
ITSRR	21-Mar-2004	8.12	Prior ITSRR investigation results have been implemented by ITSRR or MoT	Many of the results from Waterfall are still outstanding. A program to trace Waterfall recommendations has been initiated.	Doc #04344 Report on Waterfall Implementation
ITSRR	21-Mar-2004	8.13	ITSRR provides sufficient confidentiality for rail employees to speak openly	OTSI has established a Confidential Safety Information Scheme (CSIRS)	www.OTSI.NSW.GOV.AU
ITSRR	21-Mar-2004	8.14	There is an appropriate system in place for rail authority employees and the public to report safety issues confidentially	OTSI has established a Confidential Safety Information Scheme (CSIRS)	Confidential Safety Information Reporting Scheme Proforma
			<b>ITSRR Audits</b>		
ITSRR	21-Mar-2004	9.1	ITSRR has a robust audit function that identifies key rail authority safety issues	It is too early to assess if ITSRR has a 'robust audit function that identifies key rail safety issues'. ITSRR is in the early stages of developing an audit protocol or tool. This tool will be a derivative of one developed in the UK - it has 1122 questions.	
ITSRR	21-Mar-2004	9.1		ITSRR Compliance policy including audit methodologies is currently being developed	Interviews: MN4/LN11 Documents: Rail Safety Act 2002 Compliance and Enforcement Policy (draft V4) (reg # 3715) Transport Regulation Project (Audits and Inspections) (reg # 3780) Rail Safety Compliance Framework (reg # 3714)
ITSRR	21-Mar-2004	9.1		Monitoring of RailCorp readiness for terrorism response is in place	Interviewee explained involvement in identification of critical infrastructure. Has recently carried out an audit of RailCorp implementation of counter terrorism response plans in critical areas. Audit supplied [ 04346 ITSRR State rail 2003/4 Audit Rep
ITSRR	21-Mar-2004	9.1		No auditing of RailCorp training effectiveness is undertaken	Interviewee reported that there is security training for RailCorp security staff but no review or audit of this the effectiveness has been undertaken. Hde noted that he plans to do such an audit .
ITSRR	21-Mar-2004	9.1		RailCorp security plan potentially inadequate	Interviewee noted that railCorp security plan had been in draft for for several months and that it had not been signed by the CEO of railCorp. There are no KPIs or internal reporting mechanisms in RailCorp to cover the area of security.
ITSRR	21-Mar-2004	9.2	ITSRR audits are appropriately targeted	It is too early to assess this	
ITSRR	21-Mar-2004	9.3	Results are trended	It is too early to assess this	
ITSRR	21-Mar-2004	9.4	Corrective actions are required, tracked to completion and when appropriate, re-audited	It is too early to assess this	
ITSRR	21-Mar-2004	9.5	Audit cycle is appropriate	It is too early to assess this	

Observations	Issues	Interview/Document Review ID	Ratings for Finding
			
		Interviews: MN5/LN12, MN7/LN15, AR15/MN 14 Documents: 'Relationship between the OTSI and the TSR' Reg # 4217: OTSI Investigation Manual v3 , regn # 4217	
	Yet to be demonstrated	MN07LN15 MN05LN12	
		AR17/MC2	
If there wasn't a commission, there probably wouldn't be any real lessons learned.			
			
		Interviews: MN5/LN12 MN7/LN15 Documents: 'Relationship between the OTSI and the TSR' Reg # 4217:	
	While ITSRR and OTSI are still eveolving, there is a risk, due to limited resources, that the threshold may be set too high.	MN05LN12	
	Yet to be demonstrated		
Biggest challenge will be to overcome the perception and culture that these tyes of systems are just paid lipservice but always result in punishment or blame.		MN05LN12 MN07LN15	
System has been set up by staff on loan from ATSB and appears to be a very effective system technicaly. It will be critical for OTSI to keep info confidential from TSR. Managing perceptions will be difficult.	effectiveness and acceptance yet to be demonstrated		
	In the meantime some of the older 'ad hoc' audit processes continue to be used	AR16/MC1	
	Audit process has a large impact on system safety	Interviews: MN4/LN11 Documents: Rail Safety Act 2002 Compliance and Enforcement Policy (draft V4) (reg # 3715) Transport Regulation Project (Audits and Inspections) (reg # 3780) Rail Safety Compliance Framework (reg # 3714)	
		NI15 KL14	
		NI15 KL14	
		NI15 KL14	
			
			
			
			

Parent Organisation	Date of Entry	Element ID	Sub Element	Finding(s)	Audit Evidence
ITSRR	21-Mar-2004	9.5		A risk management approach to ITSRR's functions is planned to ensure that the audit cycle is appropriate	MB12_ 11-3-04 DRMB32 reg 04365 Risk management should pick this up
ITSRR	21-Mar-2004	9.6	Audit criteria match ITSRR policy and accreditation processes	It is too early to assess this	
ITSRR	21-Mar-2004	9.7	Process is well documented	It is too early to assess this	
ITSRR	21-Mar-2004	9.8	Auditors are sufficiently independent from other ITSRR functions and the rail authority	The Act and the organisation provide the basis for the independence of auditors from the rail authority. Compliance and Audit is part of the regulators organisation.	NSW Transport Legislation Amendment (Safety & Reliability) Act 2003
ITSRR	21-Mar-2004	9.9	Auditors are sufficiently qualified in both rail technical issues and system safety	It is too early to assess this.	
ITSRR	21-Mar-2004	9.9		Auditors do not have a great depth of experience or knowledge in system safety practices.	Interviews: MN4/LN11
ITSRR	21-Mar-2004	9.10	Auditors are appropriately trained	It is too early to assess this. A new audit protocol/tool is being developed (based on an existing UK example) & auditors will eventually be trained in the use of this.	
ITSRR	21-Mar-2004	9.11	Audit results affect ITSRR and MoT policy	It is too early to assess this	
ITSRR	21-Mar-2004	9.12	Audits take into consideration prior or concurrent ITSRR or rail authority accident/incident investigations	It is too early to assess this	
ITSRR	21-Mar-2004	9.13	ITSRR identifies rail authority safety culture issues and tracks and trends these issues	It is too early to assess this	
ITSRR	21-Mar-2004	9.13		No safety trend information system exists. Plans are in place to develop one.	Interviews: AR7/LN16/MN8 MN4/LN11 MN5/LN12 MN7/LN15 AR15/MN14
ITSRR	21-Mar-2004	9.14	Rail authority safety culture issues affect ITSRR policy.	It is too early to assess this	
ITSRR	21-Mar-2004	9.15	ITSRR audits rail authority construction and renewal	It is too early to assess this	
ITSRR	21-Mar-2004	9.16	There is an adequate system that periodically assesses the audit process to determine its effectiveness Changes are made if the process isn't adequate	Bullet 1: It is too early to assess this Bullet 2: It is too early to assess this	
			<b>Safety Accreditation</b>		
ITSRR	21-Mar-2004	10.1	Accreditation process is sufficient and adequate to determine safety of rail authority	The Accreditation Process is still a draft and is based on the National Transport Commission (NTC) Key Business Process 1. The question 'is it sufficient and adequate to determine the safety of the rail authority' is not easily demonstrated	Draft Rail Operator Accreditation Model Version 6.0, 23/02/04
ITSRR	21-Mar-2004	10.1		The accreditation process is currently flawed. It follows a coregulatory model which does not appear to be fully understood by the regulator or operators. ITSRR have written a report on a "Transport Regulation Project"	Interviews: MN4/LN11 Documents: Transport Regulation Project (Accreditation) (reg # 3780)
ITSRR	21-Mar-2004	10.1		Draft accreditation model for Rail Operators dated Feb 03	Rail Accreditation DRAFT Rail Operator Accreditation Model V 4.2 (reg # 3716)
ITSRR	21-Mar-2004	10.1		In the past the accreditation process under the Co-regulatory model has failed to adequately evaluate the 'fitness' of the major operator's safety management systems to ensure identified risks are controlled. The new ITSRR Accreditation model is still focused on AS4292, AS4360 and AS4801, none of which contain true Safety System Analysis requirements.  There is a complete lack of over arching regulation that defines requirements under the Legislation and provides the framework in which coregulation can be judged to be effective.  Under the previous regulatory regime, the operator was allowed to dictate the conditions of governance and effectiveness of the SMS.	SCOI Interim Report _LN17MR9 LN17AR08 WAUD.002.003.0140 WAUD.012.001.0371 WRES.001.006.0181 WWAT.002.395.0202
ITSRR	21-Mar-2004	10.2	Appropriate and sufficient information is required from rail authority to adequately determine accreditation	The draft Rail Operator Accreditation Model details what is required to be submitted by a rail authority. It is based on AS4292 Railway Safety Management (1995).	Draft Rail Operator Accreditation Model Version 6.0, 23/02/04
ITSRR	21-Mar-2004	10.2		Whilst the Accreditation model seeks information on SMS, risk and work place safety it does not seek the nomination of 'specified personnel' to be held accountable for the SMS.	WWAT.002.395.0202 WAUD.002.003.0140
ITSRR	21-Mar-2004	10.3	Cycle of accreditation is appropriate	Major operators (RailCorp, PN, ARTC) will be reviewed annually	
ITSRR	21-Mar-2004	10.4	Cycle of re-accreditation is appropriate	A 'Re-accreditation cycle' is not mentioned but at interview it was stated that major operators are subject to an annual renewal	Draft Rail Operator Accreditation Model Version 6.0, 23/02/04
ITSRR	21-Mar-2004	10.5	Accreditation activities are appropriately documented and maintained	This was a major deficiency of the previous regulator. It is too early to assess for ITSRR.	

Observations	Issues	Interview/Document Review ID	Ratings for Finding
Continuity of work is required since there is little awareness of risk management		MB12_11-3-04 and DRMB32	
			
			
			
			
	Auditors should be qualified in system safety	Interviews: MN4/LN11	
		AR16/MC1	
			
			
			
		Interviews: AR7/LN16/MN8 MN4/LN11 MN5/LN12 MN7/LN15 AR15/MN14	
			
			
			
	None of the ITSRR Processes are final and they do not show evidence of Document Control - that is 'written by', checked by', authorised by' etc		
New accreditation policy currently under development. Previous policy was not robust and did not have sufficient process to ensure safety systems in place and complied with	Very important for system safety of operators that accreditation process clear, transparent and enforced.	Interviews: MN4/LN11 Documents: Transport Regulation Project (reg # 3780)	
	Important that Operators know what is expected of them under accreditation requirements asap	Rail Accreditation DRAFT Rail Operator Accreditation Model V 4.2 (reg # 3716)	
There are 75 'accredited' rail entities  RailCorp accreditation was based on the shakey accreditation state of SRA and noted that the RailCorp application had not identified who was accountable for hazard identification and risk management.	Neither ITSRR or RailCorp has demonstrated an ability to manage risk at a corporate level and flow down requirements via an fully integrated SMS. ITSRR does not currently possess the skills base to judge effectiveness or fitness of the RailCorp risk approaches	LN17MR9 LN17AR08	
	AS4292 is overdue for a review and may no longer be 'appropriate and sufficient' to adequately determine accreditation requirements without significant supporting guidance.		
The information required under the conditions of accreditation vary in intent and in many cases do not provide a clear basis of verification of completion or satisfaction		WAUD.003.001.0045	
There are 75 accredited organisations. Process cycles are yet to be fully determined		WAUD.002.003.0137 WAUD.002,003.0140	
			
			

Parent Organisation	Date of Entry	Element ID	Sub Element	Finding(s)	Audit Evidence
ITSRR	21-Mar-2004	10.6	Accreditation results are tracked and trended	First Accreditation Milestone meetings between ITSRR and RailCorp appear to be ineffective in effectively tracking progress toward full accreditation.	WAUD.003.001.0303
ITSRR	21-Mar-2004	10.7	Accreditation trending results affect policy	It is too early to assess this	
ITSRR	21-Mar-2004	10.8	There are sufficient and adequate rail industry standards to support the accreditation process	In Australia rail industry standards to support the accreditation process currently consist of AS4292 and the NTC Key Business Processes. Generally the Australian industry does not use standards from elsewhere	Draft Rail Operator Accreditation Model Version 6.0, 23/02/04 AS4292
ITSRR	21-Mar-2004	10.8		The current standards set AS4292 is dated and predominantly based on quality management constructs. There isn't a rail standard that is based on a true Safety Systems Analysis construct.	WAUD.002.001.0356
ITSRR	21-Mar-2004	10.9	Accreditation process considers all stakeholders that can affect safety	It is too early to assess this	Draft Rail Operator Accreditation Model Version 6.0, 23/02/04
ITSRR	21-Mar-2004	10.9		Accreditation process does not have a direct focus on senior management and their governance and accountability structure to support the coregulatory model.	WAUD.002.003.0140
ITSRR	22-Mar-2004	10.10	Accreditation review and approval process is adequate	All previous accreditations, including the current provisional accreditation of RailCorp must be considered questionable.	The SCOI Interim report and statements by interviewees suggest that there is doubt as to the validity of all previous accreditations due to the previous regulator being under-resourced, lacking capacity and competency and not keeping adequate records.
ITSRR	23-Mar-2004	10.11	ITSRR tracks and trends rail safety performance levels and goals.	Yet to be demonstrated	
ITSRR	24-Mar-2004	10.12	ITSRR sets minimum requirements and standards.	Yet to be demonstrated	
ITSRR	25-Mar-2004	10.13.1	ITSRR communicates those requirements adequately (through clear guidelines) to the rail authority.	Yet to be demonstrated	
ITSRR	26-Mar-2004	10.13.2	ITSRR gives guidance to the rail authority of how to successfully meet accreditation requirements	Some guidance material has been developed and has been circulated to industry for comment via the internet.	
ITSRR	27-Mar-2004	10.14	ITSRR accreditation process covers all key areas of rail authority and includes the entire system life cycle	Accreditation process does not have a direct focus on senior management and their governance and accountability structure to support the coregulatory model. The draft accreditation model does provide sufficient focus on safety system and risk analysis.	WAUD.002.003.0140
ITSRR	21-Mar-2004	10.15	Accreditation process evaluates rail authority safety management system and all other systems that affect safety	This was not the case for previous regulators and is yet to be demonstrated by ITSRR.	
ITSRR	21-Mar-2004	10.16	Accreditation process is systematic, integrated, risk-based, and rigorous	It is not clear that the accreditation process is fully 'systematic, integrated, risk based and rigorous'. ITSRR is in the process of accrediting ARTC - the only new application that has been submitted since ITSRR was formed. The results of the process	Draft Rail Operator Accreditation Model Version 6.0, 23/02/04
ITSRR	21-Mar-2004	10.16		The Accreditation model is still focused on AS4292, AS4360 and AS4801, none of which contain true Safety System Analysis requirements. However it does focus on the SMS and Safeworking Rules but with a direct focus by auditors on safeworking and OH&S.	WAUD.002.003.0140 CEO - Regulator PD WAUD.003.001.0164 Audit Officer PD
ITSRR	21-Mar-2004	10.16		Draft process does not appear to have these characteristics.	WAUD.002.003.0140
ITSRR	21-Mar-2004	10.17	There is sufficient ITSRR review and approval of rail authority accreditation	The ARTC application mentioned in 10.16 will be subject to review (by the ITSRR Advisory Board) once a recommendation is made	Draft Rail Operator Accreditation Model Version 6.0, 23/02/04
ITSRR	21-Mar-2004	10.17		Provisional Accreditation was granted to RailCorp in a very short period (6 days) taking effect 1 Jan 04. The DG reviewed and approved the recommendation from the A/Exec Dir in 1 day (23-24Dec)	WAUD.003.001.0041 WAUD.003.001.0043
ITSRR	21-Mar-2004	10.18	ITSRR documents their accreditation process and retains all pertinent records	It is too early to assess this	
ITSRR	21-Mar-2004	10.19	ITSRR differentiates between occupational safety and system safety in its regulatory framework	The Regulatory framework is not clear on differentiating between OH&S and system safety.	NSW Transport Legislation Amendment (Safety & Reliability) Act 2003 NSW Rail Safety Act 2002
ITSRR	21-Mar-2004	10.20	ITSRR verifies rail authority operational readiness before giving final approval before a new system or significant modification is activated	The accreditation model is still focused on AS4292, AS4360 and AS4801, none of which contain true Safety System Analysis requirements.	WAUD.002.003.0140 WAUD.002.001.0356
ITSRR	21-Mar-2004	10.20		Since the Rail Safety Act was amended to remove the need for a System Safety Plan, it will be difficult to judge the operational readiness for a rail authority that is developing its safety management system .	
ITSRR	21-Mar-2004	10.21	There is an appropriate and adequate safety regulation waiver or deviation policy	No evidence seen	
ITSRR	21-Mar-2004	10.21		ATRICS, a totally new train management system that interfaces to safety critical systems and changes the interface for train control was introduced without a material change review by the regulator. At the RailCorp presentation, the Dir Safety & Environme	WAUD.003.001.0150 Transcript of RailCorp presentation to SCOI Waterfall Rail Accident LN25BM16
ITSRR	21-Mar-2004	10.22	ITSRR is a leader in developing transit safety design criteria	No evidence has been seen that ITSRR develops 'transit safety design criteria'.	
ITSRR	21-Mar-2004	10.23	Identify medical standards for employees in safety critical positions	New medical standards are being legislated for safety critical positions	Adoption by NSW of draft National Medical Standards by May 2004

Observations	Issues	Interview/Document Review ID	Ratings for Finding
	yet to be demonstrated		
	The question is are they 'sufficient & adequate'		
There is a lack of rail industry standards to support design assessment and SMS validation	There needs to be serious consideration towards establishing baselines for acceptable practice with regards to rolling stock design, especially safety critical systems.		
	ITSRR process yet to be established and demonstrated.	WAUD.003.001.0041 WAUD.003.001.0043 Safety Review Brief by ITSRR AR07LN16MN08 MN04LN11 LN17MR9 LN17AR08	
		<a href="mailto:WWW.transportregulator@nsw.gov.au">WWW.transportregulator@nsw.gov.au</a>	
		_LN17MR9	
	The lack of an appropriate model, such as a system safety program plan, safety case etc, will make it difficult for the regulator to establish an appropriate basis of review for the rail entities safety management system maturity and validity	WRES.001.006.0092	
	Adequacy of AS4292. Lack of an appropriate model for validation the maturity of the safety management system will prevent an appropriate systems approach to accreditation	WRES.001.006.0092	
The CEO is the current regulator since authority and accountability for accreditation has not been delegated, yet the CEO does not possess any Safety System analysis skills.		WAUD.003.001.0004	
ITSRR does not possess the competencies to effectively implement an integrated systematic risk based model.		PD CEO, PD Manager WAUD.003.001.0164	
	Adequacy of AS4292		
The accreditation basis of SRA and RIC has been challenged yet has still not been reviewed or fully addressed as part of RailCorp's accreditation.		LN17AR08	
Records were not well maintained by previous regime. ITSSR has plans for a robust information and record management system	yet to be demonstrated		
	The lack of a requirement for a rail authority wanting to be accredited to develop some form of System Safety Plan such as a systems safety program plan, safety case or other model to define the framework and maturity of an evolving safety management system, it will be difficult for the Regulator to make valid judgements regarding operational readiness	WRES.001.006.0092	
There is no clear understanding between the regulator and the operators as to what constitutes a need to advise the regulator for a material change in the operation and SMS.		WAUD.003.001.0302	
No such system discovered or reported by ITSRR.			

Parent Organisation	Date of Entry	Element ID	Sub Element	Finding(s)	Audit Evidence
ITSRR	21-Mar-2004	10.24	Ensure that the medical standards and frequency of assessment are appropriate to the level of assessed risk for all positions	The level of risk for the different positions has been assessed	Adoption by NSW of draft National Medical Standards by May 2004
ITSRR	21-Mar-2004	10.25	Ensure that protocols 10.23 and 10.24 are reviewed regularly for currency	Not yet formally introduced but RailCorp is introducing ahead of the legislation	Adoption by NSW of draft National Medical Standards by May 2004
ITSRR	21-Mar-2004	10.26	Ensure that the fitness to work systems utilised by the operators are "fit for purpose"	RailCorp currently in the process of demonstrating to ITSRR that this is the case There was some concern expressed as to the validity of the processes and procedures used to release trains to service following maintenance, and the driver acceptance processes.	RailCorp Accreditation Milestones WAUD.002.001.0011
ITSRR	21-Mar-2004	10.27.1	Ensure that the operator's systems to ensure daily fitness to function are "fit for purpose"	RailCorp currently in the process of demonstrating to ITSRR that this is the case	RailCorp Accreditation Milestones WAUD.002.001.0011
ITSRR	21-Mar-2004	10.27.2	Ensure that both systems are effective and utilised	RailCorp currently in the process of demonstrating to ITSRR that this is the case	RailCorp Accreditation Milestones WAUD.002.001.0011
			<b>Partnership with the Rail Authority</b>		
ITSRR	21-Mar-2004	11.1	* ITSRR partners with the rail industry to improve safety  * ITSRR coordinates with the rail industry to develop safety standards (especially safety design criteria)		
ITSRR	21-Mar-2004	11.2	ITSRR tracks new rail and safety technology	There was some evidence (anecdotal only) of informal tracking by individuals.	
ITSRR	21-Mar-2004	11.2		ITSRR has establishment for a research and analysis function.	WAUD.002.003.0078
ITSRR	21-Mar-2004	11.3	ITSRR regularly liaises with the rail industry to solicit input to the regulatory process	ITSRR has circulated draft accreditation models, and enforcement models to industry and has a good website that provides documents for comment.	WWW.transportregulator.nsw.gov.au
ITSRR	21-Mar-2004	11.4	ITSRR identifies and tracks industry and non-rail safety best practices	Yet to be demonstrated	
ITSRR	21-Mar-2004	11.5	ITSRR implements rail safety and non-rail safety best practices where appropriate	A Human factors specialist has been engaged.	Interviews: AR7/LN16/MN8
ITSRR	21-Mar-2004	xxx		Emergency preparedness arrangements exist for transport coordination	ITSRR represented on State Emergency management Committee (SEMC). Lists of transport agency contacts claimed to exist for coordination purposes. Transport Services Control Centre at Everleigh exists but never been invoked according to interviewee.