RISSB

RAIL INDUSTRY SAFETY AND STANDARDS BOARD

ABN: 58 105 001 465

Guideline
Rail Emergency Management Planning

Notice to Users

This RISSB product has been developed using input from rail experts from across the rail industry and represents good practice for the industry. The reliance upon or manner of use of this RISSB product is the sole responsibility of the user who is to assess whether it meets their organisation's operational environment and risk profile.

Document Control

Identification

Document Title	Version	Date
Rail Emergency Management Planning (Review Draft)	2.0	26/11/2018

Document History

Publication Version	Effective Date	Reason for and Extent of Change(s)
1.0	17 March 2010	First publication
2.0	26/11/2018	Updated law & regulations references

Copyright

Referenced Documents

Item	Title	Issued By	Doc No	Issue
1	Australian Capital Territory Emergency Plan	ACT Emergency Services Agency <www.esa.act.gov.au>	version 5	2012
2	Business continuity management	SAI Global < https://infostore.saiglobal.com/	HB 221	2004
3	Developing and Maintaining Emergency Operations Plans	Fema (USA) <www.fema.com>	N/A	2010
4	Planning for emergencies in facilities)	SAI Global < https://infostore.saiglobal.com/	AS 3745 Amdt2	2018
5	National strategy for disaster resilience	Emergency Management Australia <https://www.homeaffairs.gov.au/about/emergency-management/em-australia>	Manual I	2004
6	Emergency Management Guide for Business and Industry	FEMA (USA) <www.fema.com>	N/A	1993
7	Emergency Management Manual Victoria	Emergency Management Victoria (EMV) <https://www.emv.vic.gov.au/>	N/A	2015
8	Reporting Requirements for Notifiable Occurrences	The Office of the National Rail Safety Regulator (ONRSR) < www.onrsr.com.au >	Version 1	2017
9	Management system integration	SAI Global < https://infostore.saiglobal.com/ >	AS/NZS 4581	1999
10	Rail Safety National Law	Office of the National Rail Safety Regulator < https://www.onrsr.com.au/about-onrsr/legislation>	N/A	
11	Rail Safety National Regulations	Office of the National Rail Safety Regulator < https://www.onrsr.com.au/about-onrsr/legislation>	N/A	
12	Preparation of a Rail Safety Management System guideline	Office of the National Rail Safety Regulator www.onrsr.com.au	N/A	2013
13	New South Wales STATE DISASTER PLAN (DISPLAN)	State Emergency Management Committee <www.emergency.nsw.gov.au>	N/A	2006
14	Northern Territory Emergency Management Plan	Northern Territory Emergency Services <www.pfes@nt.gov.au>	2	2009
15	Multi Agency Plans, Policies and Practice Notes	Emergency Management Victoria (EMV) https://www.emv.vic.gov.au/	N/A	2009
16	Railway Accident Investigation Guidelines for Rail Transport Operators Police and Emergency Services Personnel	Australian Transport Safety Board <www.atsb.gov.au>	Edition 3	2010
17	Risk Management – Principle and Guidelines	SAI Global < https://infostore.saiglobal.com/	AS/NZS ISO 31000	2009
18	Security Handbook – Volume 1 and 2	Rail Industry Safety and Standards Board <www.rissb.com.au>	N/A	2009
19	Security Risk Management	SAI Global < https://infostore.saiglobal.com/	HB 167	2006
20	Societal security – Guideline for incident preparedness and operational continuity management	SAI Global < https://infostore.saiglobal.com/	ISO/PAS 22399	2007
21	Queensland state disaster management plan	Queensland State Disaster Management https://www.dpc.sa.gov.au	N/A	2008

22	The South Australian State Emergency Management Plan (SEMP)	State Emergency Management Committee <www.safecom.sa.gov.au>	1.1	
23	Tasmanian Emergency Management Plan (TEMP)	State Emergency Management Committee <www.ses.tas.gov.au>	Issue 8	
24	The Australasian inter - service Incident management system (AIIMS) – A management system for any emergency	National Council for Fire and Emergency Services <www.afac.com.au>	3rd Edition	2004
25	STATE HAZARD PLAN FOR PTA RAIL CRASH (WESTPLAN – PTA RAIL CRASH)	https://www.oem.wa.gov.au/	N/A	2016
26	STATE HAZARD PLAN FOR BROOKFIELD RAIL CRASH EMERGENCIES (WESTPLAN - BROOKFIELD RAIL CRASH EMERGENCIES)	https://www.oem.wa.gov.au/Public transport authority <www.pta.gov.wa.au>	N/A	2016

Glossary

For this national guideline, rail emergency management terms have been drawn from national emergency management practices and adapted for the Australian rail industry. They are additional to terms used in current versions of the Rail Safety National Law and the RISSB glossary and they are generic.

Variations exist between the states (the jurisdictions) and specific meanings for terms should be checked in the all-hazard plans for the relevant area (see Table 3 in Section 3.3).

In some jurisdictions the term ‘disaster’ is used to describe situations that generate broad/community-wide consequences requiring whole-of-government support. In other jurisdictions ‘emergency’ and ‘disaster’ are used interchangeably. The preferred term used in this Guideline is ‘emergency’ to maintain consistency with the Rail Safety National Law and Regulations.

Rail emergency management terms

Command - The internal direction of an organisation’s resources in an emergency. Command operates vertically within each organisation.

Comprehensive spectrum/approach - A nationally agreed way of thinking about emergency management by considering prevention and mitigation, preparedness, response and recovery (PPRR) aspects of emergencies and their consequences. Refer to EMA’s Emergency Management - Concepts and Principles in Referenced Documents.

Control - The overall direction and management of response/recovery activities for an emergency which usually involves coordinating other organisation’s resources to meet the needs of the situation (i.e. control operates horizontally across organisations).

Control agency - A generic term used to identify the organisation with overall responsibility for response to the emergency.

Coordination - The systematic acquisition and application of resources (workers, equipment, goods and services). Coordination can operate vertically within an organisation (as a function of command), as well as horizontally across organisations (as a function of control).

Crisis - A generic term for any situation that threatens the core assets and/or mission-critical activities of the organisation. Core assets include critical intangibles (e.g. reputation/brand, relationships, corporate knowledge, organisational/safety culture, capabilities) and tangibles (e.g. people, contracts, physical assets, e.g. infrastructure, rolling stock, sites, equipment).

Crisis management team - A generic term for the group of senior rail managers who deal with the crisis aspects of emergencies, as part of broader business continuity arrangements. In this Guideline this is broadly referred to as 'strategic response'.

Debrief - A meeting to review the effectiveness of the response/recovery operation.

Emergency - See 'rail emergency'.

Emergency services - A generic term for Police, Fire, Ambulance and the State Emergency Service agencies in each jurisdiction. This term is more specific than 'emergency services organisation' which includes other organisations which also have response and recovery duties.

Incident - Any event/breach that is dealt with by rail transport operators without assistance from non-rail organisations and does not evolve into a rail emergency, e.g. 'near misses', signal failures, partial derailments etc.

Incident response coordinator (IRC) - A generic term for a rail transport operators' first point of contact for rail incidents and emergencies, responsible for initiating the rail transport operator's response.

Interoperability - The capacity of organisations to work together in a compatible and efficient way.

Lessons identified - A generic phrase for things identified in operations or exercises that represent opportunities for improving emergency management arrangements and/or acknowledging excellence or innovation.

Liaison officer - A worker nominated to represent his or her organisation for emergency management. Liaison officers provide advice about their organisation and its capabilities and may be authorised to commit resources.

Logistics function - The acquisition and provision of human and physical resources, facilities, services and materials to support the operation's function for an emergency.

Operation - Planned and coordinated measures that resolve a genuine emergency (i.e. not a simulated activity). Can also be known as 'response'.

Operations function - The tasking/application of human and physical resources, facilities, services and materials for an emergency.

Operations management/response (rail) - A generic phrase used in this Guideline for rail middle-senior management activities mainly dealing with the reinstatement of train services following a rail emergency.

This includes but is not limited to:

- temporary re-allocation of current resources/priorities;
- addressing contractual matters with customers;
- resolving internal protocol matters for revised paths/schedules/access etc;
- resolving issues emerging from tactical response activities;
- liaising with strategic response.

Planning function - The collection, analysis and distribution of information about an emergency and the development of plans to resolve it (which are implemented by the operations function).

PPRR - Another way of describing the 'comprehensive approach'. PPRR is the acronym for - prevention and mitigation, preparedness, response and recovery.

Preparedness - Planned and coordinated measures so safe and effective response and recovery can occur.

Prevention and mitigation - Planned and coordinated measures that eliminate or reduce the frequency and consequences of emergencies.

Rail Commander - The recommended term for the worker undertaking the rail command function. In a rail emergency the rail commander is:

- accountable to the rail infrastructure manager and the control agency at the site;
- responsible for eliminating or mitigating rail hazards at the site, managing/coordinating the rail response and arranging expert rail advice to be provided to the control agency/any other commander;
- authorised to commit/second resources and give directions to rail workers on- site.

Rail command function - A generic phrase for the management and/or coordination of the rail response, whether emergency services are in attendance or not. The rail command function is usually undertaken by a trained rail worker and it can change during response.

In the first instance, when rail workers are at the emergency site, the most able worker will usually assume this role. When rail workers are not at the emergency site, the rail infrastructure manager is usually broadly responsible for this function.

Rail emergency - Any event when loss of life, property and/or damage to the environment occur or are imminent requiring the immediate deployment and coordination of additional resources which are beyond the affected rail transport operators' capabilities.

Rail emergencies are more complex and have more serious consequences than incidents. They require a multi-agency response and a designated Control Agency provides overall coordination at the emergency site. In most jurisdictions' emergency services perform this role.

Rail emergency management - The managerial function and framework used to reduce the frequency and consequences of rail emergencies; and respond to and recover from them. It draws on accepted rail practices and priorities and current State/Territory emergency arrangements.

Rail emergency management plan - A document that is the agreed record of roles, responsibilities, arrangements and strategies for managing rail emergencies.

Rail emergency procedures – Documented instructions for use in rail incidents and emergencies.

Rail response team - The team of rail workers who deal with the rail response at the emergency at site.

Recovery - In the rail context, recovery means planned and coordinated measures, so services can be resumed as soon as possible with safer, improved or renewed systems in place. It includes but is not limited to supporting emergency-affected individuals, asset repairs, reinstating train services, managing commercial environmental impacts. By agreement, it can also include coordinated activities with government agencies with recovery responsibilities.

Response - Planned and coordinated measures that resolve emergencies. Can also be known as an 'operation'.

Site Control - A place at the rail emergency site that the control agency nominates as the main meeting point for all commanders. Also, be known as forward/command post or control point.

Site controller - In this guideline this is a generic term for the control agency worker at the emergency site who oversees and coordinates response activities. All commanders report to the site controller. Most jurisdictions have specific terms for this role and reference and this can be checked in the State/Territory emergency plan) e.g. in NSW, site controller is a specific term and is defined in the NSW DISPLAN.

SITREPS - Situation reports.

SMEAC - An acronym for a basic briefing structure that includes the following points: situation, mission, execution, administration, control/coordination.

Strategic management/response - A generic phrase used in this guideline for senior management activities focused on resolving or mitigating crisis aspects of the emergency, usually managed by the crisis management team i.e. organisation-wide matters or matters that are likely to affect the direction of the organisation, e.g. criminal investigations or safety/security policy matters.

Tactical management response - A generic phrase used in this guideline for activities managed by the rail response team at the site (coordinated by the rail commander) and off-site by the rail infrastructure manager.

Test/testing - An activity that is conducted to validate (confirm or otherwise) emergency management arrangements. Standard 'testing' activities include but are not limited to: exercises, workshops, site-based activities and debriefs for operations.

Contents

1 Introduction

1.1 Purpose of the guideline

This guideline provides a national rail emergency management resource for the Australian rail industry.

It clarifies the legislative rail emergency management requirements in the Rail Safety National Law and regulations to enhance rail emergency management capability and organisational resilience.

NOTE - All legislative references in this guideline are related to the Rail Safety National Law and Regulations. Rail transport operators should check how these references have been incorporated into relevant state-based legislation/regulations.

This guideline is not a rail emergency plan or procedure and it is not intended to be used for response and recovery operations.

For this guideline, incidents (e.g. signal failures, 'near misses', partial derailments) are not addressed in any detail, because they are managed 'in-house'. However, incident management processes should be compatible with rail emergency arrangements, so a common approach is used for all situations.

1.1.1 How to use this guideline

This guideline is presented in five sections:

Section 1 - Introduction sets the context for the guideline.

Section 2 - Requirements summarises the rail emergency management requirements in the Rail Safety National Law and Regulations. Details are provided in section 5.1.

Section 3 - Roles and responsibilities provides a summary of roles and responsibilities for multi-agency response for rail emergencies.

Section 4 - Guidance includes information about the requirements identified in section 2 and ideas for meeting them. It has four sub-sections:

- 4.1 - Prevention and mitigation;
- 4.2 - Preparedness;
- 4.3 - Response;
- 4.4 - Recovery.

Section 5 - Appendices include supporting material including some samples, templates and self- assessment tools.

A series of 'Checking In' points break up the guideline content. They provide an opportunity to think about rail emergency management in another way. These points are neither a summary of the material or audit questions. Several case studies are also included to highlight important aspects for rail emergency management.

1.2 Intended audience

This guideline is intended for all Australian rail transport operators, which vary between large, national freight operators, urban passenger systems and very small heritage operators, who might only operate once a month.

Specifically, it is designed for operational and safety managers or supervisors who have responsibilities for rail emergency management.

This guideline may also be used as a reference by the rail safety regulators panel, emergency services and other government agencies because it identifies priority areas for rail emergency management, from the rail industry's perspective.

1.3 Background

This guideline is the response to a resolution made in April 2008 between RISSB and the rail safety regulators panel to address inconsistencies in rail emergency management plans and, more broadly, to enhance multi-agency response arrangements. Subsequently, it outlines comprehensive emergency management guidelines for the rail context and provides a model plan structure and review guide that can be adjusted by rail transport operators as required.

1.4 Context

Rail emergency management is the component of the safety management system that provides a comprehensive approach for dealing with rail emergencies. It draws on accepted rail practices, as well as current State/Territory (jurisdictional) emergency arrangements. Figure 1 shows that rail emergency management has links with safety, security and safeworking systems (for prevention), as well as crisis management, business continuity/resilience programs and whole-of-government operations (for response and recovery). Nevertheless, recovery arrangements are of most strategic value because they provide a framework to cope with the consequences and resume 'business as usual' operations as soon as possible.

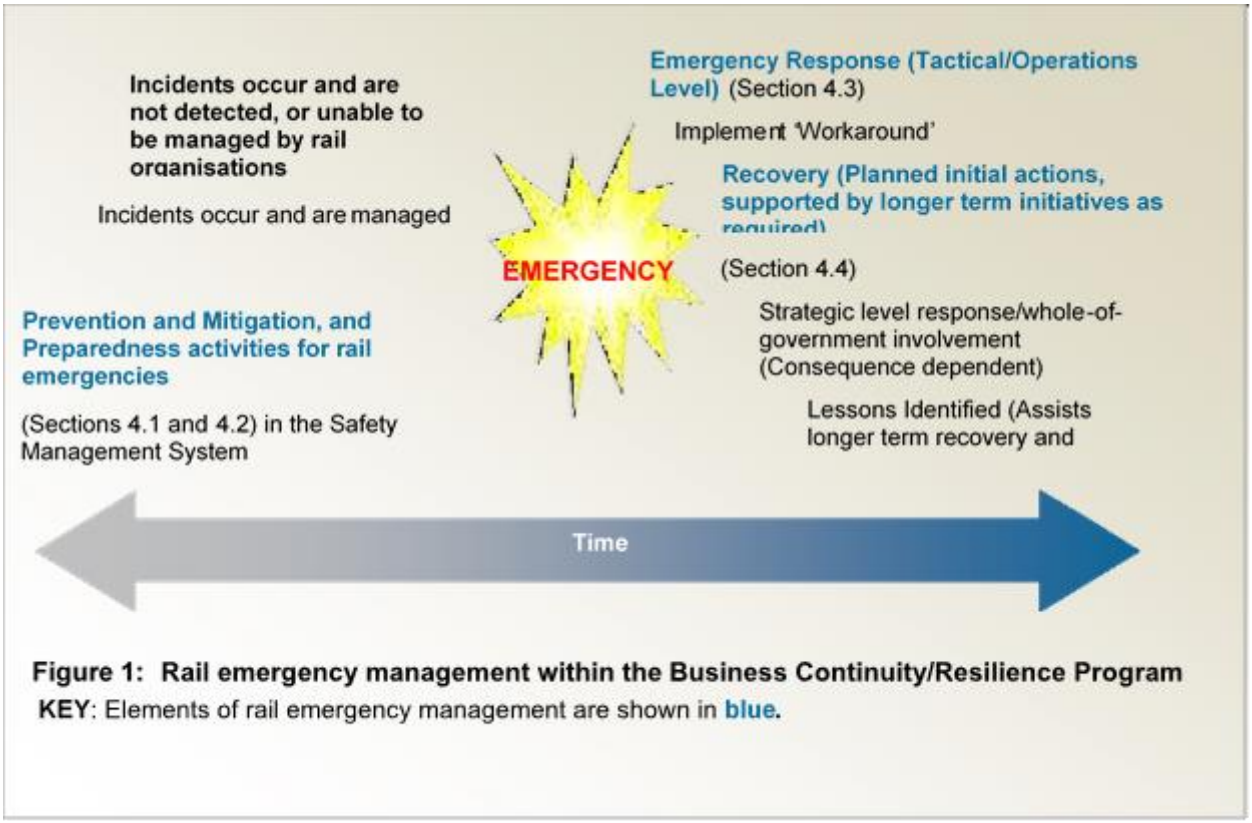

Figure 1: Rail emergency management within the Business Continuity/Resilience Program
KEY: Elements of rail emergency management are shown in **blue.**

Figure 1: Rail emergency management within the business continuity / resilience program

1.5 Defining rail emergencies

A rail emergency is any event when loss of life, property and/or damage to the environment occurs or is imminent and the immediate deployment and coordination of additional resources is required which is beyond the affected rail transport operators' capabilities.

Rail emergencies require a multi-agency response, usually including the emergency services. They can result from failures in train operations (e.g. derailment, collision) or other external factors (e.g. trespass, fires, floods). Table 1 identifies typical rail emergencies and links them to 'notifiable occurrences' from the rail safety regulations.

Table 1: Rail emergencies and notifiable occurrences

Row	Rail Emergency	Notifiable Occurrence	Category A or B
1	Bio-security emergency (i.e. animal, plant, pest diseases e.g. foot and mouth).	N/A.	N/A.
2	Collision (with another train, tram, vehicle, object or person).	When it causes death, serious injury, significant property damage.	A (i).
		Occurs at a road or pedestrian crossing between rolling stock and a road vehicle/person.	A (iv).
		Collision with other object (not a road vehicle/person).	B (ii)

3	Criminal activity (e.g. intentional violence, civil disturbances, vandalism). Excludes terrorist attack.	Assault on railway property, i.e. a person inflicts injury on another person.	B (xiv).
		Wilful or unlawful damage to rail infrastructure or rolling stock that reduces the safety of train operations and/or people.	B (xvii).
4	Derailment.	Derailment.	A (ii) running line. B (i) other than running line.
5	Electrical situation.	Infrastructure irregularity (electrical).	B (xi).
6	Explosion/fire.	Fire or explosion on or in rail infrastructure or rolling stock.	A (v) and B (xiii).
7	Medical emergency injury/illness (workers or passengers).	Any event causing death or serious injury.	A (i).
		Person caught in the door of rolling stock.	B (vii).
8	Natural hazard (storms including tornado, cyclone, flood, earthquake, landslip/rock fall, heatwave, tsunami bush/wild fire).	N/A.	N/A.
9	Spills and potential fires (e.g. chemicals, oil, contaminated products, dangerous goods).	Dangerous goods emergencies.	B (ix).
10	Terrorist attack.	Suspected terrorist attack.	A (vi).

2 Requirements

2.1 Sources

The following documents establish national emergency management obligations for rail transport operators:

- Rail Safety National Law and Regulations.
- National guideline for the preparation of a rail safety management system (June 2008).

All legislative references in this guideline are related to the Rail Safety National Law and Regulations

Rail transport operators should check how these references have been incorporated into relevant state-based legislation and regulations.

The Rail Safety National Law and Regulations require rail transport operators to:

- Maintain an emergency management plan.
- Test the arrangements in the plan.
- Take action so that rail workers can use the plan when required.
  Table 2 summarises the references. (See Appendix A.1 for more details).

Table 2: Requirements summary

Row	Themes	Source	
1			
1.1	General Requirements	Rail Safety National Law	
1.2	Consultation Requirements	Rail Safety National Law	
		Rail Safety National Regulations	
1.3	Specified Plan Contents	Rail Safety National Regulations	
1.4	Distribution & Accessibility	Rail Safety National Regulations	
2	Testing the Plan	Rail Safety National Regulations	
3	Implementing the Plan	Rail Safety National Law	
		Rail Safety National Regulations	

3 Roles and responsibilities

3.1 Introduction

Partnerships between organisations characterise emergency management and this section provides a national overview of roles and responsibilities for rail emergency management. Variations exist within and between jurisdictions and roles and responsibilities should be checked regularly.

3.2 Comprehensive responsibilities for rail emergency management

Comprehensive rail emergency management responsibilities are summarised below, but this listing in not intended to be exhaustive or prescriptive. Vertically integrated rail transport operators should refer to both Sections 3.2.2 and 3.2.3.

3.2.1 Emergency response and recovery organisations (non-rail)

These are responsible for maintaining rail emergency management capability to support rail transport operators and public safety.

Prevention and mitigation

- Support rail safety community awareness initiatives e.g. level crossing awareness, reporting suspicious activity/crimes on the rail network.
- Include rail safety information in training programs.
- Update data sets with information for rail emergencies (e.g. rail contact details held by communications centres).

Preparedness

- Clarify agency roles and responsibilities for rail emergencies and maintain related plans/standard operating procedures.
- Assist rail transport operators to update the rail emergency plan and distribute it.
- Maintain rail response and recovery capability.

3.2.2 Rolling stock operators

Overall responsibility for rolling stock, train crew and passengers/freight ('Above rail' aspects of rail operations).

Prevention and mitigation

All activities that mitigate rail emergencies and prevents failures in rail emergency management. This could include but is not limited to:

- maintaining rolling stock/infrastructure and systems to current standards;
- research/risk assessment: review reports and analyse trends in rail emergencies, as well as infrastructure/rolling stock maintenance activities;
- maintaining and sharing access and egress information and communications services where practicable;
- using business continuity processes to prevent/mitigate the impacts of emergencies/crises.

Preparedness

- Participate in the preparation of the rail emergency plan.
- Maintain the capability to implement the arrangements in the plan.
- Participate in/lead preparedness activities, including testing activities for workers at all levels.
- Provide above-rail specific information to support emergency planning (e.g. rolling stock information, advice about freight types, quantities, routes).
- Review lessons identified and take action as appropriate.

Response

- If first 'on scene' and able, assume command and limit further damage/loss when possible.
- Report the emergency to the rail infrastructure manager and provide ongoing updates.
- Support the rail command function and manage above rail aspects.
- Participate in the rail safety investigation/s process.
- Make new arrangements for passengers, freight, rolling stock and environment recovery.
- Update customers and other stakeholders regularly.
- Record actions taken in response and associated costs.
- Arrange/participate in debriefs.

Recovery

- Implement and monitor recovery of the affected people and areas (e.g. rolling stock, environment). For 'affected people' also consider families, staff not directly involved in the response, community members.

- Resume scheduled services as soon as it is safe to do so.
- Support recovery activities coordinated by the relevant emergency management authorities.
- Collate costs, prepare claims/payments, arrange re-supply for equipment/supplies
- Lead/participate in reviews and implement agreed recommendations.

3.2.3 Rail infrastructure managers

Overall responsibility for maintaining the integrity of and access to the rail network ('Below rail' aspects of rail operations).

Prevention and mitigation

All activities that mitigate rail emergencies and prevents failures in rail emergency management. This could include:

- Maintaining rolling stock/infrastructure and systems to current standards.
- Research/risk assessment: review reports and analyse trends in rail emergencies. This may extend to infrastructure/rolling stock maintenance activities.
- Maintaining and sharing access and egress information and communications services where practicable.
- Using business continuity processes to prevent/mitigate the impacts of emergencies/crises.

Preparedness

- Coordinate the development of the rail emergency plan between rail and non-rail transport operators.
- Maintain the capability to implement the arrangements in the plan.
- Maintain joint communications protocols with emergency services communications centres.
- Participate in/lead preparedness activities including testing activities for workers at all levels.
- Provide below-rail specific information to support emergency planning (e.g. schedules, infrastructure matters).
- Review lessons identified and take action as appropriate.

Response

- Confirm the emergency with immediate stakeholders and keep them updated.
- Arrange the rail command function and work in coordination with the controlling agency.
- Oversee the overall rail response using the agreed emergency management arrangements. This can include supporting whole-of-government consequence management activities.
- Oversee/liaise for rail safety investigations as required, including coordinating the rail infrastructure manager's investigation responsibilities.
- Make alternative arrangements for scheduled services/other activities on the network.
- Arrange recovery of the network and infrastructure. When a rolling stock operator is not able to manage their responsibilities, provide assistance as required.
- Provide regular stakeholder briefings (off-site).
- Record actions taken in response and associated costs
- Arrange/participate in debriefs.

Recovery

- Re-open the rail network as soon as it safe to do so.
- Implement and monitor recovery of affected workers, network infrastructure and environment. For 'affected people' also consider families, staff not directly involved in the response, community members.
- Support recovery activities coordinated by the relevant emergency management authorities.
- Collate costs, prepare claims/payments, arrange re-supply for equipment, supplies.
- Lead/participate in reviews/inquiries and implement agreed recommendations.

3.3 Rail emergency management stakeholders

The table below summarises rail emergency management stakeholders in each Australian jurisdiction.

Table 3: Rail emergency management stakeholders

Area	Emergency / disaster arrangements	Rail safety regulator
Australian Capital Territory	Emergency Services Agency (ESA). <www.esa.act.gov.au>	Office of the National Rail Safety Regulator (ONRSR) < www.onrsr.com.au>
New South Wales	Office for the Emergency Services (OES). <www.emergency.nsw.gov.au	
Northern Territory	Northern Territory NT Police, Fire and Emergency Service. <www.pfes.nt.gov.au>	
Queensland	Emergency management Queensland (EMQ). < www.qld.gov.au/emergency/emergencies-services >	
South Australia	SA Fire and Emergency Services Commission. <www.safecom.sa.gov.au>	
Tasmania	Tasmania State Emergency Service (SES). <www.ses.tas.gov.au>	
Victoria	Emergency Management Victoria (EMV) < www.emv.vic.gov.au >	
Western Australia	Emergency WA < www.emergency.wa.gov.au >	

National resources

Office of the National Rail Safety Regulator	www.onrsr.com.au
Rail Industry Safety and Standards Board	www.rissb.com.au
Attorney-General's Department	www.ag.gov.au

3.4 Rail emergency response

Figure 2 provides a summary of typical response roles for rail emergencies at tactical, operational and strategic levels, using generic terms and concepts. Rail transport operators should contextualise this figure with the relevant all-hazard or rail plan for their own operating area.

Figure 2: Rail response roles

Aspect	Incident	Emergency					Disaster/Whole-of Governmep`nt Event
Control →	Rail	Control Agency with media Liaison					State / territory control authority
Command ↓	Rail	Rail	Police	Fire	Ambulance	Others (situation/authority dependent)	Not applicable
Tactical response on-site.	Workers at/deployed to site. Intestigators as required.	Rail commander rail response team – team leaders, e.g. network repairs, media liaison, investigators.	Site security special units, e.g. rescue investigators forensics/coroner.	Fire suppression special units, e.g. hazardous materials, rescue investigators.	Triage and on-scene care medical commander transport teams. Medical car e.g. hospitals.	Support teams/ special units, e.g. rescue, search investigators.	
Off-site (lead roles).	Incident response coordinators and network control.	Rail infrastructure manager (liaison officers).	Communications centres. (may include liasion officers).				Local coordination and consequence management
Operations response	Not required.	Rail operations management.	Operations centres inc liaison officers.			Operations centres (as required)	Distric/regional coordination and consequence management
Strategic response	Not required	Crisis management team	Senior officers,advisors, executives, ministers				State co ordination and consequence management

3.4.1 Lead roles for rail emergencies

Table 4 summarises the organisations that typically have lead roles in rail emergencies to coordinate activities of other responding agencies including rail transport operators.

This provides a national summary only. Variations do exist so roles and responsibilities should be checked for each specific location. See Section 4.3.4 of this guideline for a typical response sequence and priorities for rail emergencies.

Table 4: Typical lead roles for rail emergencies

Row	Rail Emergency	Organisation
1	Bio-security emergency (i.e. animal, plant, pest diseases e.g. foot and mouth)	Primary industries or similar department
2	Collision (with another train, tram, vehicle, object or person)	Police
3	Criminal activity (e.g. intentional violence, civil unrest, disturbances, vandalism). Excludes terrorist attack.	Police
4	Derailment	Police
5 5.1 5.2	Electrical emergency • Infrastructure related • Supply emergencies (i.e. shortages/rationing - electricity, diesel).	Infrastructure owner e.g. rail infrastructure manager. Energy and resources department or similar.
6	Explosion/Fire If a criminal element emerges, Police will take control	Fire
7	Medical emergencies (injuries/illnesses related to train operations) When deaths occur, Police will take control.	Ambulance
8 8.1 8.2 8.3	Natural hazards: Storms, floods Fire Other natural hazards (e.g. landslip, tsunami, cyclone/tornado, earthquake, rock fall).	State emergency service/police/other Fire Police or other as agreed (often in coordination with the jurisdiction's emergency management authority)
9	Spills and potential fires (e.g. chemicals, oil, contaminated products, dangerous goods) If a criminal element emerges, Police will take control	Fire
10	Terrorist attack	Police (state and commonwealth)

3.4.2 Agency roles relevant to rail emergencies

Table 5 shows a broad summary of functions that are relevant to rail emergencies and carried out by organisations other than rail transport operators. This list is intended to cover most roles but is not exhaustive and it gives a national summary only. Variations exist so roles and responsibilities should be checked for each specific location. See Section 4.3.4 of this guideline for a typical response sequence and priorities for rail emergencies.

Table 5: Agency roles relevant to rail emergencies

Row	Organisation	Role
1	Ambulance/health	• Casualty treatment and transport and medical emergency care.
2	Councils/local government	• Community recovery: for consequences from emergencies across four general areas: psycho-social; economic; infrastructure; environmental. Councils can be assisted by state/territory agencies, e.g. health, premier's departments.
3	Energy/resources or similar department	• Energy supply emergencies (may affect rail infrastructure, diesel operations).
4	Environment or equivalent department	• Environmental response and coordination/directions for rehabilitation.
5	Fire	• Hazardous materials emergencies (includes dangerous goods). • Decontamination from CBRN events (chemical, biological, radiological, nuclear) usually under direction from health advisors. • Fire suppression management of potential fire (includes gas leaks), investigation of fires (urban and rural/wild/bush fires) Technical rescue/extrication: industrial accidents, trench and confined space rescue, road crashes, USAR (urban search and rescue), heavy rescue/extrication (trains, heavy vehicles). ** Except in mines where in most jurisdictions the mine manager is responsible.
6	Police	• Investigations of criminal activity and all deaths (for the coroner) Intentional violence, including terrorism (using national arrangements) coordination of response for most emergencies including: – Rescue operations; – natural disasters e.g. earthquake, tsunami, cyclones; – Transport crashes (road, rail, air). • Threats, managing public unrest/civil disturbances. • Traffic control.
7	Primary industries or similar department	• Bio-security emergencies i.e. outbreaks of plant and animal diseases (land and marine), pest incursions). • Technical rescue of and welfare advice for livestock.
8	Rail safety regulators and authorised rail investigators	• Investigations e.g. ATSB (Australian transport safety bureau)
9	State emergency service	• Floods, storm response • Operational support for police (e.g. searches, scene cordoning, traffic control). • Technical rescue/extrication from trains and road rail vehicles in specified location/selected jurisdictions.
10	Transport or similar department	• Making/coordinating requests to rail on behalf of government.

3.4.3 Case Study 1: Derailment, October 2000, Hatfield United Kingdom

The Hatfield derailment of 17 October 2000 is significant because it highlighted the importance of maintaining corporate knowledge and having redundancy for key roles and responsibilities.

The derailment occurred south of Hatfield station just after 12:30pm killing four passengers and injuring over 100. The cause of the derailment was a broken rail brought about by 'rolling contact fatigue' (defined as multiple surface-breaking cracks) and this exposed the management issues emerging from the national re-structure of the English railways.

The rail infrastructure company was found to have divested a significant portion of its engineering knowledge to maintenance contractors. Coupled with 'failings in regulatory oversight', there were critical gaps in corporate knowledge rendering the rail infrastructure maintenance arrangements ineffective.

In 2003 six people and two companies were charged with manslaughter in connection with the derailment. In 2005 this resulted in findings of breaches of health and safety laws instead. The related speed restrictions and track replacement works caused significant disruption for more than one year - the biggest and most expensive re-railing exercise in British history resulting in another restructure of the rail transport operators.

Rail emergency management: Things to think about:	
Prevention and Mitigation	Existing safety management systems e.g. safeworking are one of the most effective techniques for preventing rail emergencies. Proposed changes to these systems should always be assessed from a rail emergency management perspective.
Preparedness	Testing comprehensive arrangements and roles and responsibilities can reveal where inadequacies and gaps may be emerging in day to day management systems.
Response	Immediate notification of the type of emergency, location and what help is needed is a critical aspect of rail emergency response.
Recovery	Investing the findings of the investigations into the governance framework and safety management systems are key commercial recovery activities.

4 Guidance

The 'comprehensive approach' is an Australian emergency management principle that provides a basic structure for this Guideline in four parts:

- 4.1 - Prevention and Mitigation.
- 4.2- - Preparedness.
- 4.3 - Response.
- 4.4 - Recovery.

It is worth noting again that the material in this section is not mandatory but aims to provide a national (not local) summary of supporting ideas to benefit rail emergency management.

4.1 Prevention and mitigation

4.1.1 Principles

The principles underpin rail emergency management so support arrangements and capabilities remain robust and interoperable. They include but are not limited to:

- The protection of life, property and the environment having the highest priority (people and safety first).
- Arrangements are to be flexible, scalable, fit for purpose and have reasonable redundancy. This means arrangements should be:
  - aligned with the operator's risk profile/operational needs;

- able to be used for emergencies that result in the maximum foreseeable consequences, as well as the most likely consequences;
- include alternative personnel and relief protocols for specified rail emergency management roles/ Emergency planning includes arrangements for recovery so that services can be resumed as soon as possible with improved/renewed safety systems and consequences can be addressed with affected communities.

Checking In

Do the current rail emergency arrangements reflect these principles, given your situation?

4.1.2 Preventing rail emergencies

Rail emergencies usually result from multiple/simultaneous failures in management systems and other factors beyond the control of rail transport operators. These systems include:

- **safety** – safeworking practices, train separation protocols, standards for maintenance and construction of network infrastructure and rolling stock, Dangerous Goods, electrical safety, qualification/competency frameworks, a positive and pro-active safety culture, ongoing public safety awareness campaigns;
- **security** – physical, information, personal/personnel;
- **environment** – air, noise, water, soil, sustainability;
- **risk management** – using accepted risk management methods is recommended to assess the organisation's emergency management capabilities and vulnerabilities e.g. AS/NZS ISO 31000 Risk management-principles and guidelines, HB 167 security risk management, RISSB security handbook. This work could also include bench- marking existing arrangements and procedures against good practice models, as well as research and analysis of available data.

Checking In

Has a review of the organisation's emergency management capacity been recently undertaken (e.g. in the last 2 years)

4.1.3 Mitigating impacts of rail emergencies

Three considerations for reducing the impacts of rail emergencies are:

- Communications.
- Access and Egress (network and rolling stock).
- Consequence management analysis.

Communications

Being able to communicate in emergencies is critical for effective response. The communications capability should be assessed routinely, and considerations should include the extra load on the network that occurs in emergencies e.g. increased use of mobile phones, poor weather etc. Where communications coverage is considered marginal/less than adequate, alternative communication methods should be considered. Rail transport operators should make sure that their emergency management partners have the correct contact details, and these should be separate to public/passengers 'information lines and services.

Checking In

Are you satisfied that your emergency management partners maintain the most appropriate contact details for your organisation? Are you satisfied that your organisation maintains the appropriate contact details for its emergency management partners?

Access and egress (Network and rolling stock)

Rail transport operators are encouraged to critically review their network from an access and egress perspective and identify points on the network to support response their emergency management partners e.g. pre- planning access, egress and staging points etc. Emergency access and egress points should be clearly signed from the road network ('emergency access only').

Maps are useful resources when they clearly show the rail and surrounding road network. Remember that maintaining geographic data, such as GPS coordinates (eastings and northings/grid references) can be more relevant than property or mailing addresses in response.

Access and egress to the rolling stock should also be assessed by the emergency services so that the equipment typically used for technical rescue, casualty care, investigations and forensics can be considered.

Checking In

Are the emergency services given information about the safety ways to access the network and rolling stock?

Consequence management analysis

Consequence management analysis of rail emergencies enables thorough recovery arrangements which go beyond repairing the network and re-instating train/tram services. Refer to section 4.4 of this Guideline for more information.

Checking In

Does the rail organisation have recovery arrangements that consider the personal/human aspects, infrastructure, economic and environmental consequences of rail emergencies?

4.1.4 Case Study 2: Intentional violence: World events 2004-2007 (Madrid, London, Mumbai)

11 March 2004, Madrid Spain:

191 people die when bombs are detonated as part of a coordinated attack on four commuter trains in Madrid. Another chilling aspect to this attack was the use of secondary devices in an attempt to kill first responders attending the scene.

7 July 2005 London, United Kingdom:

56 people lose their lives as a result of four explosions on buses and trains in London. The blasts are part of a coordinated attack and the trains affected are part of the 'Tube' - the underground, electrified rail network. The attacks effectively closed parts of London for a short period of time and in the initial stages' response efforts were hampered by the lack of interoperability of communications hardware between agencies. On the other hand, the public information arrangements were quickly activated, and this became one of the success stories of the operation.

11 July 2006 Mumbai, India:

200 people died and over 700 people were injured in another coordinated attack involving seven bomb blasts over an 11-minute period. All bombs were placed in the first class 'general compartments' reserved mostly for women. They were detonated during Mumbai's after work peak hours. Railway services were restored approximately 4 hours later.

These events show that trains and railways are obvious targets for intentional violence and the unique operating context of railways provides a number of issues to consider in the rail emergency planning process, so arrangements can be used for all hazards.

Rail emergency management: Things to think about:	
Prevention and Mitigation	Protective security is an important part of prevention and mitigation strategies. Use HB 167 to guide decision-making.
Preparedness	Preparing to deal with outcomes of intentional violence may mean including rail security specialist in the planning process and adjustments to training plans an internal reporting system.
Response	Multiple emergency scenes require coordinated efforts and multiple rail response teams. The 'tunnel' context also complicates response and communications efforts. Combined, these increase the demand for information flow.
Recovery	Attacks of this nature impact on public confidence, so recovery arrangements should include a communications element to address the concerns likely to arise from each rail emergency.

4.1.5 Summary

Although the Rail Safety National Law and Regulations focus on preparedness obligations, this section looked at a number of considerations that can prevent failures in rail emergency management and reduce the impacts of rail emergencies. Rail transport operators are encouraged to assess the adequacy of their current approach to prevention and mitigation for rail emergency management.

4.2 Preparedness

4.2.1 Introduction

The requirements in the Rail Safety National Law and Regulations and mainly preparedness related. To meet these obligations a range of activities are inferred and together these form the rail emergency planning process, which is iterative and aims to achieve continuous improvement. This section briefly looks at ways to address the requirements.

4.2.2 The rail emergency management plan

Emergency management plans record the current arrangements for emergencies i.e. what is to be done and who will do it. Managing emergencies brings a wide range of stakeholders together and so emergency plans and planning tend to achieve the best results when undertaken in a collaborative and comprehensive manner. Rail emergency management plans are likely to be used by a range of organisations for a range of purposes, so they should be presented in a consistent, user-friendly format and be written in plain English with limited duplication.

4.2.2.1 Coordinating the Plans

Even though roles and responsibilities for rail emergency management planning can vary depending on access regimes, ail Safety Regulators are promoting a model so rolling stock operator plans complement or are aligned with the rail infrastructure managers plan. In turn, the rail infrastructure manager's plan is aligned with external agencies' arrangements.

How to achieve this should be clearly described in the access regime and can be supported by each rail transport operator nominating a central point of contact for the plan.

Note that some rail emergencies may not involve the rail infrastructure rail infrastructure manager's network control e.g. rail emergency affecting a rolling stock operator in their own yard/siding. Arrangements for these situations should be similar to other arrangements.

Checking In

Was the current plan developed in collaboration with the rail infrastructure manager and rolling stock operators and discussed with external agencies, including the emergency services?

4.2.2.2 What should the plan look like?

There are no 'hard and fast' rules for what an emergency plan should look like but there are benefits to presenting plans in a consistent format including:

- Increased confidence of stakeholders and regulatory authorities.
- Supporting training and awareness of emergency services.
- Decreasing time needed for consultation between rail transport operators.
- Minimising the resources needed for maintaining the plan.

This guideline includes a model plan structure that is compliant with rail safety requirements and reflects contemporary Australian emergency management practices (see Appendix A.3). It is not intended to be prescriptive; rather it provides a common format for rail transport operators to consider next time the plan is due for review. A supporting plan review guide is also included in Appendix A.3 to assist with internal review of the plan.

Checking In

Does the current plan reflect the model structure? Consider using it the next time the plan is reviewed.

4.2.2.3 Consultation methods and strategies

The Rail Safety National Law and Regulations identify a group of organisations to be consulted with when preparing the plan. Table 6 sorts this list into three broad categories and includes examples.

Ideally, consultation between rail transport operators and their emergency management partners is a two-way activity. Some practical consultation methods/strategies include:

- addressing specific planning matters on an as needs 'basis in existing forums/meetings/other established activities, such as existing local, district/regional, state emergency/disaster management committees;
- conducting specific activities to resolve emergency management issues, such as site visits (to tunnels, underground stations, bridges, stabling yards), rolling stock familiarisations, presentations, workshops;
- establishing an ongoing joint rail-emergency management planning committee or information sharing forum;
- rail transport operators also need to have standardised methods for communicating with stakeholders for emergency planning. A basic template for recording planned consultation activities is included in Appendix A.2, which can be adapted as required.

Mutual Aid: Most plan consultation stakeholders will have their own emergency planning responsibilities and rail transport operators could assist with the review of plans and procedures from a rail perspective.

Checking In

Does the rail organisation have effective relationships in place for maintaining the plan? Is a formal stakeholder management plan needed?

Table 6: Plan consultation stakeholders

Stakeholder Categories	Stakeholder Organisations
Plan users and advisers	• relevant emergency services (e.g. police, fire, ambulance, state emergency service); • government agencies with emergency management functions (e.g. health, primary industries, environment, land management agencies, education, transport and local and state emergency management agencies/committees); • rail workers (worker-to-management spectrum) including all groups who are likely to use the arrangements e.g. train crew, OHS representatives, service providers, contractors, consultants, network controllers and investigators; as well as other workers who support the arrangements when they are being used e.g. switchboard staff, front counter/sales staff.
Accountable officers	• asset owners for public utilities/infrastructure in the relevant areas (e.g. water; • rail managers responsible for maintaining and implementing the plan.
Other affected groups	• relevant union representatives for the rail workers; • the public (when appropriate); • any other transport operator who may be affected by the implementation of the plan (e.g. public transport providers who might be called upon in the event of an emergency).
Rail transport operators who are seeking consultation exemptions can apply in writing to the Regulator/s outlining the group/s identified for exemption and the reason for the exemption.	

4.2.2.4 Consultation with the emergency services

Table 7 identifies some issues that can arise during consultation with emergency services and some ideas to address them are outlined in the 'Ideas' column. This table is not intended to be exhaustive and

although some of the ideas might seem quite basic, they are drawn from actual experiences of some rail transport operators.

Table 7: Consulting with the emergency services

Row	The Issue is that…	Some Ideas for rail organisations are
1	It can be challenging finding appropriate points of contact for the emergency services.	• Check the relevant all-hazards emergency plan to see which roles are undertaken by the agencies (some roles are location specific). • Promote a 'mutual aid' approach (i.e. helping each other) or make a presentation at the relevant all-hazard emergency management committee. • Discuss issues informally first with suitably ranked officers and jointly develop simple engagement strategies. • Send formal correspondence from the rail organisation's general manager or similar to each agency requesting a liaison officer to be nominated for rail emergency planning.
2	The same terms mean different things.	• Cross-check terminology between agencies with the rail transport operator's own terms. Include key terms and meanings in the plan and training programs to promote consistency.
3	The arrangements don't cater for situations when rail transport operators aren't involved in the emergency/present at the emergency site (e.g. emergency occurs at an unmanned station).	• Make sure that the emergency arrangements can be used, even if rail transport operators are not present or their attendance at the site is significantly delayed. • Assist the emergency services to keep the correct contact details for the rail transport operators.
4	Emergency services don't provide much comment on the rail plan	• Do not request that emergency services 'approve' the plan. Instead ask them to check that it accurately describes roles/responsibilities and is in line with the current arrangements. • Once the plan is finalised it can be tabled with/distributed to the relevant emergency management committees/agencies.
5	The emergency services aren't up to date with rail emergency procedures/arrangements	• Run short briefings about rail operations, hazards and rail emergency procedures on site (e.g. network control centres or presentations). • Seek opportunities to jointly develop training resources/awareness to promote safety.
6	It can be difficult for rail transport operators to explain their response times	• Confirm understanding of safety obligations that can impact on response times (e.g. isolation and earthing electrical infrastructure). • Enhance understanding by breaking down response times into times for deploying ('getting on the road'/being called out), travel and action. • Discuss specific areas of concern and when practicable make changes to improve response times.
7	Different priorities lead to conflicts in planning	
7.1	Example 1: Emergency services indicate they will want to shut the rail network in the event of a rail emergency	• As required discuss adopting the following arrangement 'Where possible, the control agency will seek advice from rail and take the advice into account to minimise hazards at the site, traffic and service disruptions and enhance response.'
7.2	Example 2: Emergency services indicate they expect the Rail Commander to remain with them at all times and this creates a serious resourcing issue for rail	• Maintain arrangements so the rail commander can request support for other on-site duties (e.g. team leaders for infrastructure repairs, rail media liaison officer) • Consider pre-planned rail response teams for deployment/call-out • Make sure team members at the emergency site can communicate privately and with the rail infrastructure manager. Where possible these are also interoperable with the emergency services.

Checking In

Who are the rail organisation's current points of contact with emergency services at tactical, operational management and executive levels? Who are the rail liaison officers for these points of contact?

4.2.2.5 When should the plan be reviewed?

A review period is not set in the Rail Safety National Law and Regulations, although it is suggested that plans are reviewed after tests are conducted and inadequacies are revealed. Caution should be exercised in adopting this as the only/main review trigger. Review periods for plans are recommended to be criteria-based including the following considerations:

- Rail transport operator's safety management system review requirements.
- When changes have occurred or are imminent e.g. from legislative/safety regulations, interfacing plans/agreements, key stakeholders/roles and responsibilities etc.
- When new or emerging sources of risk or are identified or lessons are released from other response/recovery operations or exercises (rail or non-rail, Australian or international).
- If no other triggers activate a review of the plans, they should be reviewed at least every 1-3 years.

Checking In

When was the rail plan last reviewed? When is it next due for review?

4.2.2.6 Is there a standard review process for plans?

Emergency planning is based on continuous improvement and Figure 4 shows a recommended planning process with some target timeframes.

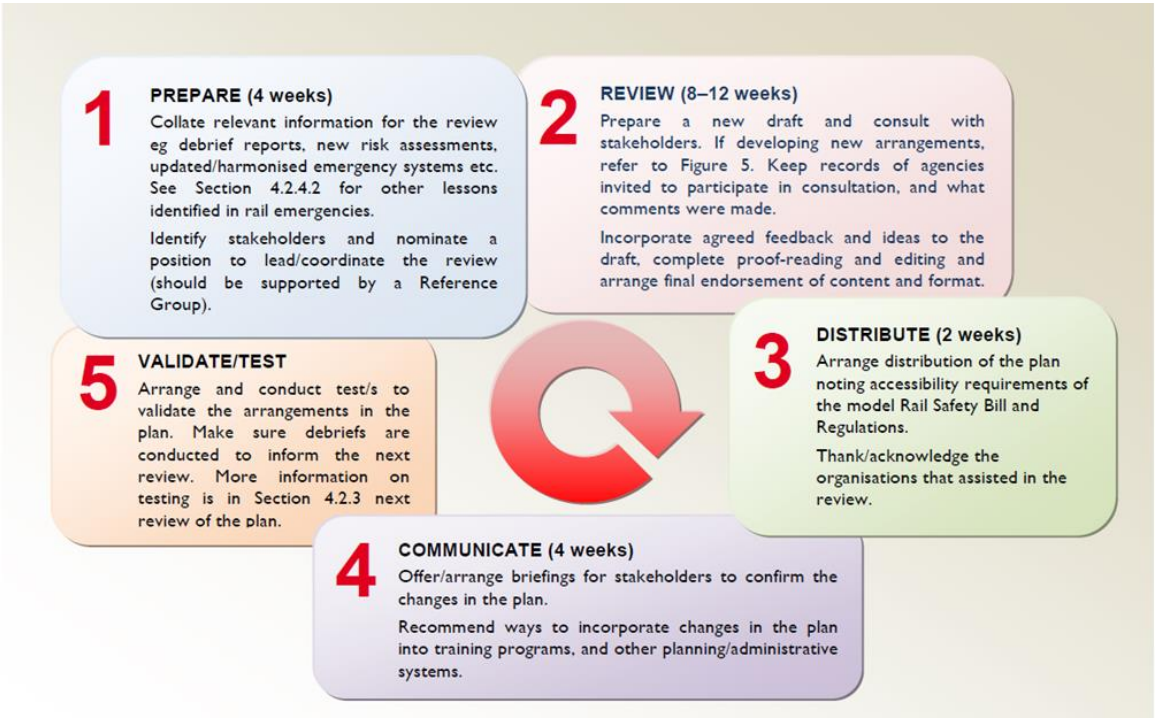

Figure 4: Emergency planning process

4.2.2.7 How to develop emergency arrangements

Plans include a range of information, including emergency arrangements. Emergency arrangements describe the steps that are anticipated to be taken to resolve the emergency and recover from its impacts. A simple three-step process for developing/reviewing the arrangements is summarised in Figure 5, below. It shows a structured approach for developing arrangements and this usually is the focus of the 'review' stage in the planning process summarised in Figure 4).

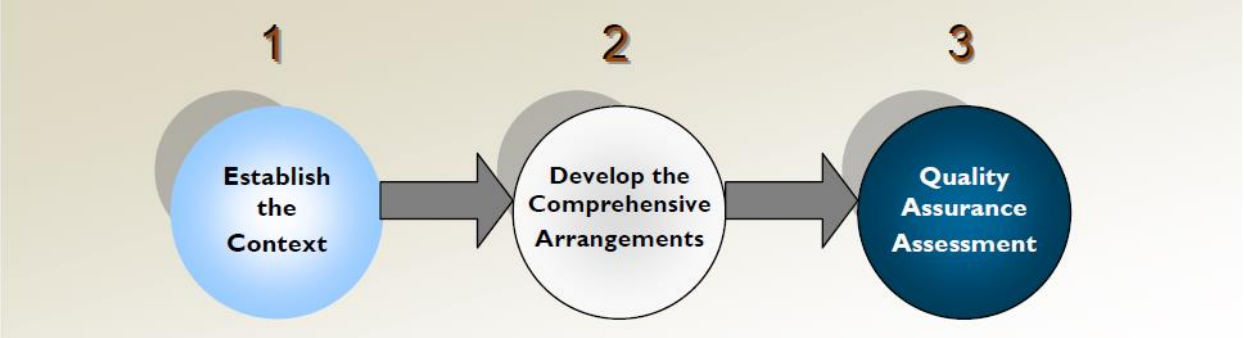

Figure 5: Emergency arrangements development process

Establish the context

Arrangements will be influenced by the operating context which can vary depending on:

- Network type/location, terrain e.g. urban, isolated, electrified, non-electrified, coastal, inland, forest, desert, mountainous.
- Service type:
  - Passenger – urban commuter, long distance passenger, heritage, tourist. Also consider passenger demographics because special arrangements may be required for particularly vulnerable groups (e.g. elderly, children, disabled, culturally and linguistically diverse (CALD) groups, tourists).
  - Freight – dangerous goods, bulk freight, other containerised freight.
- Safety systems for safeworking, train crewing, communications.
- Train power sources – electrified, diesel, steam.
- Presence and availability of rail emergency management partners (especially emergency services) Interfaces with other train operators.
- What are the different rail emergencies that can occur (e.g. those caused by rail operations and those resulting from other hazards e.g. natural hazards – fire (on the train, at stations, on the network), wildfire, flooding, cyclone, landslide etc.
- Where can these situations occur?
- What are the consequences for rail transport operators, non-rail organisations and communities (consider broad categories e.g. psycho-social/life/safety/well-being, economic, infrastructure, environment).

Develop the comprehensive arrangements

A simple approach to developing arrangements for rail emergencies is to consider 'what has to happen next' as well as 'What can go wrong' and 'what must go right?' This approach helps identify critical inputs and dependencies for the comprehensive arrangements. The following questions can help to develop robust, flexible and interoperable arrangements:

- What are the most important things that are done in prevention and mitigation, preparedness, response and recovery, at tactical, operational and strategic levels? For example, response to a dangerous goods spill at the site (tactical level) might include getting and staying upwind, bunding the affected area and cordoning it off.
- Are the arrangements written in a 'priority order' or sequence? Does the order reflect 'life, property and the environment'?
- Who is accountable for these actions and which workers are responsible for performing them?
- What are the basic resources (equipment and supplies) needed and what else can make the job easier?

Check the relevant all-hazard plan for the area that the train/tram operates in and make sure that the arrangements in the rail plan are compatible with it. The agencies listed in Table 4 (Section 3.3) could assist.

Quality assurance assessment

The following sample checklist can be used to assess the quality of the arrangements.

- Are the arrangements scalable and flexible? Will they be effective:
  - in all rail emergencies, in all parts of the network (including closed/mothballed corridors);
  - when there is a defined rail emergency site and when the emergency site changes or is large (e.g. cyclones, floods, emergency animal/pest diseases);
  - when rail transport operators attend the emergency site and when they are absent from it;
  - when other emergencies occur simultaneously/when some rail response functions are impaired/unavailable.
- Are the arrangements interoperable:
  - between rail and non-rail transport operators, especially for response;
  - within each rail organisation (i.e. can efforts be coordinated at tactical, operational and strategic levels)?

Checking In

Do the arrangements in the plan reflect the operating context? Do the arrangements complement (not conflict with) the existing all-hazards plan for the area?

4.2.2.8 Distribution and accessibility of plans

Distributing plans and making them accessible are two of the most important aspects of the review process and can be overlooked. Organisational changes occur regularly, so it stands to reason that the plan's distribution and accessibility will also alter every time the plan is updated. The following criteria can be used to identify distribution and accessibility arrangements for the next plan update.

- 'Need to know' (and 'Need to Share') – Which workers are likely to need access to the plan? Consider all workers who are likely to use it in emergencies (e.g. train crew, station staff, network control, management) and/or support emergency management (e.g. rail emergency planners, safety officers, trainers etc and non-rail workers e.g. communications workers). Workers with an identified 'need to know' are also likely to have a 'need to share' relevant information from the plan. Sharing this information however, should not materially affect the controlled distribution of the plan.

- Access – Can workers independently access the current version of the plan at all hours? Think about the usual consequences of rail emergencies. Are these consequences likely to create barriers to accessing the plan? Also consider the plan's information security classifications. Are they appropriate? Are they creating barriers or resulting in 'over-distribution' of the plan?
- Integrity and confidence – Workers who access the plans should have confidence that they are accessing the current version of the plan. It is important that the issue number and status are clearly displayed.
- Plan format and production – Accessibility includes physical access to the document, as well as access to the information in it. How accessible is the information in the plan, to the reader? Think about maximising the use of plain English and diagrams, other layout styles and the use of colour (see more notes below).

Some practical tips for distribution and accessibility include:

- maintaining a user-friendly and consistent format so that the same messages are in paper and electronic versions having plans professionally proof-read/edited;

  ensuring that use of colour does not create barriers for vision-impaired users (a useful 'rule of thumb' is to restrict the publication to shades of black and white or use 'two-tone colours ');
- issuing electronic copies in a stable format, such as PDF;
- providing copies to key stakeholders (ideally in the format that suits them);
- keeping copies in agreed common locations and allocate responsibilities for maintaining them, such as in network control areas, on websites/intranets.

A final comment on distribution: Historically, the practice of 'controlled copies' has been used for emergency plans, but with increased use of electronic versions and desk top printers this practice is no longer as relevant. This is not to suggest that emergency plans should be freely/publicly available (this is a matter for each operator to address). Applying an appropriate security risk management approach to protecting information is recommended. This guideline encourages the maintenance of a detailed distribution register including the format the plan was distributed in.

Checking In

How accessible is the plan and who is it distributed to? How is this record kept updated? When is it considered in plan review process?

4.2.2.9 Planning lessons identified

The following list identifies some general planning 'lessons' that are also opportunities for improvement (OFI) in emergency planning:

Prevention and Mitigation	OFI
The risk process that guides decision-making is flawed/unrealistic	Notes: Analysing data about incidents and emergencies is part of a comprehensive risk-management lifecycle, because it helps to provide an accurate. Suggested: This guideline recommends that emergency reporting is aligned with notifiable occurrences, as noted in the regulations (see Section 2). Routine assessments of emergency management capability and vulnerability can also assist.
Preparedness Planning assumptions result in unrealistic arrangements	Planning stakeholders can assume things to be true, without checking. These should be critically analysed in the early stages of planning and should be included in the plan's context statement. For example, does the rolling stock operator assume the emergency services have suitable equipment to rescue/extricate people from derailed trains on all parts of the network? Do

	the emergency services assume that they can access any part of the network (including tunnels/bridges) at any time, independently and safely? Suggested: Document planning assumptions and then check them with relevant stakeholders. Consider including assumptions in the rail emergency plan. Suggested: Plans that are of any use must be developed collaboratively so that arrangements are interoperable.
Arrangements are in conflict	Suggested: It's useful to dedicate some time to regularly reviewing lessons identified from rail and other emergencies and consider if they could apply to the current context. If lessons are identified, they should be treated in a similar way to any other issue/task/project. If they are identified from the rail transport operator's own debrief, the lessons should be checked thoroughly, and remedial actions developed and implemented.
Response Inadequate redundancies for response capabilities	Suggested: Identifying critical inputs to emergency response and recovery capabilities is useful so that redundancy arrangements can be put in place. For example, consider: What are the things that the rail organisation must/be able to do for response and recovery? As well as protect life, property and the environment, often the 'business-need/imperative' needs to be considered (e.g. urban commuter operators have different 'needs' compared with other passenger services with fewer schedule constraints). What do these things depend on? Consider physical and system inputs (e.g. power, replacement parts/supplies and other transport/service providers). Pay particular attention to the inter- dependencies that may exist between some of these factors.
Recovery Impacts/consequences are not assessed accurately, and inappropriate/ineffective recovery occurs	Suggested: Rail transport operators are encouraged to consider consequences of rail emergencies across four broad categories, document them in the plan and develop arrangements as required to enable recovery. (See Section 4.4 for more ideas.)

Checking In

Are any of these? OFIs' issues for emergency planning in your organisation? Are there others (remember this is not an exhaustive list)?

4.2.2.10 Mini-summary: rail emergency plan review responsibilities

For the rail emergency plan, rail transport operators are responsible for:

- leading/coordinating plan preparation in consultation with specified stakeholders making the plan accessible;
- managing the subsequent communication of the arrangements;
- maintaining the capability to implement the rail component of the arrangements for rail emergencies.

NOTE - The emergency services and other relevant organisations are equally responsible for maintaining their own capabilities and may need help from rail transport operators to do this.

4.2.3 Testing the plan

Section 63 of the Rail Safety National Law requires arrangements in the rail emergency management plan to be tested in accordance with the regulations (see section 18 of the Regulations). 'Testing' means activities that enable assessment and validation of the arrangements. Testing can also be used as training/familiarisation activities and to enhance relationships.

4.2.3.1 What does testing include?

A common method for 'testing' is to conduct an exercise, but other activities can also validate arrangements including:

- Using the arrangements in a genuine emergency (evidenced by debrief reports).
- Planning activities that examine the arrangements (e.g. workshops/meetings/case studies or familiarisations of rolling stock, rail yards, other parts of the rail network e.g. tunnels).

4.2.3.2 Exercises

Exercise styles and types are explained in various ways. This guideline does not attempt to address all of these, other than to provide an overview of the basic styles and some exercise management protocols in Appendix A.4. Nationally consistent exercise management practices are outlined in an exercise management manual, which is publicly available from the Australian government attorney-general's website. The national counter-terrorism committee maintains a similar guide.

4.2.3.3 What to test?

Tests should reflect usual train operations because research shows that people usually respond to an emergency in the way they have been trained. For example, heritage operators should ensure that their exercises reflect the type and numbers of passenger that would be carried on their typical routes. Similarly, a large metropolitan rolling stock operator should conduct tests that simulate situations involving their usual passenger numbers. Testing activities should provide opportunities to test different parts of the arrangements in the plan. For example:

- initial advice and initial activations; communications hardware and pathways;
- coordinating rail response with multiple agencies in a range of conditions (weather, season, time of day, type of day);
- opening and closing operations centres, arranging for rail liaison officers to attend other response centres, such as the police major incident room;
- cost capture and information flow (coordination of tasks and resources, situation reports) providing public information (including working with the media and other agency media liaisons)
- Escalation:
  - requesting assistance from other organisations (examine the internal processes for an escalating situation);
  - managing offers of assistance from other organisations, for example government, emergency management committees, other agencies, celebrity shows/personalities;
- managing deaths (workers, passengers, emergency service agencies), disrupted passengers or distressed relatives ending response in a coordinated way;
- arranging, conducting and following up on debriefs developing short- and long-term recovery plans;
- Any part of the plan that has not been used or tested since it was last reviewed.

4.2.3.4 When to test?

Testing intervals can be determined using the following considerations:

- New arrangements should be tested before they are issued
- Revised arrangements are tested after the plan is re-issued in two stages:
  - Stage 1: 'in-house' (rail transport operators only);

  - Stage 2: combined/joint (including emergency services and other rail emergency management stakeholders).
- In-house testing intervals should be set considering what frequency and type of testing will support workers to use the plan (consider broad groups of workers, staff, supervisors, managers, train operations, policy/planners/liaisons)
- Testing intervals for combined/joint tests are to be set in consultation with the emergency services to enhance participation. 'Participation' includes a range of roles, including planning the activity, running it, being tested, evaluating the performances during it and facilitating the debriefing.

Setting the Testing Register:

A testing register can be maintained to record the agreed testing activities and when they are scheduled to be conducted. Considerations for developing the register can include:

- the specific purpose of the tests (aim and objectives);
- when the tests will occur;
- how to run the tests;
- what to be included in the tests;
- Criteria for changing the register, after it is agreed.

Appendix A.2 provides a sample register for recording and communicating the testing program. It should demonstrate a reasonable blend and spread of activities. Appendix A.4 outlines one way to develop a progressive exercise program.

Modifying the Testing Register:

It may be useful to modify the testing register in the following circumstances:

- When substantial changes have occurred or are imminent affecting:
  - The plan or interfacing plans/related legislation;
  - key personnel, positions/functions;
  - Equipment;
  - the operational context.
- When new/emerging sources of risk are identified.
- When a debrief report from a response/recovery operation (i.e. genuine emergency) shows that a plan or part of the plan was used. If the arrangements were effective, the scheduled testing may be deferred. If the arrangements were found to be inadequate, the testing activities may be 'fast- tracked'.

Checking In

When will the rail emergency plan be tested next?

4.2.3.5 Who to include in the tests?

Testing activities provide excellent opportunities to improve interoperability. Whenever possible, rolling stock operators should attend and participate in testing with the rail infrastructure manager and similarly, rail infrastructure managers should attend activities conducted by the rolling stock operators.

Participants for testing activities include similar groups to those involved in plan consultation (see Table 7 in Section 4.2.2.2). Inviting observers can also be valuable.

4.2.3.6 What to do after the test

Because testing seeks to validate the arrangements, it necessarily includes evaluation and reporting components. Regardless of the type of testing activity carried out, debriefs should be conducted. The next section looks at ways to manage the debriefing process.

4.2.4 Debriefs

Debriefs provide a standardised method for evaluating arrangements used in tests or genuine emergencies. Debriefing helps stakeholders identify 'lessons' which can include opportunities for improvement and examples of excellence/innovation. Section 4.2.4.2 lists some lessons that have been identified in rail emergencies.

There are two main types of debrief:

- 'Hot' debriefs are held at the end of each shift or upon conclusion of the test to identify workers' immediate impressions. For operational debriefs (i.e. genuine emergencies) this can include safety or command/control issues and/or a general 'welfare' check with workers.
- Formal debriefs are held later at an arranged time and place with specified attendees.

Formal debriefs have historically been carried out for response, but rail transport operators are also encouraged to consider establishing similar arrangements for recovery debriefs.

Checking In

Does the rail organisation run debriefs for recovery?

4.2.4.1 Formal response debriefs

It is recommended that formal response debriefs are conducted by rail transport operators following:

- All testing activities.
- Multi-agency response operations.

Table 8 can assist rail transport operators establish debriefing processes for operations (genuine emergencies) and tests (e.g. exercises, workshops, site visits).

Table 8 Formal response debrief considerations

Formal Response debrief considerations	
Timing	Debriefs should be conducted as soon as possible after the test or operation. A target time frame for undertaking formal debriefs is within a month of the emergency being resolved or the test being conducted. Timing for both activities may be constrained by: • the availability of key stakeholders; • appropriate timing following the emergency (i.e. timing should demonstrate due consideration for losses that occurred).
Responsibilities	Each rail organisation is responsible for maintaining its own response and recovery debrief protocols and arrangements. These should include implementing follow-up actions for: • addressing gaps; • acknowledging excellence; • working with other stakeholders to improve arrangements. After a multi-agency response, a combined debrief should also be arranged. A standard protocol between most emergency services is that the control agency coordinates these debriefs with the responding agency commanders. However, rail transport operators are encouraged to take a more prominent role in debriefs for rail emergencies. Consider the following wording the next time the plan is reviewed: • the rail organisation which resources the rail commander role arranges a debrief for all rail team leaders and liaison officers involved in the response; • the control agency is responsible for arranging a tactical level debrief that the agency commanders, as well as representatives from their main coordination point, attend, such as the rail infrastructure manager, emergency services communications centre/operations centre. Attending agencies could invite observers to the debrief. • The rail organisation which resourced the rail commander role will arrange for the debrief findings to be recorded and other rail transport operators directly involved in the emergency will share the reasonable total cost arising from the joint debrief (agency wages not included). • Case-by-case, commanders may agree that a combined debrief is not required on the grounds that the majority of responders have used the arrangements recently (i.e. within the last six months) and that safety and command and control issues did not arise between the responding agencies. This agreement is recorded by the affected rail transport operators. • Debriefs at operational and executive levels for rail transport operators are arranged as required/agreed. When appropriate, follow-up meetings may be required with non-rail organisations and it is the responsibility of the rail organisation which resourced the rail commander role to coordinate these and record their findings. • Joint debriefs for recovery are held by agreement with the relevant stakeholders. The rail organisation which resourced the rail commander role is responsible for coordinating rail input.
What to discuss	Debriefs follow a fairly standard format: • the agreed facts of the response What went well and why; • opportunities for improvement and why; • the lessons identified for the arrangements (response/recovery); • for tests only: observations about the conduct of the test (realism and value of scenario, timing, venue facilities for the exercise style).
What not to discuss	Debriefs should avoid discussing the cause of the emergency, especially when investigations are continuing. Often it is not realistic to attempt to finalise recommendations at the debrief when they require broader consultation and consideration.
Effective strategies	• Arranging an independent facilitator (“fresh eyes”). • Pre-plan how the record of the debrief will be managed, finalised, shared/distributed and what level/classification (if any) of information security should be applied to the records. • Conducting debriefs in accordance with an agreed agenda. • Acknowledging the input of all organisations. • Providing light refreshments. • Doing what was agreed with debrief findings/minutes as close to the agreed timeframes as possible.

Lessons identified	It is recommended that lessons identified in debriefs are recorded in a central repository so that they can be accessed at the start of response and also by planners before reviewing the plan. See Section 4.2.4.2 for a summary of 'Lessons identified' from rail emergencies.
Supporting resources	Supporting resources and processes can include: • templates for invitations, agendas, debrief findings, minutes and reports; • pre-selected venues, caterers, facilitators and workers for administrative support; • processes for dealing with the recommendations from the debrief

4.2.4.2 Rail lessons identified

The 'lessons' below have been drawn from a number of rail emergencies and are listed here for rail transport operators" consideration, especially in planning.

The 'lessons' include:

- not recognising that an emergency has occurred or is imminent;
- not reporting and recording concisely and in a timely manner;
- lack of awareness of safety/emergency procedures (e.g. safety briefs not taken seriously by passengers);
- inaccurate/ineffective reporting of relevant information e.g. location and consequences of the emergency, not providing updates;
- lack of access and egress e.g. network gates locked, deficient on-call rostering;
- not monitoring rail workers who work on their own (e.g. driver only operations, track workers in isolated areas);
- other communications issues including technical/hardware failures, lack of redundancy, as well, 'operator errors' (people unable to use the communications equipment in emergency conditions);
- not protecting the site from rail hazards (particularly electrical hazards) and/or not providing clear advice about the status safety at the site;
- not identifying lead roles in the multi-agency response teams;
- not implementing a rail response management structure that can coordinate its efforts with the Control Agency;
- failing to contain the emergency, so it doesn't spread to other sites (e.g. distributed bomb threats
- failing to isolate the site from other rail traffic e.g. from trains approaching the emergency site;
- low levels of awareness by rail workers of other agencies" authorities, responsibilities and priorities during emergencies;
- not operating within the scope of tactical, operational and executive management during emergencies (not sticking to their own areas of responsibility);
- not maintaining site security (unauthorised/unnecessary people attending the emergency site, e.g. rail/emergency services workers, relatives/friends of passengers/injured workers, members of the public);
- disruptions to rail command (changing over rail commanders unnecessarily);
- failures in ongoing information flows e.g. rail workers failing to report both within the response management structure as well as not briefing line managers;
- not supporting personal recovery for rail workers and other parties affected by the rail emergency.

Other lessons have shown that response is enhanced when there are successes in:

- Sharing resources/plans, mapping and communications systems.
- Improved understanding of agency authorities and context.
- Relationships at key points of the multi-agency response structure (when workers know each other).
- Rail transport operators leading joint planning activities, sharing their expertise related to train operations.
- Emergency services/other government agencies sharing relevant contacts and advice for mutual benefit.
- holistic recovery planning occurs (more than restoring train services and physical assets).

4.2.5 Rail specific preparedness

4.2.5.1 Rescue capacity

Rail transport operators and emergency service agencies will usually work together to prepare for rescue from trains and other rolling stock. In most jurisdictions the police and/or fire services maintain technical and heavy rescue capabilities relevant to rail transport operators and other organisations may also assist.

The design features of trains can provide a challenging rescue environment and so rescue planning should be jointly addressed. Once general rescue strategies have been developed, current equipment should be assessed for adequacy and/or procurement of equipment/supplies may be needed as well as training and testing activities. A summary of rescue capabilities can also be included in the rail emergency plans (often known as 'resource lists').

Checking In

Is the rail organisation satisfied that:

- a reasonable rescue capability exists for their regular train operations; and
- rescue equipment and vehicles can access and egress all parts of the network?

4.2.5.2 On-site response support

A number of resources, systems and processes can support response and recovery at the emergency site:

- Communications protocols and contact lists.
- Back-up communications hardware e.g. spare phones/phone numbers, radios, batteries with mobile chargers, location aids e.g. maps, site plans, rolling stock information sheets, GPS units.
- Equipment and supplies for on-site response including vests/tabards for key response workers, extreme weather gear, fire extinguishers, spill kits, boundary tape, registration kits/tags, shelters/shades, chairs/tables, recording/logging kits, body sheets/tarps, PVC/para-web safety fencing, star pickets, outdoor hammers, cable ties, power (generators).
- Administrative systems for emergencies – pre-established cost centres, purchase orders, credit cards, claim forms.
- Pre-prepared proforma's e.g. situation reports, resource/task requests.
- Pre-prepared model structure for command post briefings (SMEAC provides a basic outline), holding statements or a model structure for a press briefing.
- Emergency procedures, checklists and actions cards for tactical, operational and strategic levels of response. (See below for more information.).

4.2.5.3 Off-site coordination support

Rail transport operators are encouraged to maintain areas that can be used for off-site coordination at tactical, operations management and strategic levels. Commonly referred to as EOCs (emergency operations centres), these can be specially equipped to support response and recovery. Basic needs include:

- networked/secure communications equipment for voice and data, such as telephones, laptops, printers, faxes access to media sources and a media area;
- whiteboards;
- other facilities – meeting areas, kitchen/catering space, toilets/showers, proximity to accommodation transport facilities – car parking, cab/bus/trains/helicopter/flight terminals;
- limited and controlled entry and exit points;
- resources including maps, pre-prepared proforma's for situation reports, records of management meetings/decisions, pre-prepared holding statements, checklists for more structured press conferences, general statements for web pages and worker information etc;
- emergency procedures, checklists, actions cards for operational and strategic levels of response.

4.2.5.4 Procedures, checklists, action cards

Maintaining 'quick references' is recommended to support response and recovery. In the initial onset/identification of the emergency, procedures or action cards and checklists should detail immediate and important actions to help workers at all levels perform effectively. They have a different purpose and usually are more specific than the plan. Below is a set of outcome statements that may be used to enhance these resources:

- Is the resource written in plain English, with a user-friendly format (planning, operations, logistics, control themes are suggested)?
- Is it clear: what the resource is for, who should use it and when it was last reviewed?
- Does the resource include relevant safety reminders, some basic indicators of the emergency, the immediate actions to take, triggers to seek extra help and when to give/update information?

Checking In

Are the rail transport operator's response support resources linked to the rail emergency response plan e.g. are they listed in the Associated Documents section of the plan? Are they reviewed after the plan is updated? Are they developed for all levels (tactical, operational and strategic)?

4.2.5.5 Awareness and training

Key messages in general awareness/safety programs

As for other duties, rail workers must be prepared for rail emergencies. The following list identifies some key messages that may be considered for future safety programs:

- Safety First – any actions for emergencies are only taken within the limits of each worker's safety and training.
- Emergencies can happen at any time (It's not a question of 'if', it's a matter of 'when').
- Emergencies are not always easy to detect but they usually have these things in common: unusual sequences of activity in unusual timeframes, creation of hazardous situations, serious harm to life, property and/or the environment.
- Emergencies must be reported as soon as possible giving the 'best' (most accurate) information available (and updating this as required).
- Emergencies mean action must be taken immediately – 'business as usual' activities are suspended, and alternative reporting lines may be used.

Key points for response awareness and training

- Workers at all levels with specific emergency response duties must be clearly authorised and empowered to take action that optimises safety. These include but are not limited to: workers who undertake rail command, team leader and liaison officer functions.
- Workers at all levels without specific emergency response duties may require briefings in non-emergency and emergency periods about emergency authorities, so that they can support response.
- All workers need to be aware of the response authorities to improve cooperation and coordination.

Emergency management awareness and training

Even though rail training and awareness programs would already address some emergency duties, rail transport operators are encouraged to consider providing some specific emergency management training opportunities. (See Table 9 for ideas.) It is recommended that where appropriate these are

aligned with competencies from the AQTF (Australian quality training framework) public safety training package (PSTP).

Table 10: Emergency management training areas

Prevention and mitigation • Business continuity management • Risk management and risk a • Succession planning and programs (for alternative/relief personnel).	**Preparedness** • Emergency planning exercise management • Stakeholder and project management • Introduction to jurisdictional and national emergency management arrangements including relief and recovery arrangements.
Response • Command, control and coordination i.e. response management systems including an introduction to jurisdictional emergency management arrangements. • Issue management and crisis communications (strategic response). • Working with the media. • Preservation of evidence, rail safety investigations. • First aid training, suitable for the operational context e.g. remote or urban, passenger characteristics. • Spill containment, fire suppression (on trains, at sites, on the network). • Information security. • Liaison officer.	**Recovery** • Recovery arrangements • Introduction to command, control and coordination i.e. response management systems. • Introduction to jurisdictional and national emergency management arrangements including relief and recovery arrangements working with the media. • Liaison officer. • Psychological first aid. • Rehabilitation – workers and environment.

4.2.6 Case study 3: Level crossing: Kerang, Victoria June 2007

On 5 June 2007 at about 1340 hrs AEST a southbound passenger service collided with a north-bound semi-trailer on a level crossing where the Swan Hill railway line crosses the Murray Valley Highway, approximately 6 kilometres north of the town of Kerang. Kerang is about 257km north-north-west of Melbourne city. The crash location was characterised by relatively straight sections of the rail line and road highway with some trees lining the rail line. The level crossing was fitted with lights and bells, but not boom gates. The cause of the crash was attributed to errors made by the truck driver.

The nearly 40 tonne truck, traveling at 120km/hr, struck the side of the train and was all but destroyed on impact. The damage to the truck and the carriages was exceptional and earthworks were required to provide a solid footing for heavy lifting equipment to remove rolling stock from the scene.

Tragically 11 people lost their lives and 23 were injured in the crash which was Australia's second deadliest rail event since 1977. The Prime Minister of the day (John Howard) announced support for the affected families and investigations. The then leader of the Opposition Kevin Rudd also spoke to the media and the Premier visited the site and announced an Inquiry would be held. V-Line (the rail transport operator) arranged counselling for the passengers and the families and announced its full support for the Inquiry.

The emergency response was swift and effective with a number of seriously injured people airlifted to Melbourne hospitals, while others were transported to Kerang's local hospital. Train services between Bendigo and Melbourne were not affected but buses replaced trains between Swan Hill and Bendigo until the crash site was cleared and released by the investigators.

Rail emergency management: Things to think about	
Prevention and Mitigation	Access and egress to the damaged rolling stock was a key focus of the response efforts involving a number of agencies and heavy rescue capability.
Preparedness	Emergencies like this highlight the need for the rail emergency plan to be developed in consultation with a range of stakeholders from both rail and non-rail organisations and cover both response and recovery considerations.

Response	Rescue of injured people is the first priority, closely followed by the needs of rail safety investigators. Note the rapid and direct involvement of State and Commonwealth government agencies.
Recovery	Coordinated arrangements for providing alternative transport solutions as well as support to affected people enhances overall recovery.

4.2.7 Summary: making sure the plan is used

The emergency management obligations in the Rail Safety National Law and Regulations are primarily focused on preparedness so the arrangements are useful in response and recovery. To have confidence that the plan will be used, rail transport operators are encouraged to make ongoing assessments of the rail emergency management capability. When the following elements can be readily identified, they could provide informal indicators that an appropriate rail emergency management capability exists.

- Rail workers at all levels:
  - have a strong and positive safety culture including alertness for the occurrence of rail emergencies;
  - are empowered and prepared to take immediate action to protect life, property and the environment – this can start with knowing who to talk or report to and how to raise the alarm with a 'Safety First' approach;
- Appreciate the value of thorough investigations and rapid and coordinated recovery.
- An emergency management structure exists that can be used for rail emergencies of any magnitude/complexity.
- Sound relationships exist with response and recovery agencies for rail emergencies.

Checking In

How is your organisation 'tracking' for rail emergency preparedness?

4.3 Response

4.3.1 Introduction

The nature of emergencies means that decisive action is required in a structured and coordinated way to limit further harm and/or loss. Though all emergencies are different, this section looks at a typical response sequences and functions to support emergency planning. If rail transport operators are vertically integrated, they should consider how these functions are managed in their own context.

4.3.2 About command, control and coordination

Emergency services all use command, control and coordination protocols in response, but the actual systems used often vary between agencies and jurisdictions. Rail transport operators are encouraged to use a command and control system that:

- can provide a systematic approach to dealing with events of any type and magnitude;
- enables the rail transport operators, in particular the rail commander, to easily track and monitor the progress and movement of various rail response teams that may be working at the site.

Rail transport operators are encouraged to review their current response management system and incorporate the following four generic functions:

- Control.

- Operations.
- Logistics planning.

Checking In

What is the command and control system that your rail organisation uses? Is it interoperable with systems used by your rail response partners?

4.3.3 Emergency powers – rail and others

The arrangements in the rail emergency plan provide the authority for the rail infrastructure manager to give reasonable directions to coordinate rail-specific aspects of response. The emergency services and some other non-rail transport operators have other legislative authorities in emergencies, as outlined in Section 3 of this Guideline so all responding agencies need to coordinate their own efforts, in line with decisions made by the controlling agency.

When significant and broader consequences emerge, other powers may be also be sanctioned by specified government roles, which reinforces the need for rail transport operators to make sure that their arrangements cater for a range of situations/consequences and are compatible with the jurisdiction's arrangements.

Checking In

Do the response arrangements take into account the broader emergency powers that can be sanctioned by state authorities and make provisions to extend information flows if this occurs?

4.3.4 Rail response sequence and priorities

A typical response sequence is outlined next for rail emergencies with a defined emergency site. While all rail emergencies are different there are common issues and considerations in response and recovery and this section addresses a number of them, along with regular references to arrangements that could be included in the rail emergency management plan.

This section presents the rail transport operators‟ perspective for but it is important to remember that the Controlling Agency is responsible for providing overall coordination at the emergency site and that rail transport operators are required to coordinate their efforts with them.

Notification and initial priorities

Once an emergency is imminent or occurs, the alarm should be raised as quickly as possible so that assistance can be given to protect life, property and the environment. Often this means that first contact needs to be made to workers controlling train movements on the affected track section and the emergency services using the Triple Zero (000) number. In other situations, a member of the public or an emergency service communication centre could raise the alarm.

The first notification priorities are to make contact with emergency services, confirm the type of emergency, location, access points and what help is needed.

During response it is very important that information is provided and updated continuously internally and externally to rail transport operators.

Checking In

Do current procedures allow for rail emergencies to be reported by/to the workers controlling train movements on the affected track section?

At the emergency site (assuming a train is involved)

- the most able rail worker assumes command, assesses the site and reports the situation in line with current procedures e.g. tell train control or call calls '000';
- within the limits of safety and training, workers minimise hazards at the site and gather information for the worker controlling train movements on the section/rail commander. This may include protecting the track from other trains;
- preliminary checks on the health and well-being of others are carried out (workers, passengers, members of the public);
- evacuation priorities and safety are reviewed. Generally, passengers/workers should be directed to stay on the train in the initial stages, unless there is a fire on the train or some other significant hazard;
- any deceased persons should be covered if it is possible and safe to do so.

Off-Site

The worker controlling train movements on the affected track section assesses the situation and takes action to reduce the hazards at the site with such actions as:

- notifying emergency Services/Control Agency and providing directions and location advice. (Remember that local rail names may not be relevant for emergency services that mainly use road access to sites);
- protecting the track section (from other rail traffic).
- confirming the initial worker acting as the rail commander and consider other workers for the Rail Response Team. Specifically, the following functions:
  - rail safety;
  - rail response planning;
  - operations and logistics;
  - site security;
  - rail media liaison.

These functions address both above and below rail considerations, but they do not necessarily require a person each. In some emergencies, one rail worker will manage all of these functions and in others they will be shared. It is important that there are no gaps or conflicts.

Site safety and access

Rail transport operators are responsible for minimising hazards from rail sources.

This can include:

- eliminating hazards at the site – protecting the track, isolating and earthing electrical hazards, managing dangerous goods spills;
- being able to identify rail workers with important response roles in all weather conditions – rail commander, other team leaders, e.g. electrical (electrified territory only). Consider issuing tabards (all weather) to clearly identify authorised/key rail workers at the site;
- establishing staging points for emergency services vehicles/equipment/triage area.

Establishing the:

On-Site: The rail commander makes him/herself known to the other agency's commanders,

Response management structure

Provides an initial safety briefing and continues to coordinate the rail response.

Off-Site: the rail infrastructure manager:

- organises workers for the response e.g. rail response team, relief rail commander etc confirms the control agency and other attending services
- starts providing updates to stakeholders and confirms timing for situation reports.

Site security and preservation of evidence

Securing the site supports the preservation of evidence. Unless rescue requirement necessitates it, evidence should not be removed or touched, including rolling stock and associated infrastructure (to be left 'in situ'). Though the control agency has overall responsibility for securing the site, the practicalities of rail emergencies mean that the Rail Commander has a major role.

Rail transport operators need an easily transportable system to clearly identify authorised people at the site. Rail workers should only report to the site if specifically, directed or authorised and only remain at the site with the authority of the rail commander.

Each attending organisation is responsible for managing access to the site for their own workers, but they may not be aware of rail organisation's responsibilities for site security or preservation of evidence for rail safety investigations. The control agency also has the authority to close the site temporarily or restrict access, especially to preserve evidence or for safety reasons.

Checking In

Are responsibilities for site security/registration agreed and included in the plan?

Rescue and caring for injured people

- Care for injured/affected people is the next most important consideration.
- Rescue/extrication should not begin until hazards at the site have been addressed. Pre- planned rescue strategies and priorities can accelerate response e.g. isolate, contain, evacuate (ICE) or stabilise, access, disentanglement, extrication (SADE).
- Passenger rolling stock operators are responsible for caring for affected passengers and their belongings until their contract for transport has been fulfilled. This responsibility endures while Ambulance services provide emergency care and may include making alternative arrangements for travel and accommodation as required. It could also mean that the rolling stock operator needs to deploy liaison officers to relevant hospitals/workers to support the affected individuals and their families.

Secondary hazard considerations at the site

Dealing with other hazards is the next priority so investigations and repair/recovery of the assets can be addressed. Safety First applies at all times and secondary hazard priorities can include:

- fire suppression, removing/containing items that have fire potential stabilising damaged rolling stock or containers
- containing spills or leaks of dangerous goods.

Investigations

- Investigation priorities should be confirmed (noting authorities of both rail transport operators and non-rail organisations) and updates provided regarding the anticipated and actual arrival

and departure times of investigators. Rail safety investigations can occur simultaneously so cooperation and coordination is required. In many cases memorandums of understanding are in place between agencies for this and they should be noted in the plan.

- The rail commander closely monitors investigation activities and regular updates mean recovery activities can be timed to coincide with release of the site. This can be a challenging time for rail transport operators as the pressure to re-start services can compete with the time required by investigation authorities. Fatalities can increase investigation requirements, as do emergencies when there is evidence of criminal acts.

Checking In

Does the rail emergency plan describe preservation of evidence and investigation roles and responsibilities for multi-agency response including police, fire, the coroner, rail investigative authorities etc)?

Managing deaths

When fatalities occur, police will manage special requirements and rail transport operators may be able to assist. Police are responsible for advising next of kin, but rail transport operators may feel it is appropriate that they are part of this often-difficult process.

Where possible, commercial or industrial cleaners can be contracted to clean rolling stock or network infrastructure (police and fire may be able to assist with contacts for managing deaths).

Establishing broad arrangements in the plan is recommended as well as recovery arrangements which can also include longer-term support for affected people (including workers).

Caring for workers at the site

The longer-term physical welfare of rail workers at the emergency site needs to be addressed, for example provision of water and food, protection from weather, temporary accommodation and transport. Due to the hectic and demanding nature of the initial response, this could be specifically delegated to a rail worker to arrange, in coordination and consultation with the rail response team.

Before the Rail Response Team is relieved a hand-over needs to occur with relief workers. Notwithstanding industrial matters shifts of more than 10-12 hours are discouraged. Travel and hand-over times also need to be factored into arranging relief.

Although it can be valuable to have supervisors of rail recovery teams assess damage/impacts, timing the deployment of their teams should be carefully considered. An agreed timeline for restoration work can minimise fatigue (especially if there are limited support services near the site, e.g. catering, water, shelter).

Other considerations at the site

- Other support activities at the site might be needed and can be coordinated from on or off site. These will depend on the train services affected, network location, time of day or weather and include:
- arranging for drug and alcohol testing of workers (if required);
- damage/impact assessments (from the emergency and response) on the rolling stock, network infrastructure, other assets or facilities, the environment;
- ongoing monitoring of people accessing the emergency site supporting/providing authorised access for media, VIPs arranging handovers and hot debriefs;
- coordinating breaks, delivery of food, water and shelter to workers;

- monitoring and coordinating the location, progress and welfare of response, investigation and recovery teams;
- monitoring coordination of care for passengers and alternative transport arrangements;
- requesting and coordinating re-supply of equipment e.g. lighting, spare parts, consumables;
- logging major decisions, discussions and actions and continuing to provide situation reports and advice;
- coordinating the testing of infrastructure and other equipment as it is repaired.

Off-Site coordination and operations management support

Off-site, significant coordination occurs to support activities at the emergency site. Affected rail transport operators also need to address their regulatory reporting obligations (verbal advice, followed by written confirmation, such as a prescribed form. In addition, affected rail transport operators are re-visiting schedules, updating them and liaising with customers.

Operations managers should be considering more strategic matters that may arise from the emergency so other consequences can be reduced as much as possible and prompt involvement of the strategic management group can be enabled as required. Information flow continues to have high priority. Considerations can include:

- the impacts and broader consequences of the emergency (consider life, property and the environment, commercial losses-current and potential, community impact and perceptions);
- what the control priorities are on-site and off-site at tactical, operational and strategic levels;
- the organisation's priorities and any competing demands;
- how addressing the priorities is being coordinated, monitored and reported on any other consequences expected from response actions;
- any current or emerging needs of the workers in key control or coordination roles (e.g. relief, expert/specialist advice etc);
- that the current reporting/information flows meeting current and anticipated needs?

Liaison officers

When it seems that response is going to run over an extended period, rail transport operators should consider requesting and offering liaison officers. Rail liaison officers should provide regular situation reports back to the coordinating rail organisation and log their actions taken and advice provided. Like the workers at the emergency site, rail liaison officers need to be monitored for fatigue management. These responsibilities should also be included in the plan.

Checking In

Are rail workers nominated for rail liaison duties? Is there an action card for them and what are the arrangements for monitoring and supporting them while they are on duty?

Information management

Maintaining information flow throughout response between the site and various off-site locations is critical, as is clearing it for and controlling its release through agreed channels and methods. Some basic protocols for information management:

- organisations only comment on matters that they are directly responsible for through a nominated spokesperson/liaison officer;

- an appropriate authority clears information for release. Written information is provided in a secure and transportable format, such PDF files and saved to agreed/common/shared locations;
- in the first instance the rail infrastructure manager is often the main off-site rail liaison for emergency services communications centres and others, such as rail safety investigators;
- On-site:
  - the rail commander should establish requirements for situation reports (SITREPS) with other on-site workers and provide the SITREPS to the control agency at the site and the rail infrastructure manager off-site;
  - team leaders report first to the rail commander, but they may also provide selected information to their usual line managers to support coordination at other locations;
- Off-site:
  - the rail infrastructure manager updates the rail commander regularly and prepares customer/stakeholder briefings.
  - Rail liaison officers deployed to other locations should be providing regular SITREPS to their stakeholders.
  - When the response involves operations/strategic levels, these groups are included in the information cycle. Review Section 2 Figure 3.
  - Rail transport operators should confirm how information will be provided to the public and to workers not involved in the response. This could include regular web updates and corporate updates.
- Records of expenditure should be coded to central cost accounts and records collated so that there is accurate costing of the emergency for such things as insurance claims, natural hazard relief reimbursements for eligible organisations.

Working with the media

Rail emergencies often result in intense media interest and scrutiny. It is important that rail transport operators have arrangements in place to work with the media and that this is coordinated with other agencies involved.

For a multi-agency response, the control agency arranges the primary media liaison officer/s. They will probably need assistance from rail transport operators, so that information provided is factual and relevant.

Transition to recovery

As the emergency is resolved and investigations are carried out, the authority of the emergency services' ends and responsibility for the site reverts to the asset owner/manager to complete recovery of rail assets and reinstatement of services. This often includes arranging personal support for people affected by the emergency (rail workers and others). It is especially important that information flow is maintained at this time, so stakeholders are aware of changes in lead roles and priorities.

Recovery is a part of business continuity arrangements and Table 11 (in Section 4.4) outlines some recovery considerations for the main groups involved. As with Section 3.2, this table aims to provide a nationally consistent overview and they should be reviewed and adjusted as required.

Debriefs

Conducting and/or participating in formal response debriefs occurs next. Use the arrangements from the plan to establish the debrief plan/program and make sure that debrief findings are recorded and shared.

4.3.5 Summary

Response arrangements in the plan should be scalable and flexible to meet the needs of each situation. It is also important that as response unfolds, information flow on and off site is maintained to keep stakeholders up to date. To limit further harm/loss, support is needed so that response efforts are safe, effective and timely. Specific areas considered in this sub-section included:

Rail response priority	Key Messages
Notification and initial priorities	• Raise the alarm and keep providing updates throughout response, internally and externally within command and control lines.
Site safety and access	• Reduce the hazards, protect the track and assist with access and egress. • Establishing the response management structure
Establishing the response management structure	• Confirm the rail commander and arrange support for them. • Establish the rail role within the multi-agency response team and support coordinated response with the control agency.
Site security and preservation of evidence	• Manage access to the site to promote safety and the preservation of evidence for or with the control agency.
Rescue and caring for injured people	• People first – consider workers, passengers, casualties, other responders, members of the public. • Support rescue and extrication with specialist rail advice and equipment.
Secondary hazard considerations at the site	• Continue ongoing management of hazards once initial care has been arranged for people.
Investigations	• A range of authorities exist that need to be coordinated to restore rail services efficiently.
Managing deaths	• To be managed sensitively and appropriately.
Caring for workers at the site	• Workers at the site need ongoing support (food, water, accommodation, relief) and fatigue management requires ongoing consideration.
Other considerations at the site	• Response needs ongoing forward planning, operations and logistics support in a coordinated effort with other responding agencies and investigators.
Off-site coordination and operations management support	• Provide support to on-site response workers and address scheduling and service disruptions in coordination with affected rail organisations and with other responding agencies. • Consider broader consequences of the emergency and the need for more strategic support to deal with emerging issues.
Liaison officers	• Liaison officers promote information flow and support decision-making. They can be offered or requested and require similar types of support to workers at the emergency site.
Information management	• Maintaining information flow is critical and using common protocols can support this.
Working with the media	• Media organisations are part of the stakeholder group for rail emergencies and can support rail response.
Transition to recovery	• Start to put in place the initial recovery arrangements for people (safety), rail assets, commercial and environmental considerations.
Debriefs	• Conduct and participate in formal response debriefs to identify lessons.

Checking In

Does the rail plan include arrangements for these matters as well as how the relevant workers are resourced, trained and empowered to take on these roles?

4.4 Recovery

4.4.1 Introduction

The Rail Safety National Law and Regulations do not set recovery requirements; however, rail transport operators retain responsibilities to their stakeholders and may incur other moral responsibilities for people who assisted in the response or were significantly affected by the emergency. Recovery does not simply mean returning to the pre-emergency state, because this is not usually possible, nor might it be desirable.

While there are differing opinions as to when recovery 'starts', recovery efforts are the focus once response has finished (i.e. when the threat to life property and the environment has stopped). The recovery phase includes investigations and initially focus' on the implementation of care plans for affected workers and/or passengers, as well as repair and reinstatement of rail assets.

Experience shows that adopting a holistic approach to recovery can provide longer-term benefits and as always, optimum results usually emerge from well-coordinated arrangements that are implemented in a timely manner with stakeholders. Consequently, pre-planning recovery activities is a logical extension to planning response arrangements and can assist to further mitigate the impacts of rail emergencies.

4.4.2 Recovery in the rail context

In the rail context, recovery has four main dimensions (these are aligned with the current national principles of disaster recovery):

- Safety: physical and emotional injuries/trauma to rail workers, passengers/customers, public, emergency services, others.
- Rail assets: the network and its infrastructure, rolling stock, rail property/premises.
- Commercial: re-instating train services, managing breaches (contractual and compliance), insurance impacts, reputation loss, economic loss of non-rail transport operators affected by the emergency.
- Environment: flora, fauna, air, soil, water quality, waste management.

Broader/community recovery needs may also emerge following a rail emergency. In the planning process rail transport operators are encouraged to liaise with government agencies that coordinate community-focused recovery to establish flexible and supportive arrangements.

Checking In

What are the current recovery arrangements for your rail organisation? Do they address the four areas noted here?

4.4.3 Rail Recovery Activities

Table 21: Rail recovery

Rail Recovery Aspect	Rail Transport Operators	Non-Rail Organisations

Safety	Rehabilitation of workers and passengers (physical and reasonable care for emotional trauma). This could include but is not limited to: • Arranging alternate/special duties for workers and encouraging • informal ongoing support through work-related networks. • Adopting a 'case management' approach can be an effective • strategy drawing on pre-established care/support packages that • may include financial, medical and emotional support services. • Experiences show it is mutually beneficial for support package • to also include pre-defined „exit" points (this limits unhelpful • dependencies developing). • Arranging acknowledgements/thanks to emergency services. • Where appropriate, making arrangements to support affected • emergency services workers • Establishing/contributing to tributes, fundraisers or support for • affected people. It may be appropriate to address these • matters in coordination with the local council • Finalising debriefs for response/recovery and sharing findings as agreed.	Rehabilitation of workers (Physical and reasonable care for emotional trauma). This may include: • arranging special duties for workers, supporting social, informal work-related networks; • providing feedback to rail transport operators and participating in debriefs; • Establishing/contributing to tributes, fundraisers or support for affected workers and community members.
Rail Assets	• Repairs to affected assets as required – rolling stock and network infrastructure; • Develop specific recovery plans as required.	• Repairs/reinstatement of own equipment and supplies.
Commercial	• Re-instating scheduled services. • Finalising outstanding customer matters – reconciling • passengers with their luggage, arranging extra services for freight customers where possible. • Reputation management – review liaison/spokesperson's roles, provide regular updates and advice to stakeholders regarding recovery arrangements and any anticipated impacts. Commence re-branding as required. • Managing financial matters – invoicing other rail transport operators and approving payments for response service providers in the emergency. This may include arranging estimates for reimbursements for eligible events under NDRRA (Commonwealth relief program Natural Disasters Relief and Recovery Arrangements) coordinated by a State/Territory agency). • Assessing and reporting on the cost of emergencies for business planning purposes. • Reviewing/negotiating changes to the access regimes and fees for delays and disruptions.	• Resuming normal operations/rosters. • Finalising cost recovery arrangements as required. • Completing internal reports, assisting with inquiries or investigations as required.

	• Assisting with inquiries or investigations as required.	
Environment	• Rehabilitation of affected air, soil, water, flora and fauna related to above or below rail aspects of the emergency, in coordination with Environment or equivalent department.	• Not applicable.

4.4.4 Case Study: Dangerous Goods, January 2005 Graniteville, South Carolina, USA

6 January 2005, two trains collided near the Avondale Mills plant in Graniteville. One train was in a siding at the plant. The other train collided with it as a result of improper switching. Both trains were derailed including 16 of the 42 freight cars from the impacting train as well as the locomotive and one other carriage from the stationary/stabled train.

The larger train was transporting chlorine gas, sodium hydroxide and cresol. One of the tank cars carrying chlorine ruptured, releasing at least 90 tonnes of gas resulting in nine deaths and at least 250 people needed treatment for chlorine exposure. Over 5, 000 residents within one mile (1600m) were evacuated for almost two weeks while the area was cleaned.

At the time, the rail transport operator estimated the emergency would cost between $US 30-40 million (including insurance costs but not fines or penalties that may be incurred). Part of this was used in the preliminary settlement for residents that were evacuated but did not need medical care. Payments were calculated as follows: $2000/person (flat rate) plus $200 per person/per day of the evacuation. These amounts were separate to any property damage claims.

In May 2006 the company's pending closure was announced, citing foreign competition and the 2005 derailment as the primary reasons. The closure left more than 4, 000 workers unemployed. Avondale Mills also closed after paying out a further $140 million for clean-up and repairs, leaving thousands more out of work. They started legal action against Norfolk Southern (the rail transport operator) in 2008 and reached a confidential out of court settlement.

Norfolk Southern was also sued by the federal environmental agency for polluting local waterways and precedents at the time suggested a fine of several million dollars could be reached, noting that the tangible cost of damage to the environment was likely to be much higher.

Rail emergency management: Things to think about	
Prevention and Mitigation	The value of broad consequence management analysis is highlighted in this case study.
Preparedness	Emergency arrangements need to flexible and scalable so all levels of response (Tactical, Operational and Strategic) can be coordinated. The role in promoting public awareness of the inherent hazards in railway operations was addressed by the rail transport operator and this enhanced community capacity to take care of itself in an emergency, mitigating the impact (Ironically in May 2005 the rail transport operator was awarded a national achievement award for promoting emergency preparedness for hazardous materials emergencies with emergency services and relevant communities over 2004).
Response	Managing a large evacuation highlights the need for liaison officers to work with emergency services.
Recovery	The emergency had broad consequences safety/psycho-social, economic, infrastructure and environmental and the rail transport operator was involved in remediation for all aspects.

5 Appendices

5.1 National rail emergency management requirements

The following sub-sections show the requirements identified in Section 2. Other notes are:

- All emergency management requirements from the Rail Safety National Law and Regulations are included. Remember these will need to be located or identified in each jurisdiction's legislation.
- Some requirements are duplicated in different sources. In this appendix, only the 'higher order' reference is included. Where requirements apply to more than one aspect or theme, the requirement is copied, and the relevant key words are shown in **bold**.
- Jurisdiction-specific details and guidance are not included here, and so rail transport operators should check the resources provided by the Regulators to ensure that any extra requirements are met.

Requirements for the rail emergency management plan

	Requirement	Source
General		

1	A rail transport operator must have an emergency plan for railway operations that complies with sub-section 2.	Rail Safety National Law 63(I)
2	The emergency plan must: a. address and include the matters that are prescribed b. be prepared: – in conjunction with emergency services, and any other person who is prescribed – in accordance with the regulations, and c. be kept and maintained in accordance with the regulations d. be provided to the emergency services and any other person who is prescribed, and e. be tested in accordance with the regulations.	Rail Safety National Law Section 63(2)
Consultation requirements		
3	Consultation to occur with the following when preparing a rail emergency plan: a. persons likely to be affected by the safety management system or its review or variation (the workers). b. health and safety representatives for OHS for the people in (a). c. any unions for the people in (a). d. other rail transport operators identified in interface coordination plans. e. the public, as appropriate.	Rail Safety National Law 57(2)
4	Preparation of an emergency management plan: in addition to the people specified in section 57(2) of the Rail Safety National Law, a rail transport operator must consult with: a. government agencies with emergency management functions for the area that the plan relates to. b. other transport operators who may affected by the implementation of the plan. c. any of the following where they may be required to assist in the implementation of the plan: – entities that provide water, sewerage, drainage, gas, electricity, telephone, telecommunication or other like services under the authority of an Act jurisdictional or Commonwealth). – jurisdictional pipeline users, owners, constructors, operators iii. – any provider of public transport.	Rail Safety National Regulations17 (I)
5	The rail safety regulator may exempt a rail transport operator from the requirement to consult with any particular person or body under sub-regulation 1.	Rail Safety National Regulations17(2)
Specified plan contents		
6	An emergency management plan prepared under section 63 of the Act must address: a. the types or classes of foreseeable emergencies; b. the consequences of each type or class of those emergencies including estimates of the likely magnitude/severity of the effects; c. the risks to safety arising from those emergencies; d. methods to mitigate the effects of the emergencies; e. initial response procedures for dealing with the emergencies and provision of rescue services; f. recovery procedures for the restoration of railway operations and for the assistance of people affected by the occurrence of the emergency; g. the allocation of emergency management roles and responsibilities within the organisation and between other organisations; h. call-out procedures; i. the allocation of personnel for the on-site management of emergencies; j. procedures for liaison with relevant emergency services, including information about the circumstances in which the emergency services are to be immediately contacted; k. procedures to ensure that emergency services are provided with all the information that is reasonably required to enable them to respond effectively to an emergency;	Rail Safety National Regulations18

	l. procedures for effective communications and cooperation throughout the emergency response; m. procedures for ensuring site security and the preservation of evidence.	
Distribution and accessibility		
7	A rail transport operator must ensure that the emergency management plan is comprehensible, and is readily accessible at all times, to: a. All employees of the operator, and all contractors engaged by the operator, who may be required to implement any emergency response procedures in the plan; b. All other rail transport operators who may be affected by the plan any person or body referred to in section 16(1)(c) (utility owners/managers and other public transport providers). c. emergency services.	Rail Safety National Regulations19(6)

Requirements for testing the plan

	Requirement	Source
1	The operator must test the emergency management plan, or elements of the plan, to ensure that the plan remains effective: **a) at the intervals set out in the plan;** b) after any significant changes are made to the plan.	Rail Safety National Regulations19(2)
2	In preparing an emergency management plan, the operator must, if it is reasonably practicable to do so, **determine the intervals for the purposes of sub-regulation (2)(a) in conjunction with the emergency services.**	Rail Safety National Regulations19(3)
3	When testing the emergency management plan, or elements of the plan, the operator must, so far as reasonably practicable, arrange for participation in the testing by the relevant emergency services.	Rail Safety National Regulations19(4)
4	**The operator must ensure that in-house exercises to test the emergency management plan are undertaken as often as necessary,** in the opinion of the operator, to ensure that the plan will be properly implemented should an emergency arise.	Rail Safety National Regulations19(5)

Requirements for implementing the plan

	Requirement	Source
1	A rail transport operator must ensure that the appropriate response measures of the emergency management plan are implemented if an emergency occurs.	Rail Safety National Law 63(3)
2	A rail transport operator must ensure, so far as reasonably practicable, that all employees of the operator, and all contractors engaged by the operator, who may be required to implement any emergency response procedures in the emergency management plan: a. are provided with information about the relevant elements of the plan; b. are able to do anything that may be required of them under the plan.	Rail Safety National Regulations19(1)
3	The operator must ensure that in-house exercises to test the emergency management plan are undertaken as often as necessary, in the opinion of the operator, to ensure that the plan will be properly implemented should an emergency arise.	Rail Safety National Regulations19(5)
4	The safety management system is to include: 1. the plan required by section 63 of the Act 2. systems and procedures to ensure compliance with Section 63 of the Act and Part 3 Division 5 of the Regulations (Sections 17–19).	Rail Safety National Regulations Schedule 1 Section W

5.2 Sample resources

Stakeholder management matrix

This matrix provides a simple method for registering rail emergency management stakeholders and documenting a simple stakeholder management plan. It can also be adjusted to record the advice and distribution methods used when re- issuing the plan.

Row	Stakeholder	Rail Liaison	Priorities		Methods			Notes
			Theirs	Ours	1	2	3	
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

Testing register

The following register shows one way to record the testing register plan for rail emergency response arrangements. Dates and lead roles for arranging the test should be entered in the Q1-Q4 columns (Q1 indicates the first financial quarter July–September). Once agreed, this register can be shared with stakeholders.

Row	Testing Theme (Location)	Aim	Q1 Jul-Sept	Q2 Oct-Dec	Q3 Jan-Mar	Q4 Apr-Jun
1	Strategic/Executive Management Arrangements (Board Room HQ)					
2	Operational Management Arrangements (Floor 3 Meeting Room, Regional HQ)					
3	Tactical Response Arrangements-On-Site/Multi-Agency (Level Crossing at 45.6 km on Kickatinalong section)					
4	Tactical Response Arrangements–Off-Site/Multi-Agency (Participating Agencies Control and Communications Centres)					
5	Communications Arrangements (As for #4)					
6	Evacuation 1 (Rolling stock/network area, e.g. tunnel)					
7	Field/deployment exercise (Rolling stock/network area, e.g. tunnel)					

5.3 Model plan resources

Model plan structure

This shows the recommended model structure for rail emergency plans to meet the requirements of the Rail Safety National Law and Regulations and to reflect current Australian emergency management practices used by a range of emergency services and other government departments.

General	
Title page	Should show the full plan title and issue number, approval authority and date of approval. Should include a statement that notes that this issue supersedes the previous issue. (Previous issues should be destroyed or clearly marked as superseded and removed from general circulation). The title page may also include a statement about the responsibility for keeping the plan current, for example: „The master copy of this plan is kept at/by XX. Users of other copies are responsible for keeping their own copies current'.
Headers and footers	Minimise details in headers and footers. Recommended contents are: page numbering in Page X of Y' format, plan title, plan status (Draft or Issued) and date (month and year). Use of 'text watermarks' for marking drafts is not recommended
Table of contents	Automated
Section 1: Overview	
Glossary	For key terms. Should not duplicate terms but may contextualise them if critical. Should be ordered alphabetically.
Acronyms	For relevant acronyms. Use of multiple acronyms is discouraged as it impedes readability.
Introduction	This section sets the context and purpose of the plan.
Authority	A short statement clarifying where the authority to develop the plan comes from. Traditionally this is from legislation and therefore the title and year of the Act and relevant sections should be included in italics, for example: Rail Safety Act 2006. Example: 'This plan is issued by <insert the responsible organisation who issues the plan> in accordance with the authority provided in Section XX of the <Insert act and year, e.g. Rail Safety Act 2006>.'
Aim	A short statement that identifies what the overall purpose of the plan is, using key terms about the plan from the legislation. Example: 'The aim of this plan is to describe the current and agreed roles, responsibilities and arrangements for managing rail emergencies.'
Objectives	Optional. A series of short statements that describe that main points in the plan that contribute to achievement of the aim. Example: 'The objectives of this plan are to: • outline the roles and responsibilities for rail emergencies; • describe the arrangements for the prevention and mitigation of, preparedness for, response to and recovery from rail emergencies; • describe how the responsible agencies work together under a single, comprehensive and flexible framework to limit the loss from rail emergencies.'
Scope	A short statement that identifies where, when and who the plan applies to. It may also list specific exemptions/exclusions and note the relationship of the plan to other plans or arrangements. Example: 'This plan applies to the rail network managed by Company XX that extends from A to B. It includes the local government areas of C, D. It does not apply to other train operators including Company E and F who also operate on this part of the network.'
Context statement.	Because this section sets the scene for people who will use the plan, it should give a 'plain English' summary of the environment for the rail emergency plan. It typically includes a description of the area the plan relates to. Include relevant maps, diagrams etc in the plan appendices as well as:

	• a broad description of the types of train service; • capacity of the trains and typical loads; • an overview of the how train movements are controlled; • types of rail emergencies; • the range of consequences; See Table 2 for rail emergencies and Section 4.4 in this guideline for ways to describe consequences of rail emergencies.
Safety statement	Basic safety considerations at a rail emergency site should be described – electrical, slip/trip/fall hazards on the ballast/points, exposure to dangerous goods, tunnel information, typical hazards from doors/containers when trains are de-powered. If there are sections of the track that have difficult road access, this should also be noted and any pre-planned staging areas/access points included or referenced.
Section 2: Roles and responsibilities	
The framework	This section summarises the key requirements relevant to the plan. It may include: • legislation/regulations for rail and emergency service/other agencies • Rail safety regulators' requirements • industry/organisational safety standards that establish the roles and responsibilities that underpin the plan. Also note any hierarchy that exists between the requirements and how conflicts between authorities are managed. This should include the rail transport operator's responsibilities as well as the whole-of-government emergency management arrangements (may be achieved by cross-referencing other plans). If joint planning groups or other committees are active, they should be identified here, as well as any powers/special processes used specifically in emergencies.
Roles and responsibilities	This section identifies the main roles and responsibilities for identified rail emergency management duties in Prevention and Mitigation, Preparedness, Response and Recovery. Often this is the most popular/useful part of a plan. It can be presented using 'tables' and may also provide a 'skeleton' contact list, but actual contact details should be held separately. It is also often useful to outline the capabilities of each organisation involved in rail emergency management in this section.
Section 3: Emergency management arrangements This section describes the usual arrangements, or the arrangements that will be put into place for rail emergencies, including main triggers for starting and finishing, key roles/positions and actions.	
Prevention and mitigation	Broadly describe the activities that prevent and mitigate the impact of rail emergencies. This could include risk assessment work, protective security arrangements, safeworking and OHS practices, specific rolling stock design features and other practices, like site familiarisations, to identify more vulnerable sections of the network (communications coverage, access, egress). Be careful not to duplicate material that is in the preparedness section.
Preparedness	Describes the usual arrangements for preparedness. This can include: • How rail emergency planning is coordinated and how assistance is provided for the emergency management partners' planning processes. • Testing the arrangements in the plan, including working with the emergency services to determine the intervals for testing and specifically when communications arrangements will be tested. It can also include the testing register (optional). • Debrief arrangements including how lessons identified will be managed. • Worker preparedness and awareness (for rail and emergency services workers) including awareness of the plan and how to access it. • Arrangements for maintaining rescue, on-site response and off-site coordination capabilities. This may include back-fill/delegation models for key rail emergency roles, pre-planned Rail Response Teams, other support resources, equipment and supplies.
Response	Describes the usual arrangements, or the arrangements that will be put into place for response. This can include:
Overview	• Advice to the emergency services and the initial information to be provided (type of emergency, location, access points, what help is needed).

	• Site safety, securing the site, other initial actions (on-site and off-site). • Calling out the initial rail response team. • The general response management structure (including escalation arrangements and a general process for resolving issues). It should be noted that this is the general/standard arrangement and it is flexible and scalable (not prescriptive), so it can be adjusted as needed. If there are different arrangements for specific hazards/circumstances these should be cross-referenced. • General stages of response and main activities e.g. s alert/initial advice, activation, escalation, resolution/full transition to recovery.
Elements of response	Outline general procedures and other important activities, for example: • protecting the track; • providing access/egress to the network/rolling stock; • Situation reports. • preservation of evidence and setting investigation priorities/arrangements; • the usual rescue strategies/priorities; • managing deaths; • alternative transport arrangements; • supplementing/relieving the rail response team as required (support staff for the rail commander, rail liaison officers); • information management and media coordination arrangements (on-site and off-site). • supporting other management work (cost capture, logs, debriefs; operational and • strategic/executive matters). • finishing response.
Recovery	Describes the usual arrangements, or the arrangements that will be put into place for rail recovery: • safety (physical and personal recovery of workers, customers/passengers, public, emergency services). • Asset repairs (infrastructure/signals, rolling stock, facilities). • Business recovery (service restoration, contracts, insurance, bookings, reputation management, assisting Inquiries as appropriate, local community assistance). • environmental recovery. NOTE: These arrangements should be aligned with local Government recovery arrangements to assist communities deal with consequences of rail emergencies in a coordinated manner.
Section 4: Plan administration this section describes how the plan is maintained	
	It includes: • arrangements for the plan's maintenance including the usual review period; • position/s responsible for the plan's approval and implementation; • how consultation is managed, and which organisations are invited to comment; • communication arrangements describe how various stakeholders are advised of the plan's re-issue and its contents; • the plan's history (issue number and main changes between each version); • distribution and access arrangements to the plan. Describe who is provided with a copy of the plan and how the plan is made accessible. This may need to include key positions that coordinate distribution of the plan for the particular organisation.
Section 5: Appendices - supporting details (may be included, attached or cross referenced).	
Maps/Diagrams	Maps and diagrams of the network, rolling stock layout and site plans of station facilities are recommended for inclusion, after considering information security needs.
Associated Documents	
Legislation	Optional. Primary/key legislation should have been included in Section 2, 'The framework', but there may be other relevant legislation and it can be listed here.
Plans and sub-plans, related procedures	Outline how this plan is related to other plans/sub-plans/procedures (a diagram may be a good way to show this).

Manuals, guides, reports	Optional. List any other relevant documents used in the development of this plan.
Other suggestions	Terms of reference for emergency planning committees, summaries of resources, arrangements, action cards, other relevant protocols and criteria etc. NOTE: Comprehensive contact lists are not recommended for inclusion.
Index	Optional. Key word references

Plan review guide

This guide provides a common structure to review rail emergency management plans. This review guide is intended for use by rail transport operators to enhance document quality. This is not an audit tool.

Plan sections	Checkpoints	Comments
Title Page	Plan title, issue number, approval details.	
Plan structure	Is generally aligned with the structure in the National guideline.	
Introduction	Aim, scope and objective are appropriate.	
	Context statement provides adequate overview.	
	Emergency management arrangements through the plan appear to be consistent with the aim, scope and objectives.	
Roles and responsibilities	Roles and responsibilities are included and are recorded accurately.	
Prevention/mitigation	Prevention and mitigation arrangements underpin preparedness for access and egress, communication and recover (consequence analysis).	
Preparedness	Plan maintenance and quality arrangements	
	Testing arrangements – exercises, debriefs and workshop including: • Testing communications processes, systems and equipment. • Developing the testing intervals for joint tests with the emergency services. • The testing intervals for in-house tests. • Training and awareness arrangements. • Arrangements for conducting debriefs. • Arrangements for maintaining joint rescue capability.	
Response	Activation arrangements including call-outs to promote safety at the site from rail-based hazards.	
	Response management structure and processes is described including escalation and managing offers of assistance in a multi-agency response.	
	A diagram shows the response management structure (showing on-site and off-site relationships)	
	Typical response sequence (alert/initial advice, activation, escalation, investigations, full transition to recovery).	
	Are terms and response arrangements consistent with common command and control systems – demonstrate planning, operations, logistics and control?	

	Arrangements for site security, preservation of evidence and linkages to investigation. Information for the public and stakeholders.	
Recovery	The usual recovery priorities and lead responsibilities for its coordination. Key points/activities for: • safety (rail and others); • asset repairs business recovery (rail and others); • environmental recovery.	
Plan administration	Includes point of contact for the plan maintenance.	
	Lists positions of responsibility for plan approval and implementation.	
	Review period/criteria are reasonable.	
	Outlines how consultation is managed and the stakeholder groups which are invited to comment.	
	Communication arrangements: describes how various stakeholders are advised of the plan's re-issue and its contents.	
	Distribution and access arrangements to the plan.	
Appendices	Appropriate maps and diagrams.	
	Related plans and procedures.	
	Contacts/resource lists.	
Referencing in plan	Formatting is consistent (Fronts, headings, page breaks etc).	
	Table of contents matches contents of plans and page numbering is accurate.	
	Cross referencing in plan is accurate.	
	Section or paragraphs are numbered, and numbering is sequential.	
	Headers and footers show page 'X of Y' format and page number is continuous.	
	Terms and acronyms are current, used consistently and accurately through plan. Common acronyms are listed in an acronyms table.	

5.4 Consultation with the emergency services

The table below identifies some issues that can arise during consultation with emergency services and some ideas to address them are outlined in the 'Ideas' column. This table is not intended to be exhaustive and although some of the ideas might seem quite basic, they are drawn from actual experiences of some rail transport operators.

Row	The issue is that…	Some ideas for rail organisations are
1	It can be challenging finding appropriate points of contact for the emergency services.	• Check the relevant all-hazards emergency plan to see which roles are undertaken by the agencies (some roles are location specific). • Promote a 'mutual aid' approach (i.e. helping each other) or make a presentation at the relevant all-hazard emergency management committee. • Discuss issues informally first with suitably ranked officers and jointly develop simple engagement strategies. • Send formal correspondence from the rail organisations. • General manager or similar to each agency requesting a liaison

		• officer to be nominated for rail emergency planning.
2	The same terms mean different things.	• Cross-check terminology between agencies with the rail transport operator's own terms. Include key terms and meanings in the plan and training programs to promote consistency.
3	The arrangements don't cater for situations when rail transport operators aren't involved in the emergency/present at the emergency site (e.g. emergency occurs at an unmanned station).	• Make sure that the emergency arrangements can be used, even if rail transport operators are not present or their attendance at the site is significantly delayed. • Assist the emergency services to keep the correct contact details for the rail transport operators.
4	Emergency services don't provide much comment on the rail plan	• Do not request that emergency services 'approve' the plan. Instead ask them to check that it accurately describes roles/responsibilities and is in line with the current arrangements. • Once the plan is finalised it can be tabled with/distributed to the relevant emergency management committees/agencies.
5	The emergency services aren't up to date with rail emergency procedures/arrangements	• Run short briefings about rail operations, hazards and rail emergency procedures on site (e.g. network control centres or presentations). • Seek opportunities to jointly develop training resources/awareness to promote safety.
6	It can be difficult for rail transport operators to explain their response times	• Confirm understanding of safety obligations that can impact on response times (e.g. isolation and earthing electrical infrastructure). • Enhance understanding by breaking down response times into times for deploying ('getting on the road'/being called out), travel and action. • Discuss specific areas of concern and when practicable make changes to improve response times.

5.5 Exercise management guide

'Managing exercises' provides sound advice related to planning and conducting exercises, available from <www.ema.gov.au>. There are two exercise styles:

Discussion style exercises **-** these can include syndicate or group-style activities, or hypotheticals.

Action style exercises **-** (often referred to as field/deployment exercises and can include functional exercises); these involve deploying resources and/or performing response–recovery roles in near real time, simulating response/rescue for a level-crossing collision, or decision-making for resource allocation during a multi-agency response, for example.

These two basic styles can be combined and adapted to meet the exercise aims and objectives; different industries and sectors have a variety of terms for different exercises styles. The following outline summarises a reasonable range of activities for a comprehensive exercise program. These activities range from simple to complex and cover drill-style, discussion, functional and full-scale exercises. Exercises provide opportunities to assess capability. Consequently, evaluators should be part of every exercise, along with debriefing reporting components.

Drill style exercises	**Purpose and characteristics -** a drill is a coordinated, supervised exercise activity that is narrow in scope and normally used to test a single specific operation or function. Its role as part of an exercise program is to practise single elements of a response plan. **Format -**a drill is measured against established standards and provides instant feedback. **Applications**: - as well as testing specific procedures or processes, drills are also useful for training with new equipment or practising and maintaining current skills. **Leadership**: drills can be led by anyone who has a thorough understanding of the function being tested. **Participants**: depends on function being tested. **Time Needed**: ½-2 hours, depending on function being tested and how many repetitions or variations are planned.

Preparation: drills should be fairly easy to design and based on existing procedures and plans that the participants are trained for.

Conduct points: a drill may start with a briefing to participants and begins once everyone is stationed. All participants must understand that it is a drill and not a real emergency – steps should be taken to ensure that entities or resources are not unnecessarily deployed, and safety measures are to be maintained at all times.

Discussion exercises

Purpose and characteristics: discussion exercises enable analysis of an emergency situation in an informal, stress-free environment. Participants examine and resolve problems based on existing operational plans and identify areas that need refining.

Format: a narrative sets the scene for the hypothetical emergency. The facilitator will then describe events or problems which the participants discuss and consider actions they could take. Options include:

- The facilitator can verbally present general problems, which are then discussed by the group/groups. A panel of experts – senior officers/managers – can also be added to give immediate feedback and include other things to think about.
- Problems can be individually addressed then opened up to the group.
- Written detailed events or problems can be given to an individual to answer from the perspective of their organisation and role and then discussed by the group.
- Pre-scripted messages can be delivered to participants, presented one at a time by the facilitator. The group discusses the issues raised using operating plans for guidance. They will determine what (if any) additional information is needed and then plan the appropriate action to be taken.
- Approaches can be combined. For example, beginning the exercise with a general scenario or event before passing out individual messages to participants.
- Discussions focus on roles, plans, coordination and effects of decisions on other organisations or stakeholders. Maps or charts can be used to add realism to the exercise.

Leadership: this is a more relaxed environment and conducive to team problem solving and coaching/mentoring. The facilitator must be clear about the exercise aims and objectives to manage discussions, have a good sense of timing, as well as good communication and organisational skills and should be well informed about the organisation's plans and procedures.

Participants: could be anyone who can learn from or contribute to the planned discussion items, particularly those with a policy, planning or response role. Observers can also find attending these exercises valuable.

Facilities: a large room is needed where the participants can all see and hear activities.

Time needed: usually lasts for one to four hours, but this can vary. Discussions need to be open-ended and participants need appropriate time to arrive at some in-depth decisions. The facilitator needs to maintain awareness of the time allocated for various segments of the exercise.

Preparation: allow at least four weeks to prepare, once dates and times are confirmed. Allow an extended period if stakeholders, such as Regulators, need to be involved or observe the exercise.

Functional Exercises

Purpose and Characteristics: a functional exercise is a fully-simulated interactive exercise that examines the capability of an organisation to respond to a simulated event in a time-pressured, realistic situation. Events are projected through an exercise scenario with event updates that drive activity at management level.

Format: an interactive exercise similar to a full-scale exercise which requires participants to respond in real time, with their decisions and actions generating real responses and consequences for other players. Messages must be carefully planned and scripted to stimulate participants to make decisions and act on them and the messages must reflect ongoing events and problems that might occur in a real emergency.

Leadership: functional exercises are complex and need to have an exercise Director with an exercise control team to manage and direct them.

Participants: 'players' are participants who respond as they would in a real emergency. These might include policy makers, coordinators and operational personnel from rail and non-rail organisations directing activities.

	Facilities: ideally, the participants should gather where they would normally gather for an emergency. Players and simulators are usually located in separate rooms; therefore, communication equipment such as telephones, radio, monitors or screens will be required. **Time needed**: a functional exercise can run for two to eight hours or longer, depending on the exercise aim/objectives. **Preparation**: the exercise may require a significant allocation of resources and will demand a major commitment from the organisation's leaders. It is also desirable that staff members participating have considerable experience with the functions being tested or that they mentor 'junior' staff members. **Purpose and characteristics**: this type of exercise simulates a real event by creating an emergency site. It is designed to evaluate the effectiveness and interoperability of the emergency arrangements. They can be stressful. The actions of multiple agencies need to be coordinated and reality is enhanced by requiring 'near real time" actions and decisions. It can involve a combination of elements, including simulated victims, deployment of equipment, resources and personnel.
Field/deployment exercise	**Format:** a description of the event is communicated as if it were real. Participants take action according to the requirements stemming from the emergency situation that they are presented with. **Leadership**: as for functional exercises, an exercise director with an exercise control team manage the exercise. A safety officer is part of the exercise control team. **Participants**: all levels of personnel usually take part in a field/deployment exercises, as well as 'innocent bystanders', like passengers, members of the public etc or off-site customers. community groups and amateur actors can provide excellent support as role players. Both rail and non-rail organisations should be involved. **Facilities**: realistic setting but as separate as possible from 'business as usual' operations. **Time needed**: four to eight hours are typical timeframes for field/deployment exercises. **Preparation**: three to six months is often needed to plan, conduct and debrief from these types of exercise. They can be expensive and time consuming and there are more factors that can cause them to be postponed. Consequently, they are recommended for high priority hazards and functions, after other testing activities.

RISSB

RAIL INDUSTRY SAFETY AND STANDARDS BOARD

ABN 58 105 001 465

For information regarding a product
developed by RISSB, contact:

Rail Industry Safety and Standards Board

Brisbane Office
Level 4, 15 Astor Terrace,
Brisbane, QLD 4000

Melbourne Office
Level 4, 580 Collins Street,
Melbourne VIC 3000

PO Box 518
Spring Hill, QLD 4004

T +61 7 3724 0000
E info@rissb.com.au