

## National Rail System Standard / 4

# RISK MANAGEMENT

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## PREFACE

### National Rail System (NRS) Standard

The objective of this NRS Standard is to provide a generic framework for the management of risk within the Rail Safety System (RSS). It is applicable for all activities involving the operation of vehicles on the National Rail System and is designed to meet the requirements set out in the relevant legislation and the Land Transport NZ document "Rail Safety Licensing and *Safety Assessment Guidelines*".

It should be read in conjunction with the Rail Safety System Manual and other applicable or relevant NRS Standards.

It is generic and specific to users of the National Rail System. The terminology chosen to apply to the National Rail System has been used in this NRS Standard.

### Review Of National Rail System (NRS) Standards

NRS Standards are subject to periodic review and are kept up to date by the issue of amendments or new editions as necessary. The user is responsible for ensuring that they are in possession of the latest edition, and any applicable amendments.

Full details of all NRS Standards are available from *ONTRACK (New Zealand Railways Corporation)*. *The Document Controller for all NRS Standards is ONTRACK.*

Suggestions for improvements to NRS Standards should be addressed to *ONTRACK* head office. Any inaccuracy found in an NRS Standard should be notified immediately to enable appropriate action to be taken.

## CONTENTS

<b>1</b>	<b>INTRODUCTION.....</b>	<b>5</b>
1.1	Scope.....	5
<b>2</b>	<b>RISK.....</b>	<b>5</b>
2.1	General.....	5
2.2	Risk Policy.....	5
2.3	Safety System.....	6
2.4	Areas of Risk.....	6
2.5	Risk Management.....	7
2.6	Change and Risk Management.....	7
2.7	Levels of Risk.....	8
<b>3</b>	<b>KEY RISK MANAGEMENT RESPONSIBILITIES.....</b>	<b>9</b>
3.1	All Rail Personnel.....	9
3.2	Rail Personnel responsible for projects and/or changes.....	9
3.3	Managers.....	9
3.4	Monitoring of Risk Management.....	10
<b>4</b>	<b>APPLICATION OF RISK MANAGEMENT TOOLS.....</b>	<b>10</b>
<b>5</b>	<b>RISK SCREENING.....</b>	<b>10</b>
5.1	Usage.....	10
5.2	Guidance.....	10
5.3	Method.....	12
<b>6</b>	<b>RISK ASSESSMENT.....</b>	<b>13</b>
6.1	Usage.....	13
6.2	Method.....	13
6.3	Accident Rates.....	14
6.4	Upper and Lower Bounds for Risk.....	15
6.5	ALARP Criteria.....	16
6.6	Cost-Benefit of Risk Reduction.....	17
6.7	Value of Avoided Deaths and Injuries.....	17
<b>7</b>	<b>PROCESS FOR MANAGING CHANGE.....</b>	<b>17</b>
<b>8</b>	<b>DOCUMENTATION.....</b>	<b>18</b>
8.1	Key Points.....	18
8.2	Records Required.....	18
8.3	Record-keeping.....	18
<b>9</b>	<b>CHANGE PROCEDURE DOCUMENTATION.....</b>	<b>19</b>
9.1	Format.....	19
9.2	Usage.....	19
9.3	Types of Change.....	19
9.4	Information required.....	20
9.5	Change Documentation- Example.....	21

## 1 INTRODUCTION

### 1.1 Scope

This National Rail System Standard provides generic guidelines for dealing with occupational, operational and engineering risks, responsibilities, documentation and change associated with the management of each organisation's licensed rail system."

This is a joint document that can be used by an individual organisation, or by organisations jointly. It is not intended to suggest that risks have implications beyond one Organisation, nor that assessment under this document should be joint in every circumstance.

## 2 RISK

### 2.1 General

Risk is a natural part of doing business. In all cases risk can be managed; in some cases the risks may be so small that it is not worth the effort; in others the risks associated with the process need to be closely managed.

A risk for the purposes of this manual includes a "Hazard" as defined under the HSE Act to mean "an activity, arrangement, circumstance, event, occurrence, phenomenon, process, situation, or substance (whether arising or caused within or outside a place of work) that is an actual or potential cause or source of harm; and "hazardous" has a corresponding meaning.

Deciding the level of risk, the level of controls, and the appropriate style and methods of management required is the purpose of this document. Additional support and guidance is available by contacting the health, safety and environment Rail Personnel.

### 2.2 Risk Policy

Rail organisation's acknowledge the existence of risk in all facets of business and accept that the management of risk is an integral part of total management practice. Risk management principles are seen as an integral part of management at all levels in each organisation.

Risk management involves the identification, assessment and control of the risks to which each organisation is exposed. Each organisation will take all practicable steps to manage health and safety risks to Rail Personnel, contractors, visitors and users of the rail network as required by the Health and Safety in Employment Act 1992 (*HSE Act*) and the *Railways Act 2005*.

The all practicable steps is defined in *the HSE Act* as follows:

"All practicable steps", in relation to achieving any result in any circumstances, means all steps to achieve the result that it is reasonable practicable to take in the circumstances, having regard to:

- (a) The nature and severity of the harm that may be suffered if the result is not achieved; and
- (b) The current state of knowledge about the likelihood that harm of that nature will be suffered if the result is not achieved; and
- (c) The current state of knowledge about harm of that nature; and
- (d) The current state of knowledge about the means available to achieve the result, and about the likely efficacy of each; and
- (e) The availability and cost of each means.

The risk criteria is further clarified through organisations accepting the fundamental principle that risks shall be kept "as low as reasonably practicable" (ALARP). The ALARP criteria will be used to assist organisations in managing complex projects and risks associated with the rail environment. The 'reasonableness' criteria in applying ALARP will be determined on the basis of the cost of risk

reduction with respect to the benefits achieved, including those beyond the organisation.

This clause 2.2 paraphrases the wording of the HSE Act and is not intended to be relied upon as a replacement for the express wording of the Act. To ensure compliance with the HSE Act, an organisation should always refer to the express obligations set out in the Act.

The aims in managing risk are :

- improve the health and safety performance of the organisation including decreasing the risk of accidents and incidents
- improve business economic efficiency and resilience
- identify opportunities
- focus on areas to reduce risk
- increase synergy between Business Groups in each Company and between Companies

## 2.3 Safety System

Management of safety is an important aspect of risk management.

The comprehensive evaluation and, where necessary, elimination, isolation or minimisation of risk forms part of an organisation's safety system. *The overarching Safety Case* is approved by Land Transport NZ after consultation with the Department of Labour .

## 2.4 Areas of Risk

Areas of risk to be considered include (but are not limited to):

1. Organisational change
2. Rail Personnel and Passenger safety
3. Rail Personnel well-being
4. Service delay, freight damage
5. Communications/IT
6. Infrastructure, including signalling and level crossings
7. Rolling Stock
8. Buildings, plant and equipment
9. Environmental/hazardous goods
10. Force majeure - fire, flood, earthquake, power cut
11. Legislation
12. Public Liability
13. Commercial loss - Public incident; Contractual dispute; regulation breach/loss of license
14. Financial implications
15. Marketplace - political change, economic change
16. Train control, train running, scheduling
17. Goods handling, loading, and unloading
18. Electric traction
19. Route crime, stock trespass
20. New or amended contracts

## 2.5 Risk Management

Risk Management is carried out throughout each organisation, in various forms. The aim of this manual is to make the components of risk management visible and traceable, to improve accountability. It also aims to ensure there are no gaps in the system, where risk may be unrecognised.

The benefits of risk management include:

1. Improve the economic efficiency and resilience of an organisation
2. Making decision processes more standardised and accountable
3. Ease of compliance with the legislation we operate under
4. Reduce the risk and incidence of accidents and incidents and improve overall health and safety performance
5. Reduced exposure in the event of incidents and accidents
6. Increased synergy between Business Units within an organisation

Other advantages include:

- Decisions made at an early stage, based on all facts, will reduce design changes or rework in later stages
- Increased confidence in the outcome of changes to the organisation's operations
- Increased speed with which improvements are implemented

## 2.6 Change and Risk Management

A "Change" is defined as any change to an organisation's procedure or operation that significantly alters the risk profile of the organisation. Change is anything that alters or modifies present practice.

In most cases, the changes will be "evolutionary change", i.e. enhancements, simplifications and/or minor rejigging of what happens now. Changes of this sort generally will not require major efforts in analysis or documentation.

On the other hand, any significant re-engineering or substantial change in processes, standards or personnel, may necessitate detailed analysis to verify the proposed changes do not increase the Organisation's risk profile to unacceptable levels.

Pugsley<sup>1</sup> developed a list of criteria, which could increase the likelihood of accident when past accident experience was taken into account.

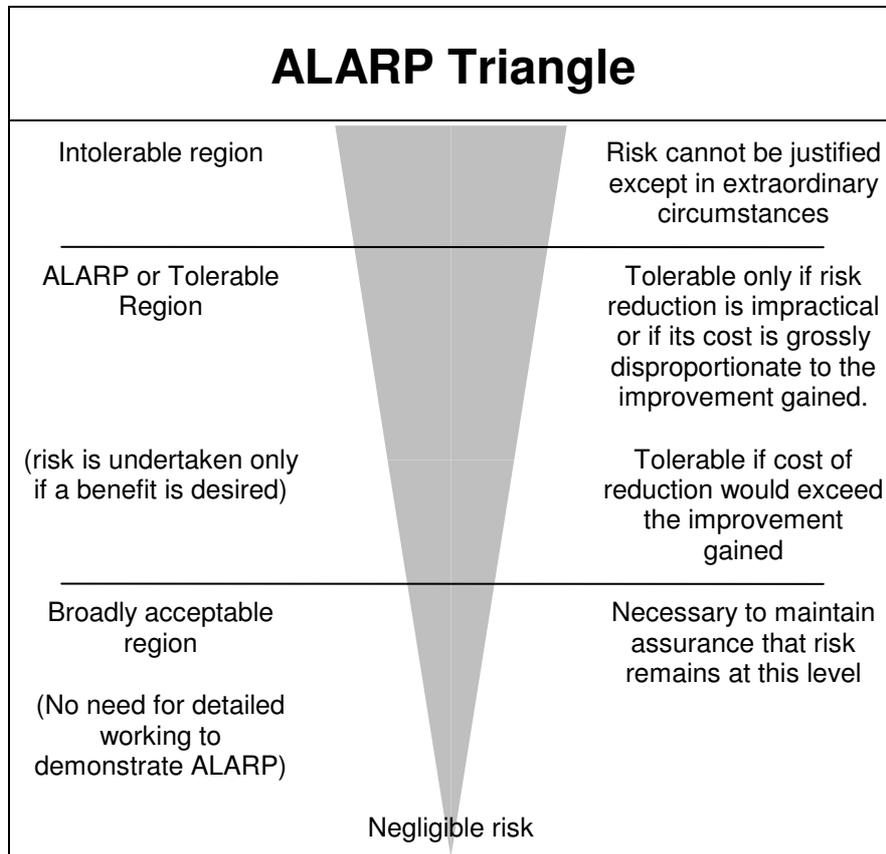
- (a) New or unusual materials
- (b) New or unusual methods of construction
- (c) New or unusual types of structure
- (d) Experience and organisation of design and construction team
- (e) Research and development background
- (f) Industrial climate
- (g) Financial climate
- (h) Political climate

{1. The Structural Engineer / June 1973}

Organisation's and individuals within organisations should refer to this criteria when determining whether the application of the risk screening tools within this manual is required as a consequence of a change.

## 2.7 Levels of Risk

It is recognised that as part of risk management, organisations need to be able to identify different levels of risks so that appropriate risk management strategies can be applied. In this manual the levels of risk are illustrated by the ALARP Triangle (ALARP – a risk expression known as the “as low as reasonably practicable” principle).



## 3 KEY RISK MANAGEMENT RESPONSIBILITIES

### 3.1 All Rail Personnel

There is a general duty on all Rail Personnel to report risks and any potential risks and to assist in their management, This includes a responsibility to report and assist in the management of, risks that arise from change.

Various tools must be made available to Rail Personnel to assist them in identifying and managing hazards and risks. These should range from basic hazard management tools provided within HSE manuals (HSE Toolkit) at site level to the more comprehensive risk management tools detailed in this document.

### 3.2 Rail Personnel responsible for projects and/or changes

Rail Personnel responsible for projects and/or changes are responsible for judging whether the change will:

- increase risks
- create, or potentially create, hazards
- introduce significant effects or impacts

Where Rail Personnel judge that a project or change will result in these impacts, they are responsible for determining the appropriate steps to be taken. This may include, completing a risk screening analysis and any hazard review or risk assessment that is required, and acting on the results of these.

Rail Personnel who have responsibility for managing projects or change are accountable for ensuring that system integrity is maintained through:

- appropriate risk management including the elimination, isolation or minimisation of any significant hazards/risks identified;
- the assignment of responsibilities,
- completion of documentation; and
- ongoing monitoring to enable unforeseen issues are addressed as they arise.

### 3.3 Managers

Managers are responsible in their designated areas for:

- reviewing the above (3.1 and 3.2), and
- assessing and managing the actual hazards and/or risks in such a way that the organisation's risk profile is not increased without appropriate risk management solutions in place including appropriate management approval..
- ensuring all documentation required is completed.

Managers are expected to assess and manage risks to the organisation in an integrated manner, as part of total management practice. This includes identification of significant risks through routine formal and informal review processes. Within their area of responsibility, Managers are expected to identify hazards, assess risk levels, provide input into business unit risk registers, and develop or monitor system performance indicators to ensure the risks are acceptable. Where Managers do not have the competence to properly assess any risk they must seek appropriate advice.

Should a Manager be unable to rectify a significant risk management issue, it should be referred to their Manager, or the relevant support services.

### 3.4 Monitoring of Risk Management

Each organisation will ensure they have in place mechanisms to monitor the effectiveness of risk management processes applied in the organisation and as between organisations. This will include provision for risk management and associated controls to be assessed as part of the organisation's auditing regime.

## 4 APPLICATION OF RISK MANAGEMENT TOOLS

The following management tools are available for use;

- **Risk screening** - Methodology to be used to determine how serious a risk is (see section 5).
- **Risk assessment** – Methodology to be used if risk screening demonstrates a medium or high risk rating, and the application to the ALARP criteria (see section 6).

## 5 RISK SCREENING

### 5.1 Usage

The following risk-screening method can be applied to assist in deciding how serious a risk is. It should be applied to all risks identified as requiring assessment including risks associated with change.

Risks that give a low rating in this screening can be monitored or accepted. Those with a medium rating must be reduced at reasonable cost. Those with a high rating need immediate action to reduce the risk.

Note: Rail Personnel dealing with risks at a site level should use the simple hazard management tool provided within each organisation's Health and Safety Manual (HSE Toolkit).

### 5.2 Guidance

**Don't be over complicated.**

Most hazards and risks are simple. Checking them is common sense, but necessary. You probably already know where your problem areas are. If you are confident you understand what's involved, you can do the assessment yourself. If you are not confident, get help from a competent source. (Manager, Supervisor, Employees, etc.)

Ask "why?" repeatedly to filter out the excuses from the reasons.

**Remember – you are responsible for seeing that it is adequately done.**

#### Look for the hazards

- If you are doing the assessment yourself, go to the site and observe what happens.
- Don't rely on what you are told – this may differ from reality.
- Ignore the trivial and concentrate on significant hazards that could result in serious harm or affect people, equipment or the workplace.
- Ask your people or their representatives what they think..

#### Decide who or what may be harmed - Include:

- Trainees, inexperienced Rail Personnel new to the process or practice.
- Rail Personnel who are mature to the process or practice and who may have developed particular individual habits or traits.
- Visitors, contractors or maintenance Rail Personnel who may not have an intimate knowledge of the process or practice.

- Members of the public, or customer's Rail Personnel that you share your workplace with.
- The past accident/occurrence/near miss records for the site or location you are reviewing
- The past accident/occurrence/near miss records for the organisation.
- Previous risk assessment records for the site.
- Previous risk assessment records for similar processes or practices used within the organisation.
- Information from external parties for similar processes or practices. This includes authorities such as : The Department of Labour, ACC, Insurance providers, etc.

### Establishing the Consequence

- Establish the consequence of an accident (using the consequence Index.)

### Evaluate the Likelihood

- Rate the Likelihood of an accident occurring (using the likelihood Index)
- Include the number of times a particular practice or process is undertaken in your consideration.
- Use the history available in accident reports, ACC claims, Occurrence logs, etc. and anecdotal comments to assist in establishing the likelihood rating.

### Determining the level of Risk

Once you have established the level of consequence and likelihood you can then determine the level of risk by multiplying the two ratings together. The outcome of this calculation can then be applied to the "five-by-five" matrix.

### Consequence Rating

The Risk Matrix becomes an important Safety Management System element that is used to identify activities that DO NOT reduce the risk to "as-low-as-reasonably-practicable" (ALARP) and to ensure that changed rules, processes or practices do not increase the risk potential.

### Determining the control mechanism and management action

When looking at site or location it is important to complete your consequence and likelihood evaluations for all processes and practices before deciding where changes should be undertaken. While the control mechanism and management action for each risk may be decided using the table for each method it is important all risk screenings are ranked in order to identify where your resources may be best utilised. Risk screenings for People, Equipment and Workplace should be assessed separately.

### Assess the Treatment Options

Once you have identified the process or practice that needs change you should **review** the people, process, equipment, workplace involved and establish any changes that will reduce the risk level.

### Ask yourself!

- Is the process or practice really necessary?
- Are the people/equipment/workplace suitable for the process/practice?
- Are the people involved trained to the required standard?
- Are the rules suitable and adequate?
- Are the rules adhered to?

Reuse (or refresh) the information that you obtained when you originally assessed the risk.

### Seek help if you need it!

Your review of the process or practice must be towards **eliminating, isolating or minimising** any impact the hazard may have on employees, equipment or the environment.

Once you have defined new processes or practices go back and **re-evaluate the consequence and likelihood and context** to ensure that you have achieved an acceptable *level of risk*.

If the revised treatment reduces the risk level and meets your requirements, it should be **implemented** as-soon-as practicable.

### Monitor & Review

**Record your risk assessment and activities.** Decide how often you should monitor the activity or process and establish a forward review date.

### 5.3 Method

#### Risk Screening Matrix: 5x5

**STEP 1.** Select the likelihood rating of the hazard:

##### Likelihood

Rating	Description	Return Period (years)	Definition
1	Improbable	40	Unlikely to occur but possible. It can be assumed the hazard may exceptionally occur
2	Remote	20	It can be reasonably expected for the hazard to occur
3	Occasional	5	Highly possible for the hazard to occur
4	Probable	1	(Almost certain) The hazard can be expected to occur frequently
5	Frequent	0.25	Hazard is certain to occur or already has

**STEP 2.** Select the consequence rating of the hazard

##### Consequence

Rating	Description	Financial Damage	Effect on People
1	Negligible	<\$10,000	No medical treatment by professional medical personnel
2	Minor	\$10,000-\$100,000	Lost time injury
3	Major	\$100,000-\$1million	Possible fatality, severe injury
4	Critical	\$1 million - \$10 million	One fatality
5	Catastrophic	>\$10 million	More than one fatality (multi-fatality) and/or multiple severe injuries

**STEP 3.** Assess risk from the 5x5 matrix below which multiplies the likelihood rating and the consequence rating:

		Consequence				
		Negligible	Minor	Major	Critical	Catastrophic
<b>RISK</b>		1	2	3	4	5
<b>Likelihood</b>	Improbable 1	1	2	3	4	5
	Remote 2	2	4	6	8	10
	Occasional 3	3	6	9	12	15
	Probable 4	4	8	12	16	20
	Frequent 5	5	10	15	20	25

Key	Pattern	Risk Rating	Action
Low		1-9	Risk can be monitored or accepted.
Medium		10-16	Risk should be reduced at reasonable cost. (Apply ALARP principle - reduce the risk As Low As Reasonably Practicable)
High		20-25	Immediate action required to reduce risk.

## 6 RISK ASSESSMENT

### 6.1 Usage

Risk assessment techniques should be used when the result of any Risk Screening produces a medium or high risk rating.

They should be used as a documented way to quantify or qualify any potential risks identified.

### 6.2 Method

There are many different types of Risk Assessments, an appropriate method should be chosen for each situation. The aim of the documented risk assessments is not to increase paperwork - if it does, it is possible an inappropriate form of risk assessment is being applied for the task in hand.

The Australian/New Zealand Standard for Risk Management - AS/NZS 4360:2004 can be referred to.

Each Organisation will measure its performance using accident rates such as Fatal Accident Rate (FAR) and Equivalent Fatal Accident Rate (EFAR) per 100,000,000 exposure hours, or other appropriate measures.

All business processes, which have a reasonably foreseeable risk of death or serious injury, should be assessed to ensure people are reasonably protected against significant risk of death, serious injury or other serious harm. When a new process is introduced, or an existing one is changed, a risk assessment should be done to determine acceptability.

All methods of risk assessment used should be documented, transparent and equitable. The risk assessment will use benchmarking where appropriate.

### 6.3 Accident Rates

#### Fatality Rates

Fatality rates can be expressed in the following terms:

$$\text{Fatality rate} = \frac{\text{DPA}}{\text{(No. of people exposed)}} \quad \text{where DPA = Deaths per annum}$$

$$\text{Equivalent Fatality rate} = \frac{\text{EDPA}}{\text{(No. of people exposed)}}$$

Injuries will be considered as if 10 serious injuries are equivalent to a death, and 200 minor injuries are equivalent to a death.

It is often preferable to express these fatality rates in unit measures of Fatal Accident Rate (FAR) and Equivalent Fatal Accident Rate (EFAR).

#### Fatal Accident Rate (FAR)

The FAR or Fatal Accident Rate is a measure of how many people would die per 100 million exposure hours. This is approximately the same as saying how many deaths are likely in 1000 people, over their working lives. It assumes an average of working 2000 hours a year, and a working life of 50 years. (Note that standard hours worked per annum is 1886 hours).

By their very nature, FARs vary significantly throughout a passenger trip or working day. An average rate of exposure is therefore used.

$$\text{FAR} = \frac{(100,000,000 \times \text{DPA})}{\text{(No. of people exposed)} \times \text{(Hours exposed p.a.)}} \quad \text{using DPA = deaths per annum}$$

#### Equivalent Fatal Accident Rate (EFAR)

Injuries will be considered as if 10 serious injuries are equivalent to a death, and 200 minor injuries are equivalent to a death.

Therefore, Equivalent Deaths per annum (EDPA) :

$$\text{EDPA} = \text{DPA} + \left( \frac{\text{serious injuries p.a.}}{10} \right) + \left( \frac{\text{minor injuries p.a.}}{200} \right)$$

Then Equivalent Fatal Accident Rate (EFAR) :

$$\text{EFAR} = \frac{(100,000,000 \times \text{EDPA})}{\text{(No. of people exposed)} \times \text{(Hours exposed p.a.)}}$$

Often the DPA or EDPA will have to be assessed statistically, e.g. one death may be expected every 20 years giving a likelihood of 0.05 deaths p.a. Where no detailed information such as accident history is available, consideration of any industry-wide information may assist.

#### Example of Accident Rate calculation

- Say 500 Rail Personnel in a work group, each working 1886 hours per annum
- In this work group say there have been 3 fatalities in the last 15 years
- From the personal accident database there have been 6 serious injuries and 113 minor injuries since in the last 12 months

$$DPA = 3/15 = 0.2$$

which = 0.2 in 500 which = 1 in 2,500 which is less than 1 in 1,000 so it is below the Upper Bound (refer 6.4 & 6.5).

$$FAR = \frac{(100,000,000 \times 0.2)}{(500 \times 1886)} = 21.2 \text{ which is less than 50 (refer 6.5).}$$

$$EDPA = 0.2 + \frac{6}{10} + \frac{113}{200} = 1.365 \text{ in 500}$$

which = 1 in 366 which is greater than 1 in 400 so it is above the Upper Bound (6.4 & 6.5).

$$EFAR = \frac{(100,000,000 \times 1.365)}{(500 \times 1886)} = 145 \text{ which is greater than 125 (6.5).}$$

Therefore the FAR is ALARP (or tolerable), using the table of upper and lower bounds in section 6.4 & 6.5 below. The EFAR is intolerable (risk cannot be justified) and therefore action is required to reduce the risk to ALARP.

## 6.4 Upper and Lower Bounds for Risk

The upper and lower bounds for risk in each Organisation relate to an individual's exposure, i.e. how likely is one individual to die in one year.

This is equivalent to (the total number of deaths per annum) divided by the (number of people in the exposed population).

The upper and lower bounds for risk in each Organisation are given in the table below :

	Deaths per annum		Equivalent Deaths per annum	
	Upper Bound	Lower Bound	Upper Bound	Lower Bound
Rail Personnel	1 in 1 000	1 in 1 000 000	1 in 400	1 in 400 000
Passengers and Public #	1 in 10 000	1 in 1 000 000	1 in 4 000	1 in 400 000

\*Source: LTSA, 9/8/99

# Excludes illegal acts

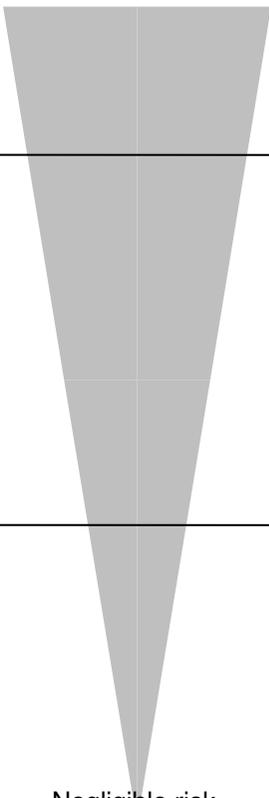
Risk above the upper bound is Intolerable, and must be dealt with immediately including temporarily creating an activity until improvements can be made.

Risk within the upper and lower bounds is Tolerable, but should be "Reduced At Reasonable Cost" (ALARP). These risks should be subject to cost/benefit calculations to determine the value of undertaking risk mitigation steps. Fatalities and serious injuries are costed using statistical value of avoided deaths and injuries criteria based on "willingness to pay" research.

Risk less than the lower bound is considered Acceptable.

This is illustrated with reference to the ALARP triangle in the diagram on the following page (section 6.5).

6.5 ALARP Criteria

ALARP Triangle			Accident Rate Thresholds							
			Rail Personnel				Public and Passengers			
			DPA *	EDPA *	FAR	EFAR	DPA *	EDPA *	FAR	EFAR
Intolerable region		Risk cannot be justified except in extraordinary circumstances	1 in 1,000	1 in 400	50	125	1 in 10,000	1 in 4,000	20	50
ALARP or Tolerable Region		Tolerable only if risk reduction is impractical or if its cost is grossly disproportionate to the improvement gained.	1 in 100,000	1 in 40,000	0.5	1.25	1 in 100,000	1 in 40,000	2	5
(risk is undertaken only if a benefit is desired)		Tolerable if cost of reduction would exceed the improvement gained	1 in 1,000,000	1 in 400,000	0.05	0.125	1 in 1,000,000	1 in 400,000	0.2	0.3
Broadly acceptable region		Necessary to maintain assurance that risk remains at this level								
(No need for detailed working to demonstrate ALARP)										
	Negligible risk									

\* Source - LTSA, 1999

Note that:

- EFAR = FAR x 2.5 (Calculated from table in section 8.1)
- FAR and EFAR's have been calculated on the basis of 2,000 exposure hours per annum for Rail Personnel
- FAR and EFAR's have been calculated on the basis of 250days at 2 hours per day, or 500 hours per annum for public and passengers.

## 6.6 Cost-Benefit of Risk Reduction

Costs and benefits should be calculated over an appropriate timespan, on the basis of discounted cashflow.

$$\text{Cost-Benefit Ratio} = \frac{\text{Net Present Value of Benefits}}{\text{Net Present Value of Costs}}$$

Benefits = value of avoided injuries + damage avoided + other benefits.  
Costs should be shared by those who benefit from reduction of the risk.

## 6.7 Value of Avoided Deaths and Injuries

As a guide the value of avoided deaths and injuries can be taken as:

Injury	Value
Fatality	\$3,100,000
Serious injury	\$330,000
Minor injury	\$18,000

(Values based on *Land Transport NZ figures as at Feb 2007* for a cost per event for a push cyclist (Movement category – “All Movements”) in a 100km/h road area. Actual values for various road usage categories can also be obtained from the Land transport Web site <http://www.landtransport.govt.nz/funding/economic-evaluation-manual/eem1.pdf> .)

## 7 PROCESS FOR MANAGING CHANGE

The following must be done when a change is proposed. Further details are provided in the appropriate sections of this manual.

A change is planned



Decide on the type of change. For your organisation/business unit, complete all the documentation necessary for the change after referencing the requirements or section 9 Change Procedure Documentation. Much of this information may already be completed and available in standard form already



Where documents recording the change are deemed necessary, the Change Documents must be signed by the person responsible for the change



Ensure the change is recorded in your organisation’s management system



Complete a Risk Screening if it is required



Do Risk Assessment using an appropriate method if it is required

If a potential risk is identified

Potential risk identified



Complete a Risk Screening if it is required



Do Risk Assessment using an appropriate method if it is required

## 8 DOCUMENTATION

### 8.1 Key Points

1. Risk, and any change to the risk, must be assessed and documented
2. Those responsible for planning and doing this for each process, procedure, project or modification need to be identified
3. Details of Risk Assessments undertaken must be included in documentation required prior to the sign-off and approval to proceed with any change
4. Appropriate documentation must be placed on file or retained in electronic format. [cf 4.2, 5.4, below]

Criteria for risk documentation :

- Should not replicate work already being done
- Should not create paperwork without adding value
- The completion of a risk assessment documentation is not the end of the process. All organisations, managers and rail personnel have an ongoing responsibility to manage identified risks.

### 8.2 Records Required

Some record of all risks and hazards identified within the Organisation is required. There is no immediate requirement to analyse or document current risks if no changes are proposed. They must however be evaluated before any changes are approved.

The choice of format for the records is to be decided by each Manager. The data required in the record is outlined in the Change Procedure Documentation.

### 8.3 Record-keeping

Each organisation must have a management system that captures risk screening, risk assessment and change procedure assessment undertaken in its area of control..

Each organisation must decide what risk information needs to be kept, and for how many years it must be kept. As a minimum records should be kept for seven years (with documentation detailing significant change held permanently on file). This information must be traceable back to the decisions and risks it is associated with.

## 9 CHANGE PROCEDURE DOCUMENTATION

### 9.1 Format

The Change Procedure does not use a defined "Form". It is information kept in some appropriate format.

The details below identify information, which must be documented in some way when a change is proposed. The Manager of each area is responsible for deciding on the most appropriate way for this information to be recorded. This will enable existing data formats and information to be used, without the need to alter them.

This collection of information, in the format determined by each Manager, is generically referred to as the "Change Documents".

### 9.2 Usage

Change Documents should be used whenever a change is proposed. They must be completed by the Manager or someone delegated by them.

### 9.3 Types of Change

The types of change are categorised into the following groups:

- Organisational
- Operating Procedure
- Rule Book
- Timetable
- Engineering Design and Standards
- Project
- Asset Purchase
- Contract

These changes can either be a change from the status quo, or a new/amended project or arrangement.

Other categories can be added if required. The areas covered include reorganisation, reengineering, and the interface between contractors and Rail Personnel.

## 9.4 Information required

This information must be provided in the Change Documents.

- Brief Description of the change.
- Rail Personnel Responsible for signing off the change - their position and name. This person will naturally need the appropriate authority and competence necessary to be responsible for the change.

Where specified the change must be signed off by the appropriate Technical Committee.

- Initial risk screening: Provides an initial screen of the risks/ impacts associated with the change. Should the responsible manager consider no further action is required at this point, this should be documented and the reasons provided.

The following additional information should be provided if the initial risk screening determines further assessment, monitoring and/or review is required.

- Task Checklist gives the checkpoints where the change should be monitored. Necessary tasks for implementing the change, risk associated with the change, Risk Screening, Risk Assessments required to be done, contacts with other organisation areas, other Business Units affected and their input on the effect of the change, responsibilities to be assigned, documentation requirement to be met. The dates these tasks will be completed by, and who is responsible for their completion must be recorded.
- Documentation defines where any documentation produced in the above Task Checklist can be located. Eg. - filename or file reference. This will provide a "paper trail" that can easily be audited. Any related documentation should also be clearly referenced - eg. Workplace Safety Plans, Hazard Summary Plans.
- Review Period for any changes which need to have a review completed of the effects at various intervals. Define the date of the review, where it will be documented, and who is responsible for completing it.

## 9.5 Change Documentation- Example

An example of generic documentation for an Organisational Change is provided below:

### Change type - Organisational

#### Brief description

During a period of organisational change, the aim is to ensure any tacit practices and formal procedures that may change do not reduce the organisation's performance.

#### Rail Personnel responsible

Manager in charge of reorganisation process

#### Task Checklist

1. Identify changeover dates
2. Manage transition, appoint acting person if necessary to ensure continuity

#### CONTACTS

1. Update organisational structure and formal reporting lines. Update Call-out list, other directories.
2. Define geographical boundaries; and Rail Personnel resources under the control of each position.
3. Define liaison relationships and responsibilities for reporting accidents, incidents and occurrences; advise those concerned.
4. Define liaison relationships with external organisations (eg. Civil Defence, fire, police, ambulance, suppliers, customers, contractors, etc), and advise them formally.

#### RESPONSIBILITIES

1. Ensure tasks and all relevant responsibilities and authority in the old structure are reassigned in the new structure. Ensure the person taking on this has the appropriate skills, technical knowledge, experience and competence.
2. Complete job descriptions covering all position responsibilities.
3. Define any authority for approval of standards and processes.
4. Ensure tasks for each position meet Safety System requirements.
5. Update Management System documentation.
6. Define any training needs

#### Documentation

Define documentation relating to the changes, and where it is located.

#### Review period

Assess the effectiveness of the new organisation.

#### **FOUR** weeks post implementation:

- Job Positions (descriptions) and any task list signed off by appointee
- Schedule of fixed and mobile assets completed
- External emergency resources notified of changes
- Liaison relationships for internal "joint reporting" established
- Plan for updating Management System documentation agreed

Notification to external regulatory authorities and other third parties completed

#### **THREE** months post implementation:

- Audit the reorganisation plan to ensure standards were achieved