

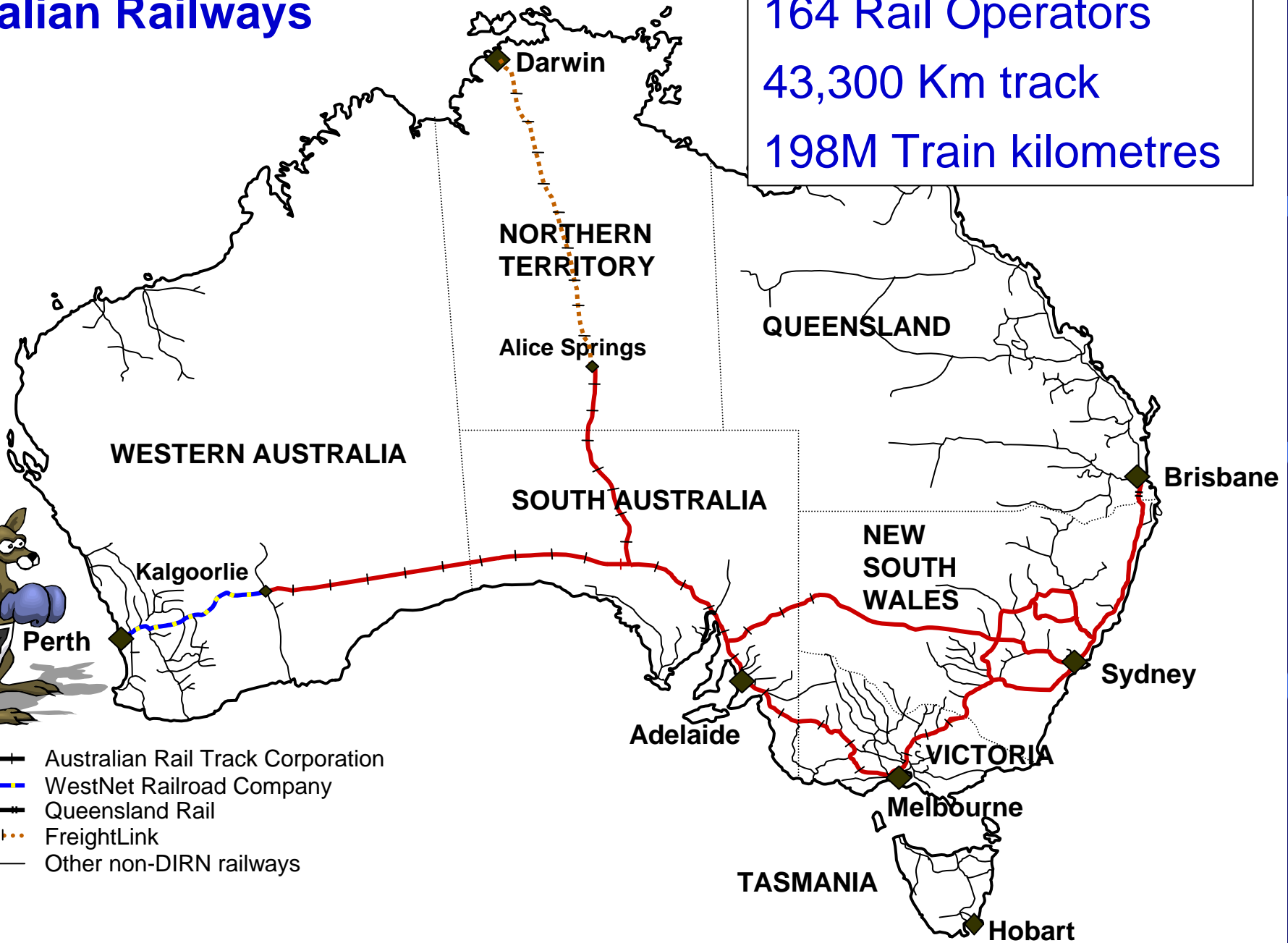
REGULATORY RELATIONS, CULTURE AND SAFETY



Rob Burrows

Australian Railways

164 Rail Operators
43,300 Km track
198M Train kilometres



- +—+— Australian Rail Track Corporation
- - - WestNet Railroad Company
- +—+— Queensland Rail
- FreightLink
- Other non-DIRN railways

Railways in Western Australia.

28 Rail Operators
10,298 Km track
44.7M Train kilometres

W.A. has over
20% of all rail
operation

**THE PILBARA - HEAVY
HAUL - IRON ORE**

BHP Railways

FMG (TPI)
railway

Pilbara Iron Railway

WESTERN AUSTRALIA

ARTC

**PASSENGER, GENERAL
FREIGHT**

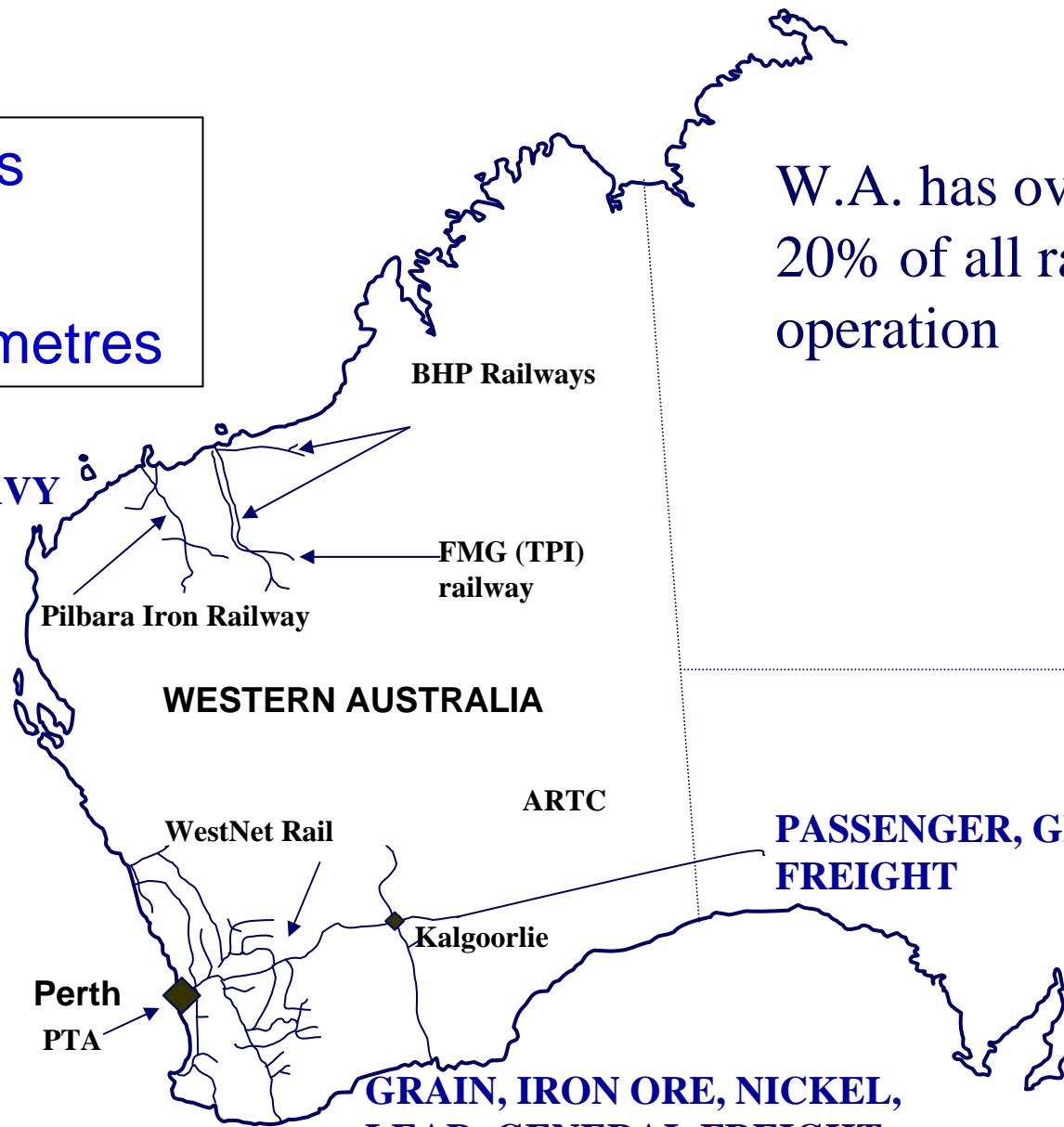
WestNet Rail

Kalgoorlie

Perth
PTA

URBAN PASSENGER

**GRAIN, IRON ORE, NICKEL,
LEAD, GENERAL FREIGHT**



RAILWAY SAFETY REGULATION

Small tourist





RAILWAY SAFETY REGULATION

Heritage – electric trams and steam trains





RAILWAY SAFETY REGULATION

Passenger – metro and country





RAILWAY SAFETY REGULATION

General freight





RAILWAY SAFETY REGULATION

Heavy haul – Pilbara iron ore



RAILWAY SAFETY REGULATION

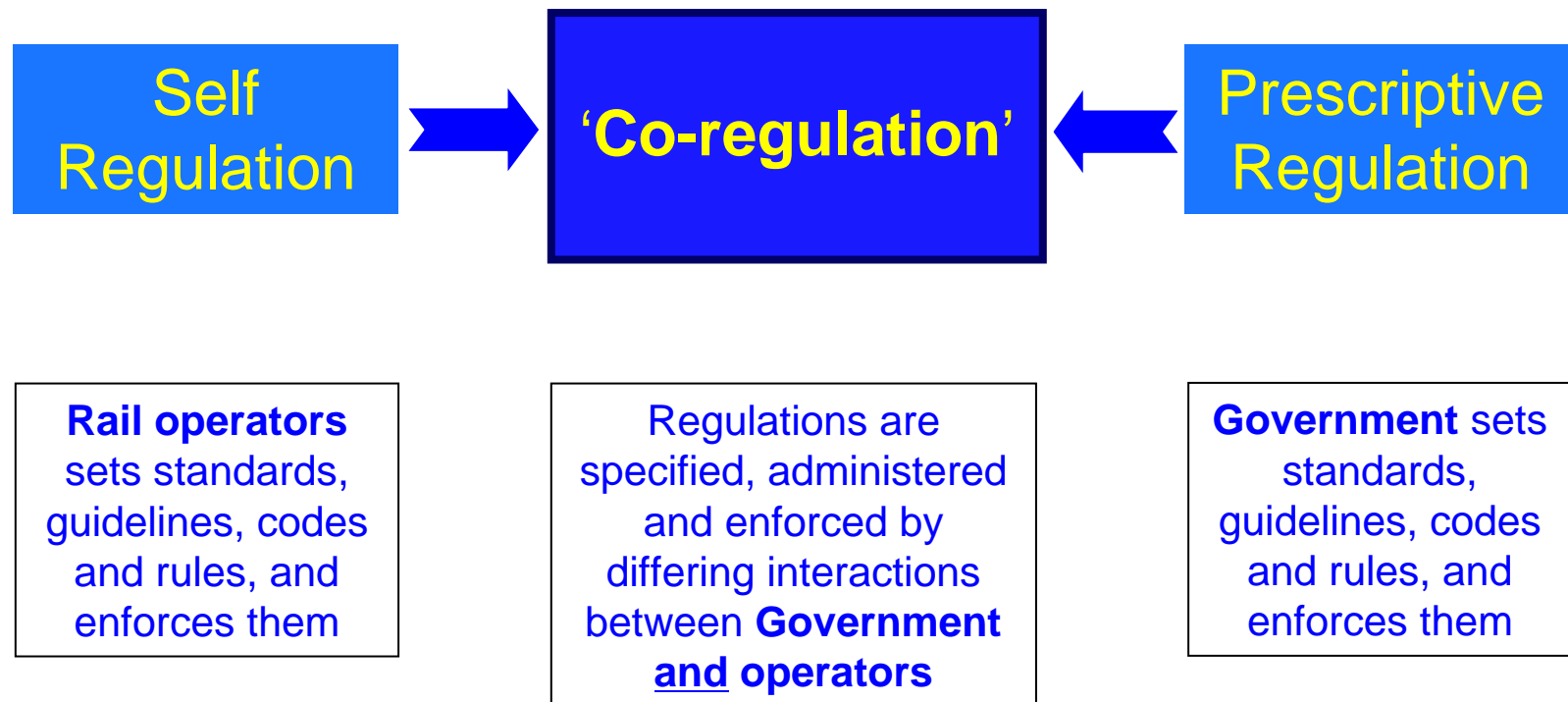
Fair grounds- we don't Regulate these



RAILWAY SAFETY REGULATION

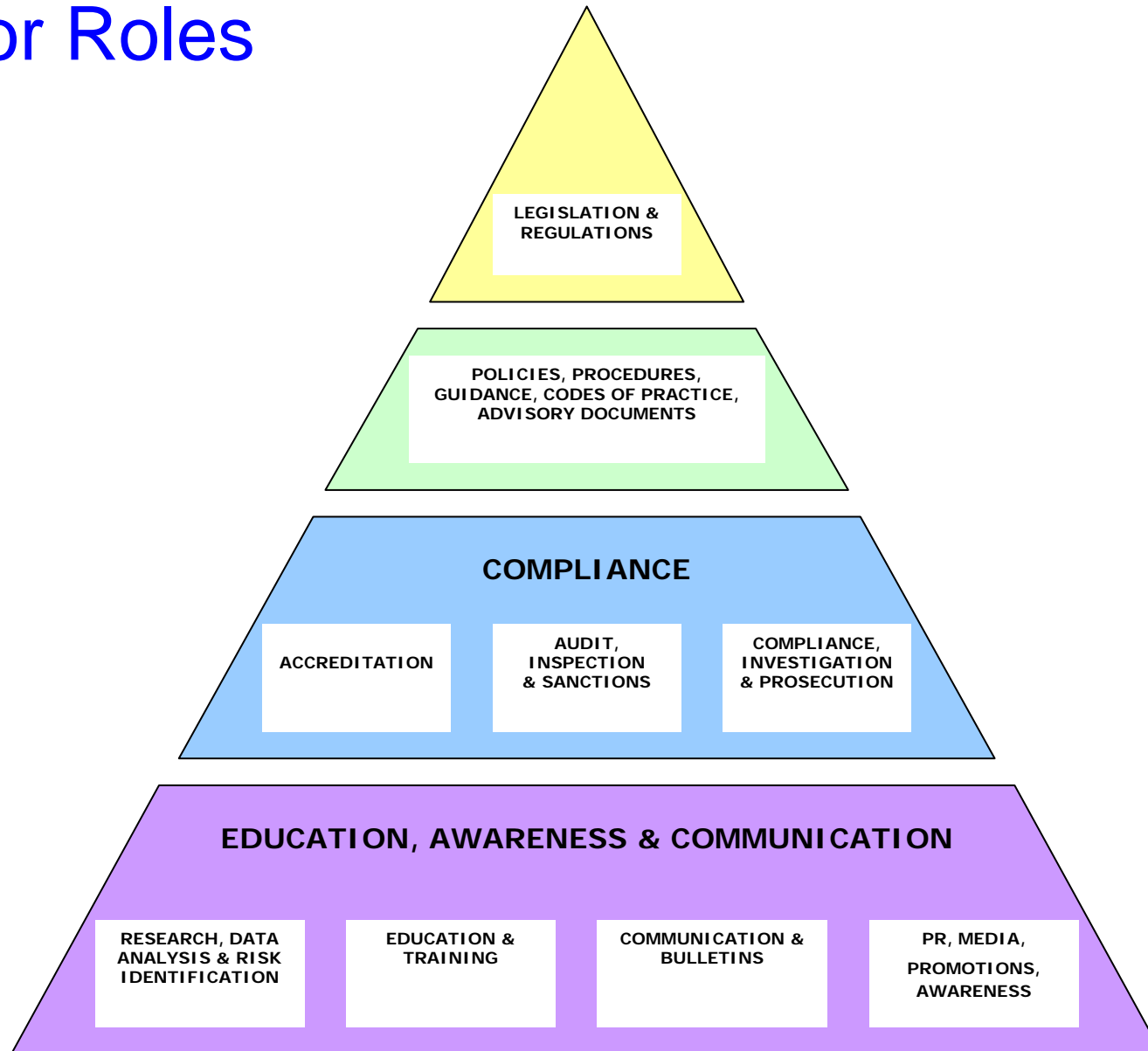
Co-regulation model

The Regulatory Spectrum



RAILWAY SAFETY REGULATION

Regulator Roles



RAILWAY SAFETY REGULATION

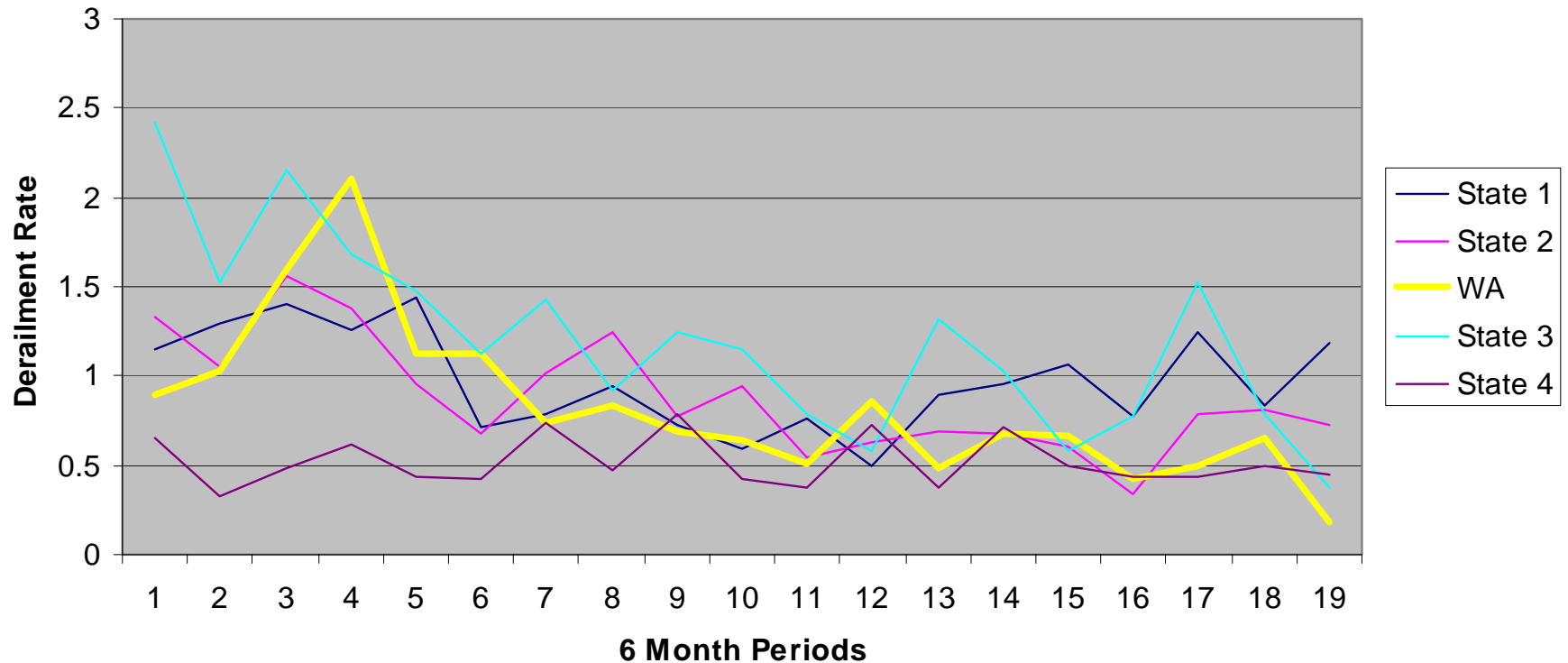
Reportable Occurrence Categories

1. Collision
2. Derailment
3. Level Crossing
4. Signal Passed at Danger
5. Proceed Authority Exceeded
6. Safeworking Irregularity
7. Rolling Stock Irregularity
8. Load Irregularity
9. Dangerous Goods Irregularity
10. Runaway
11. Track and Civil Infrastructure Irregularity
12. Signalling System Irregularity
13. Electrical Infrastructure Irregularity
14. Train Warning and Enforcement System Irregularity
15. Communication System Failure
16. Fire
17. Explosion
18. Slip, Trip or Fall
19. Suspected or Attempted Suicide
20. Alcohol or Drug Irregularity
21. Railway Network Security

RAILWAY SAFETY REGULATION

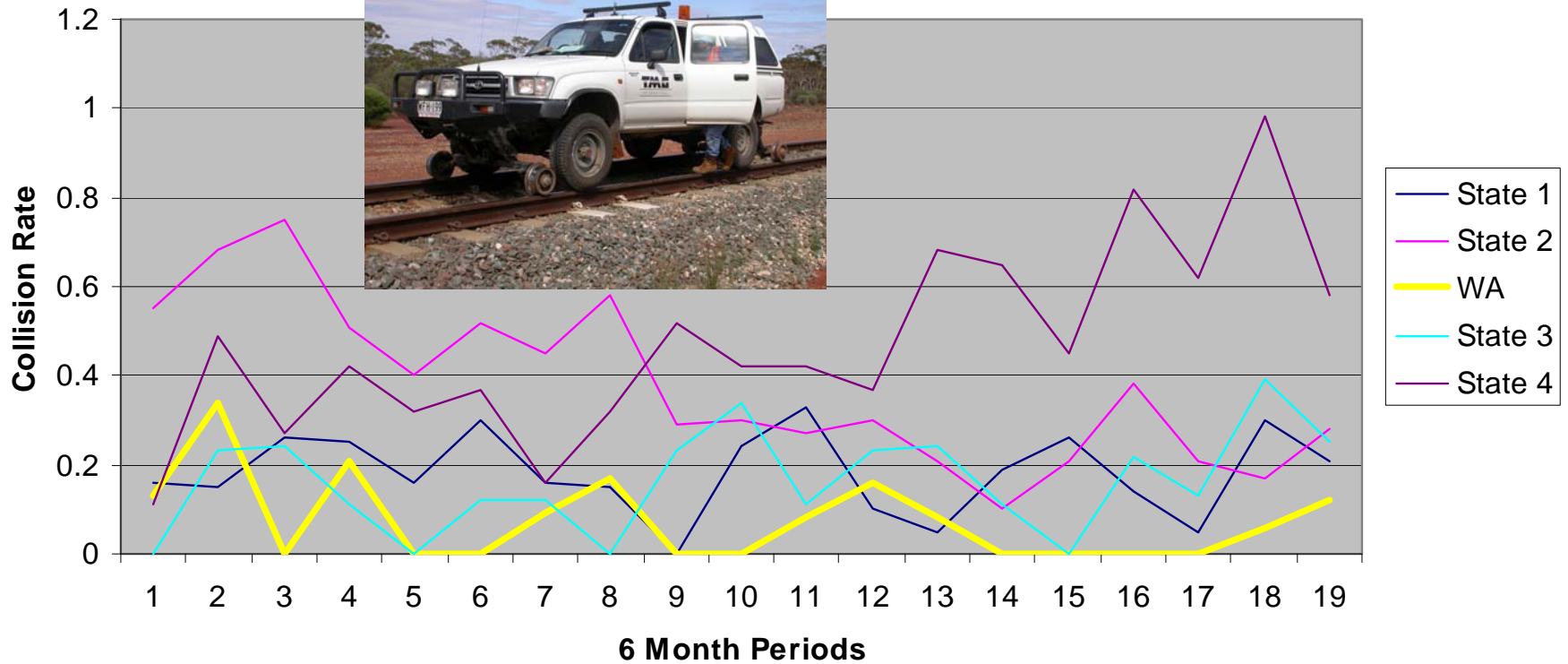
Regulator Roles

Running Line Derailments per Million Train Kilometres

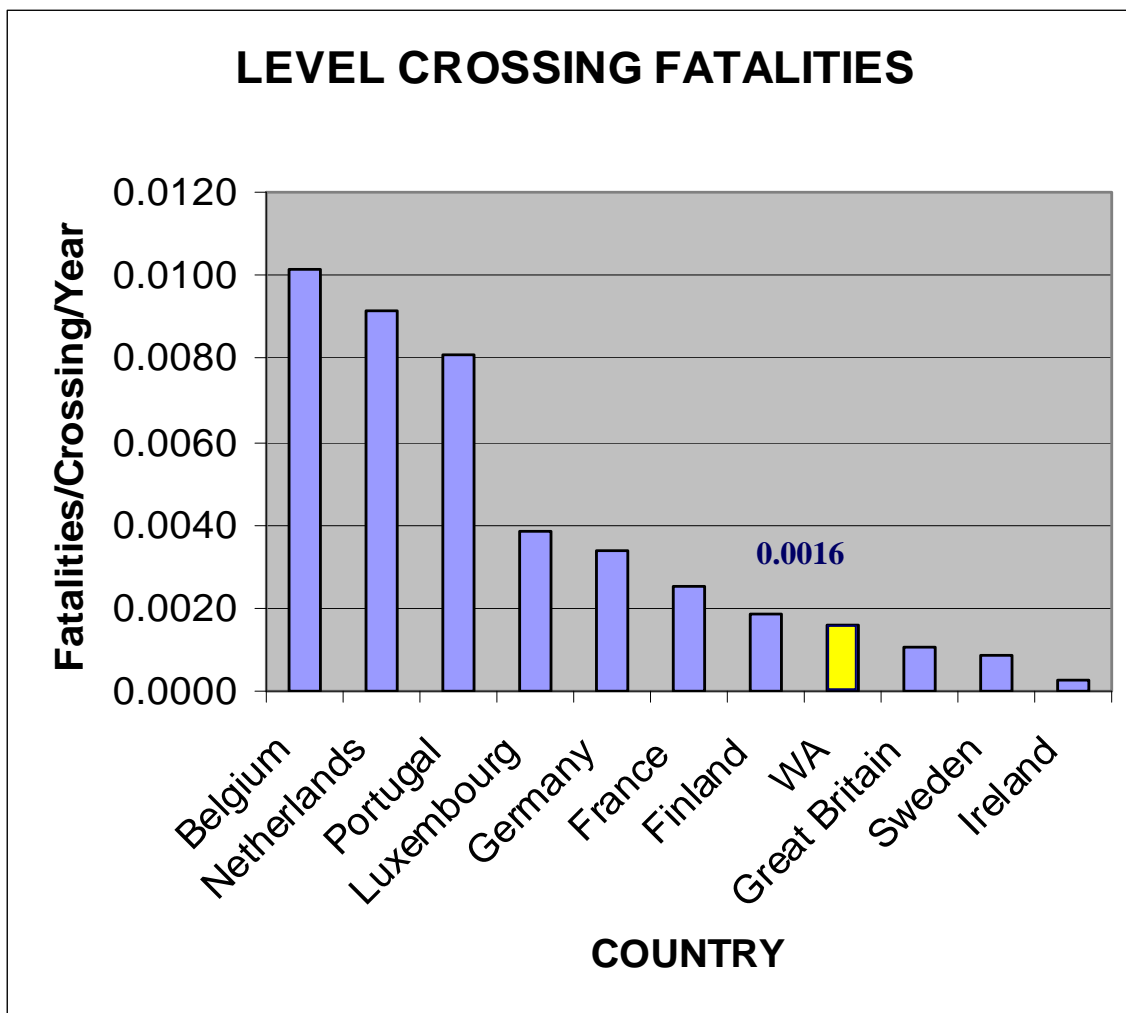


RAILWAY SAFETY REGULATION

Running Line Collisions with Trains per Million Train Kilometres

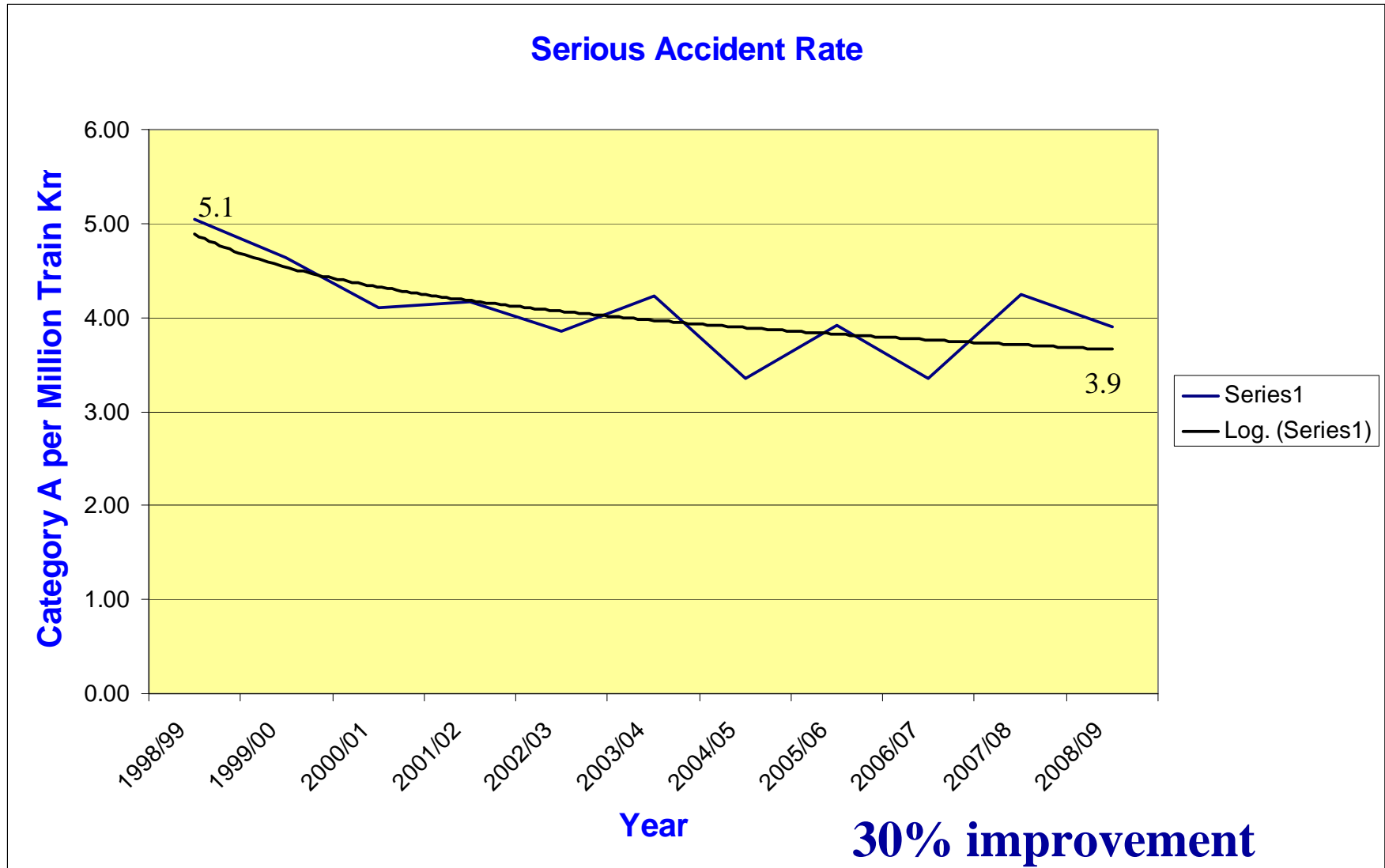


RAILWAY SAFETY REGULATION



European data source: RSSB

RAILWAY SAFETY REGULATION



KEY TOOLS IN OUR STRATEGY

Rail operators:-

- ◆ Need an SMS before permission to operate.
- ◆ Need their SMS to meet Australian Standard AS4292 – Rail safety management
- ◆ Define their own **standards, codes and guidelines** for safe practice.

Regulators encouraged:-

- ◆ Best practice
- ◆ Sharing of knowledge across industry.

SAFETY LESSONS

Safety improvement came from:

- ◆ audits (internal and by Regulator);
- ◆ SMS reviews; and
- ◆ lessons from accidents (local and international in all industries).

KEY ELEMENTS IN OUR STRATEGY

- ◆ The SMS provides a **systematic approach to safety**
- ◆ To meet requirements Management of an SMS could be a mechanical asset and paper based approach.
- ◆ For many safety management was not mature.

Better safety performance would now require:

- ❖ **better risk management competence;**
- ❖ **a safety management system; AND**
- ❖ **a positive safety culture to flourish.**

KEY TOOLS IN OUR STRATEGY

**Reactive
Risk
Management**

**Reportable
Accidents**

Regulator Database

**Other
Incidents**

Operator Records

Inspections and Audits

Reports

**Proactive
Risk
Management**

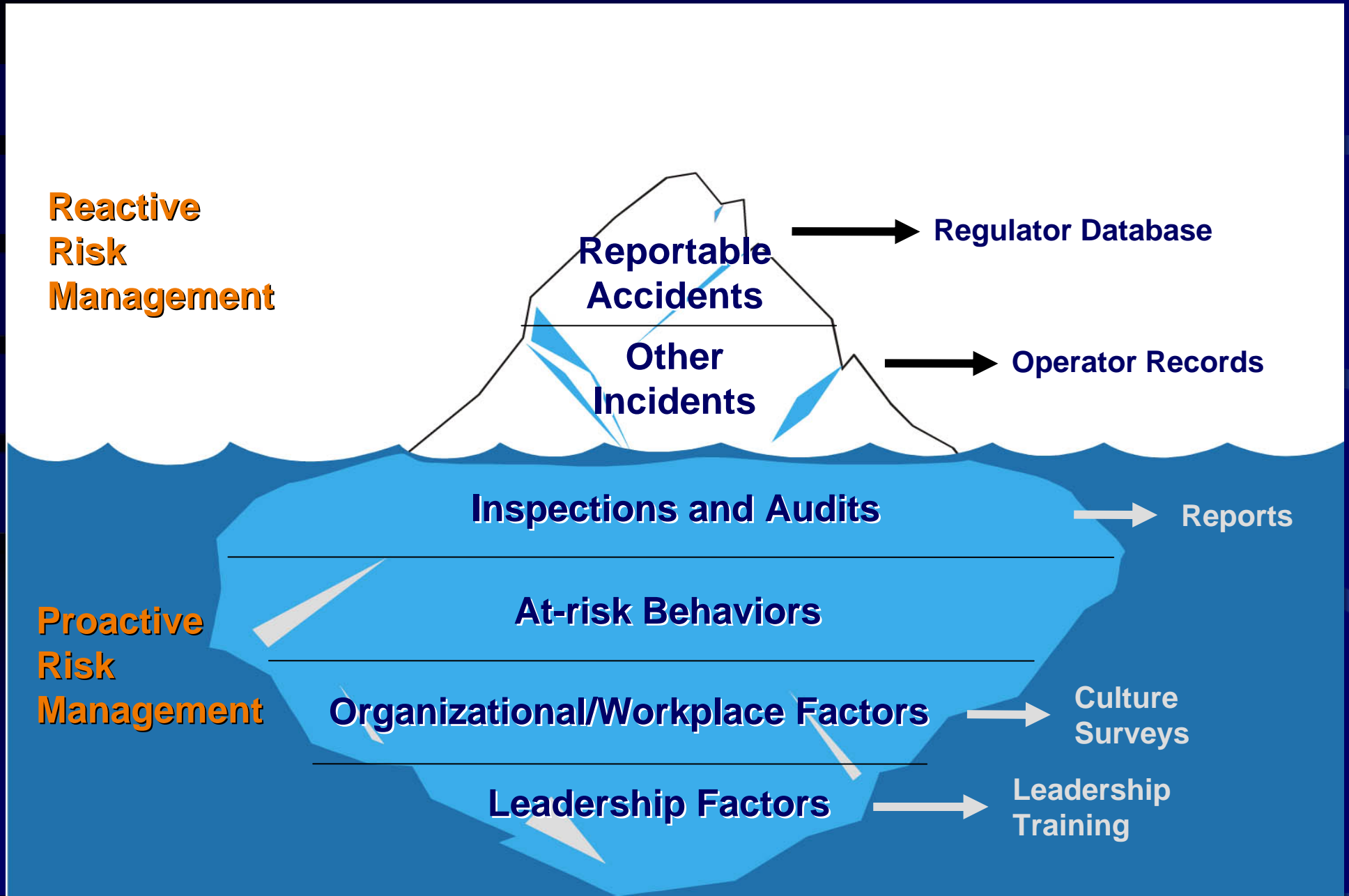
At-risk Behaviors

Organizational/Workplace Factors

**Culture
Surveys**

Leadership Factors

**Leadership
Training**



SAFETY MANAGEMENT STANDARD

AS4292.1 – 2006 Railway safety management

4292.1 Part 1: General requirements

4292.2 Part 2: Track, civil and electrical infrastructure

4292.3 Part 3: Rolling stock

4292.4 Part 4: Signalling & telecomms systems & equipment

4292.5 Part 5: Operational systems

4292.7 Part 7: Railway safety investigation

AUSTRALIAN STANDARD AS4292.1 – 2006

Railway safety management – Part 1: General requirements

AS 4292.1—2006

AS 4292.1—2006

Australian Standard™

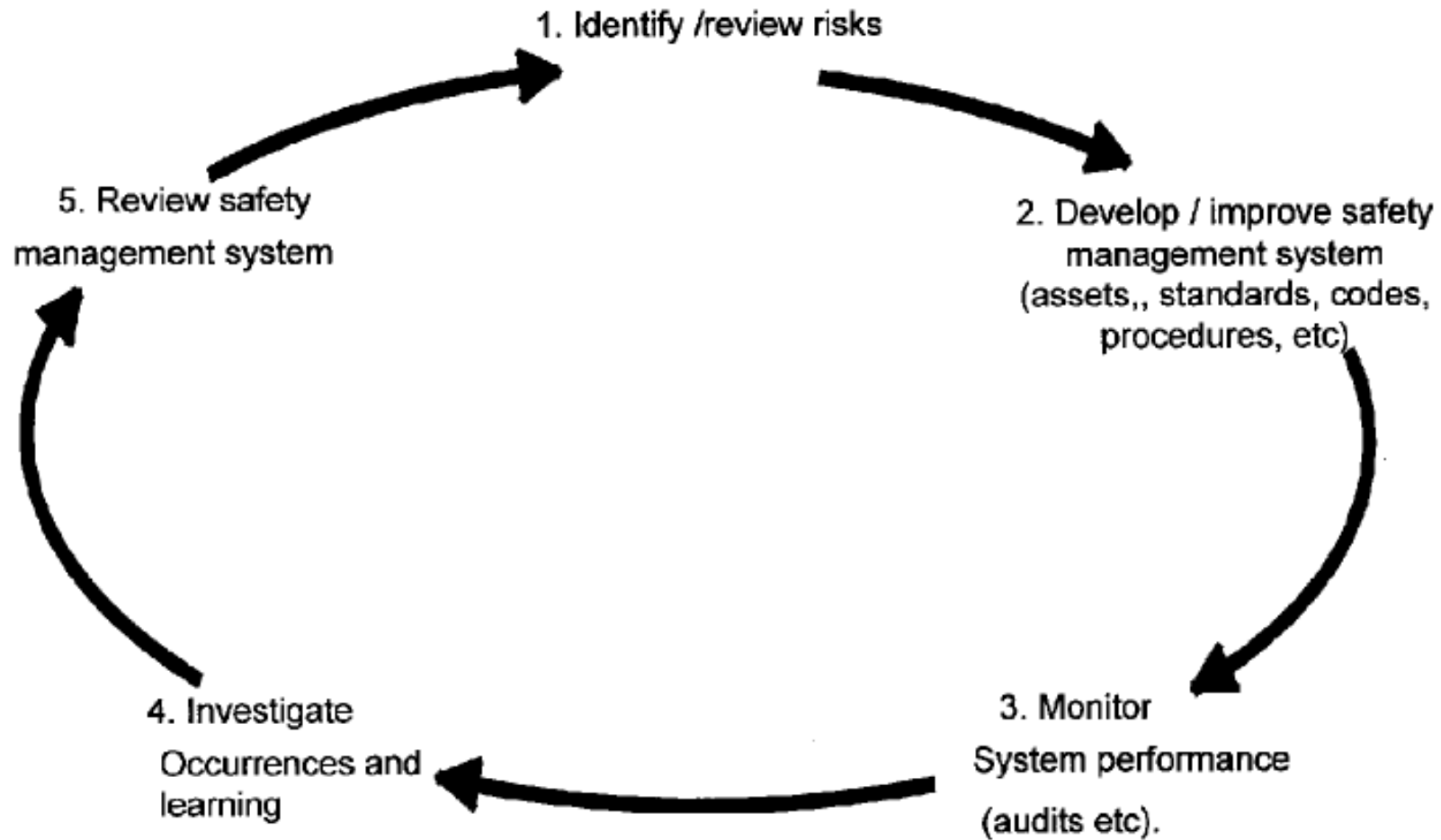
Railway safety management

Part 1: General requirements

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AS4291.1 – Continuous Improvement Management Cycle



SAFETY CULTURE

AS4292.1 - 2006

2.14 SAFETY CULTURE

The organization shall include in its safety management system methods to develop and maintain a positive safety culture taking particular account of—

- (a) the importance of leadership & commitment of senior management;
- (b) the executive safety role of line management;
- (c) the need to involve rail safety workers at all levels;
- (d) the need for openness of communication;
- (e) the need for human factors to be positively addressed;
- (f) awareness & recognition of opportunities for safety improvement;
- (g) willingness to devote resources to safety.

AUSTRALIAN STANDARD AS4292.1 – 2006

Railway safety management – Part 7: Railway safety investigation

AS 4292.7—2006

AS 4292.7—2006

Australian Standard™

Railway safety management

Part 7: Railway safety investigation

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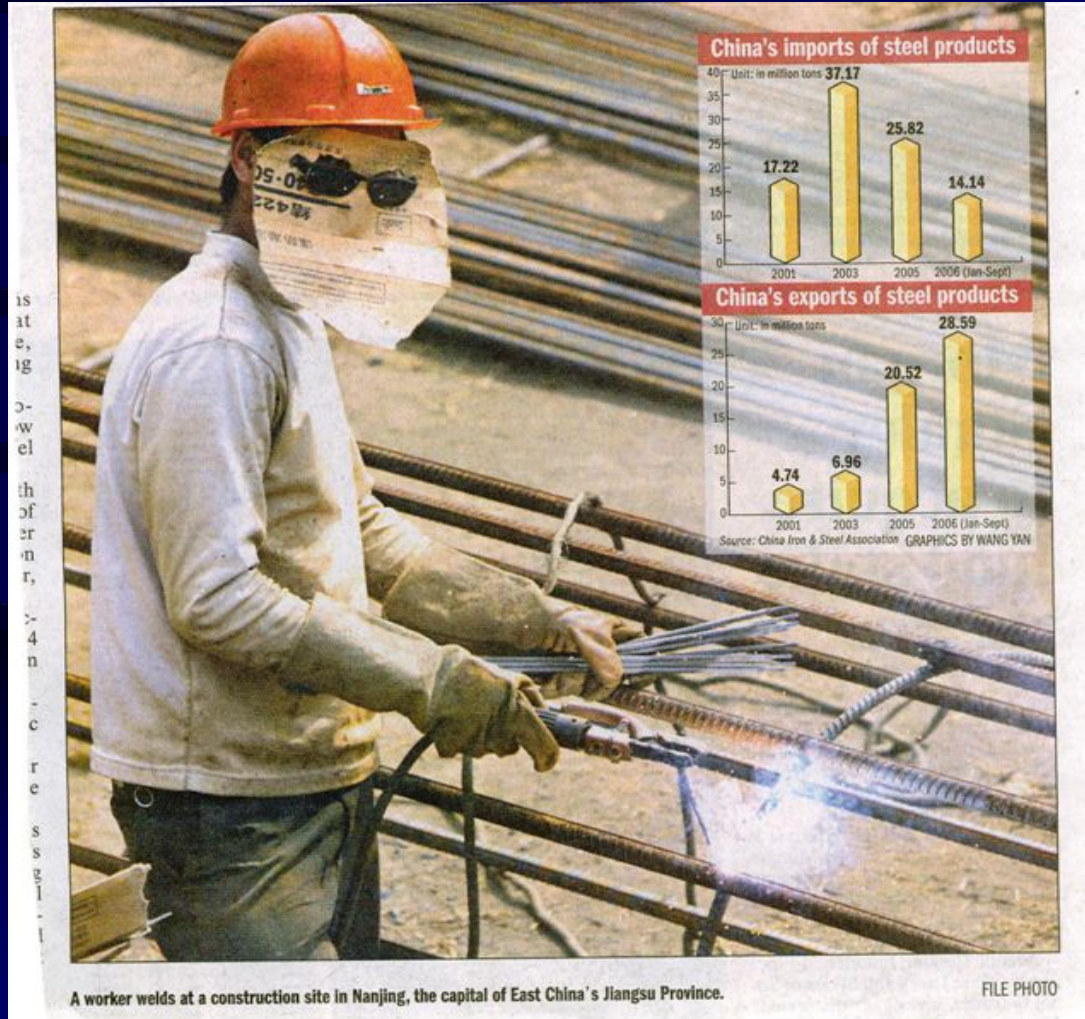
SAFETY CULTURE - Taking risks

Dust mask in South Africa –safety glass?



SAFETY CULTURE – Taking risks

Safety visor in Nanjing – it could burn?



SAFETY CULTURE - Taking risks

Crossing a river – baby first!



SAFETY CULTURE – Taking risks

Driving on flood damaged track...near Perth



SAFETY LESSONS

◆ Many cases of:

- Perhaps not knowing the risks
- Ignoring risks they know

◆ What appears risky to us may seem normal to them.

◆ It is a lot about different values and safety cultures.

◆ What then happens if an error or mistake is made?

SAFETY LESSONS - Mistakes

Error – Load crushes a truck



SAFETY LESSONS - Mistakes

Error – Overloading a container lifter



SAFETY LESSONS - Mistakes

Error - Loading a boat



SAFETY LESSONS - Mistakes

Error – Overloading a plane



SAFETY LESSONS - Mistakes

Error - Overloading a cart





SAFETY LESSONS

WHO IS BEING A DONKEY?

Why do people take risks?

Why do errors happen?

Errors keep repeating!

Are we good at learning?

What if errors become a disaster?

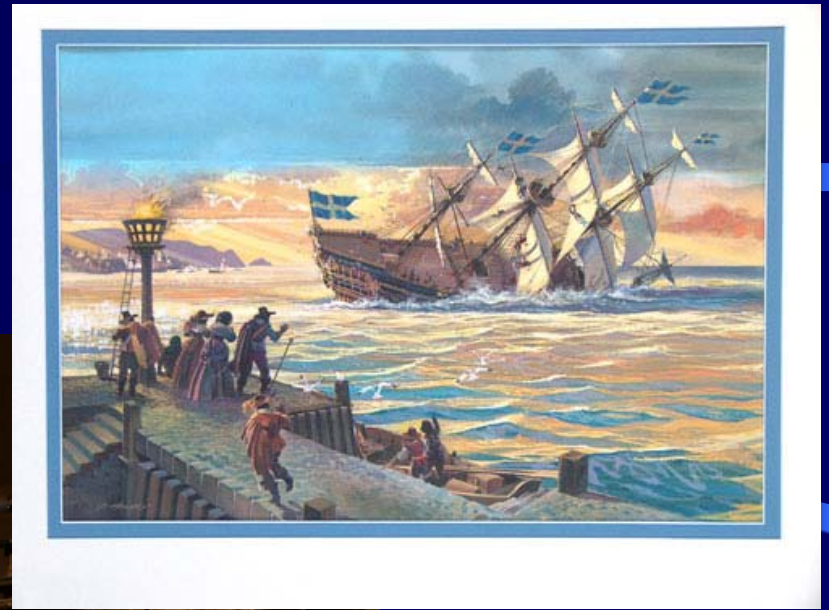
SAFETY LESSONS – Errors to disasters

Mary Rose – sank 1545about 500 drowned.



SAFETY LESSONS – Errors to disasters

Vasa – sank 1628



SAFETY LESSONS – Errors to disasters

Herald of Free Enterprise capsized 1987 ...

.....193 drowned





SAFETY LESSONS

Waterfall.....speeding – 7 dead





SAFETY CULTURE

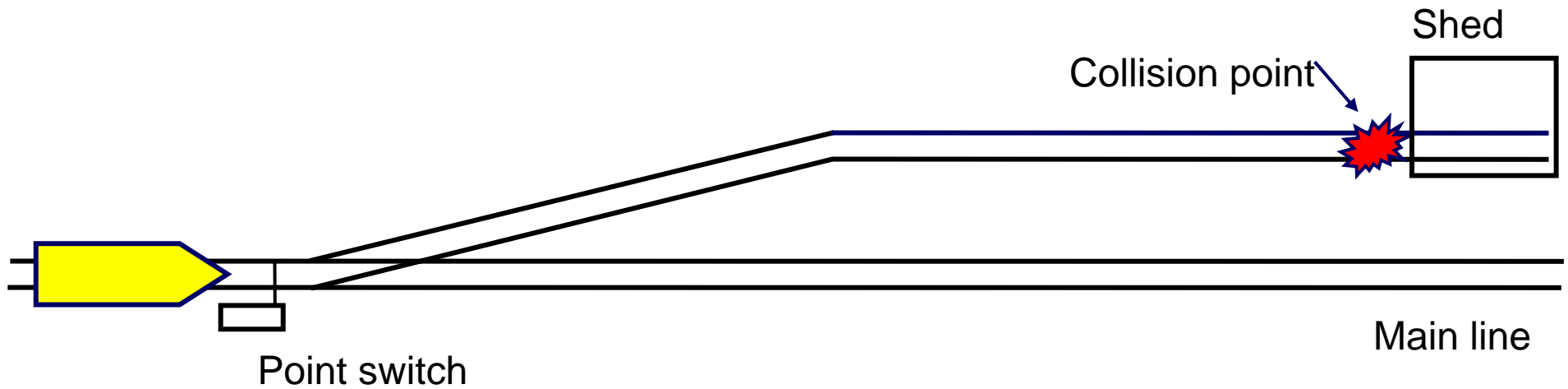
...is about

THE WAY WE DO THINGS AROUND HERE!

....helps determine how we make safety decisions

SAFETY CULTURE

The way we do things around here!



Kalgoorlie goods shed - Not to Scale

SAFETY CULTURE

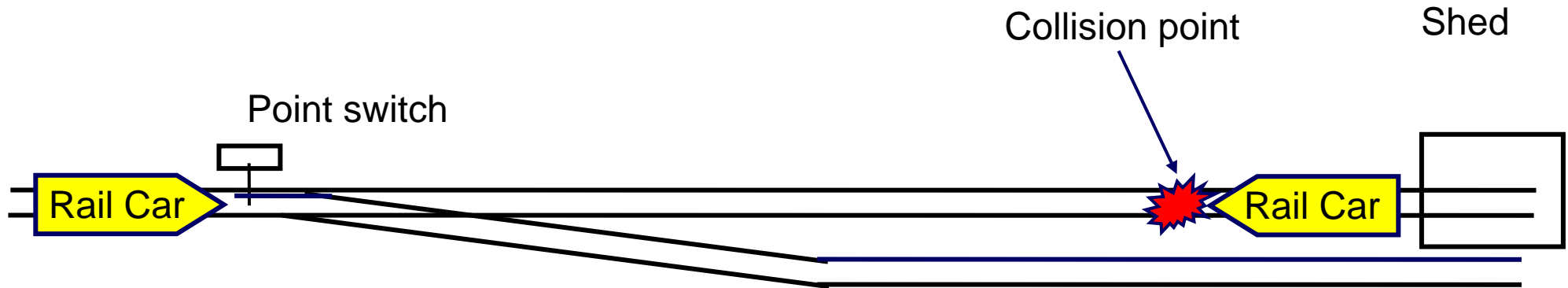
The way we do things around here...
.....putting production before safety.



Worker ignores rules, takes short cut and dies

SAFETY CULTURE

The way we do things around here!



Nowergup – run to shed - Not to Scale

SAFETY CULTURE

The way we do things around here!



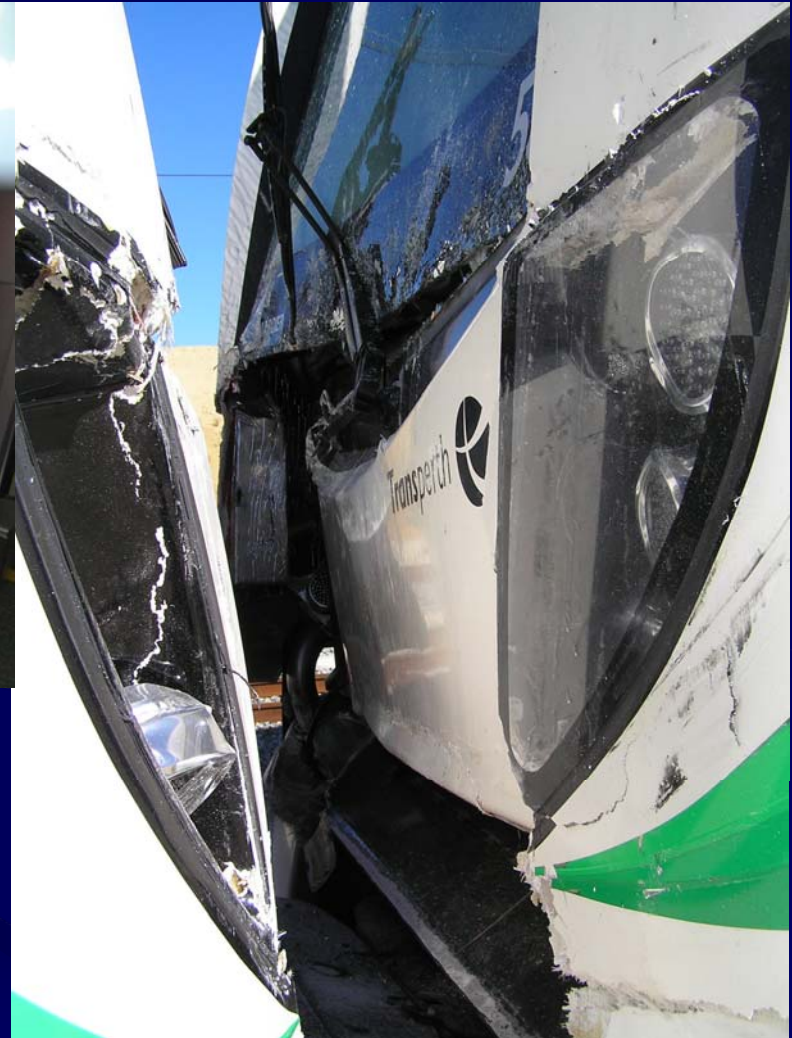
SAFETY CULTURE

The way we do things around here!



SAFETY CULTURE

The way we do things around here!



Short cut – driver left new train unattended

SAFETY CULTURE

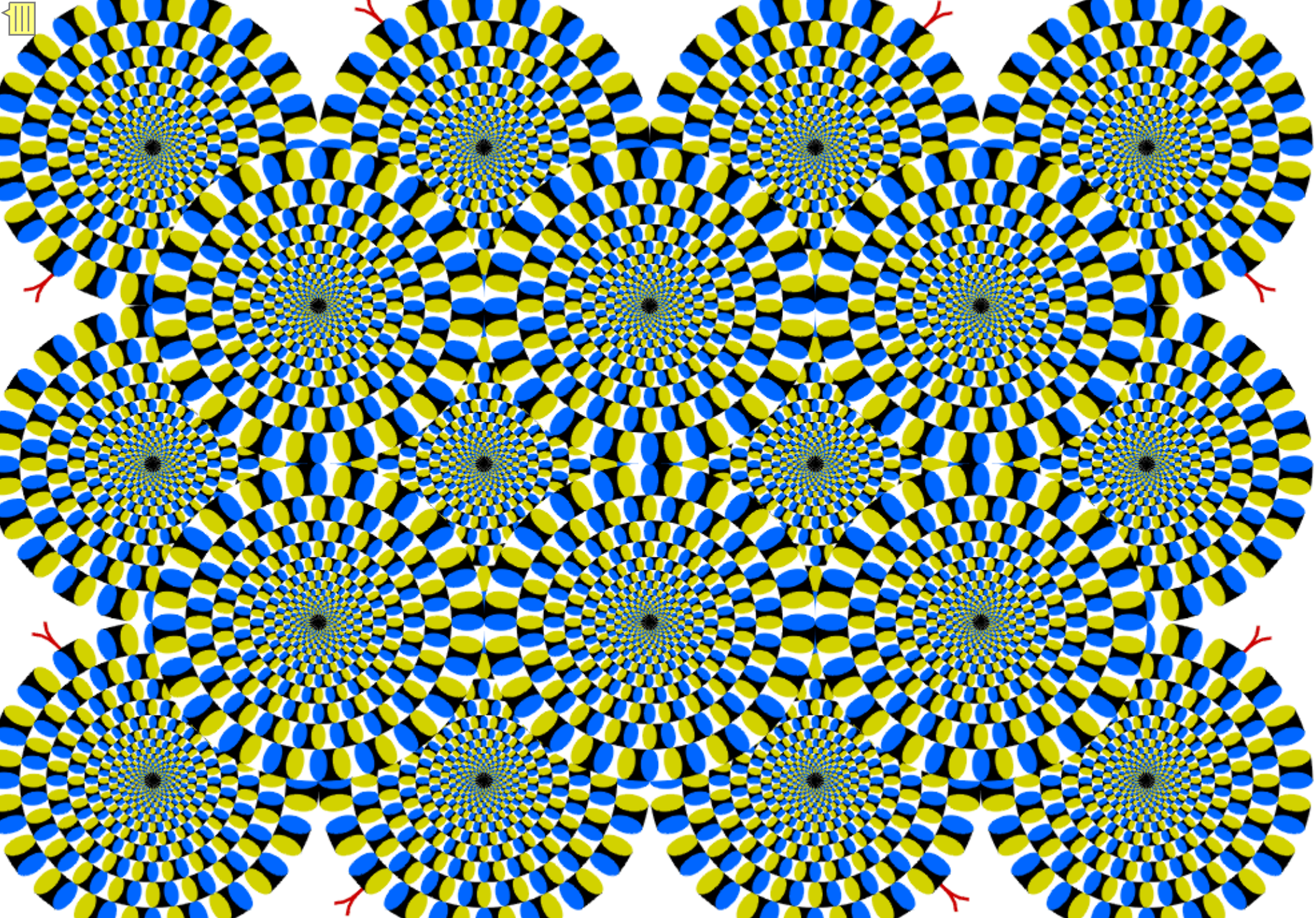
The way we do things around here!

It is not easy to see if the safety culture is good?

The mind is easily influenced and can play tricks.

DON'T BELIEVE YOUR EYES OR WHAT YOU ARE TOLD – COLLECT THE FACTS / DATA (TQM).

Safety culture needs to be measured.



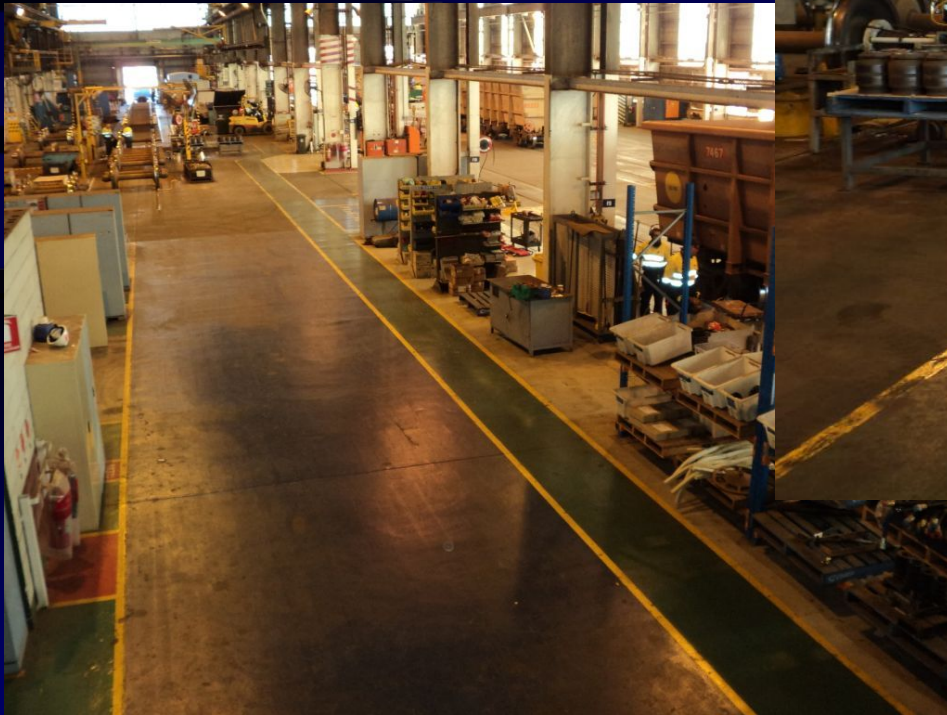
SAFETY CULTURE

The way we do things around here!



SAFETY CULTURE

The way we do things around here!



SAFETY CULTURE

--improving operator's safety culture

Operators need:-

- To develop ways to improve safety culture and reduce error
- This includes improving rules, standards, procedures, technology and competence to support that culture.

Regulators need:-

- To do more systematic audits and inspections to ensure the SMS is being implemented and improved; and
- To make ensure operators measure their safety culture and work to improve identified areas of weakness.

NEXT STEPS

3 Key Projects for Safety Improvement

- ◆ Contributing Factors Framework (CFF)
- ◆ Rail Resource Management (RRM)
- ◆ Safety Culture Toolkit

CONTRIBUTING FACTORS FRAMEWORK

What is a Contributing Factor?

- ◆ Any element of an occurrence which, if removed from the sequence;
 - ❖ Would have prevented the occurrence, or
 - ❖ Reduced the severity of the occurrence.

- ◆ Rarely a single event or factor!

CONTRIBUTING FACTORS FRAMEWORK

The CFF is a framework for

- ◆ Capturing; and
 - ◆ Categorising
- the systemic contributing factors to accidents

CONTRIBUTING FACTORS FRAMEWORK



CONTRIBUTING FACTORS FRAMEWORK

Manual

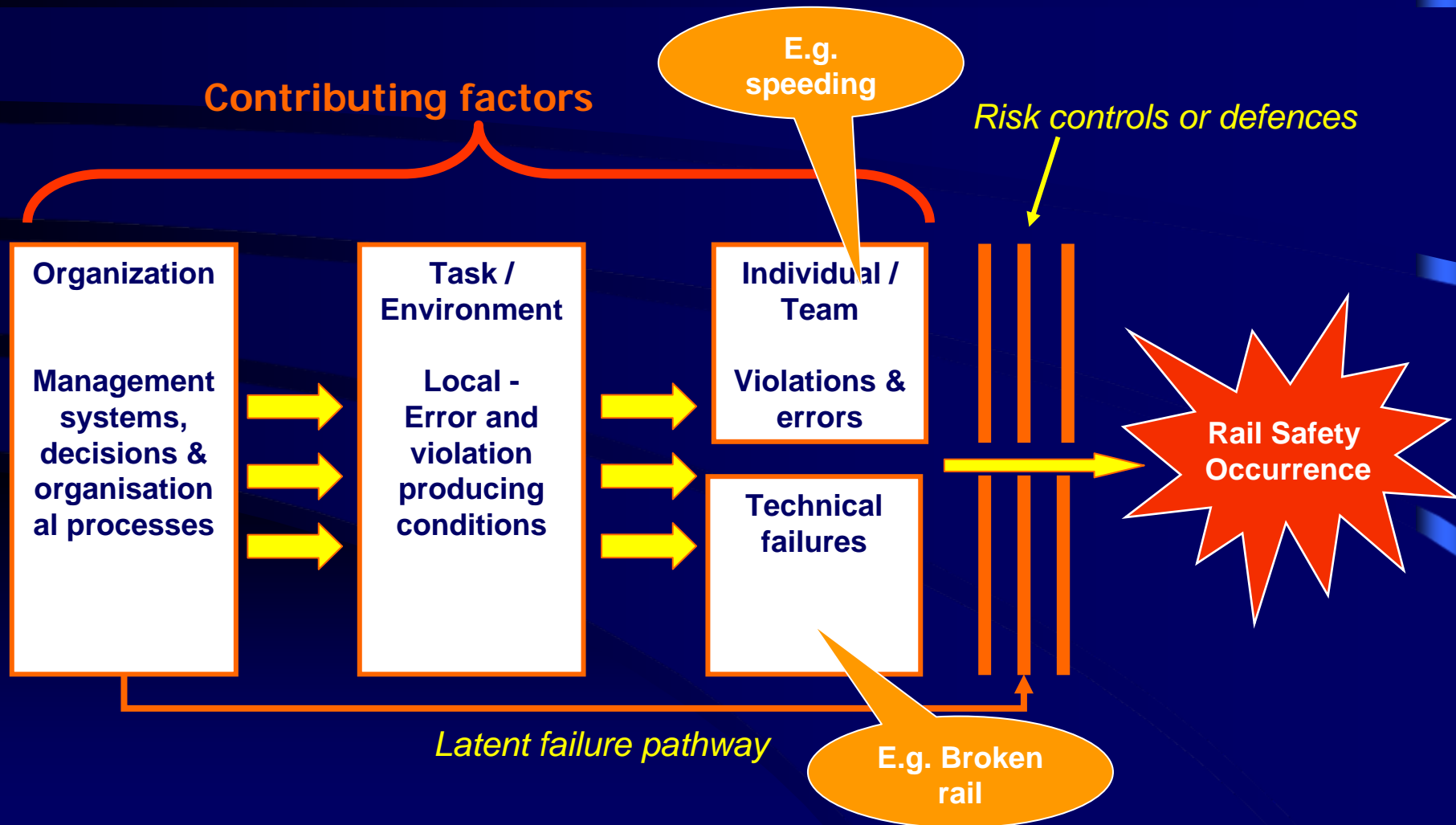
FEBRUARY 2009

VERSION 1.0

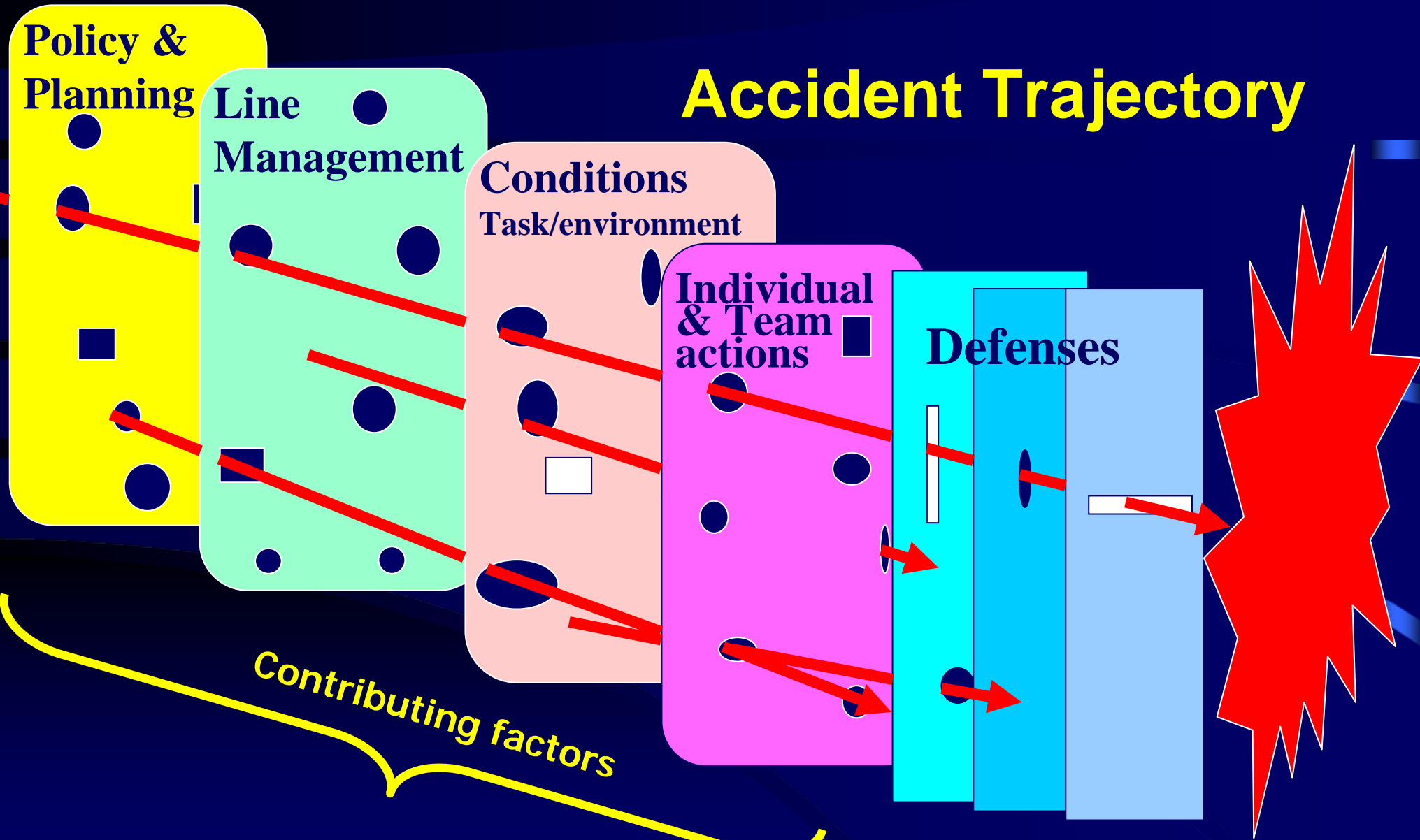
**Rail Safety
Regulators' Panel**

CONTRIBUTING FACTORS FRAMEWORK

A framework for coding the systemic contributors to rail safety occurrences.



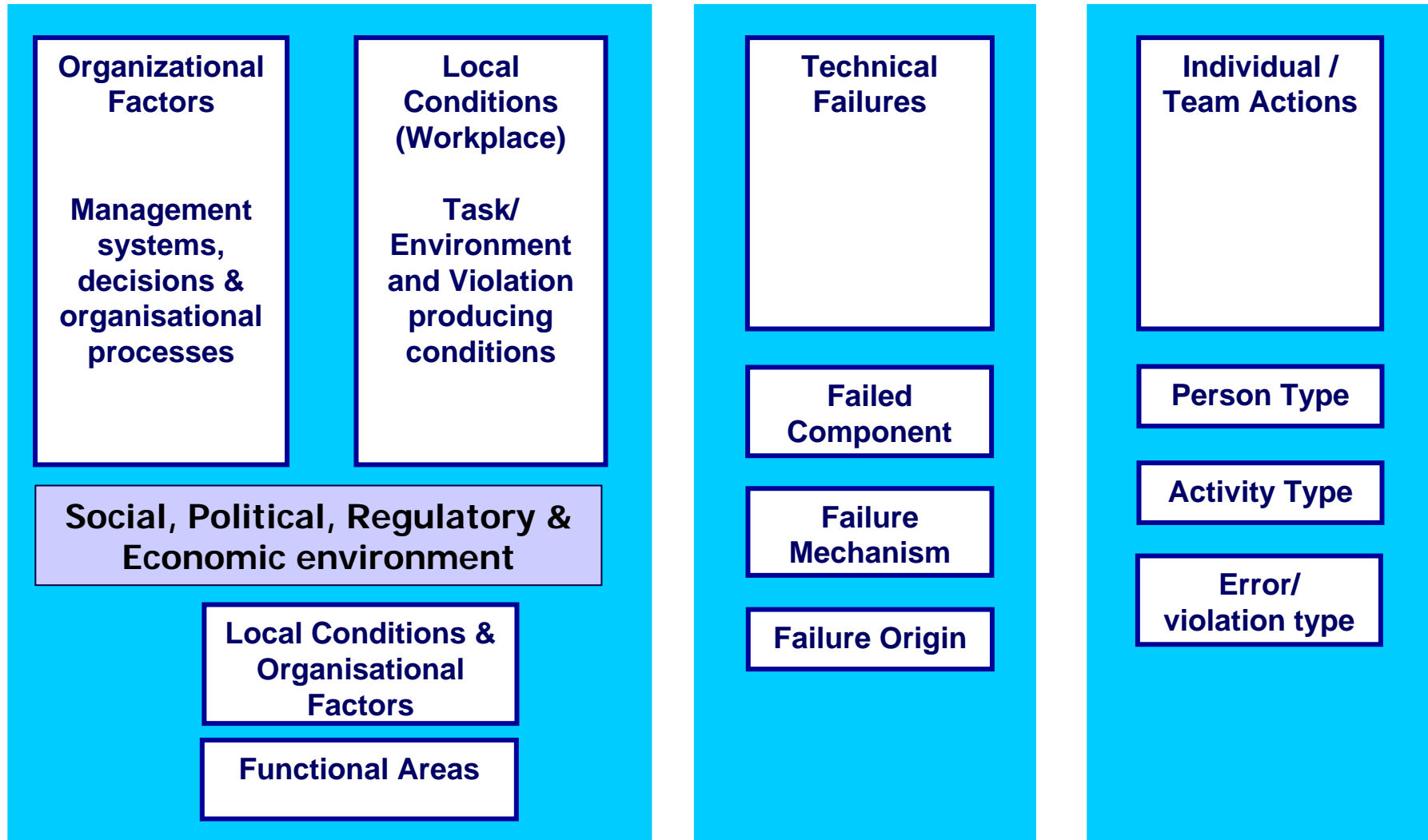
CONTRIBUTING FACTORS FRAMEWORK



James Reason, *Human Error*

CONTRIBUTING FACTORS FRAMEWORK

CFF Main Categories & Related Information



CFF Data Types

CONTRIBUTING FACTORS FRAMEWORK

Local Conditions & Organisational Factors	Individual/team actions	Technical failures	
<p>Local conditions</p> <ul style="list-style-type: none"> Personal factors* Knowledge, skills & experience* Task demands* Physical environment* Social environment* 	<p>Person type</p> <ul style="list-style-type: none"> Infrastructure maintainers Network controllers Rollingstock maintainers Train crew Station staff Terminal staff Other persons 	<p>Failed component</p> <p><i>Rollingstock</i></p> <ul style="list-style-type: none"> Bogies Braking systems Car-body Coupler/drawgear Load restraining equipment On board traction systems On board train protection systems <p><i>Infrastructure</i></p> <ul style="list-style-type: none"> Bridge Buildings Cuttings Drains/flood mitigation systems Lineside rolling stock fault detection systems Overhead power systems Road-rail interfaces Switches/crossings Track Track protection devices Tunnels <p><i>Signalling & communications</i></p> <ul style="list-style-type: none"> Communication systems Control interface equipment Interlocking systems Traffic control Train detection systems Wayside signalling equipment 	<p>Failure mechanism</p> <ul style="list-style-type: none"> Corrosion Deformation Electrical discontinuity Fracture Mechanical discontinuity Software/firmware anomaly Wear Other failure mechanism <p>Failure origin</p> <ul style="list-style-type: none"> Design Manufacture Installation / commissioning Operation Maintenance Decommissioning
<p>Organisational factors</p> <ul style="list-style-type: none"> Procedures* Training & assessment* Equipment, plant & infrastructure* People management* Organisational management* External organisational influences* 	<p>Activity type</p> <ul style="list-style-type: none"> Preparation & planning Operating equipment Monitoring & checking Handover/takeover Other activity type 		
<p>Functional area</p> <ul style="list-style-type: none"> Freight handling Infrastructure construction & maintenance Off-train operations On-train operations Passenger management Rollingstock construction & maintenance <p>Other functional area</p>	<p>Error/violation type</p> <ul style="list-style-type: none"> Error Violation Unknown error 		

Table 1: Summary of CFF categories and related data sets.

CONTRIBUTING FACTORS FRAMEWORK

Coding template

Record No: [This is the record number of the occurrence in your database]	Report prepared by: [Name] Date prepared: [31-07-2006]
--	---

OCCURRENCE DESCRIPTION (ON-S1 & OC-G1 Categories)		
[Text description]	Date:	[Date]
	Location:	[Location]
	Organisation:	[Organisation]
Occurrence Type: (include all ON-S1 & OC-G1 Categories events that occurred)		
Occurrence type:	Occurrence cat:	Occurrence sub-cat:

INDIVIDUAL/TEAM ACTIONS			
Findings/short description	Person type	Activity type	Error/violation type

TECHNICAL FAILURES				
Findings/short description	Failed component	Keyword	Failure mechanism	Failure origin

LOCAL CONDITIONS & ORGANISATIONAL FACTORS			
Findings/short description	Local condition/ Organisational factor	Keyword	Functional area (affected by the failure)

NON-CONTRIBUTING SAFETY FACTORS <i>(I.e. identified safety issues that did not contribute to this occurrence)</i>			
Findings/short description	<i>Replace text below with relevant item. Replace only if a factor is identified.</i>		
	[Person type]	[Activity type]	[Error/violation type]
	[Failed component]	[Failure mechanism]	[Failure origin]
	optional		
	[Local condition/ Organisational factor]	[Keywords]	[Functional area]

FEEDBACK ON USING THE CFF: (Document any problems you had using the Contributing Factors Framework here)

CONTRIBUTING FACTORS FRAMEWORK

CFF

Database

Microsoft Access - [MainTable1]
File Edit Insert Records Window Help

Add New Occurrence (Fields marked with * are mandatory)

* Record No Report coded by Date coded

OCCURRENCE DESCRIPTION (OH-S1 and OC-G1 Categories)

* Date * Location
* Organisation

Occurrence Type: (include all OH-S1 and OC-G1 Categories events that occurred)

* Level of Occurrence * Category Sub Category Level 1 Sub Category Level 2 Sub Category Level 3

CONTRIBUTING FACTORS

INDIVIDUAL / TEAM ACTIONS | TECHNICAL FAILURES

Level of Occurrence	Findings / short description	Person type	Activity type	Error / violation type
<input type="text"/>	Driver responded late to signal at stop, leading to a SPAD	Train crew	Operating equipment	Error

LOCAL CONDITIONS AND ORGANISATIONAL FACTORS

Findings / short description	Local condition / Organisational factor	Keyword	Functional area (affected by the failure)
Driver's performance was influenced by fatigue	Personal factors	Fatigue/alertness	On-train operations
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

NON-CONTRIBUTING SAFETY FACTORS

INDIVIDUAL / TEAM ACTIONS | TECHNICAL FAILURES | LOCAL CONDITIONS AND ORGANISATIONAL FACTORS

Level of Occurrence	Findings / short description	Person type	Activity type	Error / violation type
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

LOCAL CONDITIONS AND ORGANISATIONAL FACTORS

Findings / short description	Local condition / Organisational factor	Keyword	Functional area (affected by the failure)
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>



CONTRIBUTING FACTORS FRAMEWORK

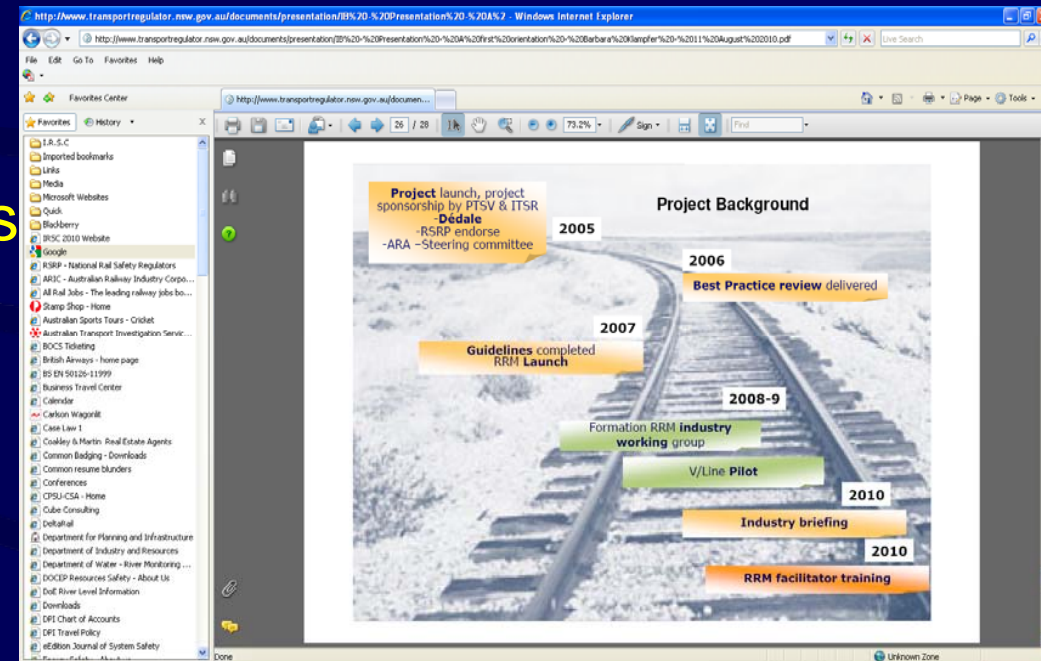
The CFF Manual is on the internet.

RAIL RESOURCE MANAGEMENT (RRM)

RRM Toolkit is based on
CRM and BRR

RRM is about:

- ❖ reducing railway occurrences attributable to human error
- ❖ enabling people to manage hazardous situations and errors.
- ❖ people making better use of resources, including team members, other people, equipment, information and procedures

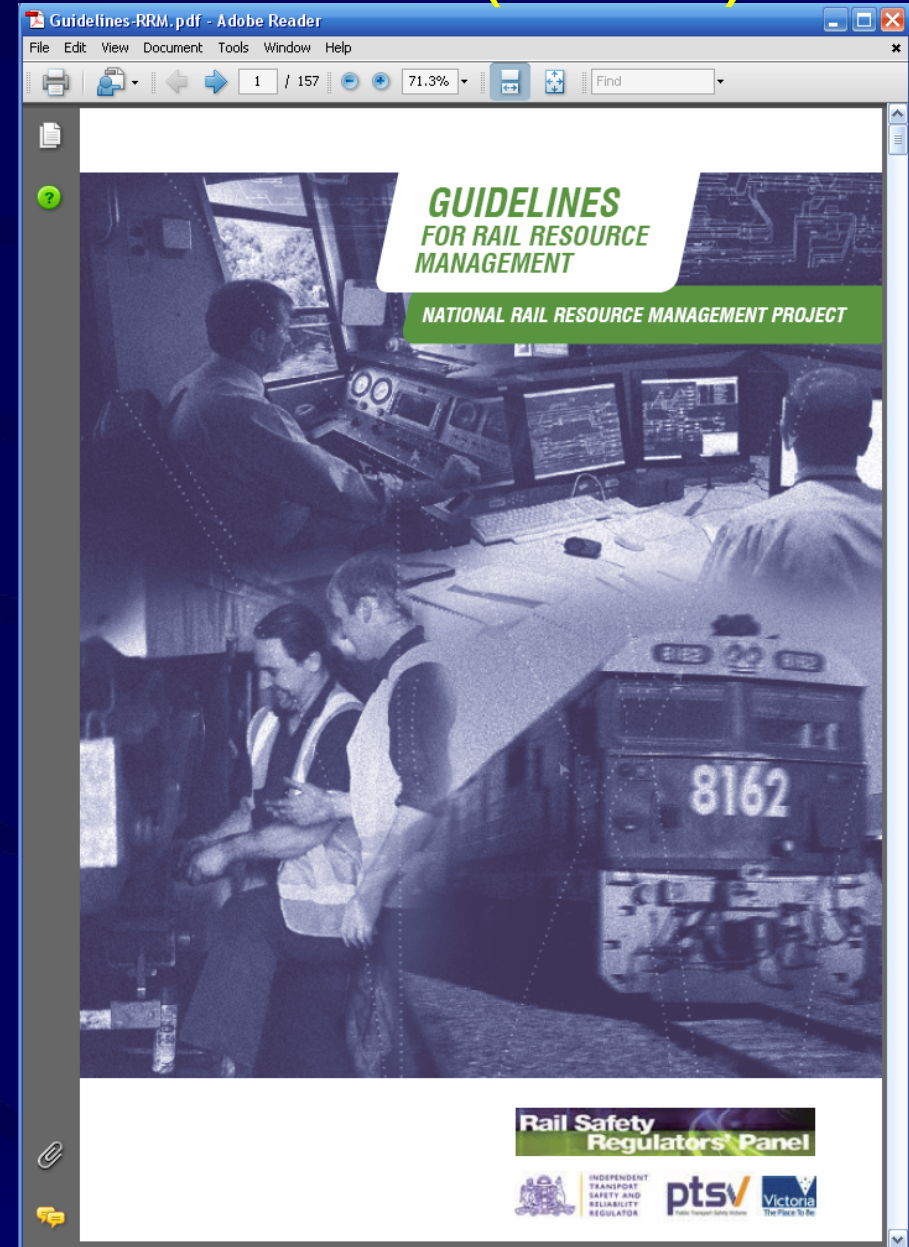


RAIL RESOURCE MANAGEMENT (RRM)

In practice:

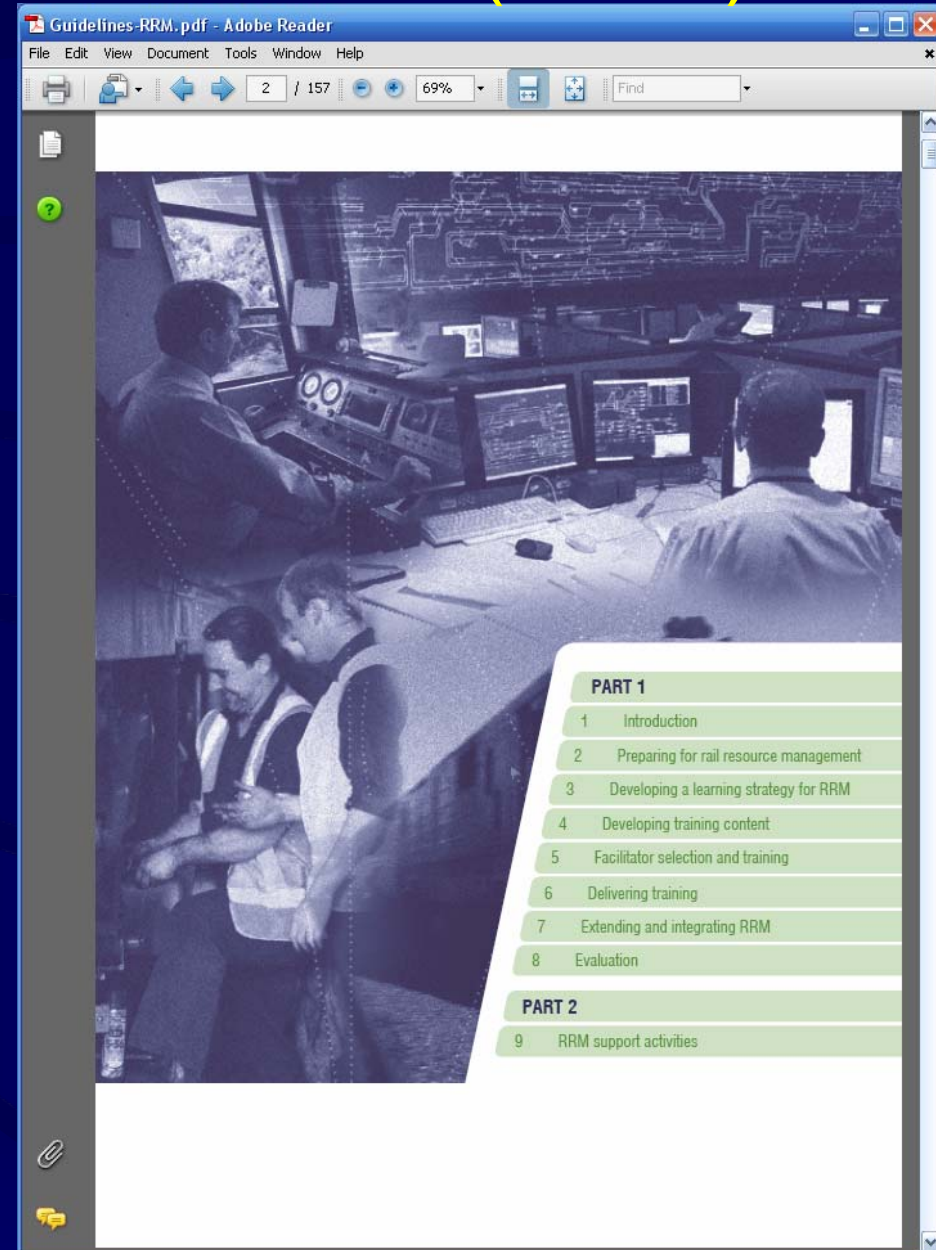
◆ RRM is about:

- ❖ strategies to reduce the frequency and consequence of errors
- ❖ improving communication skills
- ❖ cross checking and monitoring
- ❖ training for error detection and recovery
- ❖ transparent feedback systems



RAIL RESOURCE MANAGEMENT (RRM)

- ◆ Addresses key elements for a good safety culture such a leadership and safety behaviours
 - ❖ Responsibilities
 - ❖ Involving others
 - ❖ Right authority
 - ❖ Follow procedures and directions
 - ❖ Intervening
 - ❖ Decisive action
- ◆ Any railway safety worker may be required to take a leadership role.



RAIL RESOURCE MANAGEMENT (RRM)

◆ RRM Implementation:

❖ Guidelines for RRM Management

❖ RRM Training Toolkit

➔ Practical Theory

➔ Major exercises

➔ Railway examples –
accident case studies

➔ Exercises to practice on



RAIL RESOURCE MANAGEMENT (RRM)

◆ RRM Implementation:

❖ Guidelines for RRM Management

❖ RRM Training Toolkit

➔ Practical Theory

➔ Major exercises

➔ Railway examples –
accident case studies

➔ Exercises to practice on



RAIL RESOURCE MANAGEMENT (RRM)

◆ RRM Implementation:

- ❖ Need organisation commitment and a plan
- ❖ Available on internet for use by Australian railway industry
- ❖ Need to train facilitators

The screenshot shows a web browser window titled "Guidelines for Rail Resource Management - Windows Internet Explorer". The address bar shows "E:\ITS0001\Index.htm". The page content includes a header with the text "Rail Resource Management Training Toolkit" and a sub-header "It is essential to use the RRM Guidelines to develop a tailored RRM course to suit your organisation". Below this is a navigation menu with the following items: "CONTACT US | TERMS OF USE", "RRM Guidelines", "Course Materials", "Facilitator Guide Overview", "Course Introduction", "Leadership", "Task Management", "Teamwork", "Communication", "Risk Management", "Situational Awareness", "Decision Making", "Emergency Management", "Self Management", "Course Conclusion", "Major Exercises", "Accident Case Studies", "Accident Summaries", "PowerPoint Presentations", "Investigation Reports", "Additional Resources", "Pictures & Videos", and "Further Reading". The background of the page features a photograph of a train engine (numbered 8162) and a person working at a control desk with multiple monitors. Logos for "Rail Safety Regulators Panel", "INDEPENDENT AUSTRALIAN SAFETY AND SECURITY REGULATORS", "ptsv", and "Victoria" are visible in the top right corner of the page content.



RAIL RESOURCE MANAGEMENT (RRM)

RRM Guidelines are on the internet.

SAFETY CULTURE TOOLKIT

The screenshot shows a Windows Internet Explorer browser window displaying the Rail Industry Safety and Standards Board (RISSB) website. The address bar shows the URL: <http://www.rissb.com.au/linkdev/site/Tool%20Kit.php>. The page features a blue header with the RISSB logo and a navigation menu with the following items: ABOUT RISSB, MEDIA CENTRE, PRODUCTS, ADMIN DOCUMENTS, BOARD/COMMITTEE/DG, and SAFETY MATTERS. A search bar is located on the right side of the header. Below the header, the main content area is titled "RAIL INDUSTRY SAFETY AND STANDARDS BOARD" and includes a "TEXT SIZE" control with options for A-, A, and A+. The left sidebar contains a list of navigation links: Rules & Procedures, Railway Level Crossings, National Rail Safety Week, National Rail Safety Strategy, Safety Managers Group, Rail Safety Data, Safety Culture Tool Kit (highlighted in yellow), Current Safety Projects, Useful Safety Links, and Dangerous Goods Matrix. The main content area is titled "SAFETY CULTURE TOOL" and contains the following text:

Industry has identified an urgent need for a consistent way of measuring safety culture to facilitate rectification of identified gaps in that safety culture. To this end, the RISSB has adapted the UK rail industry's RSSB Safety Culture Tool.

The RSSB Safety Culture Tool has undergone extensive trials on the UK rail industry. It provides a confidential, secure, consistently repeatable, automated way of administering a Safety Culture Survey within a rail organization. It then automatically provides statistically valid analysis results to the user, identifying potential gaps within the safety culture of that organization, benchmarking against industry averages (in a confidential way) and then providing information on a set of suggested interventions.

The Australian Rail Industry's RISSB Safety Culture Toolkit is available free of charge to ARA Members.

To register your company to use the toolkit, click [here](#) or on the graphic below:

The thumbnail image shows a screenshot of the Safety Culture Toolkit interface. It features the RISSB logo and the title "SAFETY CULTURE NETWORK". The interface includes a navigation menu on the left, a main content area with text, and a circular diagram in the center. The diagram is titled "SAFETY CULTURE TOOLKIT" and shows a cycle of four stages: "Identify", "Measure", "Analyze", and "Improve".

SAFETY CULTURE TOOLKIT

The screenshot shows a web browser window titled "RISSB | Welcome - Windows Internet Explorer". The address bar shows "http://rissb.info-exchange.com/". The browser interface includes a menu bar (File, Edit, View, Favorites, Tools, Help), a search bar with "Live Search", and a toolbar with icons for home, back, forward, print, and page settings. The website content features the RISSB logo (RAIL INDUSTRY SAFETY AND STANDARDS BOARD) and the text "SAFETY CULTURE NETWORK". A navigation bar contains "Home" and "Contact Us / Help". The main heading is "Welcome to the Safety Culture Network". A light blue box contains the following text: "This site is the Australian Rail Industry's toolkit for safety culture assessment, improvement and good practice exchange designed for the rail industry. It provides organisations with a safety culture self-assessment package, guidance on safety culture improvement and the opportunity to share good practices on all aspects of safety culture across the industry. RISSB provides additional help and guidance for ARA Members. At the present time usage of the toolkit is limited to ARA/RISSB members only. RISSB would like to acknowledge the role of the Independent Transport Safety and Reliability Regulator (ITSRR) of NSW in providing a significant financial contribution to partially offset the initial set up costs in licensing the Safety Culture Toolkit from the RSSB UK." Below this, there are sections for "New Users" with a "Register..." button and "Existing Users" with a login form (username and password fields) and a "Login" button. A "Remember my login details" checkbox is also present. A circular diagram in the center-left is titled "Safety Culture Improvement Toolkit" and is divided into five segments: "What is Safety Culture?", "Safety Culture Assessment", "Who should use this site", "Safety Culture & The Rail Industry", and "What are the benefits?". A sidebar on the left contains links for "Home & Login", "Useful Information", "Latest News", "Sample Safety Culture Questionnaire & Reports", and "Registration". At the bottom, the browser status bar shows "(10 items remaining) Waiting for http://rissb.info-exchange.com/...", a taskbar with "Internet" and "100%" zoom, and a system tray with a battery icon.

RISSB | Welcome - Windows Internet Explorer

http://rissb.info-exchange.com/

File Edit View Favorites Tools Help

RISSB | Welcome

SAFETY CULTURE NETWORK

Home Contact Us / Help

Welcome to the Safety Culture Network

This site is the Australian Rail Industry's toolkit for safety culture assessment, improvement and good practice exchange designed for the rail industry.

It provides organisations with a safety culture self-assessment package, guidance on safety culture improvement and the opportunity to share good practices on all aspects of safety culture across the industry. RISSB provides additional help and guidance for ARA Members. At the present time usage of the toolkit is limited to ARA/RISSB members only.

RISSB would like to acknowledge the role of the Independent Transport Safety and Reliability Regulator (ITSRR) of NSW in providing a significant financial contribution to partially offset the initial set up costs in licensing the Safety Culture Toolkit from the RSSB UK.

New Users At the present time usage of the toolkit is limited to ARA/RISSB members only - to gain full access to all the material and guidance on the website, please enter here to register your company.

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The diagram is a circular flow chart with a central blue circle labeled "Safety Culture Improvement Toolkit". Surrounding it are five light blue segments, each with a question: "What is Safety Culture?", "Safety Culture Assessment", "Who should use this site", "Safety Culture & The Rail Industry", and "What are the benefits?".

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A useful safety culture framework

Safety Culture
"The product of individual and group values, attitudes, perceptions, competencies and patterns of behaviour that can determine the commitment to, and the style and proficiency of an organisation's health and safety management system".
ACSNI Human Factors Study Group, HSC (1993)

Psychological Aspects
'How people feel'
Can be described as the 'safety climate' of the organisation, which is concerned with individual and group values, attitudes and perceptions.

Behavioural Aspects
'What people do'
Safety-related actions and behaviours

Situational Aspects
'What the organisation has'
Policies, procedures, regulation, organisational structures, and the management systems

A useful framework distinguishes between three interrelated aspects of safety culture, specifically:
Psychological aspects (often referred to as 'safety climate')
Behavioural (or 'organisational') aspects
Situational (or 'corporate') aspects

The psychological aspect of safety culture refers to 'people's perceptions' of safety and safety management systems. This encompasses the beliefs, attitudes, values and perceptions of individuals and groups at all levels of the organisation, which are often referred to as the safety climate of the organisation. This can be measured subjectively through the use of safety climate questionnaires that aim to uncover the workforce's attitudes and perceptions at a given point in time.

Behavioural aspects are concerned with 'what people do' within the organisation, which includes the safety-related activities, actions and behaviours exhibited by employees. These aspects can also be described as 'organisational' factors.

The situational aspects of safety culture describe 'what the organisation has'. This is reflected in the organisation's policies, operating procedures, management systems, control systems, communication flows and workflow systems. These aspects can also be described as 'corporate' factors. These aspects are displayed diagrammatically in Figure 1, these three aspects of safety culture are interrelated and are not mutually exclusive.

Figure 1 - A Three Aspect Approach to Safety Culture (based upon Cooper, 2000)

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[The RISSB Safety Culture model comprises](#)
[RISSB's Safety Culture Key Elements](#)
Safety Culture Questionnaire Categories

Safety Culture Questionnaire Categories

Main Element	Factors
Effective & appropriate safety management systems	<ul style="list-style-type: none">Barriers & InfluencesTrainingCommunications
Demonstrable management commitment to safety (senior & line management)	<ul style="list-style-type: none">Organisational CommitmentManagement CommitmentSupervisor's role
Participation, involvement & workforce attitudes to safety	<ul style="list-style-type: none">Personal roleWorkmates influenceRisk taking behavioursEmployee Participation
Organisational learning & continuous improvement	<ul style="list-style-type: none">Organisational learning

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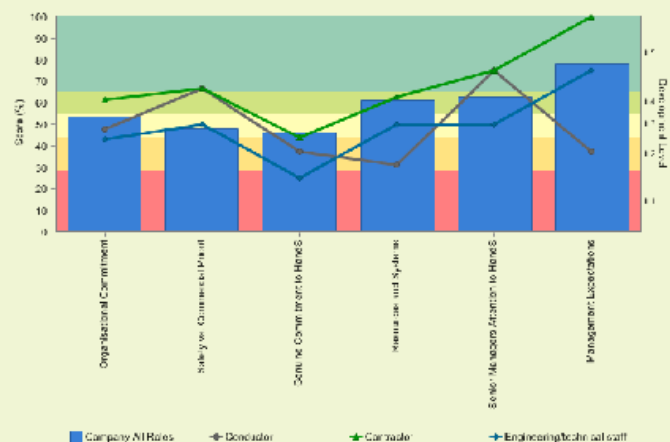
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F1 - Specific factors by roles

Company:	Enable Rail Services (Dummy Co.)	Survey Title:	CJ Test Survey 1
Date Closed:	23/02/2006 12:33:50	# Completed Questionnaires:	8
Date Report Generated	20/10/2006 15:00:55		

Selected Criteria

Gender	-- All --	Department	-- All --
Age	-- All --	Experience	-- All --
Factor	"Organisational Commitment"	Role	Conductor Contractor Engineering/technical staff
		Location	-- All --



Details for factor

Provides additional insights for this factor showing key findings from the sub-factors and specific questions.

Particularly positive and negative responses (compared with the overall average) for this factor or sub-factor are:

Factor	Score	SC Level	Guidance Notes
Organisational Commitment	53.69	Safety Culture Development Level 3	Organisational Commitment - Level 3 Response Enhance relationships between management/workforce by a strong shift to workforce involvement: <ul style="list-style-type: none"> Requires managers to have/develop a more facilitative, "human" style Aided by teamworking; listening & responding to employee issues Review & improve safety leadership by addressing unintentional behaviours (personal & organisational) that detract from safety message The following key aspects of safety management arrangements should be considered for potential improvements: <ul style="list-style-type: none"> Risk assessment & hazards/risk awareness Procedure adequacy & improvement Removal of barriers to safe behaviours & promotion of safe behaviours H&S Refresher training and provision of non-work related H&S training to raise the safety profile The effectiveness of change management arrangements and the communication of change
Safety vs. Commercial Priority	47.92	Safety Culture Development Level 3	Safety vs. Commercial Priority - Level 3 Response May need to investigate how/why H&S priority is being compromised - or could be strengthened
Genuine Commitment to H&S	46.09	Safety Culture Development Level 3	N/A
Resources & Systems	60.94	Safety Culture Development Level 4	Resources & Systems - Level 4 Response Use responses to Barriers & Influences to help to identify key areas to address Senior Managers Attention to H&S - Level 4 Response



CONCLUSION

- ◆ Operators are responsible for safety
- ◆ Safe operation is sustainable
- ◆ Work continuously on safety improvement
- ◆ Error proof the system – consider human factors
- ◆ Learn lessons from anywhere you can
- ◆ Lock in lessons and don't forget
- ◆ Develop a positive safety culture
- ◆ Regulators and Operators need to work together
- ◆ Regulators have an important role in education and safety improvement

Thank you.

