# IMPROVING THE REGULATORY FRAMEWORK FOR RAIL SAFETY IN AUSTRALIA

## DISCUSSION PAPER

**DECEMBER 2004**

National Transport Commission

**Prepared by**

**National Transport Commission**
**in association with Jaguar Consulting**

*National Transport Commission*

**Improving the Regulatory Framework for Rail Safety in Australia**

Report Prepared by: **National Transport Commission in association with Jaguar Consulting**

**ISBN:** 1 877093 78 5

# REPORT OUTLINE


| | |
|---|---|
| **Date:** | **December 2004** |
| **ISBN:** | 1 877093 78 5 |
| **Title:** | **Improving the Regulatory Framework for Rail Safety in Australia** |
| **Address:** | National Transport Commission<br>Level 15/628 Bourke Street<br>MELBOURNE VIC 3000<br><br>E-mail: ntc@ntc.gov.au<br>Website: www.ntc.gov.au |
| **Type of report:** | Discussion Paper |
| **Objectives:** | Improve rail safety and transport efficiency, reduce the cost of transport regulation |
| **NTC Programs:** | Rail |
| **Abstract:** | The purpose of this Discussion Paper is to indicate and seek comment on the changes to the co-regulatory framework NTC intends to recommend to the Australian Transport Council in early 2005. |
| **Purpose:** | For comment |
| **Key words:** | rail, regulation, safety |
| **Comments by:** | 18 February 2005 |
| **Comments to be addressed to:** | Chief Executive<br>National Transport Commission<br>L15/628 Bourke Street<br>MELBOURNE VIC 3000 |

# FOREWORD

The National Transport Commission (NTC) is an independent body established under Commonwealth legislation and an Inter-governmental Agreement to progress regulatory and operational reform for road, rail and intermodal transport in order to deliver and sustain uniform or nationally consistent outcomes.

In May 2004 the NTC released an issues paper to promote discussion on what changes could be made to the co-regulatory framework in order to improve safety and efficiency outcomes. During the submission period (June 2004) the NTC and Australasian Railways Association jointly hosted a workshop on rail safety regulation in Melbourne. The workshop was attended by approximately 70 delegates representing railway organisations and governments. An objective of the workshop was to better enable participants to make submissions in response to the Issues Paper. The NTC received 20 submissions in July and August 2004.

Since then, NTC officers have undertaken an assessment of the imperatives for reform and the options for change. The assessment has drawn on the content of submissions, available data, follow-up consultations with rail industry stakeholders and input provided by jurisdictions.

The purpose of this discussion paper is to foreshadow the changes to the co-regulatory framework NTC intends to recommend to the Australian Transport Council in early 2005. The NTC seeks comment on the proposed reforms it intends to undertake.

The Commission acknowledges the significant contribution made by the following NTC officers: Paul Salter, Marc Thompson, Kirsty McIntyre, Barry Moore, Phil Giltinan; and Mr Rex Deighton-Smith of Jaguar Consulting. The NTC wishes to thank all those that presented at and attended the workshop, and those who prepared submissions in response to the Issues Paper. The NTC is grateful for the support and advice afforded to it by the members of the steering group set up by SCOT Rail group. This input was of great assistance in finalising the discussion paper for public release.

Stuart Hicks

Chairman

Submissions making comment on proposed reforms are due on the **18th February 2005**


Email Comments to: psalter@ntc.gov.au
Telephone: (03) 9236 5043
Facsimile: (03) 9642 8922
Website: www.ntc.gov.au


Submissions by e-mail are preferred; however responses may be mailed to the following address:


Mail Comments to: Mr Tony Wilson
Chief Executive
National Road Transport Commission
L15/628 Bourke Street
MELBOURNE VIC 3000

# SUMMARY


## NTC Mandate

The Inter-Governmental Agreement for Regulatory and Operational Reform in Road, Rail and Intermodal Transport (the IGA) details the responsibilities and functions of NTC. As stated in the IGA, one of NTC's tasks is to "…develop proposed reforms in relation to:

(i) A framework to improve and strengthen the co-regulatory system for rail safety including the application of mutual recognition;

(ii) A national policy on key rail safety issues and procedures and standards to manage major risk factors;…"

## Background

In May 2004 the NTC released an issues paper to promote discussion on what changes could be made to the co-regulatory framework in order to improve safety and efficiency outcomes. During the submission period (June 2004) the NTC and Australasian Railways Association jointly hosted a workshop on rail safety regulation in Melbourne.

Since then, NTC officers have undertaken an assessment of the imperatives for reform and the options for change. The assessment has drawn on the content of submissions, available data, follow-up consultations with rail industry stakeholders and input provided by jurisdictions.

## Purpose

The purpose of this discussion paper is to indicate the changes to the co-regulatory framework that the NTC intends to recommend to the Australian Transport Council in early 2005. The NTC seeks comment on the positions it has adopted and the initiatives it has recommended.

## The Need for Regulation

There is reason to believe that externalities and imperfect information cause the market to fail to achieve the optimal level of rail safety. The potential hazards posed by railway operations are significant enough to generate public concern. Due to the combination of these factors there is a case for regulation.

A co-regulatory approach was adopted in order to provide industry the flexibility to identify and implement the most cost effective and lowest cost means of mitigating against risks, but also, to have in the reverse, sufficient powers to enforce proper standards.

Consultation has revealed that regulatory objectives are agreed to be of high value and that there continues to be a high level of support for co-regulation.

## Imperatives for Reform

Rail is a relatively safe mode of transport.

There is little evidence available (e.g. indications of worsening satey outcomes) to warrant major changes to existing processes (e.g. a change towards adoption of a more prescriptive regime). The outcomes of inquiries and best practice indicate that the capacity of governments to deal with complex organisations and complex safety problems through rules alone is very limited.

Best practice suggests a continuation of a co-regulatory approach, based predominately on application of process regulation, is appropriate. There are, however, opportunities to make improvement.

There is presently a risk of regulatory failure due to:

- poorly defined risk acceptability criteria;
- ineffective regulators due to skill shortages, resource constraints and limited range of sanctions and enforcement powers; and
- potential for safety being used to impede operation of economic regulation.

There is an opportunity to improve regulatory effectiveness (mitigate against the risk of regulatory failure) by:

- making changes to legislation and regulations;
- producing nationally consistent guidance materials;
- improving the resourcing of some regulators (a matter for jurisdictions to determine); and
- improving the overall level of skill and competency (regulators and industry alike) in the area of risk management.

Regulatory efficiency could be improved by:

- putting in place uniform legislation and regulations; and
- making sure that risk acceptability criteria incorporate consideration of all relevant economic costs and benefits.

## Draft NTC Positions

*1. Use of Regulatory Instruments*

The required scope and content of rail organisation Safety Management Systems (SMS) are properly the domain of governments and their representatives (regulators). The use of a standard (AS 4292) to specify the minimum scope and content of SMS 'by reference' (the current practice) is not supported. General requirements should be specified in legislation and matters of detail should be prescribed in regulations. This will ensure that:

- specification of regulatory requirements are within the control of regulators;
- regulators are able to make changes to required scope and content of SMS when and if required in a timely fashion; and
- there is maximum transparency as to what are the regulatory requirements.

In the rail context, in which accredited parties can be considered to be sophisticated operators, who have need of regulatory flexibility to deal with a wide range of different operational contexts, the argument for allowing for means of compliance other than via specific technical standards or codes of practice appears to be a strong one. Accordingly the NTC considers that technical standards and codes of practice developed by industry ought to have guidance status only.

The NTC believes however, that there ought to be heads of power in primary legislation for regulations that would enable technical standards and codes of practice to be recognised as an accepted means of risk control for a given type of railway. This is expected to provide additional certainty regarding compliance, and facilitate harmonisation of rules and procedures and other means of risk control. Furthermore, the NTC believes it appropriate to establish a head of power that enables the establishment of 'Statutory Codes of Practice' in circumstances where there is a strong desire to compel a railway organisation to adopt a code of practice or standard, unless the railway organisation is able to demonstrate that an alternative is equivalent or better. The NTC proposes that this instrument be used sparingly - in circumstances where it is deemed necessary to set a minimum requirement applicable to all railways.

*2. Roles and Responsibilities*

The presence of externalities suggests that there is not a natural alignment of interests and as such, it is envisaged that a regulator must necessarily challenge the safety standards that are proposed to be adopted by railway organisations. Acts establishing co-regulation must contain sufficient regulatory provisions to enable enforcement of safety standards if the operator fails to perform. The NTC is of the view that if there is true consent to regulation then the regulated should be accepting of the legitimate role of the regulator. However, the NTC's view is that the regulator should only prescribe the means of risk control as a last resort and must only do so on the basis of being able to satisfy itself that the risk control being prescribed is necessary to reduce risks to acceptable levels: it is necessary that the same onus of proof and 'goal' is applicable to both the regulator and regulated. To ensure that there are appropriate checks and balances on regulator behaviour it is necessary that appeal mechanisms are accessible and workable.

The NTC considers that an explicit requirement for interface coordination plans, combined with a strengthening of regulator powers of direction will avoid unnecessary duplication of roles and ensure that those with accountabilities are aware of it and act accordingly.

The NTC believes that it is necessary for there to be a clear requirement in legislation that an independent investigator be appointed in certain circumstances such as when an accident results in death, injury or serious damage. What circumstances give rise to a need for appointment of an independent investigator requires further consideration. The NTC acknowledges that AS5022, which is currently being reviewed and updated, provides some direction as to what circumstances should 'trigger' investigation. The NTC will consider this further, in consultation with stakeholders, as part of the development of model legislation.

*3. Harmonisation*

Differences in rail safety regulatory requirements may contribute towards limiting portability of labour and equipment between jurisdictions but are unlikely to be the main impediment – various infrastructure differences are more significant in nature.

The NTC believes that changes to the co-regulatory framework (aimed at addressing source of risk of regulatory failure) would be best implemented in a nationally consistent way in order to minimise scope for inefficiencies associated with differences between jurisdictions. The NTC considers that the driver of differences between regulator judgements is poorly defined risk acceptability criteria and a general lack of guidance regarding the appropriate conduct of regulators.

*4. Establishment of General Duties*

The NTC considers that the creation of a general safety duty in rail safety legislation would complement the existing offences in rail safety legislation that apply only to non-compliance with a term of accreditation or safety management system. The establishment of general duties would allow action to be taken by the Rail Safety Regulator for incidents that adversely impact on rail safety even though there may not be a technical breach of any particular term of the accreditation or safety management system.

The general duties approach is necessary to avoid a superficial compliance mentality, which allows an organisation to take the view that as long as they are complying with any specific requirements laid down in their SMS, they have discharged their obligations. This perspective places an inappropriate emphasis on the system of accreditation.

*5. System of Accreditation*

The NTC considers that the purpose of accreditation is (should be) to provide assurance to the public that a railway organisation has systematically considered risks that are likely to arise from its intended operations and that it has a safety management system (inclusive of risk controls) that is sufficient to reduce risks to acceptable levels. Furthermore, that it has made a commitment to implement its SMS and manage change over time. The accreditation requirement (ex-ante assurance) is intended to complement the establishment of general duties which specify the fundamental requirements applicable to different parties.

The granting of accreditation by the regulator is not a certification of the railway organisation as being safe. The regulator is merely attesting to the fact that the applicant has demonstrated the capacity and competence to operate safely, by amongst other things, providing evidence that a rigorous risk assessment has been undertaken and that risk controls have been determined, having due regard to the railway organisation's duty to reduce risks to acceptable levels.

In this circumstance, where it is acknowledged that the granting of accreditation is not a certification of safety, it is clear that it is the railway organisation's duty to reduce risks to acceptable levels, it must satisfy itself that it is not in breach of this duty. The regulator will audit and inspect with a view to testing whether a railway organisation is acting in compliance with its duty. In circumstances where there is reason to believe that an accredited railway is acting in breach of its duties, it is reasonable to expect that the regulator will request improvement, apply sanctions and utilise its enforcement powers to ensure compliance.

The alternative, whereby the granting of accreditation is regarded as a certification of safety, necessarily places a significant emphasis on the accreditation process. In this circumstance, whereby a regulator is required to attest to the safety of the railway organisation in question, it becomes the regulators' accountability to ensure that all identified risks have been reduced to acceptable levels. As such, it is to be expected that this would result in an escalation of what documentation/evidence is required by the regulator before it is willing to grant accreditation. Indeed, it is reasonable to expect that the regulator would want to sign-off on each and every risk control.

The NTC prescribes to the view, particularly given the proposal to establish general duties, that only track managers (owners) and train operators (operators) should be required to be accredited. The NTC considers that it is appropriate for there to be a 'funnelling' of accountability for safety through the two primary roles: that of the track manager and that

of the train operator. Suppliers (who are currently required to be accredited in NSW and SA) should not be required to gain accreditation.

*6. Audit Function*

The NTC considers that legislation needs to provide regulators with an array of powers that would enable them to gain access to documentation, staff, infrastructure and equipment, perhaps without notice, for the purpose of auditing compliance with conditions of accreditation and/or general duties. Furthermore the NTC considers that the powers granted for the purpose of enabling audit should be able to be used in relation to accredited railways, non-accredited railways (assuming exemption schema will exist) and those entities for which general duties apply.

*7. Hierarchy of Sanctions and Enforcement Powers*

A key issue arising from the consultation conducted to date is that of the inadequacy of current sanctions and enforcement powers. Some existing legislation provides regulators with few sanction options other than the suspension or withdrawal of accreditation. NTC proposes to provide the Safety Regulator with a hierarchy of enforcement options which may be escalated as appropriate. In addition to current provision for warnings, the options include improvement and prohibition notices, infringement notices and court imposed fines, suspension or cancellation of accreditation, commercial benefit penalties and compensation orders.

*8. Risk Acceptability Criteria*

The NTC is of the view that the net social benefit criterion is preferable to the concept of gross disproportionality on the basis that it is easier to understand and apply, is focused on social costs and benefits (not financial costs and benefits), is consistent with the general equilibrium condition required for efficient resource allocation and thus is less likely to result in perverse outcomes (due to a tendency to set safety standards too high). The NTC considers, however, that there is need for further debate amongst stakeholders on this issue.

*9. Rail Safety Performance Data*

The NTC believes that rail regulation should provide a framework that establishes an effective, consistent and transparent framework for collecting, analysing and disseminating rail safety performance data. Much work has been undertaken by rail regulatory agencies and the rail industry to develop improved reporting standards and processes for rail occurrences. This work includes development of a common set of notifiable occurrences for reporting and agreements to report data to the Australian Transport Safety Board. The NTC intends to build on this work and ensure that, where appropriate, it is formally incorporated into the regulatory framework.

*10. Employee Participation and Safety Culture*

The NTC considers that it is appropriate to establish more explicit requirements to involve railway employees, their unions, and their representatives in the development of an organisation's SMS.

*11. Overlap with Occupational Health and Safety (OHS)*

OHS laws are so broad in scope that they overlap with almostevery other piece of safety related regulation and cover in a general way virtually every activity. The overlap between OHS and rail regulation needs to be accepted, identified and addressed. The methodology previously endorsed for road/OHS regulation is also appropriate for rail. Areas of overlap should be identified and steps taken to ensure that they do not lead to adverse industry outcomes. This would mean some form of co-ordination, preferably at national level, through the National Occupational Health and Safety Council. This could be supplemented by local arrangements (e.g. memoranda of understanding) between rail and OHS regulators and enforcement agencies. To a large extent, such memoranda of understanding already exist.

*12. Overlap with Economic Regulation*

It has been identified that there is a risk of regulatory failure due to the potential for requirements of rail safety regulation to be used to impede the operation of economic regulation. The NTC considers that this risk of regulatory failure can be mitigated against by providing the regulator with adequate procedural powers. Such powers may be necessary to optimise the management of interfaces in any case.

## Recommended Initiatives

- Develop nationally consistent model legislation
- Develop nationally consistent model regulations
- Develop guidance materials
- Undertake more detailed review of institutional arrangements
- Review mechanisms for collection and publication of safety performance data
- Develop nationally consistent compentnecy standards for safety critical workers and regulator personnel.
- Develop formal processes by which industry can seek endorsement of standards and codes of practice.

# CONTENTS


**1. INTRODUCTION ..... 1**

**2. BACKGROUND ..... 1**

**3. METHODOLOGY ..... 2**

**4. THE NEED FOR REGULATION ..... 3**
4.1 Market Failures ..... 3
4.2 Size of the Problem ..... 7
4.3 Effectiveness of Regulation ..... 8
4.4 Case for continuation of Regulatory Oversight ..... 18
4.5 Conclusions ..... 22

**5. IMPERATIVES FOR REFORM ..... 22**
5.1 What Does the Data Tell Us? ..... 22
5.2 Regulatory Failure or Not? ..... 27
5.3 The need for Regulatory Harmonisation? ..... 36
5.4 Conclusions ..... 41

**6. RESULTS OF CONSULTATION ..... 42**
6.1 Principles of Co-regulation ..... 42
6.2 System of Accreditation ..... 45
6.3 Roles and Responsibilities ..... 51
6.4 Harmonisation ..... 55
6.5 Overlap with other forms of regulation ..... 58

**7. DRAFT NTC POSITONS ..... 59**
7.1 Use of Instruments and Status ..... 59
7.2 Roles and Responsibilities ..... 68
7.3 Harmonisation ..... 75
7.4 Establishment of General Duties ..... 78
7.5 System of Accreditation ..... 80
7.6 Importance of Audit Function ..... 85
7.7 Hierarchy of Sanctions and Enforcement Powers ..... 85
7.8 Risk Acceptability Criteria ..... 87
7.9 Other ..... 88
7.10 Overlap with Other Regulation ..... 90

**8. RECOMMENDED INITIATIVES ..... 92**

**REFERENCES ..... 94**

**APPENDIX A: ATTENDEES AT RAIL SAFETY REGULATION WORKSHOP JOINTLY HOSTED BY NTC AND ARA ..... 97**

**APPENDIX B: PARTIES THAT MADE SUBMISSIONS IN RESPONSE TO NTC ISSUES PAPER ..... 100**

**APPENDIX C WORKSHOP GROUPS AT RAIL SAFETY CONFERENCE – JUNE 2004 ..... 101**

# LIST OF TABLES


**Table 1.** Rail Accident Fatalities in Australia 1991-2002 ..... 16

**Table 2.** Railway Accident Fatalities, Australia, 1997-2002: year of death by State / Territory of registration of Death. ..... 21

**Table 3.** Fatalities per Passenger Distance Travelled – Normalised to Car Occupant = 1 ..... 23

**Table 4.** Running line derailments ..... 25

**Table 5.** Train to train collisions on running lines ..... 26

**Table 6.** Number of occurrences relative to level of railway activity ..... 26

**Table 7.** Level crossing occurrences ..... 26

**Table 8.** Distribution of regulatory matters between instruments ..... 67


# LIST OF FIGURES


**Figure 1.** Spectrum of regulatory and non-regulatory policy instruments .... 10

**Figure 2.** Use of Instruments within the current co-regulatory framework ... 14

**Figure 3.** Trend in rail accident fatalities for Australia (1982-2002) excluding death of pedestrians ..... 24

**Figure 4.** Rail accident fatalities for Australia (1982-2002): compares aggregate outcomes with results when pedestrian deaths are excluded. ..... 24

## 1. INTRODUCTION

The National Transport Commission (NTC) is an independent body established under Commonwealth legislation and an Inter-governmental Agreement and funded jointly by the Commonwealth, States and Territories. The NTC has an on-going responsibility to develop, monitor and maintain uniform or nationally consistent regulatory and operational reforms relating to road, rail and intermodal transport.

The NTC's principal objectives are to improve transport efficiency, safety, environmental performance and regulatory efficiency in a uniform and nationally consistent manner. The principal objectives are achieved through the effective implementation (by others) of transport reforms based on nationally consistent policy and regulation developed by the NTC. The NTC works in cooperation with industry, road and rail agencies and transport departments, and reports to the Australian Transport Council (ATC), a council of transport and road Ministers from all jurisdictions.

The Inter-Governmental Agreement for Regulatory and Operational Reform in Road, Rail and Intermodal Transport (the IGA) details the responsibilities and functions of NTC. As stated in the IGA, one of NTC's tasks is to "…develop proposed reforms in relation to:

(iii) A framework to improve and strengthen the co-regulatory system for rail safety including the application of mutual recognition;

(iv) A national policy on key rail safety issues and procedures and standards to manage major risk factors;…"[1]

## 2. BACKGROUND

In May 2004 the NTC released an issues paper entitled; "Improving the Regulatory Framework for Rail Safety in Australia". It was intended to promote discussion on what changes could be made to the co-regulatory framework in order to improve safety and efficiency outcomes.

During the consultation period the NTC and Australasian Railways Association (ARA) jointly hosted a workshop on rail safety regulation at the Melbourne Exhibition Centre, Southbank. The workshop was attended by approximately 70 delegates representing railway organisations and governments. The names of attendees are listed in Appendix A.

The objective of the workshop was to facilitate an improved understanding of:

1. regulatory approaches;
2. trends in safety regulation;
3. application of safety regulation in other industries;
4. application of rail safety regulation in other countries;

[1] Clause 5.1(b)

5. the current co-regulatory rail safety system in Australia; and
6. changes that could be made to improve the performance of Australia's co-regulatory system.

It was hoped that the workshop would better enable participants to make submissions in response to the issues paper.

The submission period for the issues paper formally concluded on the 19 July 2004. The NTC received 20 responses including a number that were submitted following the closure of the formal submission period. The parties that made submissions are listed in Appendix B. All submissions (unless otherwise indicated in Appendix B) are available from NTC on request.

All submissions were used as inputs into the production of this Discussion paper. Statements sourced from submissions are referenced accordingly throughout the text.

## 3. METHODOLOGY

Whilst a clear need for regulation can often be demonstrated, it must also be recognised that regulatory requirements have substantial impacts on the performance of the economy. Thus, governments that wish to achieve regulatory objectives without unnecessarily compromising economic performance must focus on questions of regulatory efficiency and effectiveness.

**Regulatory efficiency** means ensuring that a given regulatory objective, or benefit, is achieved at the lowest possible cost. The increasing use, throughout OECD countries and beyond, of Regulatory Impact Analysis (RIA) is testimony to governments' increasing acceptance of the need for, and validity of, such an approach to regulation. This, point represents the overcoming of earlier views of regulation as an essentially costless way of achieving government objectives, which probably derived from the hidden nature of the costs involved.

Ensuring **regulatory effectiveness** means taking a realistic view of the strengths and weaknesses of the regulatory tool and, in particular, understanding the importance of the limits to regulation. Firstly, there are practical limits to regulation's ability to force people to modify their behaviour in a particular way. Unanticipated or unavoidable side-effects tend to occur even where quite rigorous RIA has been carried out as a means of maximising regulators' knowledge prior to decision making. Secondly, there are practical limits to the extent of the burdens that governments can impose via regulation. The burden of compliance can be such that regulated parties do not have the capacity to know and understand their regulatory obligations. Without such knowledge and understanding there is no effective compliance. And, evidently, where there is no compliance there is no possibility that the regulatory objective will be attained.

Due to the limitations of regulation, Council of Australian Governments (COAG) Principles and Guidelines state that there should be an initial presumption against new or increased regulation and a general view that any new regulation should be the minimum necessary to achieve the stated objectives. They note that regulation is likely to be economically inefficient (due, for example, to the dynamic costs of lost innovation) and should therefore be the least preferred form of government intervention, after alternatives such as information campaigns, 'moral suasion' and market based approaches.

The NTC is bound to adhere to the COAG Principles and Guidelines and must give due consideration to the efficiency and effectiveness of changes that could be made (options) and the cohesiveness of the regulatory framework as a whole (assuming some options are adopted). The concepts of regulatory efficiency and effectiveness will be used consistently throughout this paper to evaluate (mainly in a qualitative sense at this stage) the various options that are available for consideration. Other criteria will also be applicable and will be identified when relevant. Options to be evaluated have been; raised in submissions in responses to the issues paper; are observed to have been implemented in other jurisdictions; or are perceived to be practical means of addressing perceived inadequacies inherent in the operation of the current regulatory framework.

## 4. THE NEED FOR REGULATION

The threshold question in respect of any proposed regulation is whether there is a case for government to use its regulatory powers. The mere existence of an identified problem that is potentially in need of a regulatory solution is not sufficient to justify regulation. As noted above, best practice regulatory principles generally counsel a cautious approach to using the regulatory tool: The COAG Principles suggest *working from an initial presumption against regulation*, while the OECD argues for *a sceptical approach to regulation, based on asking whether regulation is really needed.* The need for this caution derives from both the potential for regulation to have major, unanticipated consequences and from the limits of regulation.

Thus, faced with a possible need to regulate, decision-makers have first to satisfy themselves that the problem is of a type and of a size that potentially justifies such action. The COAG Principles indicate that the type of problem (in particular, whether there is a market failure) must first be identified. Secondly, the consequences of the market failure must be of sufficient size and significance to be of public interest. Thirdly, there must be an expectation that regulation will be effective and efficient in redressing the problem created by the market failure.

### 4.1 Market Failures

Safety (and other) regulation by government(s) is needed when a 'market failure' is determined to have occurred, i.e. when market signals are such that resources are likely to be misallocated or otherwise inefficiently employed. Some causes of market failures are as follows:

- Where markets are monopolised, they allocate resources inefficiently.
- If consumers do not have accurate information about market prices or product quality, the market system will not operate efficiently.
- The market cannot deal properly with the incidental side-effects (externalities) associated with many economic activities.

Rail safety regulation, in large part, is intended to address the market failure caused by the presence of externalities[2] and due to consumers having imperfect information about the

[2] When the actions of either consumer of producers result in costs and benefits that do not show up as part of the market price. Such costs and benefits are called externalities because they are 'external' to the market.

quality of the service being purchased. Safety regulation (more generally) is intended to mitigate against the risk of narrow minded behaviour on the part of decision makers. This, in part, also provides a justification for rail safety regulation.

### 4.1.1 Externalities

It is argued that railway occurrences (accidents or incidents) may have three categories of consequences:

- personal loss: the effect on people directly affected by the occurrence, including workers, passengers, freight and the public at large;
- reputational loss: dimished confidence in ability of railway organisation(s) to provide the service at an acceptable level of quality; and
- societal concern: linked to risks that can lead to catastrophic failure, where the consequences may be irreversible, result in inequitable impacts on the community, and can pose a threat to future generations (HSE 2001).

Each is identified in turn in order to consider whether an externality exists.

#### 4.1.1.1 Personal Loss

Personal loss is the direct impact of an occurrence whether it is through death, injury or damage to property. In some cases, the rail organisations (train operator/track manager) will be forced to internalise the cost of personal loss either directly (because the railway damages its own property) or indirectly (due to requirement to pay compensation). In such circumstances there is no real externality because the railways organisations have appropriate incentives to avoid occurrences: these organisations are made to bear the consequences. In other circumstances (typically those involving death or injury) the compensation payable by the railway organisation are not truly reflective of societal costs, in which case, an externality exists.

The compensation payable after accidents bears very little relation to the societal value applicable to the prevention of accidents and casualties, and is very much lower, especially in the case of fatalities. Compensation is only payable if the railways (or other defendant) are proved to be at fault, which is not always the case, and then it is paid essentially only for the purpose of restoring any dependants of the person killed to the same financial position as they would have been in if the person had lived. Thus if there are no dependants, there is almost no compensation. The other principle factors that determine compensation are the age and income of the deceased. The compensation cannot be more than the present value of the future income of the deceased, and usually it is much less. Value of Prevented Fatality (VFP) studies are almost unanimous in rejecting court awards as being of any use in estimating what members of society would wish to pay to reduce the risk of accidents, and for the same reason it provides poor signals to organisations as to the level of safety they should achieve. The general conclusion is that there is an externality and that this is one reason for having safety regulation.

#### 4.1.1.2 Reputational Loss

Reputational loss manifests itself in a loss of traffic and revenue. If a railway organisation has a poor safety record, and this is known, then it is to be expected that (at least some) customers will lose confidence and look to have their services provided by another railway organisation or, possibly, by another mode of transport.

In circumstances where a safety concern/product damage issue is understood (widely) to be confined to the operations of a particular organisation, it can be argued that there is no externality: the consequences of poor performance are internalised by the railway organisation at fault. If however, there is a lack of transparency, and customers form the misconception that rail transport is unsafe (in a general sense), there is an externality: the poor performance of one organisation reflects poorly on the whole industry. This in turn could have further indirect effects, for example, the transfer of freight and passengers from rail to road (a mode that has been proven to be less safe) could result in an increase in the aggregate number of deaths and/or injuries which is clearly a perverse outcome not in the public interest.

It is noted that neither industry associations nor regulators in Australia have attached high priority to managing the potential for this externality to occur. There is a lack of transparency of safety performance of railway sectors in Australia, for example, heritage and tourist sector versus metropolitan passenger transport sector versus interstate freight sector. This may be due in part to a lack of historical data and inconsistencies between reporting of occurrences and pre-cursor events such as Signal Passed At Danger (SPADs). Inconsistencies make valid comparisons difficult.

Some stakeholders (who seemingly are concerned about the externality occurring) are becoming less willing to accept this (lack of data) as a justification for the apparent lack of transparency:

> *The Regulators, having collected data for over 5 years, have failed to collate and analyse the information to provide a meaningful stratified profile of the industry and to demonstrate where safety regulation is needed (p1, ATR).*

The main industry association (Australasian Railways Association) is becoming mindful of the role it should be playing in improving the availability of safety data for the benefit of the industry (and thus addressing the potential for this externality to occur):

> *…The ARA is committed to the role of sourcing directly from industry key trend data such as equipment failures, near hits and making such available to industry and government alike, subject to relevant confidentiality and freedom of information controls (p6, ARA).*

However, as indicated by the qualifications, barriers to achieving a meaningful database of both incidents and precursor data remain. These include the aversion of jurisdictions and rail operators to publication of data that would permit comparison of performance for either political or commercial purposes. No jurisdiction or operator would like to be identified as ‘least safe’.

While the extent to which this externality exists (and its significance) is unknown, the potential for the safety performance of one railway to reflect poorly on the whole industry, at minimum, argues for transparency of safety performance of individual railways and across industry sectors. Due to the apprehension towards sharing of data by at least some industry participants it can be foreseen (and indeed has been foreseen) that this necessitates the setting of mandatory data reporting requirements. This has occurred in all jurisdictions. The potential for ‘reputational loss’ to become an externality, at least in part, provides a justification for regulation. At minimum it creates an argument for establishment of mechanisms that provide for transparency of safety performance.

#### 4.1.1.3 Societal Concern

The concept of societal concern is relatively new. The Health and Safety Executive (HSE) (2001) argues that this externality applies to 'major hazard' industries such as nuclear, offshore petroleum, gas conveyance and mining industries. HSE (2003) considers that rail is one such industry. The classification of rail as a major hazard facility (and in part the presence of an externality linked to societal concern) has recently come under criticism:

> *We do not accept that parallels exist between the rail, nuclear and chemical industries. We certainly do not underestimate the extremely serious consequences of any train accident; but the scale of nuclear and chemical accidents is not likely to be similar to those of the railway. In our view, this places in doubt HSE's designation of the railway as a 'major hazard' industry which we think could result in a 'gold plated' approach being taken to rail safety. The HSE needs urgently to rethink its approach to the classification of rail as a 'major hazard' industry and generally to adopt a more nuanced, railway-specific approach to such matters (para 74, House of Commons Transport Committee, 2004).*

The NTC believes that railway occurrences, however serious, do not have irreversible consequences to society, nor do they pose a threat to future generations. As a consequence, it is not believed that there is an externality linked to societal concern (as defined by HSE). Accordingly this does not provide a justification for having regulation.

### 4.1.2 Imperfect Information

The availability of information to consumers determines the nature of transport services they wish to procure. For passengers, safety during transit is a consideration. It is reasonable to presume that public transport passengers want a level of safety that sensibly balances what safety they would ideally like, what is technically possible, and what they have to pay. However, it is not possible for passengers to make these judgements themselves, because they do not have the requisite technical and analytical knowledge. The consumer has, in effect, imperfect information about the risk to personal well being which is inherent in purchasing the service.

The presence of imperfect information (and/or an inability to interpret technical information correctly) is a justification for use of regulation in a number of safety related areas such as food manufacturing, construction, etc. In such circumstances, the safety regulator's job is to represent users (and sometimes third parties) in deciding on safety requirements. Furthermore, even when the safety judgements have been made, passengers are still not able to observe directly whether they are actually getting the level of safety agreed (for example, they cannot tell whether the vehicles or tracks they use have been maintained in line with agreed standards). Therefore a further task for the regulator is auditing and enforcing the standards. The enforcement of the standards cannot be left to the market through the compensations system, because as has already been noted, compensation payments are on average far below the VPF benchmark. In any case, after the event court proceedings are very cumbersome and in every sense is a high cost method of avoiding safety requirements.

In summary, the risks applicable to rail transport are complex, as are the methods of control. It could not be expected that the general public can determine appropriate safety standards and enforce them via the market. Thus, there is a market failure.

### *4.1.3 Myopic Behaviour*

In order for the market to operate efficiently it must be possible to assume rational behaviour on the part of decision makers, that is, decision makers take into account all relevant factors (both in the short term and in the long term), systematically consider costs and benefits and choose the best course of action (in pursuit of self interest). In practice, it is not possible to assume that decision makers will behave in a perfectly rational manner. The costs of preventative effort are borne in the present, whereas accident costs (including the liability to customers and bystanders) occur at random times in the future. It is certainly possible that a decision maker may adopt a narrow (myopic) perspective and ignore legitimate safety considerations. In his submission, Gunningham asserts that:

> *…corporate decision-makers commonly behave in ways that suggest that they are "boundedly rational" and in consequence focus on core business functions and ignore lesser costs, even though these costs could be reduced through improved safety precautions.*
>
> *…one means to overcome bounded rationality and to generate a 'crisis of conscience' within the enterprise would be for the regulator to take effective enforcement action…(p2).*

The distinct possibility of myopic behaviour by decision makers in railway organisations provides a justification for regulatory oversight.

## 4.2 Size of the Problem

An objective assessment of the size of the problem created by the presence of market failures is crucial. Regulation often arises as a political response to a single, high profile event. However, such events may be extremely unlikely occurrences and/or may have far lesser effects than at first appear to be the case. Viscusi (1998) notes:

> *People frequently make alarmist responses to small risks and exaggerate their importance. However, government policies do much the same thing as they fail to distinguish magnitudes of the risk level and often trigger interventions based on the presence of any evidence of carcinogenicity or similar kind of risk. Policymakers may be reflecting the irrationalities of their constituency, or they may be acting as individuals who themselves display such irrationalities. Responding to irrational public pressures may be 'rational' behavior but bad policy.*

Objective assessment of the size of the problem requires a risk assessment approach: where risk is equal to hazard multiplied by probability. Thus, regulation may be justified where hazard (i.e. the harm that is occasioned if the event being controlled occurs) is substantial, despite probability being low. Regulation may also be justified where hazard is moderate, but probability is higher. As Viscusi (1998) notes, the relevant factor is the expected value of the risk.

While this implies that some simple numerical 'threshold' may be derivable, separating 'acceptable' from 'unacceptable' levels of risk, this is generally not the case in practice. While a sound understanding of the expected value of the risks being addressed is essential as a basis for decision making, risk literature also shows clearly that other, more subjective, factors also weigh heavily in people's assessments of the acceptability of risks. This includes the type of risk involved. Bray (2004) citing the work of others considers the following factors and their influence on the perception of risk: familiarity (a new risk may be treated with greater caution than an old one); voluntariness (people are more tolerant of

risks where they can control their exposure to hazard); degree of control (tolerance of risk is higher if the probability of risk can be influenced); potential for catastrophe (there is a lower tolerance for risks that result in a catastrophe); dread (some risks induce more fear than others); and how well known the risk is to science.

Quantifying the expected value of the safety risk posed by rail operations is difficult. It is possible to foresee many high consequence events if certain controls had not been established. The basic objective facts of the matter are that passenger trains have the capacity to carry a lot of people and that both passenger trains and freight trains generate significant inertia when in operation, meaning that, when things go wrong (controls fail) there is scope for considerable death, injury and property damage (depending on context).

History has demonstrated this. The Waterfall rail accident in January 2003 resulted in seven fatalities. In a previous accident at Glenbrook in 1999, seven fatalities also occurred. Clapham Junction in the United Kingdom was the scene of an accident involving two collisions between three commuter trains in December 1988. Thirty five people died and more than a hundred were injured. In January 1977, the Granville (Sydney) train crash killed 83 people and injured 220.

Fortunately such events occur rarely, demonstrating that, in the main, controls that have been developed (over the long history of railway operations) are effective in mitigating against the risk of these 'high consequence' events occurring. Indeed, consideration of rail safety performance in aggregate suggests that there is perhaps a greater need to mitigate against more moderate hazards that result in the death of solitary individuals. In 2002, based on examination of available data, the BTRE concluded that:

> *The principle issues for rail safety are suicides, level crossing accidents, and persons struck by trains. Pedestrians and young males are most at risk. In 1999, of the 43 fatalities not including suicides and level crossing accidents involving motor vehicles, 33 were pedestrians, 35 were male and 18 were male and aged 15 to 29. In contrast, fatalities and injuries resulting from train collisions and derailments are relatively rare.*

Overall, the debate tends to be not whether safety of railway operations should be the subject of regulation but the nature and extent of this regulation. There is an acceptance that market failures exist, and there is public interest in the operation of railways because hazards are potentially substantial and/or significant enough in aggregate to generate public concern.

## 4.3 Effectiveness of Regulation

Determining that there is a problem, and that this problem is of a magnitude that potentially justifies government action, is itself not sufficient to make the case for regulation. A further step is to determine the likely effectiveness of regulation. This means both assessing whether regulation is likely to be able to address the identified problem effectively and efficiently and the likelihood and extent of 'regulatory failure'.

### *4.3.1 Choices Made in the Past*

In the context of the current review, the question is not whether regulation will be effective, rather, it is whether it has been effective, given choices that have been made regarding:

- whether to regulate, or to adopt an alternative policy instruments;

- the question of the form of regulation; and
- the essential legal questions regarding what matters are appropriately placed in primary legislation, regulations and non legislative instruments.

#### *4.3.1.1 Whether to Regulate?*

Prior to the 1990s, railways were mainly vertically integrated, state based, government owned businesses, the exceptions being: the Tourist and Heritage sector which was (and still is) a mixture of vertically integrated[3] and vertically separated[4] non-profit organisations; and isolated, privately owned freight railways. At this time, all these organisations were self regulating their own safety performance. This was noted in the report of Inter-Governmental Working Group for Rail Safety (IGWGRS):

> *The regulations governing safety and investigations are contained in the various systems' railway operating rules, regulation books, handbooks, and books of rules (1993, p5).*

It was observed by the IGWGRS that the context was changing due to:

a) the growing prominence of interstate rail operations following the establishment of National Rail in 1991;

b) the opening up of rail infrastructure to private operators in accordance with the principles of competition policy;

c) the franchising of Victorian country rail services to private operators;

d) the establishment of single corridor management arrangements for interstate passenger services; and

e) the foreseeable possibility of further privatisation and changes to the structure of railways.

One of the key positions reached by the inter-government working group in 1993 was that the nature of, and significance of, market failures that existed (in context of a changing environment) was sufficient to justify the establishment of a form of regulatory oversight, rather than, for example, insisting on mandatory information disclosure and establishment of compensation provisions that are more reflective of the Value of Prevented Fatalities. It is considered that this would be the minimum response suggested given the nature of market failures that have been identified (refer to spectrum of policy instruments identified in Figure 1).

Examination of the inter-governmental working group report suggests that there was not a systematic consideration of the spectrum of policy instruments available. However, it can be inferred that there was some consideration of the relative merits of 'light handed' versus more 'heavy handed' approaches:

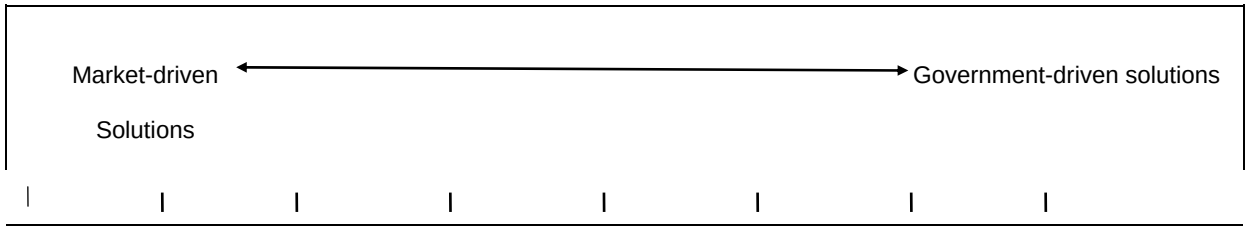
[3] Track Manager and Train Operator functions are fulfilled by the same organisation

[4] Track Manager and Train Operators are separate organisations

*Of the available approaches to regulation, self regulation based on accreditation is the one which offers the most advantages in terms of commercial flexibility, cost effectiveness and standards of performance.*

*The NSW Bill offers a co-regulatory approach which enables the operator to demonstrate the capacity to maintain safety, but contains sufficient regulatory provisions to enable enforcement of safety standards if the operator fails to perform (p iv, Inter-Governmental Working Group on Rail Safety, 1993).*

**Figure 1. Spectrum of regulatory and non-regulatory policy instruments**




| Free market | Free market governed only by general competition policy | Mandatory information disclosure (to enhance consumer choice) | Private sector voluntary regulation (voluntary agreements, private standards) | Market incentives established by government (improved, pricing signals, property rights) | Process regulation (requiring firms to assess risks and take most cost-effective action) | Performance regulation (standard objectives set by government) | "Prescriptive" Command-and-control regulation |
|---|---|---|---|---|---|---|---|

**Indications for use of various policy instruments**

| Effective competition possible but requires intervention to create appropriate frameworks or supports | Efficient market hampered only by info. asymmetry - disclosure requirement minimises cost of correction | A high level of good practice exists among market participants *or* enforcement difficult so consent issues are crucial | An essentially efficient market exists, so intervention is aimed at correcting externalities | Performance standards are difficult to specify, this response emphasises benefits of systemic thinking and disclosure | Specific standards easily identified but many tech. Solutions possible, tech. Change is rapid | Few acceptable options exist, high level of govt. control needed as important values or substantial risks concerned |
|---|---|---|---|---|---|---|

Source: p52, OECD, 2002

Minimum response suggested given nature of market failures identified

Categorisation of response embodied in current co-regulatory framework

### *4.3.1.2 Form of Regulation*

One of the key tasks of the IGWGRS was to "report back on the impact of the NSW Rail Safety Bill on rail safety". The NSW Government's proposal (1993 Rail Safety Bill) was to establish a co-regulatory framework for rail safety predominately based on use of process regulation, albeit it contained prescriptive elements. It was asserted by representatives of the NSW Government (at the time) that:

*…it is the nature of co-regulatory regimes to have sufficiently flexibility to permit the industry to regulate itself to a major extent but, to have in the reverse, sufficient powers to enforce proper standards where the industry, or a member or section of it,*

> *fails to adhere to such standards. Such schemes are generally used in circumstances where there is a need to balance a strong public interest against an industry's general reputation for responsible behaviour (p15, IGWGRS, 1993).*

In consideration of the NSW Government's proposal, the IGWGRS:

> *…formed the view that administration of the NSW regime would be a key element in ensuring that commercial performance of operators is not unduly impeded. By the same token the industry needs to accept that the extent to which the regime does impinge on their ability to retain operational flexibility, will also be a function of its ability to deliver safety.*
>
> *There is nevertheless a concern that the NSW regime contains elements that are unnecessarily prescriptive, such as the specifying of safety devices and certain details required for safety management plans. These sorts of provisions may serve to limit an operator's ability to determine how best to meet required performance standards and that considerable cost might also be entailed. However, it is generally recognised that NSW intends to make the administration of the scheme flexible and cost effective.*
>
> *Some members of the working group maintain that over time the provisions of the Bill have the potential to become increasingly onerous and that some attention could usefully be focused on the administration of regulatory policy (p21, 22)*

Despite their concerns, the intergovernmental working group recommended that a national approach to rail safety should appropriately include the following features present in the NSW Bill:

- *accreditation as distinct from prescriptive regulation;*
- *separation, where possible, of the regulator and operator;*
- *onus on the operator to account for safety performance;*
- *transparency and accountability;*
- *compliance auditing;*
- *appeal mechanisms;*
- *establishment of incident reporting; and*
- *facility for Ministers to instigate independent investigations (p viii).*

This proposal of the inter-governmental working group was endorsed, in part, when the Rail Safety Inter-Governmental Agreement was signed in 1996:

> *The Australian Transport Council having endorsed the recommendations of the report "A National Approach to Rail Safety Regulation", the Commonwealth, the States and the Territories of Australia have agreed to establish a cost effective nationally consistent approach to rail safety…(p1, Rail safety IGA, 1996).*

However, the 'industry' model proposed by the IGWGRSincluded a number of elements that were not adopted by governments. It was proposed to establish a:

- 'Australian Rail Safety Board' to promote harmonisation of standards and accreditation conditions, to facilitate and oversight mutual recognition

arrangements, and in the event of technical disputes: provide a conflict resolution mechanism.

- 'Australian Rail Safety Bureau' for purpose of investigation, research and the development of a national database; and the establishment of a formal industry consultative group which would advise the Board.

In contrast, the Rail Safety IGA (1996) only required jurisdictions to establish a co-regulatory framework for rail safety by making provision under legislation for:

- requirement for parties to nominate new or existing body to act as Accreditation Authority (rail safety regulator);
- accreditation of "Owner" (track manager) or "Operator" (train operator) involved in interstate rail operations by Accreditation Authority;
- accreditation to be consistent with the provisions of the Australian Rail Safety Standard (AS4292);
- mutual recognition of accredited operators
- accredited Owner or Accredited Operator or State or Territory Government to seek the appointment of an independent investigator to investigate an accident or other serious incident;
- appointment of investigator to be made by responsible rail investigation body of the jurisdiction. Investigator to be drawn from panel composed of experienced rail investigators nominated by each party to the agreement; and
- dispute resolution mechanisms

#### *4.3.1.3 Use of primary legislation, regulations and non-legislative instruments*

The Rail Safety IGA does not prescribe the means by which jurisdictions would be required to bring into effect the system of accreditation. It was envisaged that *legislation shall be passed or appropriate administrative action under existing legislation taken as soon as practicable* (p4, Rail Safety IGA, 1996). In effect, there was no consideration, at a national level, of what matters are appropriately placed in primary legislation, regulations and non legislative materials. It should be, therefore, no surprise that jurisdictions did not implement the intent of the Rail Safety IGA in a consistent manner. This was a key finding, when the rail safety IGA was reviewed in 1999:

> *A nationally consistent co-regulatory approach was intended, but legislative differences in timing and detail have occurred between States (II-16, BAH, 1999).*

As indicated by current circumstance, each State and the Northern Territory enacted legislation and established regulatory powers to be used to *promote the safe construction, operation and maintenance of railways.* In South Australia, Western Australia, Tasmania, Northern Territory and NSW there are specific 'Rail Safety' Acts. In Queensland, regulatory powers and requirements were established under the *Transport Infrastructure Act 1994*. In Victoria, regulatory powers and requirements are established under the *Transport Act 1983*.

In accordance with the Rail Safety IGA, there is a high degree of commonality in the approach taken in the Acts. The legislation generally has the character of being no more than a framework for the regulatory structure and typically provides very little detail.

The general approach is that of establishing a process based regulatory regime based on accreditation. Primary legislation in each jurisdiction:

(a) establishes the powers and functions of the rail safety regulators;

(b) defines which parties require accreditation;

(c) sets a requirement for such parties to develop a Safety Management Plan (SMP);

(d) requires parties seeking accreditation to submit a proposed SMP to the identified regulator; and

(e) prohibits a party conducting railway operations on designated railways without first obtaining accreditation.

Each Act provides for the appointment of an independent regulator and articulates how disputes will be handled.

Some Acts (those of NT, SA, WA and TAS) reference the Australian Rail Safety Standard (AS 4292) as a means of specifying specific requirements with which parties seeking accreditation must comply. The standard can be regarded as a regulatory instrument in these States and Territories.

Acts establish extensive regulation-making powers which could be used as a mechanism for specifying requirements. These powers are largely unused.

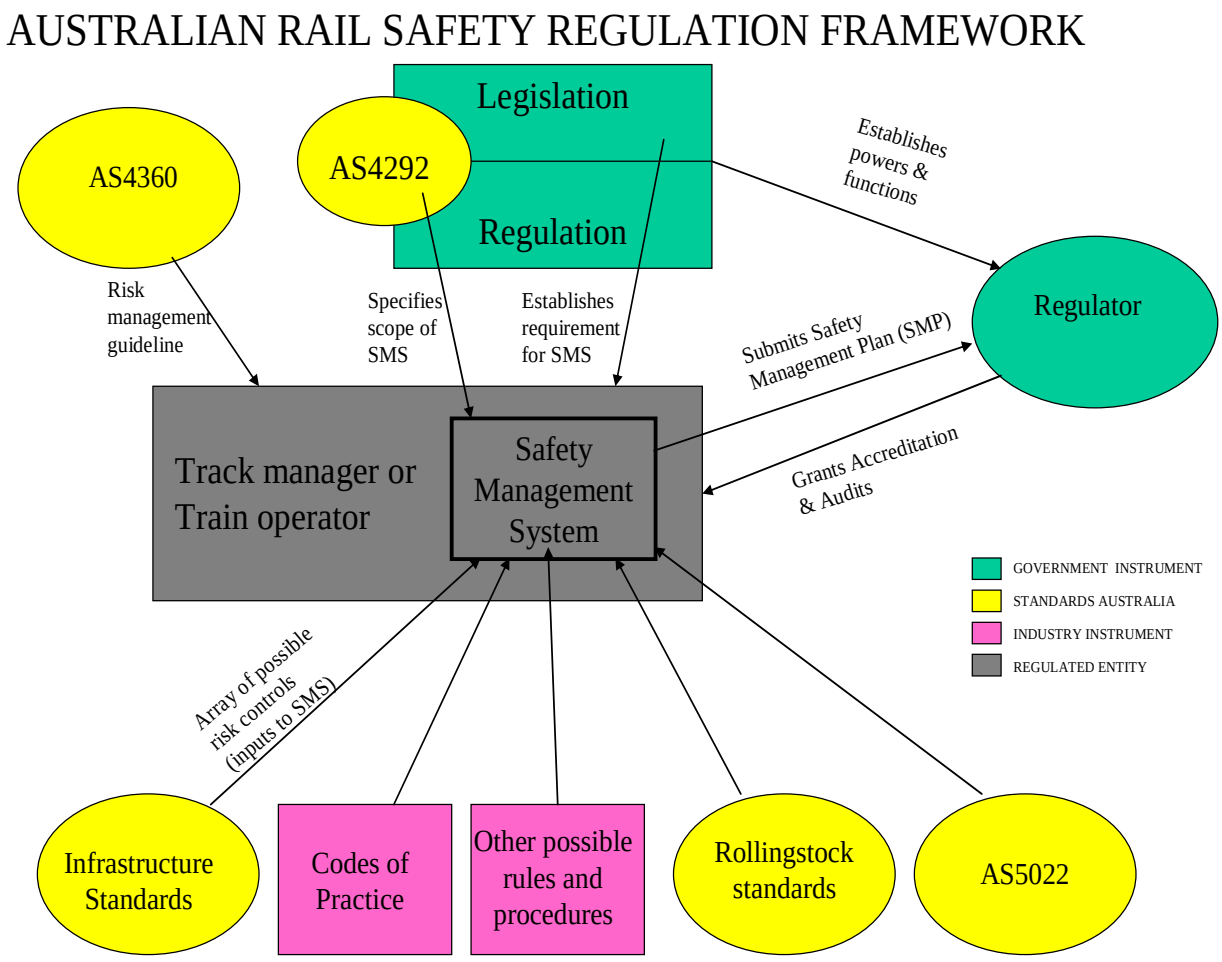
The SMP is a regulatory instrument in that the development and implementation of the SMP is a condition of accreditation.

Rules and procedures, infrastructure standards, rolling stock standards, etc. adopted by accredited parties form the substantive content of the Safety Management Systems (SMS). The SMS and the method by which its content has been determined is the subject of the SMP. The rules and procedures effectively constitute regulatory instruments (albeit in an indirect form) to the extent that SMPs state that they must be complied with. Beyond this, they can be considered quasi-regulatory in nature, as non-compliance with them would be likely to be construed as, or used as, *prima facie* evidence that non-compliance with an SMP had occurred, even though the SMP is unlikely to directly refer to them.

Codes of Practice contain suggested rules and procedures, infrastructure standards, rolling stock standards and maintenance practices that may be adopted by railways for the purpose of managing safety issues and meeting business requirements. As such, codes of practice may be adopted and form part of a railway's SMS. Best practice sourced from codes of practice form a means by which to meet the requirements of both AS4292 and the rail safety regulations in each jurisdiction. Codes of practice are not regulatory instruments, rather, they provide a source of guidance to parties seeking to gain or maintain accreditation.

Figure 2 provides an overview of the current regulatory framework and indicates the use made of the various instruments. Figure 2 is a generalisation of current arrangements. Differences exist between jurisdictions. One such example is that in some jurisdictions infrastructure maintainers and rolling stock providers and maintainers are required to be accredited.

**Figure 2. Use of Instruments within the current co-regulatory framework**




### *4.3.1.4 Co-Regulation: Dimensions and Principles*

Models of co-regulation can differ substantially, particularly in relation to the following four dimensions:

- distribution of powers between government and industry bodies;
- structure of the co-regulatory industry bodies;
- kinds of regulatory instruments to be employed; and
- transparency and accountability mechanisms employed (p3, NTC 2004).

It is notable that there was never an attempt to clarify where the Australian model of co-regulation was proposed to sit on the continuum between self-regulation and direct government regulation. As such, there has never been any clear guidance on whether there was intended to be a 'light handed' or else a more 'heavy handed' approach to regulation. Furthermore, matters of principle regarding the roles and responsibilities of the various parties (i.e. regulator, track manager, train operator, industry associations, etc.) were not adequately articulated as part of the IGA. In 2001, the then named Accreditation

Authorities Group (AAG), in consultation with representatives of industry, developed a set of principles intended to provide guidance on these matters. In the NTC issues paper (2004) stakeholders were asked whether the principles proposed by the AAG form an adequate basis for co-regulation, and if not, what other principles might be considered. Responses differed markedly, for example:

> *The principles involved reflect best practice and commonsense (p1, DPI WA).*
>
> *The principles as described appear to be adequate (p1 John Holland Pty Ltd)*
>
> *Whilst the principles proposed by the Accreditation Authorities Group (May 2001) are a useful basis for co-regulation, the industry finds variation in the application of these principles (p4, ARA).*
>
> *The Rail Tram & Bus Union perceives a wide gap between AAG principles and what actually takes place, as well as inconsistencies within the principles (p6, RTBU)*
>
> *The principles proposed by the Accreditation Authorities Group (May 2001) do not form an adequate basis for co-regulation. Regulators are perceived as having absolute power over accredited organisations without any check or balance (p11, ATR(v)).*

The responses indicate, in general, that the principles governing co-regulation are not well understood, nor are they observed to be implemented consistently.

### *4.3.2 Safety Outcomes Have Improved*

Despite the mixed use of instruments, lack of clarity, understanding and perhaps agreement on what form of co-regulation should have been applied, it is generally acknowledged that rail safety outcomes have improved.

If regulation has been effective there should at least be a correlation between the introduction of rail safety legislation (and regulatory oversight) and a decrease in the incidence of railway occurrences, in particular, fatalities, as these are of the highest public interest. Table 1 shows that in the six year period prior to establishment of regulatory oversight (1991-96) the average number of railway accident fatalities in Australia was 46 per year. In the six year period that followed (1997-2002) the average number of railway accidents fatalities in Australia have been 39 per year[5]. This is a decrease of 15%.

A number of factors (in addition to establishment of regulatory oversight) would have influenced the result and contributed to the decline in fatalities. For example, there has been investment in improved signalling and communication systems, level crossing protection and new passenger train rolling stock. Arguably, track standards have remained the same or else have declined in aggregate (particularly intrastate branch lines mainly servicing the interests of the grain industry). The mere presence of these other exogenous influences argues against drawing too firm a conclusion of the effectiveness of otherwise of regulation.

In reviewing the effectiveness of regulatory oversight, a consideration is the degree to which factors are directly under the control of rail operators (and thus influenced by regulators):

---

[5] Data sourced ATSB (2003) 'Australian Railway Accident Fatalities-Latest Data' and BTRE (2002) 'Rail Accident Costs in Australia', Report 108.

> *…a small proportion of rail accidents occur in situations which are directly under the control of operators, for example, collisions and derailments. The majority of fatalities associated with rail operations result from level crossing accidents and suicides, which are largely beyond the control of rail operators (p4, IGWGRS, 1993).*

If pedestrian fatalities are excluded from consideration (pedestrians account for the majority of fatalities) there still appears to be a significant decline in average fatalities per year. Average railway accident fatalities (excluding pedestrians) were 10 per year for the period 1991-96 and six per year for the period from 1997-2002, a decrease of 40%. Again, it is not possible to draw a firm conclusion on the effectiveness or otherwise of regulation on the basis of these statistics. Table 1 shows that the total number of rail accident fatalities (excluding pedestrians) is volatile, reflecting in part the small nature of the numbers (in an absolute sense) and the limited number of observations (making it difficult to suggest a definitive trend).

Overall it is notable that there has been a significant decline in fatalities during a time period (1996-2002) in which operational activity (measured in million train kilometres) has increased by 18%. On face value it would appear that regulatory oversight has contributed to a reduction in the number of fatalities.

**Table 1. Rail Accident Fatalities in Australia 1991-2002**

| Year | Total Rail Accident Fatalities – TF | Million Train Kilometres MTK | TF/MTK | Total Rail Accident Fatalities (excluding pedestrians) – TF (EP) | TF(EP)/MTK |
|---|---|---|---|---|---|
| 1991 | 42 | 184.5 | 0.23 | 9 | 0.05 |
| 1992 | 61 | 183.2 | 0.33 | 14 | 0.08 |
| 1993 | 52 | 176.9 | 0.29 | 16 | 0.09 |
| 1994 | 43 | 174.9 | 0.25 | 6 | 0.03 |
| 1995 | 45 | 172.4 | 0.26 | 7 | 0.04 |
| 1996 | 30 | 176.2 | 0.17 | 7 | 0.04 |
| 1997 | 43 | 188.1 | 0.23 | 4 | 0.02 |
| 1998 | 43 | 181.9 | 0.24 | 6 | 0.03 |
| 1999 | 43 | 183.9 | 0.23 | 10 | 0.05 |
| 2000 | 38 | 195.3 | 0.19 | 8 | 0.04 |
| 2001 | 35 | 193.5 | 0.18 | 3 | 0.02 |
| 2002 | 30 | 207.7 | 0.14 | 2 | 0.01 |
| 1991-96 | Average total rail accident fatalities | | | 45.5 | |
| 1997-02 | Average total rail accident fatalities | | | 39 | 15% |
| 1991-96 | Average total rail accident fatalities (excluding pedestrians) | | | 10 | |
| 1997-02 | Average total rail accident fatalities (excluding pedestrians) | | | 6 | 40% |
| 1991-02 | Increase in Million Train Kilometres (MTK) | | | 13% | |
| 1996-02 | Increase in Million Train Kilometres (MTK) | | | 18% | |
| | Data sourced from BTRE, drawing on ABS, Apelbaum, ATSB and ARA | | | | |
| | "excluding pedestrians" means pedestrians killed due to being hit by a train | | | | |

### *4.3.3 Support for Regulation*

The CoAG Principles emphasise that, in answering the threshold question of whether to regulate or not, policy makers should ask "What support is there for the proposed regulations, including support from suppliers and consumers and other parties bearing the costs of regulation?" This reflects recognition that all regulation is ultimately dependent on consent, and that without an adequate level of support for the regulation it is unlikely that it will be able to be implemented effectively and achieve its underlying objectives.

Findings of reviews over recent years have been consistent in support for a co-regulatory framework. The 1999 Booz Allen Hamilton 'Independent Review of Rail Safety Arrangements in Australia' reported that:

> *There is little question that the arrangements envisaged under the 1996 IGA have reached a stage of maturity where the administrative process is now functioning reasonably (pIII-11).*
>
> *….the basic co-regulatory, process-based model is well regarded by industry; with virtually all those consulted arguing for its retention (p III-12).*
>
> *… the support for co-regulation exists across all sizes of operator: The larger operators and managers have the resources and the expertise to present their operating processes and procedures in a format that suits the accreditation process. The smaller operators (sometimes with hindsight) often see the need to develop such processes as part of the necessary management of their business and a valuable learning experience. The view that has been expressed post accreditation is often that the introduction of greater rigour and discipline through the accreditation process was a positive development for the organisations concerned (pIII-12).*

More recently, proceedings from the NTC/ARA Rail Safety Workshop held in June 2004 indicate ongoing support (qualified) for a co-regulatory, process based approach. Comments included:

> *Currently functions well but varies between States (Group 2).*
>
> *Process regulation can be adequate, but needs adequate resourcing; needs clear and consistent process, needs role clarity; needs to be auditable (Group 5)*[6].

Comments received in submissions responding to the NTC issues paper included:

> *ITSRR strongly supports the co-regulatory approach. ITSRR considers that, within co-regulation, it is appropriate, in principle, for the regulator to own the purpose and standards for accreditation and for industry to own technical and operator standards (p3, ITSRR)*
>
> *Achieving an appropriate co-regulatory framework is a big task, but one worth striving for (p 1, RTSA).*
>
> *… the experience and frameworks developed by a number of other scholars over the last decade or so …argue that what is needed is a form of regulation, or co-regulation, directed consciously and systemically to managerial levels and which*

[6] Members of discussion groups are indicated in Appendix C. Copies of group report (powerpoint slides) are available from NTC on request.

*encourages and facilitates greater 'reflexivity' on the part of the organization as a whole (p3, Gunningham).*

## 4.4 Case for continuation of Regulatory Oversight

Regulation, like taxing and spending activities of government, represents diversions of private resources to public ends. At a fundamental level, governments must be accountable to the society for the appropriations of these private resources. It must be possible to demonstrate that resources directed towards enforcing regulation and/or complying with regulations are resources that are used in pursuit of regulatory objectives that are generally agreed to be of high value. It is also necessary to be able to demonstrate that these objectives are being achieved.

### *4.4.1 Objectives are Generally Agreed to be of High Value*

As indicated in section 4.2 there is public interest in avoiding the hazards posed by railway operations. The outcome being sought via regulation (in the crudest of terms) is a reduction in the expected value of risk than that which otherwise would occur without regulation.

In the issues paper released in May 2004, NTC sought comment from stakeholders on what the key regulatory objectives for rail safety should be and why. The responses to those questions provide an insight into why objectives of rail safety regulation are generally agreed to be of high value.

#### *4.4.1.1 'Safety' is the Prime Objective*

The implications of having unsafe railways are numerous, not least of which are the costs to the community of deaths and injuries.

- BTRE (2002) estimated that the average economic cost of a rail fatality was around $1.9 million, a serious injury about $27,000 and a minor injury about $2,000, including human costs but excluding property and other costs.

- Abelson (2003) concludes that an appropriate Value of Prevented Fatalities for public policy purposes in Australia, in 2002 prices, should be $2.5 million for avoiding the immediate death of a healthy person in middle age (about 40), adjusted by $108,000 per year (discounted at 3 percent) for persons of different ages.

Overwhelmingly, responses to the NTC issues paper have indicated that the *safe construction, operation and maintenance of railways* should continue to be the prime objective of rail safety regulators in each of the jurisdictions.

> *It is considered appropriate that the regulator is clearly focused on improving the safety outcomes of the industry (ITSRR, p18).*
>
> *The primary objective of co-regulation is to ensure the safety of rail operations is achieved at reasonable cost…It is considered that rail safety regulation is for the public benefit to protect public and property…(Burrows).*
>
> *Safety is the key regulatory objective and under the public trust criteria, railways should be safe and not compromised by commercial objectives (p2 DOTRS).*

Some submissions, however, questioned whether the focus of rail safety regulators should be on 'public safety' as opposed to aspects of railway construction, maintenance and operations which can be considered to be the subject of 'workplace safety', which is already regulated using powers established in Occupational Heath and Safety (OHS) legislation. It is noted that the IGWGRS held the view that the objective of rail safety regulation should be limited to public safety:

> *Railway safety is a question of protecting persons from injury and property from damage. As far as railways are concerned safety issues fall into three broad categories: the physical factors surrounding the movement of trains; the safety of persons within railway environs; and the workplace environment. Rail safety issues are normally concerned with the first two categories, i.e., accidents involving rail vehicles and/or passengers, or accidents involving the general public on railway property. Rail safety is generally not regarded as dealing with normal workplace health and safety, which are governed by occupation health and safety legislation. Likewise, security issues are distinct from safety elements, and these need to be separated (p i, IGWGRS, 1993).*

The NTC tends to agree that the objectives of rail safety legislation should be focused on (but not necessarily limited to) public safety. This would direct rail safety regulators to use there powers to mitigate against the occurrences that are a consequence of, or may give rise to, the market failures that have been identified. The NTC does not, however, believe that it would provide a clear point of demarcation between OHS regulation and rail safety regulation. In recent years, there has been recognition that OHS legislation extends to cover many aspects of public safety. For example, in a recent NSW case, it was found that a road transport operator had an OHS duty to both his driver and the other road user who suffered a collision with the fatigued driver. The potential for overlap therefore can not be avoided by simply limiting the objective to public safety.

#### *4.4.1.2 Need for Public Trust*

There was recognition in a number of submissions made in response to the NTC issues paper that a justification for having regulatory oversight of rail safety is to generate 'public trust':

> *Whilst the onus/responsibility for operating in a safe and proper manner may be with industry, the obligation on Government to ensure that industry does not substitute profits for safety remains as a community expectation (DIER, p1).*
>
> *The regulatory objectives should be to ensure the community (including government, public, passengers and employees) is confident of the safety of the rail system (QT, p2).*
>
> *Rail safety legislation expresses the views of the community towards a high risk industry in which public confidence in the safety of the rail system is paramount (p7, RTBU).*
>
> *Public Trust. There are apparently expectations of very high standards of safety where railways are concerned. Lesser standards are apparently accepted for roads. (p4,RTSA).*

Public trust is about perceptions: the community has to perceive that there is sufficient regulatory control exercised by governments to provide an assurance that industry does not substitute safety for profits. Whether or not such a tendency exists (the substitution of

safety for profits)[7] is immaterial in many regards. The implied distrust of the market's capability to deliver acceptable safety outcomes argues against the effectiveness of implementing market based approaches to meeting the public safety objective (in preference to the form of regulatory oversight that currently exists).

A lack of confidence (a perception that rail transport is unsafe), has important implications for utilisation of rail passenger services, the efficiency of capital cities and for land use planning (if not remedied). For example, in Melbourne, rail transports only a small proportion of total passenger kilometres, but a large proportion (approx 50%) of passengers to and from the CBD during peak periods. Even a small transfer of passengers from rail to road is expected to have a significant impact on congestion on the road network[8] and in aggregate it could reasonably be expected to increase the risk of death or injury while in transit (given that risk is more than 6 times higher on road transport in comparison to rail transport – refer to 5.1).

#### *4.4.1.3 Recognition that Safety cannot be Pursued at any Cost*

The NTC issues paper asserted that the primary objective of rail safety regulation is safety, but not safety at any cost:

> *There is a need to balance safety and efficiency by limiting risk to 'acceptable levels'. Differing views exist as to what is an acceptable level of safety… (p11, NTC, 2004).*

Bray (2004) makes the point that:

> *A regulatory system must balance aspiration and practicability. Hence, it is a reasonable desire that there should be no deaths or injuries from rail activities. However, to use this as the criterion against which rail regulators set standards to be met by track managers and train service operators would, given current knowledge and resources, result in regulators failing to meet their charter or require them to close railways because of the railway industry's inability to perform to this standard (p17, Bray 2004)*

This notion was supported by the submissions received:

> *…risk cannot be reduced to zero and there is a component of that practicality in the principle of ALARP (p11, ARA).*
>
> *100% safety is not achievable. Some railways maintain this as a clear objective. It is not the level of risk that must be assessed for acceptability, but the cost of managing the last tiny increments in risk mitigation (p4, RTSA).*
>
> *While safety should be a key regulatory objective for rail operations it must be balanced with other considerations such as efficiency and affordability and take into account the risk profile of a particular operation (p1, DIPE).*

---

[7] Railways organisations themselves argue that safety is good business and that incentives are such that the market does not fail to deliver safety.

[8] VicRoads advise that is has been able to observe that up to 5% drops in traffic on major arterial freeways (e.g. during school holidays) has significant impacts on transit time (up to 30% reductions). The opposite is also observed to be true: small increase in traffic levels above normal peaks substantially increases transit times.

> *[ITSRR] does not consider its role is to achieve 'safety at any cost' but it would be disappointed [to see] a substitute analysis of whether a counter measure is warranted with some subjective test of whether a counter-measure is commercially affordable (p22, ITSRR)*

The latter part of ITSRR's comment reflects a view that: having objectively established an appropriate regulatory standard (aimed at achieving a minimum level of safety), there is an expectation that regulated parties will accord with the standard – commercial viability and other factors cannot be used as reasons for failure to meet the standards. In its submission, John Holland Pty Ltd makes the following statement which supports the aforementioned ITSRR position (as a matter of principle):

> … *If the organisation cannot achieve compliance to this mandated minimum* [level of safety] *then they cannot operate in the field (p2).*

The Rail Tram and Bus Union (RTBU) adopted the position that the minimum level of safety should that which ensures the health and safety of employees:

> *The RTBU does not accept the proposition 'safety cannot be pursued at any cost'. There is a cost in assuring the health and safety of employees, but who has the right to place a monetary value on the health and safety of workers and the public?*

### *4.4.2 Are Regulatory Objectives Being Achieved*

It can be observed that rail safety outcomes have improved significantly in recent years as indicated by the decreasing number of fatalities in aggregate (refer to Table 2).

**Table 2. Railway Accident Fatalities, Australia, 1997-2002: year of death by State / Territory of registration of Death.**

| Year | NSW | VIC | QLD | SA | WA | TAS | NT | ACT | Total |
|---|---|---|---|---|---|---|---|---|---|
| 1997 | 21 | 16 | 2 | 2 | 2 | 0 | 0 | 0 | 43 |
| 1998 | 25 | 8 | 3 | 3 | 4 | 0 | 0 | 0 | 43 |
| 1999 | 21 | 10 | 2 | 2 | 8 | 0 | 0 | 0 | 43 |
| 2000 | 14 | 12 | 2 | 3 | 6 | 0 | 0 | 1 | 38 |
| 2001 | 15 | 11 | 6 | 1 | 2 | 0 | 0 | 0 | 35 |
| 2002 | 12 | 9 | 5 | 0 | 2 | 0 | 1 | 1 | 30 |

Source: ATSB refer to http://www.atsb.gov.au/rail/stats/index.cfm

This observation however, in itself, is an insufficient basis on which to assert that regulation has been effective in improving safety outcomes, or that it has been efficient in doing so. The next section of the paper ('Imperatives for Reform') considers these questions in more detail and in doing so, seeks to establish whether or not there is a sufficient justification for regulatory reform.

## 4.5 Conclusions

The following conclusions can be drawn:

- There is reason to believe that externalities and imperfect information cause the market to fail to achieve the optimal level of rail safety.
- However, it is acknowledged that the private incentives for safe rail operations are strong, such that the divergence between public and private incentives may not be very large.
- The potential hazards posed by railway operations are significant enough to generate public interest.
- On balance, there is a solid case for regulation.
- A co-regulatory approach was adopted in order to provide industry the flexibility to identify and implement the most cost effective and lowest cost means of mitigating against risks, but also, to have in the reverse, sufficient powers to enforce proper standards.
- Regulatory objectives are generally agreed to be of high value.
- There continues to be a high level of support for co-regulation.

# 5. IMPERATIVES FOR REFORM

## 5.1 What Does the Data Tell Us?

Rail is no doubt one of the safest forms of land transport. ATSB (2002) notes that in 1993 and in 1985/86, in terms of passenger fatalities per distance travelled, rail passenger transport was as safe as bus transport and considerably safer than all other modes except high and low capacity regular passenger transport by air. In 1993 the number of rail passenger fatalities per 100 million passenger kilometres was only 0.1.

ATSB (2002) also compared the figures it obtained for Australia with those published concerning the United Kingdom, to examine how consistent its results were. The results are shown in Table 3.

In examining the results there are some factors to take into consideration.

- Firstly, the total passenger distance travelled as a pedestrian can be expected to be low and thus this inflates the figure somewhat, given the approach to normalisation which has been adopted; and
- Secondly, it is reasonable to expect that any accident involving a motocycle, cyclist or pedestrian is more likely to result in a fatality given that that there is little or no protection afforded to the individual in transit. This can not be said for buses, trains and cars which generally have a number of safety features aimed at protecting occupants in the event of an accident.

**Table 3. Fatalities per Passenger Distance Travelled – Normalised to Car Occupant = 1**

| Mode of Transport | Australia 1985-86 | Australia 1993 | UK 1990-99 |
|---|---|---|---|
| ***Air*** | | | |
| High capacity regular public transport | 0.00 | 0.00 | 0.01 |
| Low capacity regular public transport | 0.00 | 0.33 | n/a |
| General (fixed wing) aviation | 6.22 | 6.83 | n/a |
| ***Road*** | | | |
| Car occupant | 1.00 | 1.00 | 1.00 |
| Motorcycles | 24.18 | 26.67 | 31.52 |
| Bus Passengers | 0.18 | 0.17 | 0.12 |
| Cyclists | 4.04 | n/a | 13.33 |
| ***Rail*** | | | |
| Passenger Fatalities | 0.23 | 0.17 | 0.15 |
| ***Other*** | | | |
| Pedestrians | 15.36 | n/a | 18.79 |

*Source: ATSB 2002*

Table 3 indicates that car occupants are six times more likely to die than are the occupants of buses or trains. This result is consistent with that found in other countries:

> *Rail is a safe mode of transport and is getting safer. It is one of the safest forms of transport in the UK, roughly six times safer than travel by car and with similar safety levels to those for bus and coach travel (p6, DfT, 2004).*

The ATSB data and analysis, however, predates establishment of regulatory oversight of rail safety in most Australian jurisdictions. ATSB has not had an opportunity to update Table 3 using more recent data.

### *5.1.1 Rail Transport in Australia Continues to Become Safer in Aggregate*

As indicated by Table 1 and Table 2 (included in previous sections of this paper), rail accident fatalities have declined significantly since establishment of regulatory oversight (1996), during a period (1996-2002) where total train kilometres have increased by approximately 18%. The trend towards improving rail safety outcomes in Australia is depicted in Figure 3 and Figure 4 (below).

**Figure 3. Trend in rail accident fatalities for Australia (1982-2002) excluding death of pedestrians**

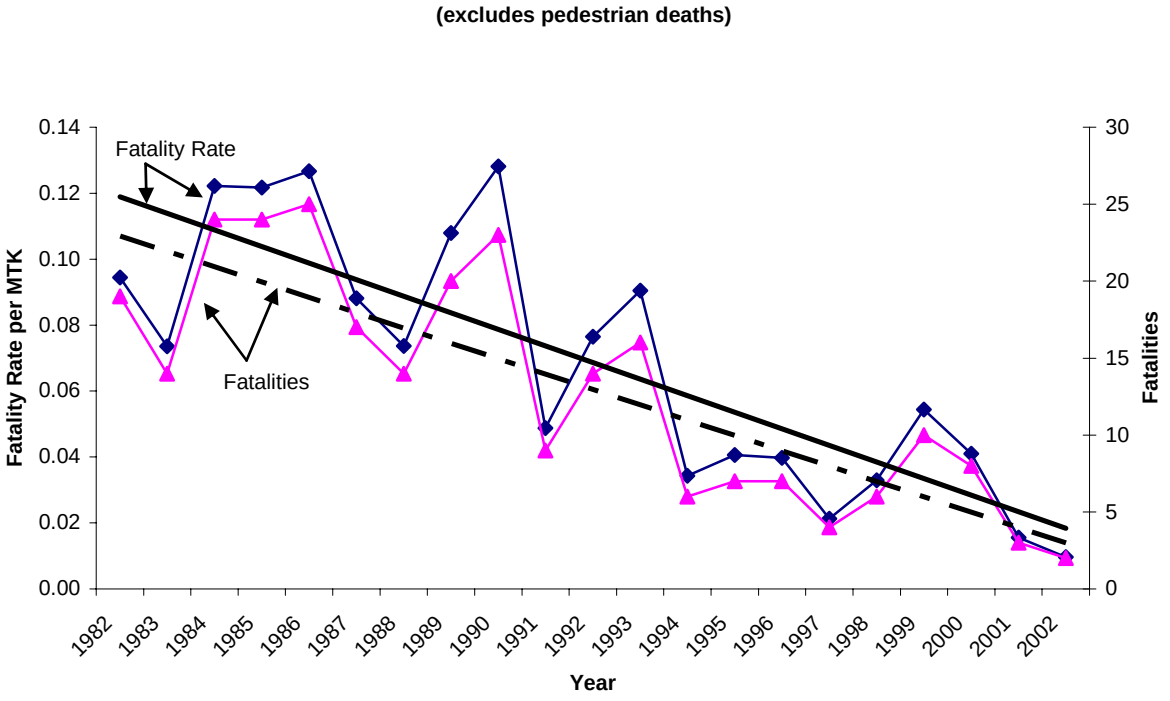
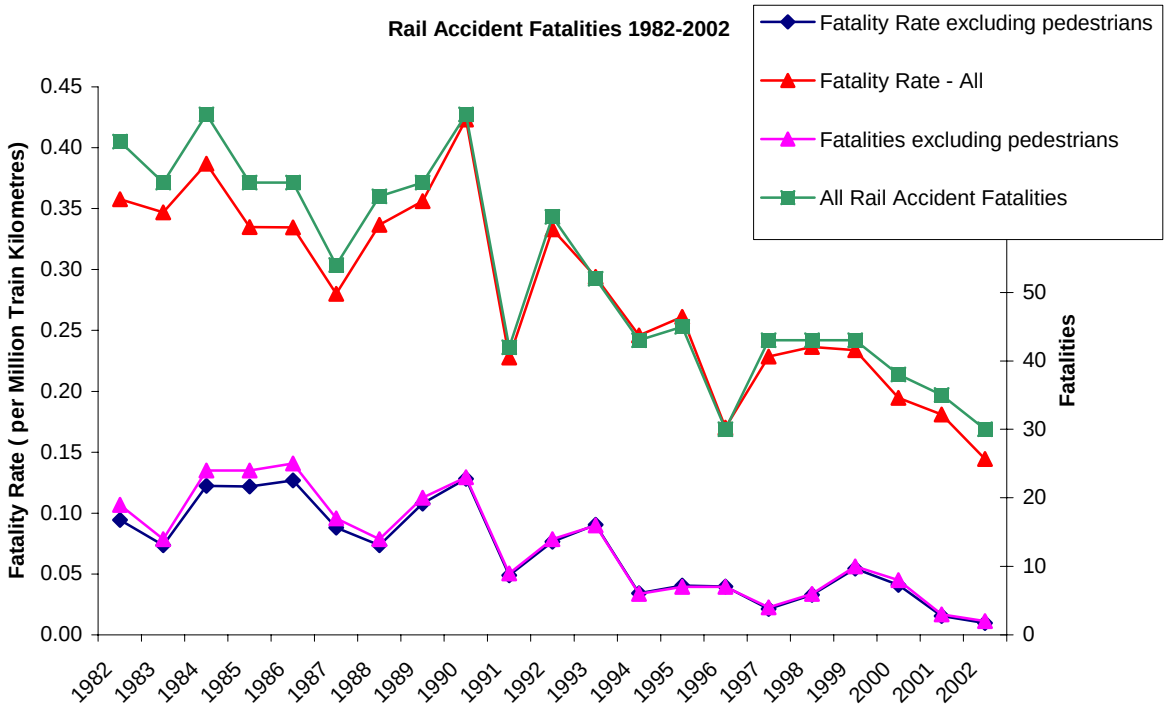



**Figure 4. Rail accident fatalities for Australia (1982-2002): compares aggregate outcomes with results when pedestrian deaths are excluded.**



### *5.1.2 Consequences of Rail Occurrences Small Relative to Road Toll*

To gain perspective, it is useful to compare the size of the safety problem that is associated with rail relative to that associated with road. BTRE (2000) reported that fatalities and serious injuries arising from road transport decreased significantly between 1988 and 1996:

> *In 1988 there were 2,875 fatalities (compared with 1,970 in 1996) and almost 30,000 serious injuries (compared with about 22,000 in 1996). [The improvement can be]…attributable to the reduced incidence of fatal and severe injury crashes due to overall improvements in road safety. However, this saving was partly offset by an increase in the estimated number of minor crashes ( pXII,XIII, BTRE, 2000).*

This improvement in road safety outcomes occurred during a period (1988-1996) in which vehicle kilometres travelled (all vehicles) increased from 151 billion kilometres to 182 billion kilometres (BTRE unpublished), an increase of approximately 20%. More recently ATSB (2003) reports that:

> *After steadily falling from the mid 1980's to 1997, the road toll from 1997 to 2002 was effectively constant. In 2002, there were 1,715 persons killed on Australia's roads (p I, ATSB, 2003)*[9].

The safety of road transport relative to rail is important because it provides some benchmark as what community expectations are for rail safety and transport safety more generally. While society seems to accept a lower absolute level of safety on the road, it is certainty true that society expects continuous improvement with respect to safety performance. There is no room for complacency: this message is applicable to rail as much as it is to road.

### *5.1.3 Recent rail occurrence statistics*

Table 4 shows that the total number of running line derailments increased significantly between the two years for which data has been made available to ATSB. No firm conclusions can be drawn from this observation. As ATSB quite rightly points out: *trends in transport safety are often apparent only in statistical data covering several years, especially when small numbers are involved.*

**Table 4. Running line derailments**

| | NSW | NT | Qld | SA | Tas | Vic | WA | Australia |
|---|---|---|---|---|---|---|---|---|
| **2001** | 36 | 0 | 38 | 26 | 33 | 17 | 19 | 169 |
| **2002** | 65 | 0 | 43 | 22 | 19 | 22 | 36 | 207 |

**Source:** http://www.atsb.gov.au/rail/rail_occurrences.cfm
**Note:** Excludes tram derailments.

[9] Total vehicle kilometres travelled has increased by a further 15% between 1996 and 2002.

### Table 5. Train to train collisions on running lines

| | NSW | NT | Qld | SA | Tas | Vic | WA | Australia |
|---|---|---|---|---|---|---|---|---|
| **2001** | 6 | 0 | 2 | 0 | 2 | 2 | 0 | 12 |
| **2002** | 10 | 0 | 0 | 0 | 0 | 3 | 0 | 13 |

**Source:** http://www.atsb.gov.au/rail/rail_occurrences.cfm
**Note:** Excludes tram to tram collisions.

### Table 6. Number of occurrences relative to level of railway activity

| Number per 1,000,000 train kms of: | Year | NSW | NT | Qld | SA | Tas | Vic | WA | Australia |
|---|---|---|---|---|---|---|---|---|---|
| **Running line derailments** | 2001 | 0.7 | 0.0 | 1.0 | 1.9 | na | 0.5 | 1.2 | 1.1 |
| | 2002 | 1.1 | 0.0 | 1.1 | 1.5 | na | 0.6 | 1.9 | 1.2 |
| **Train to train collisions on running lies** | 2001 | 0.1 | 0.0 | 0.1 | 0.0 | na | 0.1 | 0.0 | 0.1 |
| | 2002 | 0.2 | 0.0 | 0.0 | 0.0 | na | 0.1 | 0.0 | 0.1 |

**Source:** http://www.atsb.gov.au/rail/rail_occurrences.cfm

### Table 7. Level crossing occurrences

| | NSW | NT | Qld | SA | Tas | Vic | WA | Australia |
|---|---|---|---|---|---|---|---|---|
| **2001** | 265 | 0 | 317 | 110 | 5 | 267 | 91 | 1055 |
| **2002** | 261 | 1 | 356 | 153 | 3 | 276 | 85 | 1134 |

**Source:** http://www.atsb.gov.au/rail/rail_occurrences.cfm
**Note:** Excludes level crossing occurrences involving tramways crossing roadways.

In commenting on the Victorian situation, DoI (2004) makes the following observations:

> *Overall progress in rail safety is largely attributable to reductions in level crossing fatalities, which account for the majority of rail fatalities in Victoria. Substantial investment in improved level crossing protection, such as level crossing upgrading has resulted in a halving of the rate of significant level crossing incidents over the last decade. When these reductions in level crossing fatalities are discounted the underlying safety performance levels are revealed to remain unchanged…the rate of significant train incidents (derailments and collisions) has remained fairly constant…however…in 2003 there were six train to train collisions. This is double the number occurring in each of the previous two years.*
>
> *There has been no improvement in the incidence of signal passed at danger (SPAD) reported by accredited organisations and indeed, these have approximately doubled in the past six years (p15&16, DoI, 2004).*

Disaggregated data at a State or Territory level has not been made available to the NTC so it is not possible to comment on whether Victoria's recent experience is similar to that of other jurisdictions. It is possible to observe, however, that a more detailed breakdown of occurrence data (than that used by DoI) is required to identify particular problem areas

and/or sectors of the industry that are demonstrating poor performance. The availability of data, and lack of transparency of rail safety performance is a problem that has existed for decades.

### *5.1.4 Recent Occurrence of Serious Accidents and Incidents*

As reported by DoI:

> *In the last four years, there have been an unacceptable number of serious rail accidents in Victoria…These include collisions involving passenger trains in the Melbourne Metropolitan area: at Holmsglen, Footscray, Epping and two at Spencer Street Station. The incidents resulted in injuries, but due to specific circumstances, there were no fatalities. However, a fatality did result from a safeworking related incident involving a freight train in the Melbourne metropolitan area over this period. Three significant incidents have also occurred in regional Victoria: at Ararat, Chiltern and at Benalla, where there were three fatalities resulting from a level crossing accident. In addition there have been a number of derailments, which have resulted in significant property damage, in all cases to rolling stock and in some cases to the track (p17, DoI, 2004).*

These observations pertain to Victoria. There is not a comprehensive body of evidence suggesting that there is a significant rise in the number of serious accidents and incidents across all jurisdictions. However, there is no doubt that accidents such as those listed above, that which occurred at Waterfall (and Glenbrook before it) and incidents such as 'Broadmeadows runaway train' have focused political attention in all jurisdictions (to a more or lesser degree) on the issue of rail safety.

In order to achieve regulatory objectives, in particular, maintain public trust, there is need to demonstrate that due consideration is given to the cause of such occurrences. To not do so would be to risk amplification of safety concerns.

### *5.1.5 Summary*

The evidence available indicates that rail passenger transport is safer than cars and comparable to buses. It appears that rail is a relatively safe form of transport. At an aggregate level, trend lines would seemingly indicate that rail is getting safer, however, an increase in occurrences and poor results in other key safety indicators (at least in Victoria) indicate some cause for concern.

The rarity of occurrences relative to the aggregate level of railway activity means that statistical indicators are volatile and are unlikely to be a good guide as to when regulatory reform and/or intervention is required. Caution needs to exercised in determining how best to respond.

A measured response is needed and this, first and foremost, should be based on an assessment of whether there is evidence of regulatory failure or else that there are significant inefficiencies caused by regulation and/or regulatory practice.

## 5.2 Regulatory Failure or Not?

Regulatory failure occurs where regulation fails to be effective or because other, indirect costs result from the implementation of a regulatory solution. Such indirect costs may, in some cases, be large enough to undermine substantially the benefits achieved by the regulation. Probable regulatory failures can be extremely difficult to foresee, making a careful analysis of this issue crucial.

Given the form of regulation adopted, and its characteristics, the risk of regulatory failure in rail comes from three possible sources:

- Safety standards may be set at too high a level;
- Regulation is not effective in changing behaviour; and
- Regulation may act to lessen competitive pressures in the regulated market

### *5.2.1 What is an Acceptable Level of Safety?*

Regulatory failure may occur because implementation of regulatory oversight results in too many of society's resources being dedicated towards ensuring rail safety, rather than to other ends, such as health, education, defence, etc.

In theory, assuming perfect markets, this would be said to occur when safety regulation results in the implementation of a safety measure for which the (resource) costs exceed the benefits. This action would be inconsistent with the condition that would maximise social benefit which is: spend on escalation of risk controls until the benefits of implementing the incremental risk controls are equal to the cost[10]. In practice, markets are not perfect and reliance on the aforementioned condition may not result in the determination of the optimal level of rail safety, holding all else constant. Given this fact, it is often difficult to identify whether regulatory failure is likely to occur (or is occurring) due to unjustifiably high safety standards.

A more pragmatic test is to give due consideration to whether regulatory intervention has (and could be expected to) resulted in perverse outcomes. The relativities between the activity which is to be regulated and activities that can be substitutes need to be considered. In this case, the relativity between rail transport and road transport is important because they are often close substitutes. Relativities between rail transport, sea transport and air transport are also important (because they can be substitutes) but tend to be lesser considerations because the circumstances in which they are substitutes are limited.

In determining whether there is a risk of occurrence of perverse outcomes, the key questions are:

- Would the implementation of a risk control (required by regulation) result in the cost of rail transport services to increase to the point where consumers of those services decide to substitute other modes for rail transport?
- If so, what is the aggregate impact associated with fulfilling the transport task (both freight and passengers) by utilising a different mix of modes: is there an expectation that the aggregate number of fatalities and injuries will increase or decrease?

In practice this will depend on whether an escalation of safety requirements:

- would have an effect on costs that would need to be passed on to consumers;
- would lead to an increase in price that would result in the transfer of freight and passengers to road transport (for instance); and

[10] Assumes a graduated array of possible risk controls that are increasingly costly to implement.

- The relative safety of rail transport relative to road transport (the assumed substitute).

#### *5.2.1.1 Role of Rail Transport*

Rail transport plays a limited role in fulfilling the national freight and passenger tasks and is susceptible to substitution with road transport to varying degrees.

- Rail freight mainly consists of intrastate transport of bulk export commodities (for which rail has a competitive advantage), intrastate transport of containerised cargo to export ports (for which there is fierce competition with road), and interstate transport of containerised cargo between capital cities (fierce competition with road).

- Rail passenger transport is predominantly undertaken in the major State capitals (metropolitan rail systems). There are infrequent (scheduled) interstate services between capital cities and between eastern seaboard capitals and regional centres, however, these are of far lesser significance (in terms of passengers carried).

- The tourist and heritage sector is, in the main, a large number of not for profit rail operators that are generally of minor significance. There are exceptions however, for example, Puffing Billy railway (operating on the eastern outskirts of Melbourne) transports 250,000+ passengers per annum and can be considered 'significant' on any number of different measures.

#### *5.2.1.2 Would Costs of New Safety Measures be Passed on?*

In the freight market it would be reasonable to expect that costs of compliance with regulations would be passed onto consumers to the maximum extent possible, given market circumstances. It is foreseeable that in some circumstances the profit maximising decision will be to absorb some of the cost (by reducing margins) when there is an expectation that an increase in price beyond a certain level will result in a loss of business and associated revenues beyond that lost by accepting lower margins.

The Tourist and Heritage sector would have to make similar considerations.

Rail passenger transport providers, on the other hand, may not need to on-charge costs that may be associated with an escalation of safety measures (were this to occur due to regulation). As many rail passenger services are provided by publicly owned corporations[11], any significant increase in the costs of delivering safety outcomes may be funded via an increase in subsidies from State and Territory Governments[12]. Prices for passenger fares are typically set by governments and/or their statutory authorities. Any increase in price (recovery of increased costs from passengers) would have to be explicitly approved by governments.

#### *5.2.1.3 Effect of Increase in Price on Demand*

[11] Connex / Yarra Trams being the exception.

[12] This may be the case with Connex / Yarra Trams also depending on the particulars of the franchise agreements. NTC is not privy to this information.

If regulation were to result in an escalation of safety requirements, and subsequently lead to an increase in the price of rail freight services, it would be reasonable to expect some purchasers of rail freight services to switch to road transport. This would be the case even in the market for transportation of bulk commodities to export ports. The degree of sensitivity (elasticity of demand) would vary.

For passenger transport services, the degree of sensitivity to increases in prices is likely to be low. The cost of road transport for commuting to and from the central business district's of capital cities (for which rail passenger traffic is focused) is typically well in excess of the cost of rail transport (combined with road/cycling/walking). It is suspected that in most cases a small to medium increase in price would do little to change this position. Those that can afford road transport already make use of it.

The tourist and heritage sector is another proposition. The provision of services by this sector is not for the purpose of transport per se, but forms part of a recreational experience. In this market, tourist and heritage operators are subject to competition from a variety of sources. Any increase in price (to fund an increase in safety requirements) is likely to have an impact on demand. Given the 'micro' scale of most of these organisations (typically not for profit) that any increase in regulatory burden is likely to be significant relative to turnover of the organisation.

#### *5.2.1.4 Outcomes in Aggregate*

If freight was transferred from rail to road the aggregate outcome would no doubt be perverse from a safety perspective: rail freight transport is far safer than road freight transport on a net tonne kilometre basis. BTRE (1999) estimated that accident costs were in the order of 0.03 cents per net tonne kilometre for interstate rail freight transport and 0.32 cents per net tonne kilometre for interstate road freight transport. The differential reflects the relative safety of each mode.

To the extent to which an increase in fares encouraged passengers to use their cars instead of rail transport, this outcome would also be perverse from a safety perspective: statistics referred to in this paper indicate that a car occupant is more than six times more likely to die an in accident than is a train occupant. Holding all other factors constant, a transfer of the passenger transport task from rail to road would be expected to result in more death and injuries in aggregate. In addition, it is well known that small increases (or decreases) in traffic loadings on the arterial road system during peak periods have a more than proportional effect on the level of congestion. Such an outcome is clearly negative.

The potential consequences of regulation requiring an increased amount of safety measures to be undertaken by the tourist and heritage sector is difficult to determine. The substitute activities are varied, as are the safety risks that might be posed by such activities. A substitution away from purchase of services from the tourist and heritage sector would result in participation in a less preferred recreation and/or leisure activity, meaning, that there would be a loss of welfare and/or utility. Whether there is a 'net' loss of welfare is dependent on whether safety levels in the tourist and heritage sector are currently considered to be acceptable (from a societal perspective).

#### *5.2.1.5 Source of Risk*

The NTC's observation is that the legislation and/or regulations of the States and Territories fail to adequately define risk acceptability criteria. This is a potential cause of

the safety standards being set too high (or too low), which could lead to perverse outcomes of the sort described in the previous sections.

While some Acts refer to the As Low As Reasonably Practicable (ALARP) criterion as an appropriate means of identifying what risks are acceptable or otherwise, there is evidence to suggest that this criterion is poorly understood by stakeholders. Discussion groups at the joint NTC / ARA National Rail Safety Workshop made the following comments:

> *ALARP = consequence & likelihood, availability of technology solutions, extent of control exercised – variability of interpretation (Group 2).*
>
> *ALARP: 'Ambiguous Levels of Australian Rail Performance'. Not well understood (Group 5)*

The implication of having poorly defined risk acceptability criteria is that the objective level of safety to be achieved by railway organisations is not well understood nor easily defined leaving considerable scope for disagreement between the regulator and regulated entities. The general fear or criticism is that if there are no bounds on what is required (what is considered to be safe enough?). There is a risk that the regulator will seek to set safety standards too high, potentially leading to perverse outcomes. This is of significant concern to the industry:

> *The industry's view is that the safety regulatory structure in Australia needs to include a mechanism to enable the review of regulator decision or behaviour…*
>
> *…there is no detail or transparency on how check and balances might be put in place to address regulatory failure…*
>
> *…why should regulators be given the power to raise the safety bars even higher (usually at a cost) and perversely move freight and passengers onto alternative, less safe forms of transport? ( ARA).*

The potential for regulators to insist on 'gold plating' has certainly been a criticism levelled at the Health and Safety Executive (HSE) of the UK:

> *…safety standards were being gold plated because the criterion for balancing risks and costs ('reasonable practicability') was imprecise and was being applied inconsistently…*
>
> *… several instances of gold plating … for example, automatic level crossings which are the most expensive in the world; Train Protection Warning Systems (discussed below) and an inflexible approach to permitting selective door openings on trains which are longer than the platforms serving them…*
>
> *…[TPWS] the original proposal would have saved 60 lives over 25 years and the consequence of what we have done, the full implementation, is 65 lives over 25 years. The extra 5 lives have cost the difference between $190 million, which was the original estimate, and $575 million… (p58-61, HCTC, 2004).*

The NTC has not been provided with any evidence to suggest that safety standards have been set too high in Australian jurisdictions. The NTC believes, however, that the risk of regulatory failure due to poorly defined risk acceptability criteria requires resolution.

### 5.2.2 Has Co-regulation Changed Railway Behaviour?

From the discussion contained in section 4 it was concluded that market failures exist and that regulation was required to firstly ensure that railway organisations seek to achieve an acceptable level of safety (set appropriate standards); and secondly to enforce relevant safety standards to ensure that an acceptable level of safety is achieved. The presence of externalities suggests that there is not a natural alignment of interests and as such, it was always envisaged that a regulator would necessarily have to challenge the safety standards that are proposed to be adopted by railway organisations. Furthermore it was always intended that Acts establishing co-regulation would *contain sufficient regulatory provisions to enable enforcement of safety standards if the operator fails to perform (p iv, IGWGRS, 1993*).

In his submission, Gunningham recommends Christine Parker's framework as a useful tool with which to think about rail regulation. Parker (2002) argues that effective regulation involves three components:

*(i) The commitment to respond.*

Regulators must generate the internal commitment to self-regulation through enforcement action, legal liability, and personal liability for CEO and senior management, public access to information, benchmarking etc.

*(ii) The acquisition of specialized skills and knowledge.*

Regulators can teach firms about self-regulation by forcing them to go through a process, develop a systematic approach to identifying, controlling and minimising risks and to develop management systems that aim to prevent breaches of laws and promote a culture of compliance.

*(iii) The institutionalisation of purpose.*

Regulators must evaluate corporate self-regulation, hold industry accountable and make it accountable to others. There is a key role for process/systems and performance standards.

The question here is whether regulators have been effective in securing the commitment to respond, encouraging the acquisition of specialist skills and knowledge and institutionalising a sense of purpose.

#### 5.2.2.1 Criticisms of co-regulation

The most damning critics of co-regulation assert that establishment of regulatory oversight has merely led to employment of persons by railways (that act in isolation of the rest of the organisation) for the purpose of 'paper shuffling' (preparation of documentation required by the regulator) and interfacing directly with the rail safety regulator and/or its representatives. Such critics are of the view that what is currently termed co-regulation is self regulation: regulatory oversight has been ineffective in achieving real improvements in safety outcomes.

Serious criticism of the current co-regulatory approach (along these lines) is forthcoming from rail accident inquiries and even from jurisdictional regulators. Edkins (2004) has asserted that industry is *self regulating by setting standards on its own; regulators are taking a passive role; and there is confusion over standards.* This criticism is reiterated in the DoI issues paper:

> *The role of the safety regulator is significantly understated. It is limited to accrediting and auditing the rail organisation on the basis of the organisation's standards, without the authority or a clear role to challenge the standards.*
>
> *…this regulatory model has not significantly changed since operational control of the rail industry was devolved to the private sector. Consequently, the predominant model continues to reflect an emphasis on industry self regulation in which the safety regulator's role is relatively passive and its accountabilities relative to industry are unclear (p28&29, DoI, 2004).*

The issues paper goes on to identify a number of other aspects of the regulatory regime that are argued to limit its effectiveness:

- *There is a lack of clear definition of the respective responsibilities of industry and the safety regulator;*
- *There is no explicit obligation to demonstrate that a SMS is capable of systematically and continually controlling and minimising the risks that have been identified and assessed by a rail organisation;*
- *Whilst rail organisations must establish a SMS for accreditation purposes, the requirements are stated only in broad terms; there is inadequate guidance regarding the scope of quality of a SMS;*
- *The penalties for breaches of accreditation are not aligned with penalties for similar breaches;*
- *There are no provisions for penalties for disregarding non-conformance or non-compliance reports, thus limiting the ability of the safety regulator to ensure that necessary corrective action is taken by the rail organisations in a timely manner; and*
- *There is a lack of guidance for industry and the regulator for the conduct of safety investigation.*

It is necessary to make the point that some of these criticisms appear valid in multiple jurisdictions, while others are of particular concern to Victoria given the content of its legislation, regulations and history of regulatory practice. For example, in response to concerns raised in the NTC issues paper regarding the range of enforcement powers available to regulators, the WA regulator made the following statements:

> *We have had no problem in WA. The Rail Safety Act provides a variety of means of enforcement. We have used them and have had no problem. This has included stopping operation of services and taking rolling stock off track…We can direct and we can prosecute if the SMS or direction is not complied with. We can close all or part of a railway. Some other jurisdictions don't have this 'part' power which is a problem…the only power we don't have and believe we should have is to enter a property unannounced. Many other regulators in many other industries have this power (Burrows).*

#### *5.2.2.2 Outcomes of Inquiries*

Evidence from inquiries seems to confirm the legitimacy of some of the criticisms made by the Victorian regulator (if only in NSW).

Gunningham (drawing on outcomes of Glenbrook) argues that there appears to have been 'Implementation failure' due to the regulator's inability to achieve 'institutionalisation of purpose'. He goes on to make the point that co-regulation requires a pro-active regulator with sufficient powers to ensure that objectives of regulation are being met:

> *There is an overwhelming weight of evidence to suggest that procedure based approaches, which rely on self-regulation alone, are only in the most exceptional circumstances, capable of protecting the public interest. Rail safety is certainly not one of these exceptions. In the case of commercial rail operators, the industry's self-interest in commercial outcomes (not least, profitability and on-time running) demonstrably conflicts with safety considerations, at least in some contexts while in others it may simply be that, whether as a result of bounded rationality or for other reasons, safety is not given a sufficiently high priority within the organisation.*
>
> *For these reasons, it is only if the self-regulation and risk-management of the industry is closely scrutinised by government with the threat of more direct intervention if it fails, that an enterprise is likely to take effective action. On this model, what is needed is a form of "meta risk management" or "meta-regulation" whereby government rather than regulating directly, risk-manages the risk management of individual enterprises. or put differently, engages in independent risk assessment on basis of information supplied by the companies. As Parker argues, the role of legal and regulatory strategies under this approach is to add the 'triple loop' that "forces companies to evaluate and report on their own self-regulation strategies so that regulatory agencies can determine the ultimate objectives of regulation are being met" (p4, Gunningham).*

The NSW Ministry of Transport report (2003) on the waterfall accident identified the regulator's inaction, in a number of areas, as a contributing factor, leading to the occurrence of the accident. The following commentary was made:

> *The rail safety regulator had a history of being under resourced and under skilled, resulting in it being unable to effectively scrutinise accreditation applications. It therefore took a passive approach to regulation, i.e. was not prescriptive where necessary.*
>
> *SRA* [State Rail Authority] *had therefore been permitted to operate to its own safety agenda, and to apply its own interpretation of regulations.*
>
> *The various safety deficiencies identified throughout this report demonstrate that effective safety and risk management had not yet been assured by the regulatory process and that the rail safety regulator clearly had a need to be better resourced (p58, MoT, 2003).*

The report of Safety Management Systems Expert Panel (2004) echoed many of the same concerns when making comment on the performance of the previous regulator (prior to the establishment of ITSRR):

1. *Key individuals within the regulatory body lacked essential qualifications, training and experience in system safety fields such as risk management, human factors and systems engineering.*
2. *No processes were in place to measure the effectiveness of the regulatory function.*
3. *Insufficient key resources to carry out regulatory responsibilities effectively.*

4. *No detailed policy documents and document control processes to ensure consistency in safety accreditation, audit and investigation functions.*

5. *No overarching policy and guidance material to frame regulations under the co-regulatory model and provide guidance to railways (pXVIII).*

#### *5.2.2.3 Evidence of Regulator Failure*

Overall, there does appear to be evidence to question whether past regulators in NSW have had the capacity to discharge their duties effectively. An insufficient range of sanctions and enforcement powers, insufficient resources, etc have acted to limit capacity. As a consequence, inquiries have found that regulatory oversight has proved ineffective.

Similar problems may exist in other jurisdictions but there is no available evidence to confirm this. The Victorian regulator appears to be of the belief that there are limitations to what he can achieve in Victoria, given the current framework, whereas, in general, the WA regulator is of the view that he already has all the necessary tools he needs to do his job. It is not necessary to determine which view is more valid: the shortcomings identified in the regulatory regime that act to impede the regulator's effectiveness (at least in some jurisdictions) are a source of risk of regulatory failure. As a consequence, there is a case to consider how best to remedy this in order to improve and strengthen the co-regulatory framework.

### *5.2.3 Has Rail Safety Regulation Acted as a Barrier to Competition*

The NTC issues paper identified *the establishment of a rail safety management system that is not able to be used as a barrier to entry* as an important consideration relevant to the design of the regulatory framework. The Rail Safety Inter-Governmental Agreement (IGA) clearly highlights the perceived importance of this issue. In the IGA it is stated that:

> *... [Jurisdictions] have agreed to establish a cost effective nationally consistent approach to rail safety which ensures there is no barrier to the entry of third party operators (p1).*

This in part reflects the significant changes to industry structure and ownership that were unfolding at the time of the development of the IGA (1996). In accordance with the IGA, rail organisations can be accredited as being a track manager or train operator or both. The provision for separation of track manager and train operator functions facilitates on-track competition between multiple train operators.

In the present context, the risk of rail safety being used as a barrier to entry arises from the ability of the incumbent vertically integrated railway (access provider) to use rail safety regulation to frustrate the accreditation of potential competitors by not agreeing to an Interface Coordination Plan (ICP) between it and the access seeker. The access seeker is not able to gain accreditation (new operator) or mutual recognition and/or an approved 'material change' to its SMS (existing operator) unless it is able to discuss and agree an ICP.

This issue was recently highlighted in an NTC discussion paper entitled 'Impediments to Improving Efficiency in the Area of Intermodal Transport'. In that paper the discussion centred on safety being used as a barrier to connection of a new terminal to the rail network, because an ICP is required between the track manager and the private siding operator before the private siding can be commissioned:

> *Safety regulation requires track managers, for example a private siding operator and a network manager, to jointly prepare and submit what is known as a Material Change Application (MCA). The MCA documents the risk assessment undertaken and the nature of infrastructure and other forms of risk control that are to be established in order to reduce risks to acceptable levels. No one party is able to unilaterally seek approval of the safety regulator as the safety regulator (there is one in each jurisdiction) needs to be satisfied that there is agreement on how the interface is to be managed, and, that safety risks have been reduced to acceptable levels. Clearly there is potential for the incumbent, vertically integrated operator to impede the commissioning of a siding (or at least delay commissioning) by not agreeing to participate in risk assessment, agree controls and 'sign-off' on MCA (p57, NTC, 2004).*

Some jurisdictions have amended their Acts and/or regulations in order to provide the regulator with the power to give safety directions (e.g. to require cooperation within a prescribed timeframe) or else to make decisions about terms of access agreements relating to safety if parties cannot agree. Queensland is an example of a jurisdiction which has made amendments to its Act in order to mitigate against this potential source of regulatory failure. Amendments to the *Transport Infrastructure Act 1984* (QLD) *were passed on 8 September 2003, assented to on 18 September 2003, and proclaimed to commence on 1 December 2003 (p8, Queensland Government, 2004).*

Not all jurisdictions have Acts that provide regulators with the powers to give safety directions or determine terms of access agreements that relate to safety matters. In these jurisdictions there is a risk of regulatory failure: regulatory requirements established for the purpose of meeting public safety objectives can be used to impede the operation of economic regulation (the efficient functioning of rail access regimes). There is a case to remedy this shortcoming.

## 5.3 The need for Regulatory Harmonisation?

The results of the assessment to date indicate that there are identified aspects of the current regulatory regime that could lead to regulatory failure (and seemingly have led to regulatory failure in certain circumstances).

Quite distinct from these issues is the strong focus certain industry stakeholders have on the degree to which differences between jurisdictions represent barriers to economic efficiency.

The general assertion forthcoming from industry, most notably from the Australasian Railways Association, is that there are examples of differing approaches and philosophies being adopted by regulators. Differences are asserted to be:

- a cause of inefficiencies and interoperability problems (due to having to adopt different risk controls in different jurisdictions despite being able to argue that the risk environment is same); and
- result in a higher than necessary level of regulatory burden (multiple audits, different reporting requirements, etc). This can be considered to be a matter of regulatory efficiency: the achievement of a given level of safety at lowest possible cost.

These are long standing complaints. It was a significant focus of the review of the Rail Safety IGA in 1999. In addition, there have been *various other reports on problems with*

*railways, especially interstate, in response to industry complaints about a lack of harmonisation of standards (including safety standards) and inadequate infrastructure (p3, ACIL Tasman, 2004).*

However, there is a need to gain perspective: to whom are these problems applicable, are the criticisms valid and how significant are the problems?

### *5.3.1 Where is Consistency Required?*

Consistency between safety, technical and operational standards and associated rules and procedures is important where there is a demand for interoperability. Demand for interoperability arises due to the nature of intended operations (a wish to operate a train between A to B) and the possibility that there are benefits associated with having portability of labour and equipment between jurisdictions/networks.

#### *5.3.1.1 Interstate Transport*

There has historically been a focus on addressing the demand for interoperability that arises due to the wish to operate between jurisdictions (across networks). Investment has been made to achieve a higher degree of interoperability (e.g. standardisation of rail gauges) and significant effort has been directed towards decreasing the cost associated with switching between systems when crossing between jurisdictional/network boundaries (i.e. various coping mechanisms have been developed). Naturally, such investment and effort has focused on the interstate network, given that demand for interstate transport gives rise to the need for interoperability between what were (from a historical perspective) separate networks.

Many interoperability issues are caused by differing infrastructure and systems. Maunsell (1998) identified nine major issues:

- safeworking, crew management and training
- communication requirements
- management information systems
- train operating standards
- axle load restrictions
- rolling stock design specification
- rolling stock gauge
- safety accreditation
- access arrangements

As argued by Burrows in his submission to NTC:

> *most of the issues identified by Maunsell involved track efficiency issues or harmonisation issues caused by significant incompatibility problems inherent in the national network.*

It is important to recognise that inconsistency of regulator judgements is not the only possible cause of inefficiencies associated with interstate rail transport, indeed, differences

between approaches to rail safety regulation is likely to be only a minor contributing factor (relative to impediments posed by differences between infrastructure and associated systems). This is discussed further in section 5.3.2.

#### 5.3.1.2 Intrastate Transport

It remains the case that most rail networks have very little need to interface. For the most part, these networks continue to act as if isolated from the remainder of the Australian rail network. This reflects the pattern of demand but also reflects a legacy of past investment decisions, in particular, the decision of State Governments to establish rail networks of differing gauge (narrow, broad and standard). Given this context, the importance of harmonisation of safety, technical and operational standards can be questioned. It may be efficient, given the legacy of past investment in different systems, and differing market contexts, for railways (in particular, track managers) to seperately identify the most cost effective and practical way to mitigate safety risks. As put by Burrows in his submission:

> *A key advantage of the current approach is that it allows railways to innovate to obtain a competitive advantage. This means railways can be different provided it is safe. It means they have an ability to embrace a national code or to do something different…and they normally choose to do so.*

A key question is whether there is a latent demand to operate more broadly across rail networks, and whether this is impeded by differences between networks. If latent demand exists, a further question is whether the level of demand is sufficient to justify expenditures required to remedy interoperability problems. Resolution of such questions needs to be based on what is known about demand, and needs to recognise the role and function of rail transport.

Rail transport is an efficient mode of transporting relatively large quantities of freight and passengers, for example 2200t (typical payload of train in Victoria) of grain instead of 40t (typical payload of a B-double). It is likelythat in the majority of cases there is insufficient latent demand (volume of freight and passengers) to justify significant expenditures required to remedy differences between networks (and enable the provision of a rail solution for identified transport task). These questions, of course, need to be given case by case consideration. For example, some investigations by jurisdictions have found that there is insufficient justification for rail gauge standardisation, whereas others, like the relatively recent (2000) investigation undertaken in Victoria, found that standardisation of part of the Victorian intrastate network was justified.

#### 5.3.1.3 Portability of Labour and Equipment

Very little attention has been paid to the question of whether a high level of consistency or else uniformity ‘across the board’ would be justified due to benefits associated with portability of labour and equipment. Potential benefits include:

- relocation of equipment and labour freely between networks in order to smooth peaks and troughs in rail transport demand that exist throughout the country;
- production efficiencies associated with being able to purchase off the shelf equipment without need for modification; and
- competition between rail operators on intrastate networks.

The latter issue is of particular importance in the current context. Inconsistency of regulator judgements or behaviours would potentially have an impact on operators that deliver services in multiple jurisdictions. Freight Australia's operations in NSW are an example of this, as is, Queensland Rail's operations in NSW and Pacific National's operations in Queensland. *The ability of alternative railways to be able to enter new areas, or credibly threaten to do so, is enhanced if the safety regime is similar to the one they are already familiar with (p6, ACIL Tasman, 2004a).*

The observation to be made is that past considerations have not motivated governments to progress with wide ranging standardisation programs. The benefits, while potentially significant, are uncertain and intangible whereas the costs are identified as being significant (as per Maunsell's report).

Most of these questions go beyond the scope of whether or not rail safety regulation should be consistent. The relevant questions in this regard are whether regulator judgement or views are a primary cause of limits on portability or else a contributing factor. This is most likely to occur when there is prescription. In 1993, there was evidence to suggest that prescriptive rules that had developed over time were acting to impede the portability of equipment between jurisdictions:

> *…Flat wagons: the limiting of the AQCX container flat wagons to 80km/h is exclusive to one system;*
>
> *3pack wagons: These wagons belonging to one system are banned by another outside that system despite having passed ROA performance standards.*
>
> *Steps and Handrails: Following a shunting accident in one system and the Coroner's findings, shunters are not permitted to travel on the sides of wagons on that system. Accordingly, wagons with side mounted handrails and steps are not allowed to enter the system, despite the fact that the majority of other rail authority wagons are fitted only with side mounted steps… (p10, IGWGRS, 1993).*

The NTC's impression is that there has been a rationalisation of these sorts of bans and/or prescriptive rules. The establishment of the co-regulatory regime would have, in principle, allowed track managers and operators to take a more considered view of the inherent risks and devise a number of means to mitigate against risks, given the characteristics of equipment and infrastructure, rather than, for example, forming the view that equipment should be banned from use. To the extent to which different prescriptive rules exist, and limit the portability of equipment, a further question is whether retention of prescriptive rules are at the insistence of the regulator or at the insistence of the track manager. It could be possible that a difference of views between track managers is the reason why such inconsistencies are being propagated. Given recent changes to the management arrangements for the interstate track, this is increasingly less likely on the interstate network.

### *5.3.2 Are Criticisms Valid?*

Rail safety regulation may contribute to the cost of interstate transport to the extent to which it:

- directly results in inconsistency, by requiring regulated entities to implement a risk control (rule, procedure, infrastructure standard, signalling system, etc.) that is different to that which exists in a similar risk environment in another jurisdiction; or

- results in a higher than necessary level of regulatory burden due to having to deal with multiple regulators (multiple audits, different reporting requirements, duplication of processes etc).

#### 5.3.2.1 Extent to which Regulation is a Direct Cause of Inconsistency

The NTC has heard many claims indicating that the requirements of regulators are different, that they have different philosophies and that this is a cause of operators having 'do things differently' between jurisdictions at a cost. NTC is of the view that inconsistency between jurisdictions regarding the level and means of risk control that is acceptable or otherwise (to the extent to which inconsistencies are actually manifesting) is not surprising given that there are poorly defined and understood risk acceptability criteria. Regulators have an accountability to ensure an acceptable level of safety is achieved but lack of guidance regarding what is acceptable may place regulators in the position of having to make (what can be viewed as being) a subjective judgements. For these judgements to be the same between jurisdictions (and even between individuals) would be a happy coincidence given the lack of guidance.

Of concern, however, is the suggestion that some regulators are mandating the use of certain rules and procedures. The Australian Rail track Corporation (ARTC) has verbally indicated to NTC (and has made similar statements in public forums) that it is being prohibited from implementing some of the rules and procedures it wishes to in Victoria. Instead ARTC is being forced to retain former Public Transport Commission rules and procedures that it considers to be unsafe on the basis of risk assessments it has undertaken. Such an action by the regulator is inconsistent with the principles underlying the adoption of a co-regulatory approach based on application of process regulation, that being that it should be the regulated entities that assesses the risk and determines the cost effective and practical way of reducing risk to an acceptable level. If the regulator performs this function then it can only be expected that the regulator would assume some accountability.

A necessary qualification to the former points is that there is always a question as to whether the risk environment is the same as operations move from one jurisdiction/network to another. On face value, the crossing of jurisdictional boundaries should not make a difference, as, holding all else constant, the risks posed by operations and the need for risk mitigation should remain constant. The interstate network has numerous interfaces with different networks at different points (e.g. Sydney metropolitan network). Due to these interfaces, the risk context may differ and serve as a legitimate justification for the need for differing risk controls. As argued, however, it is not the regulators role to devise risk controls and mandate there use. The regulators' role, on behalf of the public, is to ensure that risks have been reduced to acceptable levels. The onus is on the regulated entity to demonstrate that this has occurred.

#### 5.3.2.2 Extent to which here is Unnecessary Regulatory Burden

The mere requirement for interstate operators to have to deal with different regulators in each jurisdiction soaks up more resources than otherwise would be the case than if there were one single national regulator. The extent to which there is inconsistency between jurisdictions amplifies the amount of resources that are expended duplicating reporting requirements (e.g. form and content differs and thus time is needed to modify).

Regulators have attempted to rectify inconsistencies between jurisdictions with respect to key business processes, form and content of required reports, etc. Inconsistencies have been eliminated and or minimised. There is an expectation that current work being

undertaken by the Regulators Panel will be effective in working towards meeting this objective.

### *5.3.3 How Significant are the Problems?*

The 'regulatory burden' problem identified above is mainly applicable to one industry sector, interstate rail, and to freight operators that operate in multiple jurisdictions. There are now only six companies that are running major interstate operations: Pacific National, Specialised Container Transport, Australian Railroad Group, Great Southern Railway, Queensland Rail and the Australian Rail Track Corporation. Freight Australia should also be added to this list (at least for now[13]) to reflect the fact that it is also an organisation that operates in multiple jurisdictions.

All available evidence seems to suggest that the regulatory burden borne by each of these organisations (a small number relative to the total amount of organisations that are accredited) is being reduced. For example, the accreditation of Pacific National in NSW was granted and was mutually recognised in other jurisdictions on the next day. Furthermore, Pacific National was collectively audited by all relevant regulators at the same time. NTC's observation is that where required, regulators are increasingly acting as a one stop shop. The only impediment to further improvements are the constraints posed by legislation governing the different regulators. Due to differences between legislation, not all regulators have the necessary powers to act in the same way as their counterparts.

The NTC has no sense of the significance of the other problem - differences in regulator judgement (that are not justified relative to risk). It appears that in some cases this problem is caused due to poorly defined risk acceptance criteria and a general lack of guidance on the acceptability of different risk control mechanisms.. In other cases, what may appear to be differences in judgement by regulators may be justified on the basis that the risk context differs. In this regard, it is possible that parties within the industry do not recognise the legitimate role of the regulator: regulatory oversight is required to firstly ensure that railway organisations seek to achieve an acceptable level of safety (set appropriate standards) and secondly to enforce relevant safety standards to ensure that an acceptable level of safety is achieved.

## 5.4 Conclusions

Rail is a relatively safe mode of transport and is getting safer.

There is little evidence available to warrant major changes to existing processes (e.g. a change towards adoption of a more prescriptive regime). The outcomes of inquiries and best practice indicate that the capacity of governments to deal with complex organisations and complex safety problems through rules alone is very limited.

Best practice suggests a continuation of a co-regulatory approach, based predominantly on application of process regulation is appropriate. There are, however, opportunities to improve regulatory effectiveness and regulatory efficiency.

There is presently a risk of regulatory failure due to:

- poorly defined risk acceptability criteria;

[13] Freight Australia has been purchased by Pacific National and presumably, in time, will fall under the accreditation of Pacific National.

- ineffective regulators due to skill shortages, resource constraints and limited range of sanctions and enforcement powers; and
- potential for safety being used to impede operation of economic regulation.

There is an opportunity to improve regulatory effectiveness (mitigate against the risk of regulatory failure) by making changes to legislation and regulations, perhaps by improving the resourcing of some regulators and by improving the overall level of skill and competency (regulators and industry alike).

Regulatory efficiency could be improved by putting in place uniform legislation and regulations. This would enable the Regulators' Panel to maximise the effectiveness of one stop shop arrangements.

## 6. RESULTS OF CONSULTATION

The NTC issues paper raised a number of matters for discussion and posed a number of questions. Submissions received from stakeholders have provided opinion on whether significant problems exist and have made suggestions regarding changes that could be made to better meet regulatory objectives.

### 6.1 Principles of Co-regulation

In May 2001 the Accreditation Authorities Group comprising the jurisdictional rail regulators developed, in consultation with industry, a set of co-regulatory principles. Iin the NTC's issues paper stakeholder were asked to comment on whether the AAG's set of principles formed an adequate basis for co-regulation, and if not, what other principles might be considered.

In the main, stakehoklders are supportive of the principles proposed by the AAG, albeit many suggested minor amendments for the purpose of ensuring greater clarity. In addition, a number of stakeholders made it clear that they thought that lack of adherence to the identified set of principles was due to those principles having no formal status. There was strong support for a set of principles to be formalised within the regulatory framework:

> ***…****all parties say that they remain committed and supportive of the greenbook and this was evident at the workshop. A means of making decision stick is required…One area where the principles need strengthening is to add words highlighting that in being responsible for safety accredited railways are also responsible to ensure that their contractors and sub-contractors and suppliers are also safe and are seen to be part of the accredited railways overall integrated safety management system. The 'green book' is written around this premise but it should be expressly stated in the principles (Burrows).*
>
> *The principles proposed by the Accreditation Authorities Group (May 2001) do provide an adequate basis for co-regulation. However they would be enhanced if the following actions were taken:Highlight the enforcement powers of the Regulators under the respective legislation; and Endorsement of the principles by NTC/ATC to give them more effect/strength (p1 NT DIPE).*
>
> *While we agree that the principles form a good basis for co-regulation, the problem seems to be one of getting everyone to apply the principles in practice. For example,*

> *the new regulators in New South Wales and Victoria seem to have taken over accountability for managing at least some aspects of operational safety (p1, QR).*
>
> *The principles provide a good basis for a co-regulatory framework, however, there is a need to better clarify/define the roles of the Regulatory Authority, the Track Manager and the Railway Operator to reduce the probability for confusion between the three parties in their application of the principles (p2, TAS DIER).*
>
> *The principles outlined give a good clear overview of what co-regulation should stand for and what roles and accountabilities of track managers, operators and regulators should be. The final principles, when agreed, need to be clearly signed off by all and monitored for compliance (p1 QT).*

Other stakholders who made comment on the principles made it clear that they were not supportive of the some of the principles as currently worded:

> *…the 'green book' significantly understates the regulator's role relative to industry. Indeed, co-regulation as described in the green book and reflected in the NTC issues paper is largely a policy of self regulation (p6, VIC DOI).*
>
> *The RTBU questions a 'principle' in co-regulation which would require regulators to recognise codes of practice such as that developed by the Australasian Railways Association. Again, this demonstrates that the industry is to define its own regulations, and thus is superior to the regulator and the laws setting up the office of the regulator (p6, RTBU).*
>
> *A major contradiction in the AAG principles is demonstrated by the assertion that regulators and track managers will not duplicate each other in regulating the safety of train operators. A track manager has an operational and commercial imperative to regulate the safe operation on its network, and at the same time, it has a commercial imperative to maximise use of its tracks to achieve a profit or to achieve sufficient revenue for track maintenance. The regulator independently must ensure safe operations of all parts of the rail system, and may well duplicate what the track manager does in safety supervision (p7, RTBU).*
>
> *The credibility gap in the current co-regulation framework will not be overcome while all players are expected to 'trust' the accreditation process as the main mechanism for safety assurance. The current rail accreditation process, compared to other high risk industries, and as noted by several inquires, needs significant improvement (p7, RTBU.)*

ITSRR, in its submission, supplied a review of the suitability or otherwise of each of the AAG principles. ITSRR's submission suggests that the following principles should be revisited in the current phase of the NTC's work:

- ***Structural separation between strategic policy setters, the rail safety regulators and the service providers****: ITSRR considers that this principle within the Green Book is contributing to calls from some stakeholders for a 'regulator of the regulators'. In ITSRR's view such calls involve 'reading down' the role of the rail safety regulators as merely operational units. The decision as to whether any State's rail safety regulator has a policy function is one for individual governments. …ITSRR does not see a need for the NTC to entrench any structural separation of roles in its current review of the co-regulatory framework for rail safety.*

- ***Rail safety regulation is achieved through a consultative approach and mutual cooperation:*** *ITSRR accepts, and strongly supports, the proposition that consultation and mutual cooperation are intrinsic to the co-regulatory approach. …Beyond this, however, it must also be clear within any principles of co-regulation that regulators may employ a range of strategies to achieve compliance. These strategies will include incentives, facilitation of compliance and deterrence strategies such as the application of sanctions. The regulator should have access to, and employ as required, a range of formal enforcement tools as part of its broader compliance strategy.*

- ***Accreditation authorities accountable for continuously monitoring safety performance by applying a compliance audit based approach rather than a prescriptive standards or a methods based approach:*** *ITSRR considers that this principle, as it is currently worded, is neither clearly understood nor agreed by all stakeholders. It should be revisited. …ITSRR considers that regulators should have the capacity to employ a range of strategies and tools to achieve compliance and to promote safety.*

- ***Accreditation Authorities and Track Managers are not to have duplicate roles in regulating the safety of operators:*** *ITSRR considers that the roles of track managers, the operational and regulatory significance of their rule books, and their relationship to the rail safety regulator are topics upon which further policy work is needed….There may be opportunities for greater efficiency and effectiveness in this area.*

- ***Track Managers and Operators are to rely on the accreditation process to ensure that each other are applying effective safety management systems:*** *ITSRR supports this principle but considers that it fails to adequately and accurately describe appropriate interface relationships between track managers and operators. …ITSRR notes that the requirement to develop 'coordination plans' is a long standing component of rail safety regulation and is a component of AS4292. In ITSRR's view, the active management of these interfaces would imply that railway organizations would not rely solely on the accreditation process to ensure that interfacing railway organisations are operating safely in areas of direct relevance to them. (Attachment 1, ITSRR).*

DOTARS, in its submission, also gave consideration to the AAG principles on a more detailed basis. DOTARS made the following comments on a selection of the identified set of principles:

- ***Track managers and operators, rather than the Accreditation Authority, are accountable for conducting their railway activities safely:*** *is true operationally but could be misconstrued as suggesting that the Accreditation Authority is not also part of the accountability chain, should the operator fail to perform safely…the public's view of accountability would be that a regulatory authority should be involved in ensuring safe practices do occur and that this is not left soley in the hands of the operator (to what extent the regulator's involvement is reasonable then becomes the issue).*

- ***Accreditation authorities set the minimum requirements for scope and content of safety management systems:*** *given the objective of harmonization, it should be possible to set national minimum standards and this should be reflected in the principles.*

- ***Accreditation authorities are accountable…by applying a compliance audit based approach rather than prescriptive standards or a methods based approach:*** *does not recognise the fact that a mixture of approaches are generally used to monitor safety performance.*

- ***Accreditation Authorities are to recognise codes of practice developed by the rail industry for national application and accepted nationally by way or a formal process:*** *raises issues as to what is exactly meant by 'recognise' and 'accepted nationally' and how this should be achieved…It clearly needs to the regulator that makes the decision as to what are acceptable practices and ideally regulators should be actively involved in the development of these practices before they are endorsed.*

- *In summary, the principles are useful but need to be underpinned by recognition that ultimately it is the rail safety regulators who are the final arbitrators, even in a 'co-regulatory' framework (p1&2).*

## 6.2 System of Accreditation

### *6.2.1 Minimising demands on small business*

The NTC issues paper made the point that process regulation can place substantial demands on small businesses, due to the lack of the resources available to develop individualised compliance options. NTC raised questions as to whether an 'off the shelf' SMS could be developed for use by heritage railways and the like that may have insufficient resources to develop appropriate SMS.

Some stakeholders recognised how difficult it was for small scale volunteer organisation to comply with the current accreditation and audit requirements:

> *The concept of "one size fits all" approach does not take into account the small volunteer heritage railway operator who would be unable to comply with requirements acceptable to the larger intrastate and interstate railway operators. (p3, TAS DIER).*
>
> *I hear regular comment from tourist and/or heritage railway groups that they have a very difficult situation coping with burgeoning compliance requirements which are aimed primarily at main line railway operations. Life is hard enough for these embattled groups with the massive growth in their insurance liabilities, without being further burdened by excessive regulations which apply beyond the scope of their operations (p1 Jones).*
>
> *…under the current co-regulatory model, small operators are each required to develop and submit an independent SMS and to identify and nominate their own relevant technical and operational standards. ITSRR understands that many of these small operators are concerned at their capacity to meet these obligations (p22).*

Others made the point that means have already been developed to minimise the regulatory burden impacting on small hertitage and tourist railways:

> *The tourist & heritage sector, because of its mainly not-for-profit nature, shares information on a scale and at a pace which often outshines the commercial sector. This appears to be poorly understood by the NTC, Consultants, Regulators and Commercial sector participants. For example 'template' risk management system*

> *development, as envisaged by the Issues Paper, already occurs to a significant degree:* [A number of examples sited]
>
> *These templates have been successful but experience has shown that development is a non-trivial task, technical and operational differences between railways mean they cannot be universally applied and, if tailored to address differences the task of ongoing maintenance is complicated by the divergence from one common base (p9&10, ATR(v)).*
>
> *WA and Queensland have both developed a model SMS for heritage railways. They then also facilitated these railways through the risk assessment process and guided them on completing their accreditation application…In UK there is a two-tier system where some small railways can be exempted from doing a full safety case process. In simple terms those that don't operate on main networks may be able to produce lesser levels of SMS. In practice regulators take the same approach in Australia (Burrows).*

Critically some stakeholder questioned whether this would be good for rail safety:

> *Reference is made to the suggestion that heritage operators be given an "off the shelf" SMS. This suggestion should not be adopted. The main benefit of writing your own SMS (especially if numerical safety goals are set) is to force operators to think about important aspects of their operation and the risks that they will need to address to safely manage their operations (p3, QR)*
>
> *The "one size fits all" SMS is an interesting question. Generally the SMS will be identical in nature across a wide variety of operations, but the degree to which it will be developed will vary according to the nature, size and complexity of the operation it must protect (p3, RTSA).*

### *6.2.2 Auditing undertaken by regulators*

The effectiveness of process regulation, as well as its perceived legitimacy in the eyes of the public, is highly dependent on the auditing and monitoring processes that are implemented as part of the requirement. At present, there may be insufficient skilled resources dedicated to compliance auditing and this may lead to (be a cause of) implementation failure.

A high number of submissions indicated that resourcing of some regulators may require consideration and that there are believed to be some skill shortages.

> *It has been the experience of John Holland Rail Division that the audit process has been rigorous and probing of our systems. It is the view of the John Holland Rail Division, that on the whole the regulators appear to be sufficiently resourced. However it is also considered that there are some areas where additional resourcing would be advantageous. These are in the areas of SA and NT in particular where they are very limited in manpower for the extent of the role. In terms of the capability of the personnel to undertake the audits, it is considered that the majority are very competent individuals and clearly familiar with railway aspects. However it is considered that some of these people are not fully conversant with the necessary aspects of safety management to be able to be fully rounded individuals. That is to say they have little experience of "true" safety and the legal principles underlying it (p1&2, John Holland Pty Ltd).*

> *Queensland continues to conduct rigorous accreditation and accreditation variation assessments. Queensland also continues with its annual compliance audit program which now also includes targeted, random audits…Queensland transport has increased its resources over the past two years to assist in carrying out these additional and more rigorous approaches (p2, QT).*
>
> *Industry believes the levels of resourcing of regulators are far from uniform or sufficient to achieve the appropriate levels of assurance needed. This lack may well be a contributor to uneven standards between states. Of importance here is also the need for uniform high standards of skilling of regulators and safety managers in industry to ensure consistent understanding of the elements of the safety management system and technical issues such as the application of ALARP (p6, ARA).*
>
> *Accreditation and compliance monitoring are complex processes, with high demand for resources and know-how. There are resource issues for rail safety regulators, as in for other areas of Government. A considerable imbalance in the present regulatory environment is becoming more pronounced, mainly as a result of the significant changes in NSW (and to a lesser degree in Victoria), where regulatory resources have been expanded by a considerable margin. The NSW Regulator now has the capacity to address accreditation and compliance issues with unprecedented attention to the scope and level of detail (p2, NT DIPE).*
>
> *With an establishment of 84 staff. ITSRR is at least twice the size of the next largest Australian rail regulator. To some extent this variation in the size of the regulators is perhaps a reflection of the variation in size and complexity of the rail industry in the various jurisdictions. However, ITSRR acknowledges that these differences in resources available to rail safety regulators have the potential to be a limiting factor in achieving regulatory consistency (ITSRR, p21).*
>
> *Concerns expressed at the workshop, that regulators needed more resources and in particular skills (e.g. risk management, human factors, safety data analysis and system based auditing) does raise questions over the adequacy of current regulatory approaches. While some jurisdictions may be better served than others, there appeared to a be a strong view that a number would benefit from better regulatory resourcing (DOTARS, p3).*

There was not, however, a uniform view:

> *A comparison of figures we have done showing number of rail regulator staff to number of accredited railways or number of rail regulators staff to train kilometers indicates staffing levels or regulators is not greatly dissimilar...In WA all staff are required to have training in risk assessment and management, as lead auditors and in investigation methods and human factors. This is consistent with agreement by all regulators several years ago. It would be hoped that other regulators are keeping to this agreement.. (Burrows).*

Critically, some stakeholders argued that skill deficiencies were leading to increases in regulatory burden:

> *Sector experience with the application of the accreditation and audit process has been unsatisfactory as outlined in the main part of this submission. One specific difficulty not covered earlier is the lack of audit skills (as opposed to subject matter skills) of the regulators. At a macro level this has resulted in application of an inappropriate ISO 9000 style of compliance auditing rather than a top-down risk-*

> *based objective-driven model. At a micro level it translates to grossly inadequate audit planning, work-paper creation and report production on individual audits (p12, ATR(v)).*

Furthermore other stakeholders believed that lack of persons and/or persons with appropriate skills rendered regulatory oversight ineffective

> *… It appears from discussion with industry and regulator staff that rail safety regulators are generally not sufficiently resourced with people who possess the necessary rail industry knowledge to undertake meaningful rail safety audits…I suspect that a de facto co-regulatory framework (tending almost to self regulation in some jurisdictions) has developed not because this is the model provided by the legislative framework , but only because most regulators do not have staff with appropriate rail industry knowledge…(p2, Rail CRC)*

### 6.2.3 Enforcement powers

Whilst co-regulation encourages responsible behaviour and co-operation, the ability to identify and to stop or correct unsafe practice is essential to establish public trust in the safety of the system. Some regulators have argued that, in certain circumstances, regulators have an insufficient range of enforcement powers. There was a clear recognition of this problem in submissions:

> *There is no clear hierarchy of sanctions linked to severity of non-compliance or frequency of non-compliance. Conversely, there is no recognition of incentives to industry for continued safe performance. Any effective compliance regime is based on both "carrot" and "stick" underpinned by good communication about the goals of the compliance program (p9, ARA).*
>
> *While process regulation is more flexible and effective, in theory, than prescriptive regulation, in Australia's rail systems today, process regulation is clearly failing to deliver safe, reliable passenger and freight services. This is because the 'process' is defined too loosely by AS4292 and is not enforced by an effective regulator, backed with a hierarchy of penalties (p6, RTBU).*
>
> *ITSRR considers that compliance is an historically under-developed part of rail safety regulation. Jurisdictions capabilities vary significantly and the regulators compliance strategies may be unclear to industry. ITSRR considers that clear powers for regulators in the area of compliance and enforcement, including powers of direction, may have some unexpected benefits for industry. Where these powers are lacking, the only recourse is for regulators to take an extremely detailed approach to accreditation and material change applications (ITSRR, p19).*

### 6.2.4 Risk Acceptability / Tolerability

In the NTC issues paper it was asserted that process regulation is utilised for rail safety in Australia without reference to an established set of performance targets. It was suggested that there is little or no direction provided in legislation to give track managers / operators a target level of risk mitigation (i.e. what risk levels trigger the need for a control) or to aid regulators in determining whether a residual level of risk is 'acceptable' or not. The issues paper goes on further to say:

> *Differing views exist as to what is an acceptable level of safety and how safety decisions are most appropriately managed in the context of a business with limited*

> *resources, albeit that there is agreement that safety can not be pursued at any cost. A criterion known As Low As Reasonably Practicable (ALARP) is generally utilised by regulator (p14).*

Submissions supported the view that there is a lack of clarity:

> *Safety objectives should be well defined and quantified to as to be measurable and thus able to be reviewed. Similarly, people often talk about "a good performance" and "a bad performance", without being able to quantify what they really mean, thus leaving too much scope for subjectivity and bias (p2, NT DIPE).*

Most suggested that ALARP, or similar criterion, would be useful provided it is widely understood and can be implemented from a practical point of view:

> *Providing that the ALARP criterion is applied in a consistent and quantifiable manner it is an appropriate means on which to manage the risks associated with the railways. The key issue is the measurement of risk and the cost of mitigation measures (p3, TAS DIER).*

> *ALARP is an acceptable tool for railways organizations to use in assisting them to understand their tolerable and intolerable risks in conjunction with other tools such as cost –benefit analysis. Clearly however, it should only be used as a tool in determining how to manage risks and other externalities such as community and government expectations which also need to be given proper consideration (p3, QT).*

> *… if there was a proper process that forced people to consider each of the six regulatory objectives for rail safety (public trust, safety, efficiency, regulatory systems not a barrier to entry, cost, and consistency between jurisdictions) in a systematic and achievable way, then the ALARP principle would be more effective. One way of doing this could be to develop industry recognised criteria to score acceptable and unacceptable risks (p3, QR)*

> *The ALARP criterion is a useful tool in determining a practicable course of action when balancing a number of competing objectives. However, what is needed is an agreed methodology for assessment using this method and uniform up skilling of both regulators and safety managers to use the concept effectively. This includes improved risk assessment methodologies and competencies (p6, ARA).*

> *Provided clear guidelines are formulated and understood, ALARP is a reasonable criterion in the management of conflicting safety and commercial objectives. Industry needs to be educated to accept that an unsafe industry can never prosper (p4, RTSA).*

Some submissions questioned the practicality of using ALARP, given the availability of data:

> *From time to time our clients have asked us to evaluate the safety benefits associated with various improvement projects. We have found this difficult to do with the current standard of incident and accident data held by the various jurisdictions, in particular the lack of causal information. We suggest that a national cause-consequence rail safety rail model (similar to the UK Safety Risk Model developed by the Railway Safety and Standards Board) could be implemented by the NTC in order to quantify the level of risk on the Australian rail network and allow objective comparisons between jurisdictions…(p3, ARUP).*

> *The ALARP criterion is problematic as a tool for balancing safety and cost unless there are well established data in relation to the cost of achieving various levels of risk. Such data is unlikely to be available for rare but catastrophic events (p2, Rail CRC).*

Other suggested that ALARP is currently being misused:

> *ALARP is a dangerous phenomenon as in the risk management process people tend to move the assessment criteria in to an acceptable level of risk. It is preferable that all risks should be critically analysed and relevant controls be determined. Some acceptable controls may already exist but the process should be documented to show the process of evaluation was implemented (p3 Barclay Mowlem).*

> *…there is scope for the application of ALARP – however it is considered that it requires to be crafted to some minimum defined parameters which are absolute. This guarantees a minimum standard of safety in critical areas and will ensure that organisations that are not capable of achieving basic levels of capability are excluded from the regime by hiding under other areas or utilisation of other strategies to sidestep the issues (p3, John Holland Pty Ltd).*

There is strong support for NTC consideration of this issue as part of the reform agenda:

> *ITSRR considers that there is an urgent need for the NTC to examine the validity, reliability and practability of risk assessment and the tolerability of risk. As previously noted, ITSRR considers that this is an important issue and also a matter of sensitivity to all stakeholders. It requires careful and well rounded consideration (ITSRR, p22).*

### *6.2.5 Competency in risk management*

An issue that was raised in a number of submissions was the practice of risk management by both rail organisations and regulators.

It was asserted that

> *Industry has failed to become competent in risk management techniques or to train people well in that area (Burrows).*

> *….independent investigations into a number of serious rail accidents have identified systematic inadequacies in risk management practices and the safety regulatory regime in both Victoria and interstate (p2, VIC DoI, sub).*

It was requested that NTC give this issue explicit consideration as part of its reform agenda:

> *AS4360 is commonly referenced as a guidance for risk management. Concern has been expressed to ITSRR about the adequacy of this standard for the complex safety and risk context of many rail environments… ITSRR understands that AS4360 is currently being reviewed and there is an expectation that it will be expanded to support the management of operational risk. ITSRR suggests that the NTC should give formal consideration to the suitability of AS4360 and the possible need for other standards as supplements or alternatives (ITSRR, p9).*

## 6.3 Roles and Responsibilities

General comments were divergent on this topic. Some put forward the view that there was a problem:

> *…the roles and responsibilities in the current framework are not appropriate, not clear and are not always understood - even by people directly applying them (p12, ATR(v)).*
>
> *Whilst the roles and responsibilities are clear, application is not consistent or uniform (p6, ARA).*
>
> *The roles and responsibilities in the current co-regulatory framework are understood by most parties …but - for whatever reason often not applied or applied only to a limited extent. … may be due to the fact that the "green book" has never been formally endorsed by ATC .. in order to give it a "mandatory" status (p3, NT DIPE).*
>
> *The roles and responsibilities put forward by the Accreditation Authorities Group are appropriate and clear. However, considering the quite intrusive approach used by regulators in other states, they are obviously not that well understood. A commitment is required from all the industry to work within the principles (p3, QR).*
>
> *Queensland supports the roles and responsibilities as outlined in the* [Greenbook]…the problem is that the document has not been uniformly implemented by all jurisdictions (p4, QT).
>
> *The role of the regulators and accrediting authorities is clear and has legislative backing. The role of industry and the development of codes are less clear (p2, DPI WA).*

In contrast, other stakeholders were of the view that:

> *In general it is considered the roles are well enough defined and understood by the respective parties (p3, John Holland Pty ltd).*

### *6.3.1 Independence of the regulator*

The NTC issues paper asserts that in order to provide a robust basis on which to progress any matter of importance to government or the community in general, policy development should to the greatest extent possible be independent of the role of implementation. From the alternative viewpoint, it is important that the regulator has independence and is allowed to fully implement safety policy that has been set by Governments.

This was a matter which was the subject of considerable comment. Comments indicated strong support for their to be a separation of powers between regulators, policy setters and politicians:

> *…current government structures do not appear to have provided the necessary authority and responsibility to the strategic transport policy setters. Policy initiatives in the rail safety area have been driven by the regulators. At some stage, initiatives by regulators need to be passed through to the transport policy areas for development (p9, ARA).*
>
> *The industry agrees that regulators should be clearly separate from those with responsibility for policy development of rail safety. This is not to say that regulators should not have input to policy development but at the moment the regulators are*

*developing the policy and there is no real evidence in government for rail safety policy to be developed outside of the regulators' office (p11, ARA).*

*The NTC Issues paper includes a useful discussion… on the desirability of structural reform to ensure there is a greater level of perceived and actual independence of public transport safety regulation from the Government and transport departments. The DoI is in agreement with such proposals for establishing the safety regulator as an independent, statutory body, including arrangements which will also provide for the statutory separation of the regulatory and investigation functions (p6 VIC DoI).*

*It is important that not only accident investigators but also those responsible for compliance are truly independent bodies not influenced by commercial pressures and political interests (p2, NT DIPE).*

*Regulators in NSW and Victoria have been placed under enormous political pressure it implement particular 'solutions' in response to particular accidents and other events. This has seen them being required to work in a manner that is seen at times to be outside the agreed co-regulator framework and IGA framework and principles…The pressure has bought into question how independent should regulators be? This is a key question to address in redefining the national framework. There needs to be a renewed commitment by Ministers to implement a robust national decision process and appropriate independence to regulator (Burrows).*

*An independent statutory officer reporting to parliament; Actively promoting rail safety and setting safety performance objectives; Accessible to employee and union input; Setting standards for and inspecting infrastructure quality and rolling stock quality, with involvement of employees and their unions (p7, RTBU).*

*It will also be necessary to ensure the independence of the regulator in undertaking these tasks. In recent years, there has sometimes been too close a relationship between the State government, the State controlled regulator, and the rail operator, particularly where the latter is less than fully privatised. To avoid the risk of regulatory capture or co-option by either industry or government interests, to protect the regulator from conflict in the regulatory process itself, and to maintain public trust in rail safety regulation, a number of measures may be necessary to ensure an arms length relationship from other stakeholders. In part, this might be achieved by granting the regulator statutory independence, but it will be equally important to make the regulator accountable to other stakeholders and to civil society more generally both as a democratic imperative and because in the context of rail safety this will be crucial to maintaining public trust. (p8, Gunningham).*

*ITSRR considers that accreditation and regulation decisions need to be risk based and operationally driven. They should be free of any suggestion of having an ulterior agenda or being blunted by bureaucratic caution. Within NSW, the Government and parliament have chosen to commit to that principle by entrenching the regulator's independence into legislation. ITSRR considers that the exact means by the impartiality, diligence and ethical conduct of the rail safety regulator is secured is properly a matter for governments and parliaments (ITSRR, p25).*

### 6.3.2 Role of the regulator

Consistent with the outcomes of rail accident inquiries, the role of the regulator was identified as a key consideration. The finding of inquiries (at least in Victoria and NSW)

has been that regulators in these jurisdictions were too passive – they were not fulfilling the legitmate role of the regulator. A number of submissions made the point that this should not be allowed to continue:

> *There is a need for more emphasis to be placed on the role of the 'public interest regulator' than appears to be the case in the current regulatory framework. While there are clear benefits in having industry expertise actively involved in the development of various elements of the existing regulatory arrangements, the public interest regulator must be the final arbiter regarding the appropriate suite of regulatory requirements, be in a position to monitor, audit and enforce compliance; and be actively involved in the development of those requirements (DOTARS, p4.).*

Submissions acknowledged however, that the adoption of the alternative extreme (highly interventionalist and prescriptive regulator) would not be appropriate, nor is it desired:

> *…any regulator that maintains a 'light handed approach' would be negligent. However, we normally steer away from giving advice or insisting on use of certain rules or procedures, and focus on making the railway go back and apply the processes more robustly (Burrows).*

A key question raised in submissions (particularly by rail organisations) was where should the line be drawn – what checks and balances are in place to regulate the behaviour of regulators:

> *Some regulators are choosing to delve into the micro level when this is the role of the accredited organisation to demonstrate how it proposes to manage the risk in question. For example, one regulator is seeking to prescribe the precise hardware devices to be used in alcohol testing. (p5, ARA).*

### *6.3.3 Use of Standards and Codes*

Questions have been raised about: (a) the appropriateness of Standards Australia effectively exercises quasi-regulatory powers by virtue of compliance with AS4292 being made either compulsory or quasi-compulsory under the legislation of the different jurisdictions; and (b) the status (if any) that should be afforded to codes of practice and standards more generally.

Stakeholders generally supported the view that governments, through its legislation and representatives (regulators) should specifiy the minimum requirements for SMS:

> *The industry believes that the issue of how standards such as AS4292 and AS 4360 handle changes should be revisited. In a co-regulatory environment, the process for developing and changing standards should not sit outside of government and industry processes. Moreover, as the SAA process currently stands any significant entity is able to veto the process. This is unacceptable (p10, ARA).*

> *In all known co-regulatory systems (see websites in UK, Canada, etc) it is the regulator, not industry, that defines the minimum requirements for a SMS. The regulator must do this so individual railways know what needs to be done to prepare an application for accreditation and achieve regulator approval. Regulators must establish clear standards, guidelines and checklists for the SMS and other key regulatory process requirements such as incident reporting (Burrows).*

> *The law should require that the Safety Management System put forward in the accreditation process includes a list of specific matters which must be addressed, and the technical standard required to address these risk areas should be developed by the Regulator, rather than an external body such as Standards Australia (p7, RTBU).*
>
> *DoI holds the view that much of the material currently contained within AS4292, AS5022 and AS 4360 should be included in legislation and development of performance standards should appropriately be the domain of the safety regulator. The current situation in which key safety standards are developed and 'owned' by an unaccountable third party, whom also charges a fee for their publications, is inappropriate within the context of a more rigorous, transparent and contemporary regulatory system (p7 VIC DoI).*
>
> *Without seeking to pre-emptany possible national decision on AS4292, ITSRR considers that it would be helpful for any national model legislation for rail safety to provide a clear head of power for regulators to set requirements for safety management systems (ITSRR, p8).*

There was a general acceptece of the potential role of codes and standards in providing guidance:

> *A range of 'quasi-regulatory' or advisory instruments may be recognised as industry best practice and adopted voluntarily by enterprises or industry-wide (various Australian Standards) or may be operating rules agreed by track managers as the conditions for assessing their rail networks (p7, VIC DOI).*

There was, however, some concern about whether codes and standards should be afforded explicit regulatory status or otherwise:

> *It is (in my opinion) questionable as to what extent the Codes of Practice need to form part of Government regulations. An approach might be to use them, or prove that an alternative is appropriate (p 3,RTSA)*

### *6.3.4 Independent accident investigation*

Recent reviews of rail safety have emphasised the need for an appropriately resourced independent accident investigatory body, with adequate powers, to have the primary role in relation to accident investigation. Independence from both regulators and industry is seen as necessary in order to ensure that investigations and subsequent recommendations for improvement are not compromised by conflicts of interest. Submissions emphasised the importance of independent accident investigation, but also, questioned whether there need be multiple investigatory agencies:

> *In the area of incident and accident investigation, industry believes that there is no place for individual state investigations. These investigations should be an independent review of the performance of the rail operator but also of the accreditation authority. If the investigation is conducted by the same authority that undertakes accreditation, genuine independence cannot be guaranteed. Instead, industry supports a single national investigation agency which is capable of providing independent review of the safety events as well as observations of the effectiveness of the governmental compliance regime. Industry believes this is best accomplished by the ATSB (p6, ARA).*

## 6.4 Harmonisation

Harmonisation efforts are costly, both directly and indirectly, and so harmonisation efforts should be targeted and limited to areas in which there are sufficient benefits to justify these costs and not driven by a philosophy of harmonisation for its' own sake. Relatively little research has been carried out to determine the key areas in which achieving uniformity would yield important gains in safety and efficiency. There is significant debate about the degree of harmonisation that is required.

Submissions clearly indicated that harmonisation was desireable:

> *Harmonisation is totally desirable at ALL LEVELS for all organisations that operate on an interstate/national basis. It would eliminate disparities in accreditation structures, processes, costs, interpretation, regulations, application of basic principles and so on. (p4, John Holland Pty Ltd).*
>
> *DoI endorses the view that there is a need to strengthen attempts at harmonization and aim to achieve greater consistency in regulatory frameworks and procedures. More effective safety regulation is not necessarily inconsistent with seamless safety regulation and enhanced industry efficiency (p5, VIC DoI).*
>
> *Industry strongly supports harmonisation to ensure seamless interoperability (p7, ARA).*

Submissions indicated that the need for harmonisation was a consequence of the desire to undertake interstate operations and/or enable railway organisations to operate in multiple jurisdictions:

> *Harmonisation is of benefit to all operators and access providers whose activities are covered by multiple jurisdictions. In the past, when we all stayed inside our own borders, harmonisation was not much more than a game. Now it is far more important. (p4 RTSA)*
>
> *Were it not for interstate ownership/operations, the requirement for across-the-board harmonisation might not become an issue at all. However, in the present environment, it is highly desirable that harmonisation is achieved, in particular for the interstate owners/operators conducting their activities in two or more jurisdictions (p3, NT DIPE).*
>
> *The key priorities for harmonization should be based on what impacts on the 'interstate operators'…Uniform accreditation processes and audits should be the key priorities (p4, QT).*

In its submission, ITSRR identified 7 areas in which it believes that harmonisation is required:

- *Accreditation model;*
- *Legislative framework;*
- *Accreditation standards and complementary audit standards for use by the regulator when monitoring accreditation;*
- *Acceptence Criteria (the standards to be applied by the regulator in assessing the acceptability of the systems submitted for accreditation);*
- *Regulator business processes;*

- *Consistent regulatory approaches for differing risk environments;*
- *Terminology used within the rail safety management and regulatory processes (ITSRR, p30).*

Of interest was the fact that submissions were generally skeptical about the ability to achieve harmonisation through voluntary adoption of codes of practice:

> *Industry based codes are the preferred method; however, past experience has shown that this approach is somewhat ineffective. If harmonisation is really desired, the industry will have to submit to some sort of external, nationally consistent regulatory regime that has the power to a least encourage consistent regulatory outcomes. Whether this comes from nationally consistent legislation or the state based regulators acting as one is not important. To be successful, it will have to be external to the main track manager/operator players. (p4, QR).*

> *There is a small section of the industry which believes that the* [Australian] *Code of Practice is the panacea for the problems currently experienced in the railway industry throughout Australia. A cautious approach should be taken in regard to this (p2, TAS DIER).*

### *6.4.1 Rulebook standardisation*

When the market is left to itself, it is financial gain that provides the primary driver to harmonisation. A key question is whether or not there is a market failure that is acting to impede harmonisation or else is the current situation representative of the efficient outcome i.e. costs exceed benefits for any further form of hamonisation. If there is a market failure a further question is whether a larger government role is likely to be more effective and/or efficient as a means of achieving harmonisation.

Some submissions argued that the market should be left to determine the optimal level of harmonisation:

> *Operational standards are in the hands of industry and there should be a strong business case to adopt common standards. There may be some instances however where the costs cannot be justified for particular operations infrastructure and the system must be accepting of that (p4, DPI WA).*

In contrast, other submissions called on the NTC and regulators to demonstrate leadership:

> *If the NTC asks "What do you want?" the response may reflect something akin to the behaviour of a small child in a supermarket. We need a firm hand here; someone who understands what we need and knows what is good for us. What we need to achieve harmony is firm leadership, and the ARA – NTC initiatives seem to be a good first step (p4 RTSA).*

> *The mechanism for driving harmonisation has to be government action in the public interest, and safety is a high value in the public interest. The present move by the Victorian Government to create one rule book for all operators in Victoria is an expression of the recent view that government must drive harmonisation - and this has industry endorsement as reflected in industry acceptance of the new rule book. As stated earlier, modern technology is urgently needed in the areas of signaling, communications and train protection, and this will only be achieved by government regulation, exercised through strong, independent rail regulators (p8, RTBU)*

In its submission, ITSRR notes that:

> *…the cost impacts of regulatory and operational reforms may in future propose are unlikely to be unevenly distributed across all track managers and operators (ITSRR, p27).*

This may be a source of market failure. That said, ITSRR make it clear that its motivation for wanting one rulebook is driven by safety considerations:

> *ITSRR has exprerssed a clear view that it requires one track rule-book in use across the entirety of the NSW network. ITSRR is concerned about the creation of multiple network interfaces (ITSRR, p28).*

The concern surrounding interfaces between track managers is shared by some other stakeholders:

> *We don't agree with having completely different codes or rulebooks applying between the interstate and regional / metropolitan systems: the interface risks of having 2 sets of operating procedures or different rule books at say a metropolitan boundary is greater than at the interstate border because of the greater number of trains and different operators at the interface. We consider that this is a valid reason for RIC and Victoria having a single rule book for each state (p2, ARUP).*

### *6.4.2 Harmonisation of regulations and regulatory practices*

The NTC issues paper asked the following set of questions: Does harmonisation require alignment of legislation between jurisdictions or can it be achieved despite legislative inconsistency? If legislative alignment is required can it be achieved and maintained through jurisdiction co-operation or would it require Commonwealth legislation? Beyond legislation what is required to harmonise regulatory practice (interpretation, etc).

Stakeholders were clearly of the view that alignment of legislation between jurisdictions was a prerequisite to more consistent regulatory requirements and regulatory practices. There was explicit support for development of model legislation. There is an expectation that this would be a logical step towards achieving a greater degree of harmonisation:

> *While a single rail safety regulator for Australia is clearly the ultimate goal to be aimed for, application of harmonised regulatory frameworks in each state would be a good and more readily achievable first step (p2, Rail CRC).*

There was strong support for the proposal to establish a single national regulator:

> *… so long as there are different regulators/accrediting authorities in each of the different states we will continue to have different "interpretations" on the various standards and codes - including the IGA. It is suggested that the only way that a single uniform application and interpretation will ever be achieved will be through a single national regulator (p1, John Holland Pty Ltd).*

> *… both the desirable skills base and regulatory independence (not to mention consistency and uniformity of the regulatory regime) might best be achieved by creating a new national regulator rather than attempting to make major changes to existing state regulatory structures. It is no coincidence that this approach was ultimately taken with regard to the regulatory regime for off-shore oil, after the various State regulatory regimes proved largely inadequate to the tasks given them (p8, Gunningham).*

One stakeholder called on the Commonwealth Government to take the lead:

> *The preferred mechanism for driving harmonisation must be federal legislation over-riding the states and preventing the resurgence of parochialism and vested interest (p4, John Holland Pty.Ltd).*

## 6.5 Overlap with other forms of regulation

NTC did not receive significant comment about the overlap between rail safety regulation and regulations pertaining to the environment, security etc. This indicates that there is no identified problem in these areas and/or that there is acceptance of the overlap between regulatory requirements.

### *6.5.1 Overlap with OHS*

The overlap between OH&S and industry specific regulation, whilst not unique to the railway industry, creates a potential for differing drivers in setting safety objectives and accountability for managing incidents.

In submissions received some stakeholders downplayed the significance of the overlap:

> *From a "principles" point of view there is little or no difference in rail safety legislation and its processes than there is in "mainstream" OH&S. Furthermore in terms of a management framework it is merely and extension of good quality system management with some minor additions – which incidentally are more or less swept up in OH&S frameworks…It is these overlaps that have enabled the John Holland Group to effectively integrate ALL of these areas into a single "Integrated Management System". We have been operating this system for several years to date and it has been audited and `certificated/accredited by major external authorities as well as rail regulators. This is proof positive that these elements can be successfully combined and managed as a single entity (p4 John Holland Pty Ltd).*

The RTBU asserted that rail safety should adopt the general principles of OHS:

> *Rail Safety Regulation in Australia is disconnected from OH&S law, and the RTBU strongly holds that the rail industry would benefit by being re-connected to the general OH&S system by recognising and adopting the principles of the general OH&S system. Rail Safety laws should come under the umbrella of OH&S law and principles. This would further empower rail employees and their unions to play a full role in delivery of safe rail operations. OH&S laws define a duty-of-care and specific obligations for parties, based on a 'reasonable practicality' test. Accreditation under a specific rail safety law should be based on the general duties and obligations similar to the OH&S law (p9, RTBU).*

The majority of other stakeholders held the view that the overlap should be managed in the short to medium term, but, indicated a wish to have ambiguities removed in the longer term:

> *It is inevitable that there will be overlaps with other regulatory frameworks such as OH&S, Environmental and Mine Site Safety. Rail safety regulators should negotiate protocols with other regulators in an effort to overcome the existing duplication of effort… (p2 Rail CRC).*
>
> *While there is some duplication in Queensland (e.g. between Queensland Transport and the Department of Workplace Health & Safety), it seems to be well managed. To*

*our knowledge, other operators and track managers have not reported any specific difficulties in this area either (p4, QR).*

*OHS provides a key safety governance feature in all states which creates opportunity for overlap and confusion. In the long term this ambiguity needs resolution to prevent potential shortcomings in the application of safety in the workplace. In the short term each State and Territory needs to establish appropriate MOUs to ensure that relevant OHS concepts and instruments are adopted where relevant without causing duplication (p7, ARA).*

### *6.5.2 Overlap with economic regulation*

In certain circumstances, the track manager may have incentives to use safety requirements as a barrier to entry. To the extent that such a dynamic exists, there would potentially be an argument for (economic and safety) regulators to attempt to act to prevent such matters being used as access conditions – particularly if there was a potential for anti-competitive impacts to result from them. The NTC did not receive substantial comment on this issue.

## 7. DRAFT NTC POSITONS

The following section provides an indication of what NTC believes is required to improve and strengthen the co-regulatory framework for rail safety in Australia. It draws on the discussion in section 5 (Imperatives for Reform) and section 6 (Results of Consultation). The NTC seeks comment on the draft positions it has adopted.

### 7.1 Use of Instruments and Status

A threshold issue for the design of a regulatory system for rail safety is that of what legislative instruments are used, what key regulatory elements are contained in each and how they relate to each other. These issues must be resolved successfully to ensure that key regulatory governance values are served: the regulatory structure must be efficient and effective, it must be flexible and able to respond to dynamic changes in key variables and there must be adequate accountability and transparency.

### *7.1.1 Overview – What Instruments are Required?*

The current regulatory structure in relation to rail safety is relatively complex, embracing as it does six distinct kinds of regulatory instrument. These are:

- Acts;
- Regulations;
- Safety Management Systems;
- Technical Standards;
- Codes of Practice; and
- Rules and Procedures.

Review of the roles played by these instruments indicates that, while the current regulatory structure is complex, the continued use of this range of instruments remains appropriate to

the specific context of rail safety. This conclusion follows both from the theoretical discussion put forward by Jaguar (2004) and the views received from stakeholders during the public consultations undertaken to date.

Acts and regulations are, of course, primary regulatory instruments and can be found in virtually all areas in which government chooses to regulate. Safety Management Systems are an essential corollary of the fundamental decision to adopt a substantial element of process regulation as the basis for regulating rail safety. A Safety Management Plan (SMP) essentially operationalises the process regulation requirement.

The use of Technical Standards is, again, widespread in the regulatory context. As noted by Jaguar (2004):

> *…regulators will often take the view that there can be little merit in developing detailed, technical standards specifically for a regulatory purpose when relevant standards already exist and have been developed via a robust process that incorporates the inputs of a wide range of experts and stakeholders (p12).*

Achieving high standards of rail safety is clearly a complex and multi-faceted task that involves ensuring that detailed technical standards are established and followed. In such contexts, the use of Australian Standards is clearly appropriate, although the issue of their specific status remains open for consideration.

The Australian Code of Practice (ACoP) evolved as an instrument intended to promote the harmonisation of rules and procedures, infrastructure and rolling stock standards. It is also seen as a major part of the preferred co-regulatory approach to rail safety, since the development of the Code is essentially an industry responsibility. The consultation process has indicated that the extent to which the Code has been able to promote harmonisation in practice has to date been limited, while there appear also to be differing views as to the appropriate status of the Code[14]. However, there appears to be clear support for the continuation of the development of the Code. Moreover, insofar as industry participants have a self-regulatory function, through the development of Rules and Procedures manuals, the future role of the Code is, to a substantial extent, necessarily within their control.

### *7.1.2 Distributing Regulatory Matters between Instruments*

Primary legislation is subject to substantial parliamentary and public debate and scrutiny and, as a result, is the appropriate vehicle for establishing the fundamental elements of a regulatory system, including the underlying objective of the regulatory system and the broad outlines of the regulatory rights and responsibilities of different parties. In particular, the following should be included in primary legislation:

- matters which alter or redefine rights, obligations or liabilities;
- rules that create serious offences or establish significant penalties;
- similarly, significant fees and charges; and
- significant procedural matters that constitute much of the essence of a legislative scheme.

[14] That is, whether the Code should be mandatory, have deemed to comply status, be purely voluntary, etc.

By contrast, matters which give effect to the general regulatory scheme by determining detailed requirements and or establishing machinery provisions should be contained in delegated legislation. Matters which are likely to require frequent change (e.g. specification of fees or forms) should be included in delegated legislation.

Given the proliferation of different forms of delegated legislation, and the often uncertain status of different forms, regulatory systems should take care to minimise the range of delegated legislation used and to clarify as far as possible the status of each instrument and the rules applicable to it.

The use of technical standards can provide important efficiency gains within the regulatory context, but must be managed carefully to avoid the potential for significant negative consequences. Key concerns include the possibility that over-use of standards will lead to 'regulatory inflation' and excessive complexity, leading to an undermining of regulatory compliance; a possible undermining of the goals of flexible, performance oriented regulation by the adoption of prescriptive standards that become quasi-regulatory in their own right; and the potential negative impacts on regulatory transparency and certainty that flow from the widespread use of Standards.

The 1997 Commonwealth Government report on 'Grey Letter Law' recommended managing the use of standards to avoid these concerns by adopting the following rules:

- *reference only those parts of a standard that are essential to satisfy regulatory objectives;*
- *explicitly assess the suitability and impact of standards adopted in legislation and regulation in the context of all future reviews of such legislation;*
- *use standards as "deemed to comply" instruments, rather than mandatory requirements, wherever appropriate;*
- *investigate mechanisms to provide businesses with low cost access to standards that are referenced in legislation (p xvii)*

To these recommendations the following can be added:

- When incorporating material by reference, review consciously the total regulatory requirement (especially in terms of its volume and complexity) and consider this in the light of the probable compliance capacity of those affected.
- Consider the appropriateness of the specific material being referenced for use in a regulatory context, particularly in terms of the regulatory principle of identifying minimum necessary requirements.

In this context, the status of the primary Australian Standard in the Rail Safety area (AS4292) is to be discussed. In most jurisdictions, AS4292 is effectively a part of the regulatory structure, since most Acts state that SMPs submitted by bodies seeking accreditation must be consistent with AS4292.

The status of AS4292 is consistent with the current content of these Acts and the Standard respectively, since most Acts contain no detail on the required contents of an SMP, while AS4292 itself is confined to the identification of a range of generic elements of SMPs. ACIL Tasman (2004) described AS4292 as:

> *… Essentially a large checklist of what must be done but does not say anything about how it must be done (p21).*

This is an uncommon form for a Standard to take. Strong arguments have been made in favour of incorporating the main "checklist" elements into primary legislation, with delegated legislation also potentially being used to establish additional, more detailed, requirements. In particular:

- ensuring that the key elements of the SMS requirement are set out in legislation would ensure that Government had direct control over these crucial elements of the regulatory system, rather than relying on an effective "outsourcing" of this responsibility to a non-governmental body;
- placing key SMS requirements in legislation improves transparency, since the basis of the process based regulatory requirement is contained in the same regulatory instrument that establishes the accreditation requirement; and
- placing these elements in legislation improves the accessibility of the law, since legislation is freely available to interested parties, while Standards are proprietary instruments that must be purchased at significant cost.

As noted above, in relation to the report on 'Grey Letter Law', there is a strong general argument in favour of ensuring that technically based standards and codes of practice are afforded 'deemed to comply' status, rather than making compliance with them mandatory. In the rail context, in which accredited parties can be considered to be sophisticated operators, who have need of regulatory flexibility to deal with a wide range of different operational contexts, the argument for allowing for means of compliance other than via a specific technical standard or code of practice appears to be a strong one. Accordingly there is reason to believe that technical standards and codes of practice developed by industry ought to have guidance status only, or else at most, 'deemed to comply' status, subject to validation as being appropriate for a given type of railway via a formal approval process.

### *7.1.3 Content of Specific Instruments*

Consistent with the above general discussion of key concerns and best practice guidance in the use of different regulatory instruments, this section highlights the NTC's current views on the appropriate content of the different instruments in the specific rail safety context. In particular, areas in which changes to existing arrangements appear justified are highlighted.

#### *7.1.3.1 Primary Legislation*

There is a high degree of commonality between many of the Acts primarily responsible for regulating rail safety in the various States and Territories. In general, these Acts can be characterised as 'framework' documents that provide little if any detail on the mechanics of achieving rail safety. This is an outcome of the central role accorded to process regulation in the rail safety context.

It is envisaged that primary legislation will continue to fulfil the function of establishing the framework for regulation of rail safety. It is proposed that a number of changes be made to the content of primary legislation in order to improve the effectiveness and efficiency of regulation. In particular, as suggested above, legislation should be amended to enhance the transparency and accountability of the regulatory system for rail safety.

This would include, for example, listing the mandatory criteria for accreditation of operators, as well as the processes by which accreditation applications would be assessed. It would also include specifying the main requirements that must be met, in terms of scope and content, in developing SMPs to implement the basic legislative requirement for a process-based system of regulation.

Proposed changes to the content of primary legislation are discussed in section 8 and reflect draft positions reached by the NTC with respect to a number of issues discussed in the remaining parts of section 7.

#### *7.1.3.2 Regulations*

While existing Acts governing rail safety include wide-ranging regulatory powers in many cases, little use is generally made of these powers at present. Consistent with the above discussion of the merits of using regulation in preference to other subordinate instruments, it is proposed that regulation should increasingly be used to establish requirements in a number of areas. This is consistent with the general view of regulation as setting out the detail of the general regulatory structures established via primary legislation and thus operationalising its requirements.

A key area for regulation would be that of providing additional detail on SMP requirements, beyond the basic scope and content specifications to be included in primary legislation. In addition, regulation could appropriately be used to specify criteria for assessing accreditation applications. NTC notes that it has not proven necessary to do this elsewhere, for example, the Health and Safety Executive (HSE) of the UK developed 'safety case' assessment guidelines but did not specify assessment criteria in regulations.. Thirdly, it is envisaged that regulation will be used to detail prescriptive requirements that are applicable to all railways. This could include areas such as medical fitness standards, drug and alcohol requirements, etc.

It is proposed that a set of model regulations will be drafted to complement and integrate with proposed changes to model legislation. The research required to be undertaken, and the proposed content of regulations is indicated in section 8.

#### *7.1.3.3 Standards*

As discussed above, it is considered appropriate for all standards to have either guidance or deemed-to-comply status only, so as to ensure that the benefits of process and performance based regulation are not undermined through the adoption of often prescriptive quasi-regulation and so that the regulatory system remains transparent and accountable. The NTC's issues paper and Jaguar Consulting's Working Paper also indicated a broader range of concerns with the use of standards as quasi-regulatory instruments.

Views expressed in submissions (refer to section 6.3) suggest support for a shift to a 'guidance only' status for standards, as well as a more critical approach being taken to the necessary and desirable extent of any referencing of standards in legislative instruments; even as guidance documents.

The proposed change to a 'guidance only' approach to the use of standards has particular relevance to AS4292, as it implies the removal of legislative requirements (in some jurisdictions) for all SMPs to be consistent with this Australian Standard. This implies that rail safety legislation would require amendment in those jurisdictions where AS4292 is afforded a regulatory status 'by reference'. As well, the Inter-Governmental Agreement governing rail safety will require amendment, since it currently requires all States and

Territories to accredit owners (track managers) and operators (train operators) consistent with the provisions of the Australian Rail Safety Standard (p4, Rail Safety IGA, 1996). The Rail Safety IGA is expected to require amendment to reflect both this (the intention to stop referencing the 'Australian Rail Safety Standard') and other aspects of the current reform agenda.

#### *7.1.3.4 Codes of Practice*

Codes of Practice constitute an identification of 'best practice' in particular areas of railway construction, maintenance and operations. As such, codes serve as useful input into the development of SMS by railway organisations. At present, codes of practice can be considered 'guidance': they have no formal regulatory status.

The Australian Code of Practice (ACoP)[15], originally envisaged as being the primary means to achieve harmonisation in rules and procedures on the defined interstate network, has had limited success. This in part is due to the heterogeneous nature of railway environments through which the interstate network passes (which acts to limit the applicability of ACoP[16]) and the incomplete nature of the Code itself.

NTC believes that it is appropriate for industry itself (by virtue of voluntary adoption or otherwise) to continue to determine whether the ACoP and other codes constitute an appropriate and effective means of achieving harmonisation in rules and procedures (where this is necessary) and/or pursuing other industry objectives. In the short term, the NTC proposes that the current status of codes should not be amended: codes will continue to remain 'guidance' only.

However, in recognition of the recent efforts of the ARA to rectify the failings of ACoP, and the widespread commitment to the code development process, it is considered appropriate for legislation to provide for status to be afforded to codes (e.g. ACoP) or parts thereof in future, subject to endorsement by ATC.

It is envisaged that endorsement would occur following a formal review process which would involve oversight by NTC and Regulators. Codes (e.g. ACoP) which were to be developed with the objective of achieving this form of endorsement would be required to conform to particular procedural requirements as part of the development process. The endorsement of codes would signal that such material is considered to be an 'acceptable means of risk control for a given type of railway'. This is expected to provide additional certainty regarding compliance, and facilitate harmonisation of rules and procedures and other means of risk control.

#### *7.1.3.5 'Approved' Codes or Standards*

The exact nature of the status afforded to 'approved' codes or standards, and who should be responsible for 'approval', is dependent on the subject matter, and its intended purpose.

It is envisaged that it would not be intended to make a standard or code of practice mandatory. If the material embodied in the code or standard was intended to be made mandatory then best practice would suggest that such regulatory requirements should be

[15] Formerly known as the National Code of Practice for the Defined Interstate Rail Network.

[16] ACoP is assessed, in some contexts, as being insufficient to achieve an acceptable level of safety.

incorporated in regulations, and, should be within the control of governments and their representatives (regulators).

It is foreseeable that there will be circumstances where there will be a strong desire to encourage a railway organisation to adopt a code of practice or standard, unless the railway organisation is able to demonstrate that an alternative is equivalent or better.

In Victoria, the National Standard for Health Assessment of Rail Safety workers was applied as a 'Statutory Code of Practice'. Such instruments are said to have evidentiary status: compliance with a particular code of practice is not mandatory, but compliance with the code of practice will be evidence of compliance with the legislation itself. As such:

> *…an accredited railway organisation may choose to provide safety management of a specific aspect of operation other than in strict compliance with the detailed code of practice provided that it is able to demonstrate that the alternative method fulfils the requirements embodied in legislation and/or regulations (DoI, 2003).*

The NTC is of the view that the use of a statutory code of practice is appropriate in this context (establishment of a national standard for health assessment) as the content is intended to be a minimum that is applicable across all railways. If however, the subject of the code was a set of operational rules, it may be inappropriate to afford it status as a statutory code of practice, because:

- The environment in which railways operate varies considerably between jurisdictions and even within jurisdictions. It is possible that adherence to a statutory code of practice (containing a set of operational rules) may result in perverse safety outcomes; and
- The establishment of a statutory code of practice may act to limit (by virtue of the effort required to demonstrate an alternative is equivalent or better) the railway organisations capability to adopt the most cost effective and practical means of risk control, thus, potentially having a negative impact on efficiency.

The NTC believes it is appropriate to make provision for the use of statutory codes of practice by establishing an appropriate head of power in model legislation. NTC proposes, however, that this instrument be used sparingly - in circumstances where it is deemed necessary to set a minimum requirement applicable to all railways.

The NTC position (that statutory codes be used sparingly) is partly reflective of the observed experience of OHS regulators with statutory codes of practice: the onus on the regulated to demonstrate that an alternative is equivalent or better is significant in the sense that it tends to result in the regulated simply adopting practices contained in statutory codes. In effect, statutory codes tend to become quasi compulsorily and are treated as such. This was a finding of a NSW workcover study on the comparative effectiveness of approved codes of practice in achieving compliance with OHS requirements. Indeed, the study found that:

> *There was some evidence from industry that WorkCover inspectors were applying code provisions in a prescribed manner rather than seeing them as providing recommended control options from which employers could diverge to provide controls of equivalent or better standards (p2, NE&A, 2000).*

The significance of these observations is that widespread use of statutory codes may work against the intent of having an outcome focused regulatory regime that purports to provide the regulated with flexibility to determine what is the most cost effective and practical way

of mitigating against identified safety risks. For these reasons, NTC would recommend that there needs to be high level parliamentary consideration (through ATC), on a case by case basis, of the necessity of using such instruments. NTC considers that this should not merely be left as a matter for bureaucratic discretion.

In addition to making provision for the establishment of statutory codes of practice, the NTC foresees that there may be benefits in affording some codes and standards a regulatory status, but without making them mandatory or evidentiary. NTC's contention is that there may be benefit in endorsing codes and/or standards or parts thereof as being accepted means of risk control for a given type of railway.

The adoption of an endorsed code or standard would remain purely voluntary: the incentive to adopt an approved code or standard would arise because the railway organisation knows that it has been endorsed as being an acceptable means of risk control for the type of railway it purports to be. In this circumstance the onus is on the railway organisation to demonstrate that it is the type of railway to which the code or standard was approved for application rather than, in the default situation, being required to demonstrate that a given set of rules, procedures, infrastructure standards, rolling stock standards are sufficient to reduce risks to acceptable levels. The adoption of codes and standards that have been endorsed would become a (voluntary) means of simplifying the meeting of regulatory requirements.

It is thought appropriate that aspects of the ACoP could be afforded this status subject to a formal endorsement process involving regulators. This proposition will be considered further as part of the development of model legislation and model regulations. Furthermore NTC will separately consider, in consultation with stakeholders, what should constitute a formal endorsement process (refer to section 8).

#### *7.1.3.6 SMP*

The use of a process-based regulatory approach, involving the approval of Safety Management Plans (reflective of the content of Safety Management Systems) as a core criterion for accreditation, is consistent with regulatory best practice. It is considered that there is no need for any significant change in the function of the SMP within the regulatory system. That is, it should continue to serve as the means by which the railway organisation documents the scope of its intended operations, the risk assessment undertaken and the risk controls and compliance strategies it intends to adopt. As is the case in present, an SMP must be subject to regular monitoring, review and revision in response to changes in the nature of the operations of the accredited party and evolution in safety management practices and procedures.

Individual operators must develop Safety Management Plans to achieve accreditation. Failure to comply with the SMP (and the content of the SMS which is referred to in the SMP) can endanger that accreditation. Thus, the SMP can be considered to be a regulatory instrument. It is proposed that the scope and content of SMP be specified in legislation and in more detail in regulations. Currently, in some jurisdictions, the scope and content of the SMP is specified 'by reference' to AS4292.

#### *7.1.3.7 Rules and Procedures*

Rules and procedures constitute the operational requirements followed during day to day operations and are written in more detailed and prescriptive form than the above instruments. The rules and procedures effectively constitute regulatory instruments to the

extent that SMPs state that they must be complied with. Beyond this, they can be considered quasi-regulatory in nature, as non-compliance with them would be likely to be construed as, or used as, prima facie evidence that non-compliance with an SMP had occurred, even if the SMP did not directly refer to them.

There is no clear case for changes to the status or scope of rules and procedures, with the exception noted above in relation to regulations –there may be a case for some material that currently falls within the ambit of rules and procedures to be placed in regulation. For example, there may be a case to consider specifying a common set of operational terms and rules drafted in functional terms. This may improve the consistency of the operating environment.

## Table 8. Distribution of regulatory matters between instruments

| Instrument | Current function and status | Future function and status | Comment |
|---|---|---|---|
| **Legislation** | Framework | Framework | Refined to address identified risks of regulatory failure |
| **Regulations** | Largely unused | Specification of scope and content of SMP, accreditation acceptability criteria and other 'prescribed' matters of detail referred to in legislation | Integrated with development of refined legislation |
| **Standards** | AS4292: specifies scope and content in some jurisdictions.<br><br>AS4360, AS5022 act as guidance only | Technical standards are generally considered 'guidance only' and afforded no regulatory status | May be afforded status of being 'accepted means of risk control for a given type of railway' subject to approval by regulators; or<br><br>May be established as a statutory code of practice, subject to 'approval by ATC' |
| **Codes of Practice** | Guidance only, afforded no regulatory status | Guidance only, afforded no regulatory status | May be afforded status of being 'accepted means of risk control for a given type of railway' subject to approval by regulators; or<br><br>May be established as a statutory code of practice, subject to 'approval by ATC' |
| **SMP** | Regulatory instrument – must be complied with as a condition of accreditation. | Regulatory instrument – must be complied with as a condition of accreditation. | Unchanged function and status. |
| **Rules and procedures** | Quasi regulatory - non-compliance with them would be likely to be construed as, prima facie evidence that non-compliance with an SMP had occurred. | Quasi regulatory - non-compliance with them would be likely to be construed as, prima facie evidence that non-compliance with an SMP had occurred. | Unchanged function and status. |

Highlighted text suggests proposed changes relative to the current situation

## 7.2 Roles and Responsibilities

### *7.2.1 Role of Regulator*

It has been determined that regulation is required to firstly, ensure that railway organisations seek to achieve an acceptable level of safety (set appropriate standards); and secondly, to enforce relevant safety standards to ensure that an acceptable level of safety is achieved. The presence of externalities suggests that there is not a natural alignment of interests and as such, it was always envisaged that a regulator would necessarily have to challenge the safety standards that are proposed to be adopted by railway organisations. Furthermore it was always intended (as indicated by the Inter-Governmental Working Group for Rail Safety) that Acts establishing co-regulation would contain sufficient regulatory provisions to enable enforcement of safety standards if the operator fails to perform.

> *…it is the nature of co-regulatory regimes to have sufficiently flexibility to permit the industry to regulate itself to a major extent but, to have in the reverse, sufficient powers to enforce proper standards where the industry, or a member or section of it, fails to adhere to such standard (p15, 1993).*

In order to fulfil the function of the regulator, it is foreseen that the regulator must retain a wide range of powers and possess the right to intervene in certain circumstances. In its submission, ITSRR put forward the view that:

> *The principles of co-regulation must allow for a breadth of oversight including performance monitoring and validation or risk and hazard management…the development process for standards must be rigorous, needs to involve transparency and must involve standards being robustly validated…This process of validation must include a role for regulators… (p3).*

NTC supports the ITSRR position and is of the view that if there is true consent to regulation then the regulated should be accepting of the legitimate role of the regulator.

A key question is whether there should be any bounds on what the regulator should be able to do, i.e. should the regulator have the power to mandate adoption of certain risk controls.

The prescribing of risk controls by the regulator is generally viewed as being inconsistent with the adoption of a co-regulatory approach based on application of process regulation: the operator is supposed to have the flexibility to adopt the most safe, cost effective and practical means of risk control. Gunningham, in his submissions makes the following points:

> *One of the reasons why process regulation is used is because there is an imbalance of knowledge between government and the rail industry, with the latter being far more capable of identifying the risks, and of managing them, than the regulators (p2).*
>
> *Under a meta-regulatory approach (and under what, following the Cullen Report is often referred to as a "goal setting" regime) the regulator's role is not to specify the individual action but to oversee the development of the process safety program (p8).*

The NTC supports this as a matter of principle but also acknowledges that in practice, from time to time, it may be necessary for the regulator to specify the means of risk control.

If, in a particular circumstance, a regulator is not satisfied that risks have been reduced to acceptable levels, it is appropriate for the regulator to request that the regulated entity review the situation and report back on whether alternative controls exist and whether their application is justified or not. Such a request may be made informally or formally via an 'improvement notice' or similar. An outcome of the iterative process that follows may be the identification of an acceptable means of risk control by the regulated. However, it is also possible that the regulated could fail to identify an appropriate control (or combination of controls) that reduces risks to acceptable levels.

The NTC's view is that the regulator should only prescribe the means of risk control as a last resort and must only do so on the basis of being able to satisfy itself that the risk control being prescribed is necessary to reduce risks to acceptable levels. It is necessary that the same onus of proof and 'goal' is applicable to both the regulator and regulated.

To ensure that there are appropriate checks and balances on regulator behaviour, it is necessary that appeal mechanisms are accessible and workable. ACIL Tasman (2004) reported that:

> *Dispute settlement did not turn out to be a major issue because there are few, if any, disputes. This does not mean that operators are always happy with regulators' decisions but that there is no basis for appeal other than , in some circumstances, on legal technicalities, because the regulators have ultimate power and it is they who are accountable to governments for safety. Operators would think twice about entering into any sort of formal dispute with a regulator whose goodwill they will count on in subsequent matters (p13).*

The finding of ACIL Tasman suggests that the accessibility of the right of appeal is limited. In their submissions, other stakeholders such as ATR (V) have indicated that:

> *Regulators are perceived as having absolute power over accredited organisations without any check or balances. Very small individual accredited organisations are not protected from arbitrary decisions and directions and are not prepared to risk challenging instructions and having accreditation suspended and withdrawn (p11).*

While being mindful of these concerns, the NTC does not believe that it is necessary to act to limit, or place bounds around what the regulator should be able to do in primary legislation or regulations. NTC does believe that nationally approved guidelines (approved by ATC) should be developed to guide regulator behaviour (and to provide for consistency) if and when certain circumstances arise. Furthermore, the NTC believes that appeal mechanisms should be reviewed and improved where possible to ensure that there are appropriate checks and balances on regulator behaviour and judgements. There may, for example, be a case to consider the establishment of a rail safety ombudsman. This will be considered further as part of the development of model rail safety legislation.

### *7.2.2 Split of Responsibilities between Track Manager and Regulator*

The principles proposed by the AAG in 2001 emphasise that 'accreditation authorities and track managers are not to have duplicate roles in regulating safety'. Stakeholders raised this as a significant issue during the course of the 1999 review undertaken by Booz-Allan-Hamilton. This has not been raised as a significant issue in response to the NTC issues paper.

The historical concern has related to:

- the resource costs associated with what has been perceived to be a duplication of auditing / enforcement activity; and
- potential for there to be inconsistency between the requirements of the track manager (incorporated in the access agreement) and the requirements of the safety regulator (incorporated in the conditions of accreditation, reflective of the operator SMS).

The NTC considers that the track manager does have a legitimate need to monitor the activities of train operators to ensure that there is compliance with the terms and conditions of access agreements, for example, compliance with axle load limits. Such limits would mitigate against certain safety risks, but primarily are set to mitigate against undue damage to the track manager's infrastructure. In this regard there is a natural overlap between the interest of the safety regulator and the track manager. This was recognised in some submissions, for example, ITSRR:

> *…notes that while the roles of the regulators and track managers are different, it may currently, or in future be the case that each undertakes some similar activities, but for different purposes (p37).*

The key questions are whether:

- the track manager is efficient in undertaking its monitoring/enforcement activities; and
- the track manager is focused on monitoring compliance with (only) those aspects of train operator activities that have impact on the financial position of the track manager.

The subject of the first question is regulated by the market in part: if the track manager is inefficient the costs passed on to the train operator would act to limit the competitiveness of rail relative to road. This in turn would impact on the level of access revenue. Economic regulation could be used to ensure that the track manager has an incentive to efficiently employ resources in this area[17]. It is observed however, that the market conditions (fierce competition from road) are generally sufficient to motivate track managers to be as efficient as possible. This view presupposes that the track manager is exposed to market forces. ARTC is, and it is observed that it has a very lean corporate structure. Arguably the NSW Rail Infrastructure Corporation (RIC) was not. At a recent conference[18] it was asserted by Port Jackson Partners that the cost of RIC management of the NSW network (after normalising for various factors) was more than twice that of ARTC (which was assumed to be best practice in the Australian context).

The second question is dependent on the incentives facing the track manager. It is observed that ARTC adopts the view (in line with the intent of the AAG principles) that it is the train operator's accountability to ensure that rolling stock is designed, constructed and maintained such that it is safe for operation. This is a rational position for a

[17] For example, a CPI-X regime could be employed to provide the track manager with an incentive to improve efficiency over time.

[18] AusRail 2004

commercially focused track manager to adopt. If an incident/accident occur, and the condition of the rolling stock is identified as being the cause, then it can be expected that the operator would bear the full cost. Importantly, this should maximise the incentive of the operator to maintain rolling stock in a fit for purpose state. If, on the other hand, ARTC monitored the condition of rolling stock and tried to enforce a particular standard there may be a lack of clarity regarding who is responsible for damage etc in the event of an incident/accident. In this circumstance, the duplication of the role of the rail safety regulator by the track manager might act to undermine the incentives facing the train operator. Adoption of such a position could lead to perverse safety outcomes.

The point of the above discussion is that there is no apparent incentive to motivate a commercially focused track manager to duplicate the legitimate role of the regulator. The NTC believes that the duplication of the role of the regulator by the track manager may be 'historical' reflecting a past lack of commercial focus and continuation of roles and functions which predated co-regulation, corporatisation and privatisation. In the current context, all vertically separated track managers are commercially focused, hence the NTC expects that track managers will limit the scope of any policing activities it may have reason to undertake. This is perhaps why the issue was not given priority in response to the NTC issues paper.

With respect to potential for inconsistencies (between access agreement and accreditation conditions) NTC considers that this should not occur, if, as is required by AS4292 (and separately required by NSW legislation): risks arising from interfaces are assessed and controlled by agreed means documented in 'Interface Coordination Plans' (ICP).

The track manager has a duty to ensure that no train operator is permitted to use tracks under its control unless it is accredited to do so. Such a train operator would not be able to gain accreditation or increase the scope of its accreditation unless it can demonstrate that it has agreed an ICP with the track manager. The content of the ICP will clearly be informed by the contents of the access agreement and vice versa (depending on which document is drafted first). As a result, there is no reason why the terms and conditions of an access agreement should be inconsistent with the terms and conditions of an ICP.

The role and function of ICP are discussed further in the following section.

### *7.2.3 Interface Management*

The split of responsibilities between track managers and train operators is well understood from a practical point of view.

- Train managers, amongst other things, specify the rules and procedures applicable to network operation and the limitations applicable to infrastructure use (e.g. axle load limits, speed restrictions), maintain track in a fit for purpose, provide and maintain signalling equipment, systems and people necessary to perform train control functions.

- Train operators, amongst other things, provide the rolling stock that is intended for use, commit to maintain this rolling stock in a fit for purpose state, employ, manage and train the drivers, install necessary communication equipment in vehicles and commit to adhering to the rules and procedures of the track manager and instructions forthcoming from train control.

It is noted however, that there is little, if any, direction or guidance regarding what, at the margin, is more properly the domain of the track manager vis a vis the train operator. As

indicated in the NTC issues paper the only real form of guidance on this matter is contained in the AAG 'Green book' publication (2001). The guidance contained in this document is of a broad nature, perhaps recognising that there is a need for flexibility in determining which party is in the best position to control an identified risk, and that circumstances differ between railways.

In circumstances where there is vertical separation (the track manager and the train operator are separate entities) the practice has been that the numerous interfaces that exist between the track managers and train operators are managed in accordance with an agreed ICP. The development of ICPs has been a long standing practice promoted by Part 6 of AS4292: 'Railway Interface with other infrastructure', albeit, as indicated by the title, the intended application of Part 6 of AS4292 is focused on interfaces other than that between the track manager and train operator. Indeed, the explicit focus of Part 6, as indicated by the text in the foreword:

> *…arises in part from the existence of a variety of other parties such as Commonwealth, State and local Government, and private sector organisations whose facilities are either under, above or intersect with the railway, or are close enough to the railway to be influenced by its presence or operation…the standard should be considered as a guide for the establishment of and safe management of the interface between the railway and the other party (p4, AS4292.6).*

While AS4292 does not contain an explicit requirement to prepare an ICP for interface between track manager and train operator, the general principles espoused in Part 6 have been accepted as being applicable in practice. The general principles being that:

> *Whenever there is a need to manage an interface, an interface coordination plan which clearly identifies the relevant responsibilities of each party and to which the parties shall agree, shall be established (p8, AS4292.6).*

Part 1 of AS4292, the part which currently has a regulatory status 'by reference' in four jurisdictions, suggests that a general management principle should be:

> *Ensuring that interfaces between different organisations and organisational elements are properly defined and managed (p8, AS4292.1).*

It can be concluded that while ICP's are not explicitly required, nor even referred to in Part 1 it is implicit that they be developed. The absence of an explicit requirement is of concern to some jurisdictions. Submissions indicated that some are in favour of there being a more explicit requirement for ICPs (as is the case in NSW). The NTC has been informed that this has been recognised by the Standards Australia Committee (ME/79) responsible for reviewing AS4292. It has been indicated that there will be more explicit requirements for ICPs in the revised standard. The NTC intends to consider whether an explicit requirement to develop ICPs should be included in model legislation or else in model regulations.

Another concern raised in submissions related to the fact that while it was generally accepted that ICPs are necessary (and indeed developed in practice), there is not an explicit requirement to optimise the management of risk between parties (particularly track managers and train operators). There is a perception (rightly or wrongly) that improved coordination is needed to optimise management of risk.

The suggestion is often made in communications with the NTC that current arrangements are failing to result in deployment of technologies (e.g. hot box detectors) that, on face value, appear to be a good idea. It is speculated that while track managers can't see an

internal business case to fit detectors, and no single operator can individually justify asking for them to be fitted, there deployment is justified in aggregate. In response to such speculation, alternative views expressed are that there is a number of ways to mitigate against the identified risk (e.g. the form of maintenance regime adopted), and, given the existence of alternatives, the business case for fitting detectors is weak. The NTC can make no comment on whether sufficient net benefits exist but observes there may be potential for the market to fail to deliver optimal deployment of such technologies if they exhibit 'public good' type characteristics. This may give reason to consider how best to bring multiple parties together to optimise decision making in aggregate.

In its submission ITSRR makes the point that:

> *…powers of procedural direction are important and necessary for the regulator. These powers are distinct from compliance and enforcement powers. They equip the regulator, for example, to direct operators and track managers to review and submit changes to their SMS, to provide information and to create or incorporate certain matters in safety interface agreements. ITSRR considers that the NTC should examine the scope and purpose of such powers and their interaction with other powers, including the power to impose conditions upon an operator's accreditation (p7).*

The NTC agrees that powers of procedural direction are important and observes that in most jurisdictions they already exist to varying degrees. The NTC considers that it would be of benefit to ensure that regulators in all jurisdictions have same array of procedural direction powers to, if cause exists, require parties to review interfaces and determine the most mutually beneficial arrangements and report back to regulator(s). However, the NTC also believes that there needs to be careful consideration of when cause to use such powers might exist. For example it is foreseeable that significant resources could be expended by a group of track managers / train operators testing the hypothesis of regulators (perhaps based on nothing more than a suspicion).

The NTC intends to consider these issues further as part of the development of model legislation.

The need for an appropriate array of procedural direction powers is also supported by the potential for safety regulation to be used to impede operation of economic (access) regulation. This is discussed further in section 7.8.2.

### *7.2.4 Independent Accident Investigation*

The argument in favour of ensuring that rail accidents are investigated by a body (or individual) that is independent of both the regulator and of industry bodies is widely recognised. In essence, the use of independent investigatory bodies avoids the possible conflict of interest that can arise where a rail regulator conducts accident investigations, due to the possibility that the underlying causes can potentially relate to regulatory failures. The use of independent accident investigation has rapidly become more widespread in recent years as a result of its expected impact in enhancing confidence in quality of the investigatory process.

As long ago as 1993, the report of the Inter-Governmental Working Group on Rail Safety cited arguments in favour of an independent investigations body and noted that New South Wales, which had recently developed new draft legislation covering rail safety had concluded:

> *…in ideal circumstances, the separation of regulatory and investigatory functions is desirable, but that budgetary and other constraints often render this impracticable (p25).*

It cited overseas practice as well as current Australian practice in relation to other transport modes:

> *Overseas practice tends to split agencies [i.e. to split regulatory and investigative functions between different agencies] and this is also the practice in Australia for the sea and air modes, where the separation of the investigatory arm is viewed as essential. In these cases the cost of regulation is recovered from users, whereas the cost of accident investigation is recovered from the budget. (p26)*

As well, the 1993 report emphasised the continued responsibility of operators to investigate the majority of accidents:

> *…whatever new arrangements Ministers might decide to set up, the majority of investigations of accidents/incidents must necessarily rest with the operator…(p25).*

Thus, the constraints to the adoption of a separate investigation body were, at that time, seen as essentially practical, i.e. resource based. However, it was argued that a national approach to accident investigations constituted the probable solution, since it would maximise efficiency.

As indicated in section 6, several submissions received in response to the NTC issues paper supported the concept of an independent accident investigator. The current Inter-governmental agreement on rail safety regulation provides for an independent investigator to be appointed in certain circumstances. Section 8 of the IGA states that:

> *The legislation…shall provide the opportunity for an Accredited Owner, Accredited Operator or party to seek the appointment of an independent investigator to investigate an accident or other serious incident involving interstate rail operations in which death or major damage occurs.*

This provision is currently reflected in State and Territory legislation, which allows for the appointment of independent investigators[19] in these circumstances. As well, it can be noted that some State regulators have appointed the Australian Transport Safety Board as an independent investigator in the case of certain intra-state rail accidents.

However the IGA provides that there is discretion to be exercised by the 'responsible rail investigation authority' as to whether an independent investigator should be appointed. This approach is insufficient to ensure that a consistent approach is taken and that all parties have full confidence in the investigation process.

The NTC believes that it is necessary for there to be a strengthening of this requirement in legislation: there should be a clear requirement that an independent investigator be appointed in certain circumstances such as when an accident results in death, injury or serious damage. What circumstances give rise to a need to appoint an independent investigator is an important question. Is it appropriate for an independent investigation to be required in cases when accidents do not result in one of the above outcomes? Furthermore should there be a legislative requirement to undertake independent

[19] In most cases, an individual and/or combination of individuals

investigation of certain kinds of serious incidents (e.g 'Broadmeadows runaway train')? The NTC considers that this issue requires further consideration. The NTC acknowledges that AS5022, which is currently being reviewed and updated, provides some direction as to what circumstances should give rise to the appointment of an independent investigator. The NTC will consider this further, in consultation with stakeholders, as part of the development of model legislation.

A second issue for further consideration is that of the identity of the independent investigator. The current arrangements rely on, in part[20], the use of Australian Transport Safety Bureau as the independent investigator, suggesting that this body would be the most obvious candidate to undertake the broader role envisaged. Alternatively, the question arises as to whether a dedicated rail safety investigator may be justified. The key potential benefit of a dedicated rail safety investigator would be the potential for such a body to lead to a greater focus on rail safety issues and to provide an effective integration of data collection and analysis, investigation and research functions.

Against this is the possibility that a dedicated body would be more costly than the continued ad hoc use of independent experts or the continued integration of rail accident investigation within the functions of the regulator. As well, it is arguable that the separation of rail investigations from those carried out in respect of other modes would detract from potential learning from the experience of other modes. Thirdly, there may be greater difficulties in attracting and retaining high quality staff to a dedicated rail safety investigator, since such a body would clearly be substantially smaller than the ATSB and this could potentially yield difficulties in it attaining a 'critical mass'.

As noted above, an aspect of this issue is the potential for a single accident investigator, operating at the national level, to enhance the dynamic functioning of the rail safety system by taking a role in the consolidation, analysis and publishing of safety data. While ATSB currently undertakes this function, a broader and more consistent role for that body (or some other single accident investigatory body) would allow this function to be more effectively performed and could substantially increase the quantitative basis for research and policy analysis. It is proposed that this issue will be considered in more detail via further policy work (refer to 'Institutional framework' initiative identified in section 8).

In general, the issue of whether a dedicated rail safety investigator is likely to constitute the best solution must be decided on the basis of an analysis of the above issues as they relate specifically to the current context of rail safety. Regulatory theory does not indicate clear preference for either multi-sectoral or sector-specific regulatory bodies (including investigatory bodies).

## 7.3 Harmonisation

Regulatory harmonisation is aimed at co-ordinating the regulatory actions of a number of jurisdictions in such a way that trade in goods and services and the free movement of people and capital, is not impeded, while safeguarding the benefits sought via regulation. Regulatory harmonisation is particularly relevant in the federal context, where there are likely to be close economic links between jurisdictions, and the importance of avoiding regulatory barriers and impediments to the free movement of goods, services, capital and people is particularly high.

[20] Jurisdictions need not appoint ATSB to undertake investigations. Some jurisdiction may simply appoint independent experts who are available and capable. More often than not such experts act as individuals.

There are costs as well as benefits in pursuing regulatory harmonisation. There are several kinds;

- First, the harmonisation process itself is an intensive user of the time and resources of government regulatory authorities. This is particularly so where there are substantial differences in the regulatory 'starting points' involved and/or strong attachments to particular regulatory standards or approaches among some or all of those seeking to achieve harmonisation.

- Second, harmonisation can reduce the beneficial effects of regulatory competition, that is, the prospects of different jurisdictions adopting different regulatory approaches, with learning effects being felt over time as the superior performance of particular approaches is demonstrated and copied by other jurisdictions, are diminished by the move toward uniformity.

- Thirdly, harmonised regulatory standards may be less flexible and adaptable over time. This will occur because the process of achieving agreement on changing the regulation is inevitably complicated by the participation of a large number of jurisdictions in the process. This can mean that regulation becomes less effective and efficient over time, creating important dynamic costs which must be weighed against the benefits sought in the first place via the harmonisation initiative.

These factors mean that there needs to be a very critical view of the potential benefits of moving to regulatory harmonisation in any particular area. That is, notwithstanding the potential for regulation to act as an impediment to trade, there are many circumstances in which a continuation of regulatory difference is virtually costless, or in which the costs involved are small in relation to the likely costs of achieving a substantial degree of harmonisation. Uniformity, or harmonisation, are not goods in themselves. Rather, they are means toward achieving the ends of regulatory effectiveness and efficiency. There is a need to take a critical view of 'how much harmonisation' is needed, or optimal.

### *7.3.1 Harmonisation of Legislation, Regulations & Regulatory Practice*

With the exception of the interstate network, rail networks in each jurisdiction, in the main, continue to operate in isolation. This reflects the patterns of demand (refer to section 5.3 for discussion). As such, the need for consistency of operating environment and consistency of regulatory requirements (recognising that one can not be separated purely from the other) is limited for the purpose of moving freight and passengers from point A to point B (between jurisdictions). Furthermore, the NTC considers that while differences in rail safety regulatory requirements may contribute towards limiting portability of labour and equipment, it is unlikely to be the main impediment. Various infrastructure differences are likely to represent more significant impediments in nature. In any case, the risk that rail safety regulation may act to limit or impede portability of labour and equipment; or contribute to interoperability problems can be significantly reduced by:

- establishing nationally consistent legislation and regulations; and

- establishing guidelines for regulators that promote consistency of regulator judgements and regulator conduct.

The existence of inconsistency between jurisdictions regarding the level, and means, of risk control that is acceptable or otherwise is not surprising given that there is poorly defined and understood risk acceptability criteria. For these judgements to be the same

between jurisdictions (and even between individuals) would be a happy coincidence given the lack of guidance. Changes to legislation can make risk acceptability criteria clearer (and consistent between jurisdictions) but such a reform needs to be supported by guidelines to ensure that there is limited scope for divergence due to interpretation.

The NTC is not able to make a strong case for harmonisation on any quantitative basis, mainly due to lack of data at this point in time. NTC considers however, that there is a case to consider making changes to the co-regulatory framework (legislation, regulations and form of guidance) due to risk of regulatory failure arising from:

- poorly defined risk acceptability criteria;
- some regulators being ineffective due to skill shortages, resource constraints and limited range of sanctions and enforcement powers;
- potential for safety being used to impede operation of economic regulation; and
- other reasons discussed in this section of the discussion paper (section 7).

The NTC believes that changes to the co-regulatory framework (aimed at addressing source of risk of regulatory failure) would be best implemented in a nationally consistent way in order to minimise scope for inefficiencies associated with differences between jurisdictions. As has been suggested already, NTC proposes to establish model rail safety legislation and regulations.

During the development process (for model legislation/regulations). The NTC will assess the benefits and costs of the changes being proposed making use of data that is available and/or becomes available. The assessment will be in the form of a Regulatory Impact Statement (RIS). RISs must now be prepared in relation to any regulatory instrument adopted by ATC. *That is, a RIS is required wherever a decision taken by the ATC is expected to lead to widespread compliance with the rule, standard or requirement to which it refers* (p1, NRTC 2001)

### *7.3.2 Case for National Regulator*

It is clear that the regulatory burden associated with having to interface with multiple regulators would be avoided if there was a single national regulator. This 'regulatory burden' problem, however, is applicable only to two categories of railway organisations: interstate rail and freight operators that operate in multiple jurisdictions. A further category: infrastructure and rolling stock maintainers/constructors that operate in multiple jurisdictions are also affected due to anomalies regarding 'who' should be accredited (refer to section 7.6). All available evidence seems to suggest that regulatory burden borne by each of these organisations (a small number relative to the total amount of organisations that are accredited) is being reduced. Regulators have worked hard to rectify inconsistencies between jurisdictions with respect to key business processes, form and content of required reports, etc.

Another argument in favour of a national regulator is the potential benefits associated with having a single organisation that is able to achieve critical mass necessary to attract, maintain and train employees with suitable skills and competencies. It is also to be expected that the efficiency of regulator functions can be improved by taking advantage of any available economies of scale and scope. The NTC is yet to consider the significance or otherwise of these potential benefits.

As indicated in the previous section, the NTC considers that the driver of differences between regulator judgements is poorly defined risk acceptability criteria and a general lack of guidance regarding the appropriate conduct of regulators. Beyond this, however, there is always a residual amount of judgement required, this may continue to be a cause of divergence. This is because different individuals are involved in making the judgements, not because individuals that are required to make judgements reside in different jurisdictions (and work for different regulatory authorities). Putting in place a single national regulator should not be perceived as a solution to this problem. As demonstrated by experience in single regulator jurisdictions (e.g. UK), it has not been possible to eliminate inconsistencies. On the other hand, there is evidence to suggest that there is greater scope for quality control within one organisation with same agenda, philosophy towards regulation, and 'culture'.

## 7.4 Establishment of General Duties

Current State and Territory rail safety legislation provides that it is an offence for an accredited rail operator to fail to comply with the terms of the operator's accreditation relating to the Safety Management System.

For example, the New South Wales Rail Safety Act 2002 imposes criminal liability on any accredited person who:

- fails to install and maintain, or maintain, a system, device or appliance on a railway or rolling stock in accordance with the terms of the person's accreditation (subsection 92(1)); or

- fails to carry out a railway operation in accordance with any terms of the person's accreditation related to the person's Safety Management Systems (subsection 92(2)).

In theory, if a serious rail incident were to occur, for instance, an accident that resulted in a number of fatalities, there would be clear failure of at least one aspect of the accredited person's SMS, and that failure would constitute the offence.

However, in practice, this is not necessarily the case. This is because a Rail Safety Regulator could have difficulty establishing an offence of failing to operate in accordance with the terms of the accreditation or the SMS if neither the accreditation nor approved SMS addresses the risk of that particular incident occurring. That is, unless the Rail Safety Regulator can point to a particular term of the accreditation or SMS that has been breached, an offence will not be established under the rail safety legislation, even though the incident in question impacts adversely on rail safety outcomes.

This could lead to the situation where the Rail Safety Regulator's ability to initiate criminal proceedings for such an incident is frustrated by the narrow focus of the wording of the offence provisions in existing rail safety legislation on the failure to comply with a term of the accreditation or the safety management system.

One option to address this gap is to impose legislatively a positive, general duty to ensure safety on those who have the greatest control over rail activities that might affect safety, and to create an offence of failing to discharge that duty. This option is raised in submissions from ITSRR:

> *ITSRR considers that the implications and impacts of a move to a set of general duties for accredited and other persons should be considered by NTC. Placing*

> *accreditation in a general duties context may clarify the role of accreditation and provide a desirable strengthening of the regulatory regime (p16).*

RTBU:

> *A new rail safety legislative framework is needed to specify the general duties of all parties…(p4).*

And in the Victorian Issues Paper, Improving Rail Safety in Victoria: Review of the Rail Safety Regulatory Framework:

> *The general duties approach is necessary to avoid a compliance mentality, which allows an organisation to take the view that as long as they are complying with any specific requirements laid down in law, they have discharged their obligations. This approach makes it clear that organisations must take responsibility for safety and work out for themselves how to do this, not shelter behind ritualistic compliance (p39).*

General safety duties are already imposed in relation to work-based activities under occupational health and safety law. Those duties are to ensure, so far as is practicable, the health, safety and welfare of themselves, employees and others at work. Occupational health and safety legislation also sets out specific requirements to be addressed in achieving those outcomes, such as providing and maintaining safe plant and systems of work and providing necessary training and supervision to employees. Regulations made under primary occupational health and safety legislation further specify the general duties in relation to specific activities, and approved codes that are referenced in the primary legislation or regulations provide practical guidance on how to comply with the general duties in the primary legislation or specific requirements under the regulations.

The creation of a general safety duty in rail safety legislation would complement existing occupational health and safety duties, but would focus specifically on rail safety outcomes. It would complement the existing offences in rail safety legislation that apply only to non-compliance with a term of accreditation or SMS, and will fill the gap outlined above by allowing action to be taken by the Rail Safety Regulator for incidents that adversely impact on rail safety even though there may not be a technical breach of any particular term of the accreditation or SMS.

The recent review of rail safety legislation in New Zealand has led to the proposed creation of such a general duty:

> *…a rail participant take all reasonable steps on its part to ensure that none of the rail activities for which it is responsible causes, or is likely to cause, the death of, or serious injury to, individuals or significant damage to property (clause 6, Railways Bill 2003, NZ).*

It is proposed that a similar, appropriately drafted, general duty to ensure safety be considered for inclusion in the national model legislative provisions for rail safety. The general duty would be tailored for specific application to each of the key rail parties: rail infrastructure managers, rolling stock operators, contractors and subcontractors, designers, manufacturers, importers and suppliers of rail infrastructure and rolling stock, and rail safety workers. This would be done in a similar manner to that which occupational health and safety law particularises the general duties for employers, employees, occupiers of workplaces and others.

Further consideration of the need for and form of such a general duty will be given by the NTC, in consultation with stakeholders, as part of the development of national model rail safety legislation.

## 7.5 System of Accreditation

The NTC considers that the purpose of accreditation is (should be) to provide assurance to the public that a railway organisation has systematically considered risks that are likely to arise from its intended operations and that it has a safety management system (inclusive of risk controls) that is sufficient to reduce risks to acceptable levels. Furthermore, that it has made a commitment to implement its SMS and manage change over time.

Due to the potential hazards posed by railway operations, this assurance is required before the railway organisation is permitted to operate. That is, demonstration that an applicant has an appropriate Safety Management System is (should be) a precondition to accreditation. The accreditation requirement (ex-ante assurance) is intended to complement the establishment of general duties which specify the fundamental requirements applicable to different parties.

### *7.5.1 What is Required to be Granted Accreditation*

It is important to recognise that the granting of accreditation by the regulator is not a certification of the railway organisation as being safe. That is, the regulator is not attesting to the safety or otherwise of the party seeking accreditation but rather is merely attesting to the fact that the applicant has demonstrated the capacity and competence to operate safely by, amongst other things, providing evidence that a rigorous risk assessment has been undertaken and that risk controls have been determined, having due regard to the railway organisation's duty to reduce risks to acceptable levels.

In this circumstance, where it is acknowledged that the granting of accreditation is not a certification of safety, it is clear that it is the railway organisation's duty to reduce risks to acceptable levels, it must satisfy itself that it is not in breach of this duty. The regulator will audit and inspect with a view to testing whether a railway organisation is acting in compliance with its duty. In circumstances where there is reason to believe that an accredited railway is acting in breach of its duties, it is reasonable to expect that the regulator will request improvement, apply sanctions and utilise its enforcement powers to ensure compliance.

The alternative, whereby the granting of accreditation is regarded as a certification of safety necessarily places a significant emphasis on the accreditation process. In this circumstance, whereby a regulator is required to attest to the safety of the railway organisation in question, it becomes the regulators' accountability to ensure that all identified risks have been reduced to acceptable levels. It is to be expected that this would result in an escalation of what documentation/evidence is required by the regulator before it is willing to grant accreditation. Indeed, it is reasonable to expect that the regulator would want to sign-off on each and every risk control. Furthermore, it would be reasonable to expect that the regulator would want to insist on periodic reviews (perhaps annually or lesser periods) of the accredited railways SMS to ensure that it continues to be sufficient to reduce risks to acceptable levels.

In submissions and in other communications, industry has indicated that it is concerned about the level of scrutiny applied by regulators when assessing an application for accreditation. Industry asserts that it has 'nothing to hide' but is concerned about the time

and cost associated with 'demonstrating' that risks have been reduced to acceptable levels. In addition, the implied transfer of accountability (from the railway organisation to the regulator) is inconsistent with the stated views of the industry. The industry quite rightly maintains that it is accountable to ensure that its business is safe:

> *We have the responsibility, we want it, the operator has the knowledge (Mike Mohan, Rail Safety Regulation Workshop, June 2004).*

A further argument against the 'certification of safety' through accreditation is that it encourages a railway organisation to develop a compliance mentality rather than being, as put by Reason (1997), wary: *on the lookout for unexpected events.*

For these reasons the NTC believes that accreditation should properly be focused on railway organisations demonstrating that they have sufficient capacity and confidence. Accordingly, it is intended that model legislation will reflect this position.

The NTC is aware that a key question on the minds of railway organisations is what would be regarded as being reasonable conduct on the part of the regulator. The NTC considers that it would be reasonable to expect a regulator (in discharging its duties) to selectively 'drill down' into the detail underlying the aggregated information generally presented in safety management plans. It is expected that regulators would not want to view the justification for each and every risk control, but rather would want to 'sample' in order to satisfy itself that the next level of detail[21] did in fact exist and was of a satisfactory standard. The NTC believes that it is of paramount importance that there be national guidelines (approved by ATC) that indicate, in a transparent fashion, how regulators will go about assessing applications for accreditation. This in turn will provide direction to railway organisations as to what is required of them.

### *7.5.2 Which Entities Should be Required to be Accredited?*

It is appropriate at this point to discuss two issues. What is the intended coverage of rail safety regulation, and who should be required to gain accreditation.

It is the NTC's view, consistent with the various definitions of what is defined as a railway in legislation of jurisdictions, that certain 'railways' should be excluded from the coverage of rail safety legislation. The NTC notes however that historically there have been some anomalies between jurisdictions. Indeed, ATR(V) asserts that there is a confusing and inconsistent set of exemptions such as (p6):

- *Crane and slipways*
- *Railways with a gauge of less than 600mm*
- *Railways operated exclusively by animal power (in South Australian regulations only)*
- *Railways exclusively for the static display of rolling stock (in SA regulations only)*
- *Amusement ride railways (in NSW regulations but not Victoria)*

The NTC considers that there is a need for consistency with respect to the coverage of rail safety legislation. It is intended that this be resolved as part of the development of model

[21] for example, risk assessment and evaluation of relative merits of alternative risk controls

legislation. In doing so, there should be due regard to the safety risks posed by the operation of railways that are not intended to be covered by rail safety legislation and the capability of Occupational Health and Safety (OHS) regulators to regulate in the absence of railway expertise. ATR(v) puts forward strong arguments to suggest that only some of the above railways should be excluded from coverage, for example:

> *The minimum gauge exemption appears to be used as a proxy means of excluding a group of passenger carrying railways which have small mass, low speed, low boiler pressure (if steam powered) and therefore perceived as having a low risk. In fact certain UK 'minimum gauge (18 inch) railways have safety issues (and controls) compatible with other regulated railways whilst there are many railways of 600mm gauge and greater which arguably have no need for accreditation as they present no risk to public safety (p6).*

#### 7.5.2.1 Exemptions from Requirement to be Accredited

The NTC believes that there is reason to give consideration to exempting certain railways from the requirement to obtain accreditation. Such railways would continue to come under the consideration of rail safety regulation, and, as such, would be: required to comply with general duties but would not be required to go through the process of accreditation. A risk based threshold could be identified for the purpose of administering an exemption scheme of this type. There was some strong support for this notion in submissions:

> *The recently-released discussion paper by the Victorian DOI acknowledges the main thrust of this submission; that the Tourist & Heritage Sector (and private sidings) warrants separate consideration if they do not exceed specified risk thresholds (p14, ATR(v)).*

An exemption scheme would be of particular interest to the tourist and heritage sector who hold the view that:

> *Many of the regulatory problems faced by the tourist and heritage sector arise from the fact that regulations standards and codes have been framed and applied without an adequate appreciation of the diversity of the industry, the result has been unnecessary and onerous requirements, inconsistently applied by regulators which have seriously inhibited development of the tourist and heritage sector (p5, ATR(v)).*

The NTC believes that there would be value in working with the tourist and heritage sector and regulators to develop a risk based exemption scheme for further consideration. This in part will need to be informed by further work on risk acceptability criteria in order to identify what are reasonable risk thresholds.

An alternative, that which has been adopted in practice at least in some jurisdictions, is for the accreditation requirement to remain in place and for regulators (Queensland and WA regulators being good examples) and/or for larger heritage and tourist operators (Buffy Billy in Victoria being a good example) to develop template Safety Management Systems that can be adapted for the use of the tourist and heritage sector more generally. The idea being that the support afforded by regulators (and industry counterparts) will act to reduce the cost and tome imposts in meeting regulatory requirements. NTC considers this to be a default position to adopt should it not be possible to reach agreement on a risk based exemption scheme.

#### *7.5.2.2 Who Should be Required to be Accredited?*

The NTC considers, particularly given the proposal to establish general duties, that only track managers (owners) and train operators (operators) should be required to be accredited. The NTC considers that it is appropriate for there to be a 'funnelling' of accountability for safety through the two primary roles - that of the track manager and that of the train operator. This is the policy proposed by the AAG in 2001 and is the practice in all but NSW and SA.

#### *7.5.2.3 Treatment of Service Providers to Railway Organisations*

It is proposed that general duties specified in legislation will extend to service providers to railway organisations, such as infrastructure and rolling stock constructors and maintainers. Application of general duties to suppliers/maintainers etc. is an example of putting in place a 'chain of responsibility': it would act to protect principle parties (those accredited) from assuming the liability arising due to the failure of others. In general, this approach has the benefit of assigning accountability to those in best position to control it.

From recent communications, the NTC is aware that at least some sectors within the rail industry are concerned by this proposition. They make the point that currently suppliers/maintainers assume no accountability (except in jurisdictions in which they are required to be accredited) beyond the warranties that they are willing to offer. There is a belief that the application of chain of responsibility will increase costs as suppliers will not accept (without compensation) additional liability/accountability.

The opposing argument is that duty of care requirements already exist via OHS and consumer protection legislation and hence restatement of general duties in rail safety legislation would aid clarity of accountabilities of those parties and would enable effective interfacing between rail safety regulators and counterparts in other areas of regulation. A further argument is that by reinforcing the fact that accountability should rest with those in the best position to control risk, it is to be expected, holding all else constant that the efficiency of risk reduction should be improved, meaning that in aggregate costs should decrease.

The NTC believes that this issue requires further consideration, in consultation stakeholders, as part of the development of model legislation.

#### *7.5.2.4 Future Commercial Developments*

There was a concern raised, particularly by ITSRR, that:

> *…traditional expectations about the reach of accreditation may fail to address contemporary commercial developments. ITSRR suggests that the NTC should give formal consideration to means by which the ambit of the rail regulator can be protected, so that the regulator is not precluded from acting where it is needed to effect improvements in safety (p10).*

One means of protecting the ambit of the rail regulator is via the establishment of general duties and establishment of 'chain of responsibility principles'. Other means already exist (discussed below).

NTC observes that a large array of commercial arrangements already exist and that these are generally managed without difficulty. The duty of the track manager to ensure that those using its tracks have established both an Interface Coordination Plan (ICP) with it,

and are accredited for the purpose of operating on tracks in question, works towards ensuring that there is clarity on who is accountable. Whether it be the party that has the principal relationship with customers (passengers or freight) or else a subcontractor (as defined by the commercial contract) the track manager must be able to identify a party (in some cases it may be either) with which it has a ICP and is in possession of accreditation that covers the intended scope of operations. This is the party which is accountable in the case of an incident/accident.

### 7.5.3 Scope and content of SMS

As indicated in section 7.1, the NTC considers that it is appropriate for governments to specify the minimum scope and content of SMS that form the basis of accreditation (and of safe operation). AS4292, the review of this standard that is in progress, and the National Rail Safety Accreditation Package (NRSAP) developed by the regulators' panel should inform the content of high level requirements that should be enshrined in legislation and the more detailed requirements that should be prescribed in regulations. The NTC intends to utilise the knowledge and experience embodied in these document and improve where possible as indicated in section 8 (refer to proposal to establish national model rail safety regulations).

Stakeholders indicate that there is significant interest in improving the rigor of risk assessment and process of decision making that determine what risk controls are to be applied. ITSRR for example, seemingly views the need for increased rigor as a central focus:

> *ITSRR considers that an improvement in safety standards and outcomes in the Australian rail sector is required. ITSRR considers that increased rigour in the accreditation process and the regulatory regime will contribute to securing this objective (p3).*

On the balance of evidence available, it would be highly beneficial to provide additional guidance on risk assessment and evaluation methodologies. It is intended that this issue be considered as part of the development of national model rail safety regulation albeit that the most likely output would be a national guideline (endorsed by ATC).

### 7.5.4 Two Part Accreditation to enable Mutual Recognition

The NTC believes it is worthwhile to consider, for the purpose of enabling mutual recognition, the development of accreditation documentation (for example, the safety management plan) in two parts.

- Part A (for arguments sake) would advise of risk assessment methodologies employed, evaluative frameworks used, compliance systems in place, change management processes adopted and the like - matters which form part of an appropriate management framework, irrespective of scope of intended operations and the infrastructure and equipment which are intended to be utilised.

- Part B would contain a description of the intended scope of operations and include detail on equipment to be used, network specific train requirements, matters contained in ICPs, process of consultation undertaken, comparative analysis of alternative risk controls, etc. This is material that is very much related to the infrastructure which is to be used for the purpose of operations.

The idea is that Part A would be the subject of mutual recognition. Part B, on the other hand, would not be required to be mutually recognised. This is because Part B would not remain constant in circumstances where there is a proposal, by the accredited organisation to increase the scope of its operations beyond the jurisdictional boundary in which it was accredited.

The origins of this idea stem from EU reforms currently in progress. The proposal will be given further consideration as part of the process of development of model legislation.

## 7.6 Importance of Audit Function

While the process of accreditation is of paramount importance at the start of any new railway venture, it is just as important, if not more important (given that are few new railway organisations) that the regulatory regime provide for ongoing monitoring of railway organisations by the regulator. As put by Gunningham:

> *…the role of the inspectorate shifts in emphasis from that of conventional inspection of the premises and plant (which relies heavily on observation of site conditions) to that of audit of the management system. The latter implies a review of written documentation coupled with interviews with personnel at various levels of the organisation to test the understanding of written practices and the extent to which they can and are being followed, together with inspection of selected areas of the plant based on interviews and the information that has come to light. t The result is that the inspectorate relies not only on its judgment of the management system, but seeks to validate that judgment by detailed examination of how well it has actually been implemented in specific contexts (p8).*

Legislation needs to provide regulators with an array of powers that would enable them to gain access to documentation, staff, infrastructure and equipment, perhaps without notice, for the purpose of auditing compliance with conditions of accreditation and/or general duties. Furthermore the powers granted for the purpose of enabling audit, should be able to be used in relation to accredited railways, non-accredited railways (assuming exemption scheme will exist) and those entities for which general duties apply. The extent and nature of such powers will be considered further as part of the development of model legislation.

A related issue, more properly the domain of the jurisdictions (as it does not pertain to the regulatory framework) is the matter of resourcing. The NTC suggests that due consideration should be given to the resourcing of regulators. Evidence would suggest that, at least in some jurisdictions, there are insufficient resources for regulators to be effective.

## 7.7 Hierarchy of Sanctions and Enforcement Powers

A key issue arising from the consultation conducted to date is that of the inadequacy of current sanctions and enforcement powers. Some existing legislation provides regulators with few sanction options other than the suspension or withdrawal of accreditation. Section 5.2.2 has pointed to some of the problems that have arisen as a result of this inadequacy of sanctions and enforcement powers, highlighting the case of New South Wales, in particular.

The submission of the ITSRR in response to the NTC issues paper noted that:

> *The NSW Parliament has recently enacted a substantially increased range of compliance and enforcement powers for the NSW regulator. ITSRR is now making use of its enhanced powers.*
>
> *ITSRR considers that comprehensive compliance and enforcement powers are essential elements of any national model legislation. ITSRR considers that these powers should include the capacity to issue notices and orders to individual operators or in relation to industry practices, and must extend to powers of entry, inspection and seizure or directed removal of materials (p7).*

Similarly, the recent Victorian Discussion Paper on rail safety argued that:

> *Where a range of enforcement options is available, it is more likely that appropriate enforcement measures will be applied. The proposed framework therefore includes the adoption of a "compliance pyramid". This would provide the Safety Regulator with a hierarchy of enforcement options which may be escalated as appropriate…In addition to current provision for warnings, the options include improvement and prohibition notices, infringement notices and fines, suspension or cancellation of accreditation and provisions for prosecution.*

This approach is consistent with the recent direction of reform in relation to road safety regulation, as reflected in the Compliance and Enforcement Bill developed by the NTC. This Bill, which takes the form of model legislation which can be adapted and adopted into their own legislation by State and Territory Governments includes the following penalties and sanction types:

- improvement notices;
- formal warnings;
- infringement notices;
- fixed range penalties (to be imposed by courts);
- commercial benefits penalties (potentially open-ended);
- cfompensation orders;
- licensing and registration sanctions;
- supervisory intervention orders;
- prohibition orders.

The Regulatory Impact Statement in respect of the Bill discussed the purposes of this suite of sanctions as follows:

> *The Bill provides an extensive suite of sanction and penalty options… This contrasts with the much narrower range of sanction/penalty options contained in existing legislation.*
>
> *The fundamental problem which this reform seeks to address is that existing legislation is unable to differentiate adequately in its approach to penalties and sanctions, between different classes of offender. In the interests of justice, as well as improved enforcement and compliance, it is considered essential to be able to distinguish in the application of penalties and sanctions between:*

- *minor and serious offences;*
- *unintentional offences and those committed for commercial gain;*
- *individuals and bodies corporate; and*
- *first time and habitual offenders.*

*The proposed penalty and sanction regime is expected to have substantial benefits in terms of discouraging non-compliance and encouraging the reform of offenders' behaviour (particularly through the use of supervision orders and prohibition orders).*

Moves in the direction of developing an expanded and mutually consistent range of sanctions are clearly underway in some States, in line with the broader direction of reform being taken internationally.

The NTC believes that reform in this area offers significant potential benefits in terms of improved compliance incentives and regulatory effectiveness. The will require changes to legislation supported by articulation of detailed requirements in regulations.

## 7.8 Risk Acceptability Criteria

Poorly defined risk acceptability criteria are identified as a potential source of risk of regulatory failure in section 5 of this paper. There is a risk that safety standards could be set too high (or too low), that uncertainty could lead to disagreement and unproductive debate and that differences between jurisdictions (with respect to what is acceptable or otherwise) could manifest in differing risk controls and inter-operability issues. The NTC therefore believes this to be an important issue that requires resolution. Submissions made in response to the NTC issues paper (refer to section 6) support this view.

The NTC has commissioned the production of a working paper on 'Risk Tolerability in Rail Safety Regulation'. This paper, prepared by Bray (2004), has helped inform the NTC position with respect to which risk acceptability criteria are appropriately applied to the rail safety context. The NTC will reconsider its position in light of comments received in response to the release of the working paper.

Bray (2004) identifies three broad approaches to defining risk tolerability:

1. A 'precautionary' approach, wherein safety is pursued (almost) to the exclusion of other criteria such as cost. This is a stringent framework because it means anything that can be done should be done i.e. limited only by technology and human capacity. No analysis of costs or benefits is required in this approach because they do not influence the level of intervention. In practice, this approach leads to impractical consequences and is not used.

2. A 'gross disproportionality' approach, which is the extension of OHS and case law to rail safety. In this framework rail safety regulators need to identify acceptable risks that can be treated with general precautions and intolerable risks that should be banned. With regard to other risks, they must assess costs and benefit of proposals to determine if costs are disproportionate to benefits. However, there remains no unequivocal definition of the ratio of costs and benefits that represent disproportionality.

3. A 'net social benefit' approach using a benefit cost ratio of one as the benchmark criterion. Safety standards are set at a level that ensures that the benefits of regulation are equal to or greater than the cost of implementing the measures (including the costs of the regulatory processes). This net social benefit approach ensures that no more is spent on rail safety than the benefits that accrue to the community, and releases funding that could be used more effectively to improve safety in other sectors or to provide cheaper services.

Bray's (2004) conclusion is that gross disproportionality's usefulness is constrained by its impreciseness particularly when compared with a benefit-cost ratio of one:

> *It is concluded that* [gross disproportionality] *does not provide adequate explicit guidance on appropriate safety standards, and therefore is an insufficient instrument to guide decisions on safety measures (p29).*

Bray (2004) goes on to make the point that empirical studies have found little evidence to support the higher unit valuation of improved safety outcomes in rail compared with road, with the strength of the factors described as being less strong than imagined and with other factors (e.g. reducing predictable single fatality accidents may be more effective than attempting to mitigate against uncertain, low probability, major events) off-setting their effect. The USA and UK governments, amongst others, use a common value for the loss of life from road and rail incidents.

Taking these factors into account, the NTC is of the view that the net social benefit criterion is preferable on the basis that it is easier to understand and apply, is focused on social costs and benefits (not financial costs and benefits), is consistent with the general equilibrium condition required for efficient resource allocation and thus is less likely to result in perverse outcomes of the type described in section 5 (due to setting safety standards too high). There is need for further debate amongst stakeholders on this issue.

In addition, there is a need to further consider the practicality or otherwise of implementing evaluative frameworks assuming adoption of either 'net social benefit' or 'gross disproportionality'. In its submission, ARUP, a consulting firm made the following point:

> *From time to time our clients have asked us to evaluate the safety benefits associated with various improvement projects. We have found this difficult to do with the current standard of incident and accident data held by the various jurisdictions, in particular the lack of causal information (p3).*

Problems associated with data are discussed in the following section. With respect to risk tolerability/acceptability it is intended that the outcomes of the debate feed into the development of model legislation and regulations. Section 8 foreshadows research that is intended to be undertaken to inform discussions.

## 7.9 Other

### *7.9.1 Data and Transparency of Safety Outcomes*

Effective assessment and control of rail safety risks is dependent on the proper collection and analysis of rail safety information. Collection and analysis of data should be an integral component of each rail operator's safety management plan. Public confidence in the safety of rail operations can be improved if there is open dissemination of information that accurately describes the safety performance of rail operators. The availability of data can assist industry greatly in better understanding the nature and significantce of identified

risks. Furthermore, the public availability of data can avoid the potential for the safety performance of one railway to reflect poorly on the whole industry.

In other countries, industry has taken the lead in ensuring that there is open dissemination of information regarding safety performance (e.g. the industry owned Rail Safety Standards Board has taken on this responsibility in the UK). This action is motivated both by the need to establish / maintain public confidence but also to provide various members of industry with data to assist with risk assessment. This has not occurred in Australia. Historically, at least, jurisdictions and rail operators have had an aversion to publication of data that would permit comparison of performance for either political or commercial purposes. No jurisdiction or operator would like to be identified as "least safe".

The NTC believes that rail regulation should provide a framework that establishes an effective, consistent and transparent framework for collecting, analysing and disseminating rail safety performance data. Much work has been undertaken by rail regulatory agencies and the rail industry to develop improved reporting standards and processes for rail occurrences. This work includes development of a common set of notifiable occurrences for reporting and agreements to report data to the Australian Transport Safety Board. The NTC intends to build on this work and ensure that, where appropriate, it is formally incorporated into the regulatory framework.

Transparency of rail safety performance is important, relevant rail safety performance data, including the performance of individual rail operators, should be made readily available to the public and the rail industry. The NTC proposes that the revised framework set out requirements for the public reporting of agreed rail safety performance data by rail regulatory agencies.

It is proposed that a revised framework for the provision and reporting of rail safety data would include:

Model Primary legislation:

- obligations on rail operators to report on notifiable occurrences;
- obligations on rail regulatory agencies to make rail safety performance data publicly available (preferably via ATSB); and
- protocols for data reporting by rail regulatory agencies

Model Regulations:

- definitions of notifiable occurrences; and
- protocols for reporting by rail operators

### *7.9.2 Employee Participation and Safety Culture*

The term safety culture has, in recent times, been used to explain why some organisations are safer than others. Presentations made at the national rail safety regulation workshop held in June emphasised the importance of safety culture. ITSRR, in its submission, indicated that there should be:

> *…focus on issues of competency and training amongst all parties and on the safety culture of operators and track managers (p13).*

More generally submissions indicated that there was support for the view that 'culture matters'. The investigation that followed the Waterfall rail accident supports this perspective. It was found that:

> *The investigation gathered a range of evidence indicating the existence of attitudes within SRA that were not consistent with a positive safety culture. There was a perception by some that railways were inherently safe, and that Waterfall was an unforeseeable accident. This argument was used to support a conclusion that everything that could have been done to prevent it had been.*
>
> *There was evidence that at the senior level, safety was thought of as somebody else's responsibility, such as the safety departments.*
>
> *SRA employees confirmed a lack of motivation to report hazards, believing that nothing would be done. Most critically, the investigation did not find any evidence of the existence of a combined risk and hazard register, contrary to the SRA SMS statement that such a register was being periodically reviewed to ensure that risks to safety were identified and managed.*
>
> *There were remnants of a blame culture, which discouraged employees from being open about near misses and other hazardous conditions. This restricted the organisation from learning (p52, NSW Ministry of Transport).*

It has been asserted by some that it is not possible to regulate for a safety culture, for example, Mike Mohan of ARG, as part of presenting an industry viewpoint stated that:

> *A safety culture cannot be legislated (Rail Safety Regulation Workshop, June 2004)*

The NTC agrees, but considers that the regulatory framework and regulator behaviour can be supportive of establishment of a strong safety culture. The potential to apply sanctions to senior management focuses the CEO and others at the top of the corporate tree on identification and control of every major hazard *and a management commitment to make available whatever resources are necessary to ensure that the workplace is safe (Hopkins 2002).* Furthermore the development and maintenance of a safety culture requires participation of employees at every level and in every aspect of operations. In its report on the Waterfall rail accident, the NSW Ministry of Transport observed that:

> *…SRA did not appear to have insight into its own culture, or operational risks, this appears to partly due to insufficient input from operational areas to ensure a 'needs based' approach to training outcomes (p53).*

The NTC considers that it is appropriate to establish more explicit requirements to involve railway employees, their unions, and their representatives in the development of an organisation's SMS. This will be considered further as part of the development of model legislation.

## 7.10 Overlap with Other Regulation

### *7.10.1 Overlap with OHS*

In recent years, there has been greater recognition that OHS legislation extends to cover many aspects of public safety. For example, in a recent NSW case, it was found that a road transport operator had an OHS duty to both his driver and the other road user who suffered a collision with the fatigued driver.

This leads to the conclusion that OHS laws are now so pervasive that they overlap with every other piece of regulation and cover in a general way virtually every activity. However, other than in a few particular cases, OHS law does not choose to set out specific (rather than general) duties, standards, prescriptive requirements and regulatory approval processes for specific industries. In addition, OHS agencies cannot develop the requisite understanding of some industries, their inspectorates may not be well equipped to do the job, their resources are not adequate to be applied consistently over a long period of time, and their national co-ordination processes are weak.

Rail safety regulation has an important role in filling in the essential standards and procedural detail that current OHS legislation tends not to concern itself with, and in setting out the accreditation regime and the functions and duties that are to be administered by a specialist body (the rail safety regulator).

If this is the case, the overlap between OHS and rail regulation needs to be accepted, identified and addressed. The methodology previously endorsed for road/OHS regulation is also appropriate for rail. Areas of overlap should be identified and steps taken to ensure that they do not lead to adverse industry outcomes. This would mean some form of co-ordination, preferably at national level, through the National Occupational Health and Safety Council. This could be supplemented by local arrangements (e.g. memoranda of understanding) between rail and OHS regulators and enforcement agencies. To a large extent, such memoranda of understanding already exists.

Other options include:

(i) not separately regulating for rail safety and leaving it entirely to OHS regulation. See comments above.

(ii) making rail safety legislation comprehensive, to include OHS, and exempting those subject to rail safety legislation from OHS provisions. This appears to be the model followed in the Offshore Petroleum Safety Review.

The NTC consider that, from a practical point of view it would not be possible to achieve the exemption from OHS legislation in the timeframe envisaged for reform of rail safety regulation. There is also the question of whether there are sufficient arguments to exempt one activity from social regulation which applies to all workplaces. Rail legislation would have to be drafted to include extensive OHS provisions. In effect, it would be akin to developing a piece of national OHS legislation. Despite recent reviews of OHS legislation in some States (Vic and NSW), this would be a huge task. This would introduce inconsistencies in OHS requirements between rail and other activities in each State. In addition, rail inspectorates would have to be increased in size and competence to cover OHS issues. The option is not supported as part of the current reform agenda.

### *7.10.2 Overlap with Economic Regulation*

In section 5.2 it was identified that there was a risk of regulatory failure due to the potential for requirements of rail safety regulation to be used to impede the operation of economic regulation. This risk of regulatory failure can be mitigated against by providing the regulator with adequate procedural powers. As indicated in section 7.2.3 such powers may be necessary to optimise the management of interfaces in any case.

It is likely that regulators will require industrial relations style powers such as ability to require good faith bargaining within an identified period. If this fails, the regulator should have the capability to either make a determination that is binding on both parties or

nominate a third party as arbitrator. The array of powers required will be given further consideration as part of the development of model legislation.

At least two jurisdictions (Queensland[22] and Victoria[23]) have made in recent times, or are in the process of making, changes to legislation for the purpose of providing such powers to their regulators. It is understood that these changes were made in response to the potential for rail safety to be used as an impediment to the operation of economic (access) regulation.

## 8. RECOMMENDED INITIATIVES

In order to improve and strengthen the co-regulatory framework for rail safety the NTC considers that it is necessary to deliver a package of projects which provide national model legislation and associated regulatory tools. The NTC recommends that this program should comprise of the following elements.

**National Model Rail Safety Legislation**

The initiative involves the resolution of legislative policy and the development of model national 'primary' legislation. When implemented, the model legislation will be supported by a number of subordinate legislative instruments (i.e., regulations setting out necessary technical detail and specifications) and other measures (eg. Statutory codes, endorsed standards and codes, guidance materials).

The scope od model legislation will include the following:

- refined accreditation model;
- articulation of general duties;
- an appropriate, escalating hierarchy of sanctions and penalties;
- review and appeal mechanisms for aggrieved industry applicants;
- refinement of mandatory data reporting requirements;
- risk acceptability criteria;
- increased powers for enforcement officers;
- power to provide 'status' to codes / standards 'approved by ATC';
- provisions to ensure the independence of accident investigators; and
- other matters of detail

[22] Amendments to the Transport Infrastructure Act 1984 (QLD) were passed on the 8 September 2003

[23] Refer to Transport Legislation (Amendement) Act 2004, Part 10, section 46.

**National Model Rail Safety Regulations**:

This initiative will develop nationally consistent accreditation requirements to manage rail safety. This project will examine issues related to the development and assessment of safety management systems (SMS). The project will deliver nationally agreed approaches to the following issues:

- risk management in rail safety and approaches to risk tolerability;
- the scope and content requirements for safety management systems;
- acceptance criteria for assessing accreditation requirements including safety management systems;
- a rail safety data collection and reporting framework for rail operators;
- criteria for assessing the safety performance of rail operators;
- monitoring and data requirements for assessing safety management systems;
- prescriptive requirements that railway organisations must adhere to, eg medical fitness requirements, drugs and alcohol prohibitions; and
- other matters of detail: the general philosophy is to articulate detail of requirements referred to in Acts in Regulations.

The outputs of this project will, in part, provide information required for the drafting of model primary legislation.

National guidelines will be developed for the following:

- development of SMS;
- assessment of SMS;
- accreditation process;
- audit process;
- investigation process; and
- material change application process

**Institutional Framework**

The proposal is to review the organisational arrangements and relationships within and between jurisdictions for managing rail safety regulation. It is proposed to be conducted in parallel with the development of model rail safety legislation. It would assess the efficiency and effectiveness of existing and alternative arrangements to ensure that national outcomes for rail safety and efficiency are maximised as a result of the adoption of new model rail safety legislation and associated regulatory tools.

The output of the review will be recommendations for effective and efficient management of rail safety, consistent with maximising national safety outcomes for both passenger and freight services.

### Safety Data

The project will be linked directly with the development of model legislation and assessment of safety management systems. The purpose is to:

- develop a nationally co-ordinated system for mandatory reporting, collation, storage and publication of safety data (accidents, incidents and precursors);
- reach agreement on those safety performance indicators which should be publicised; and
- establish effective arrangements for sharing of data and learning between industry participants.

### Training

The project will establish the minimum nationally consistent competencies required for the following:

- Safety critical workers
- Inspectorate/compliance personnel.

It will be linked to the requirements of model legislation and the associated regulations for the development of safety management systems.

### Approval process for Codes and Standards

As indicated in section 7, the NTC proposes to make provision for the endorsement of codes of practice and technical standards to be endorsed as an accepted means of risk control for a given type of railway. Furthermore, the NTC is to make provision for the establishment of statutory codes of practice in circumstances where there is strong desire to encourage railway organisations to adopt certain risk controls unless they have equivalent or better.

Accordingly, there is a need to develop, in consultation with stakeholders, a formal process for:

- the establishment of Statutory Codes of practice; and
- endorsement of codes of practice and technical standards

## REFERENCES

Abelson P (2003) 'The value of Life and Health for Public Policy' Economic record No. 79.

Accreditation Authorities Group (2001) 'Rail Safety Co-regulation – Roles and Accountabilities of Accreditation Authorities and Accredited Railway Track Managers and Operators'

ACIL Tasman, November (2003) 'Rail Safety Accreditation, Mutual Recognition, and Rail Safety Management'

ACIL Tasman (2003) 'Rail safety regulation: a one stop shop?'

Australian Heads of Government (1996) Inter-Governmental Agreement in relation to Rail safety (referred to as the "Rail Safety IGA")

Australian Transport Safety Bureau (2003) 'Road fatalities Australia: 2002 statistical summary'.

Booz Allen & Hamilton,1999, 'Independent review of rail safety arrangements in Australia', Report to the Standing Committee on Transport.

Bray, D (2004) 'Risk Tolerability in Rail Safety Regulation' Working Paper commissioned by the National Transport Commission

Bureau of Transport and Regional Ecnomics, 2002, 'Rail Accident Costs in Australia', Report 108

Bureau of Transport and Regional Ecnomics, 2000, 'Road Accident Costs in Australia', Report 102

Bureau of Transport and Regional Ecnomics, 1999, 'Competitive Neutrality between road and rail', Working Paper 40.

Department of Infrastructure (2004) 'Improving Rail Safety in Victoria: Issues paper for a review of the rail safety regulatory framework.'

Edkins, G (2004) 'From Self Regulation to Co-Regulation: Myths and Realities in Rail Safety Regulation' presentation delivered to National Rail Safety Regulation Workshop.

Government of Australia (1997) 'Grey-Letter Law', Report of the Commonwealth Inter-departmental Committee on Quasi-regulation

Health and Safety Executive, 2001, 'Reducing risks, protecting people – HSE's decision making process

Health and safety Executive, 2003, 'Delivering health and safety in Great Britain', HSE annual report and the HSC/HSE accounts 2002/03.

Hopkins, A. (2002) 'Safety Culture, Mindfulness and Safe Behaviour: Converging ideas?' National Research Centre for Occupational health and safety regulation, Working paper 7.

House of Commons Transport Committee (2004) 'The Future of the Railway', Seventh Report of Session 2003-04, Volume 1.

Inter-Governmental Working Group on Rail Safety (1993) 'A National Approach to Rail Safety Regulation', report to the Standing Committee on Transport.

Jaguar Consulting (2004) 'Identification and Examination of Best Practice Principles for National Rail regulation', Working Paper commissioned by the National Transport Commission.

Maunsell (1998) 'Study of Rail Standards and Operational Requirements', *Report* to the Australian Transport Council

National Transport Commission (2004) 'Impediments to improving efficiency in the area of Intermodal Transport', Discussion Paper

National Transport Commission (2004) 'Improving the Regulatory Framework for Rail Safety in Australia, Issues Paper.

NE&A (2000) 'The Comparative Effectiveness of Approved codes of practice in Achieving compliance with OHS requirements', research report commissioned by WorkCover NSW.

NSW Ministry of Transport (2003) 'Waterfall: Railway Safety Investigation', Final Report

OECD (1997) 'Choices of Policy Instruments'

OECD (2002) 'Regulatory Policies in OECD Countries: From Interventionism to Regulatory Governance'.

Parker, C (2002) 'The Open Corporation: Self-Regulation and Corporate Citizenship'

Queensland Government (2004) 'Review of the rail safety regulation (short form public benefit test)'

Reason, J. (1997) 'Managing the risks of organisational accidents'

Standards Australia (1995) 'Railway safety management, Part 1: General and interstate requirements' [AS 4292.1 – 1995].

Standards Australia (1997) 'Railway safety management, Part 6: Railway interface with other infrastructure' [AS 4292.6 – 1997].

Safety Management Systems Expert Panel (2004) 'Safety Management Systems review of RailCorp and the NSW Independent Transport Safety and Reliability Regulator(ITSRR).' Special Commission of Inquiry into the Waterfall Rail Accident.

UK Department for Transport (2004)'The Future of Rail'

Viscusi, 1998, Rational Risk Policy: The 1996 Arne Ryde Memorial Lectures, Oxford University Press

## APPENDIX A: ATTENDEES AT RAIL SAFETY REGULATION WORKSHOP JOINTLY HOSTED BY NTC AND ARA

| | | |
|---|---|---|
| Prof | Fred Affleck | The Planning and Transport Research Centre |
| Mr | David Apps | Pacific National |
| Ms | Margaret Arblaster | ACCC |
| Mr | Brett Baker | National Transport Commission |
| Mr | Kym Bills | Australian Transport Safety Bureau |
| Mr | David Bowden | Ministry of Transport, NZ |
| Ms | Lynelle Briggs | DoTaRS |
| Ms | Julie Bullas | Queensland Transport |
| Mr | Rob Burrows | Department of Planning and Infrastructure |
| Mr | Ron Bury | Specialized Container Transport (SCT) |
| Mr | Stephen Cantwell | Queensland Rail |
| Mr | Rex Deighton-Smith | Jaguar Consulting |
| Ms | Isa DiTrocchio | National Transport Commission |
| Mr | Kent Donaldson | Independent Transport Safety and Reliability Regulator |
| Mr | Graham Edkins | Dept of Infrastructure, Victoria |
| Mr | George Erdos | Trans Adelaide |
| Mr | David Ferris | Railway Technical Society of Australasia (RTSA) |
| Mr | Erik Finger | National Transport Commission |
| Mr | Greg Ford | Queensland Transport |
| Mr | John Frost | Association of Tourist Railways |
| Mr | John Fullerton | Pacific National |
| Mr | Don Gibson | West Coast Railway |
| Mr | Phil Giltinan | National Transport Commission |
| Dr | John Glastonbury | 3801 Ltd |
| Ms | Sheree Goldsworthy | Transport SA |
| Ms | Sharyn Gregory | RailCorp |
| Prof | Neil Gunningham | Australian National University |
| Mr | Hubert Guyot | Yarra Trams |
| Mr | Phil Halton | Independent Transport Safety and Reliability Regulator |

| | | |
|---|---|---|
| Mr | Anthony Henwood | Freight Australia |
| Ms | Catherine Herriman | Independent Transport Safety and Reliability Regulator |
| Ms | Virginia Hickey | National Transport Commission |
| Mr | Stuart Hicks | National Transport Commission |
| Mr | Craig Hill | Land Transport Safety Authority |
| Mr | Keith Hunt | Great Southern Railway |
| Mr | Dave Jones | National Transport Commission |
| Mr | Gerard Joseph | EDI Rail |
| Mr | Roger Jowett | Rail, Tram & Bus Union (RTBU) |
| Mr | Bruce Kennedy | National Environment Protection Council |
| Mr | Andrew Kitto | Australian Rail Track Corporation |
| Mr | Martin Lacombe | Lacombe Transportation Consulting |
| Mr | HowardLister | Dept of Infrastructure, Public Transport Safety |
| Mr | Keith Lloyd | National Transport Commission |
| Mr | Mike Lowenger | Railways Association of Canada |
| Mr | David Martin | Connex, Melbourne Pty Ltd |
| Mr | David Marchant | Australian Rail Track Corporation |
| Mr | Greg Martin | Department of Planning and Infrastructure, WA |
| Ms | Kirsty McIntyre | National Transport Commission |
| Mr | Tim McSweeney | Rail CRC, Central Queensland University |
| Mr | Mike Mohan | Australian Railroad Group |
| Mr | Barry Moore | National Transport Commission |
| Mr | Geoff Neil | Pilbara Rail |
| Mr | Bryan Nye | Australasian Railway Association Inc |
| Mr | Juhyun Pak | Special Commission of Inquiry, Waterfall Rail Accident |
| Ms | Natalie Pelham | Independent Transport Safety and Reliability Regulator |
| Mr | Rob Perkins | Perkins Group |
| Ms | Giselle Pethard | National Transport Commission |
| Mr | Adrian Ponton | Freight Australia |
| Ms | JanPowning | Dept of Infrastructure, Victoria |
| Mr | Don Pulciani | Transport Canada |

| | | |
|---|---|---|
| Mr | Pieter Rienks | Workcover Victoria |
| Ms | Marina Rizzo | Special Commission of Inquiry, Waterfall Rail Accident |
| Ms | Christine Roche | National Transport Commission |
| Ms | Carol Rowe | DoTaRS |
| Mr | Tim Ryan | Australian Railroad Group |
| Mr | Paul Salter | National Transport Commission |
| Ms | Catriona Scott | Silverton Rail |
| Mr | John Shalders | Australasian Railway Association Inc |
| Mr | Julius Sigut | Dept of Infrastructure, Planning & Environment NT |
| Mr | Geoff Smith | Specialized Container Transport (SCT) |
| Mr | Phil Sochon | Australasian Railway Association Inc |
| Ms | Donna Soo | National Transport Commission |
| Mr | Flett Steele | Transport SA |
| Mr | Robin Stewart-Crompton | National Occupational Health & Safety Commission |
| Mr | Glen Summers | Land Transport Safety Authority |
| Mr | Marc Thompson | National Transport Commission |
| Mr | Steve Walker | Health and Safety Executive (HSE), UK |
| Ms | Carolyn Walsh | Independent Transport Safety and Reliability Regulator |
| Mr | John Wearne | National Transport Commission |
| Mr | Leon Welsby | Australian Rail Track Corporation |
| Mr | Keith Wheatley | National Transport Commission |
| Mr | Tony Wilson | National Transport Commission |
| Mr | Bruce Wilson | Department of Transport QLD |
| Mr | Graham Windever | United Goninan |
| Mr | Jim Wolfe | DoTaRS |
| Mr | David Spence | Dept of Infrastructure Energy and Resources, TAS. |
| Mr | Mike Peter | Rail Industry Corporation |

## APPENDIX B: PARTIES THAT MADE SUBMISSIONS IN RESPONSE TO NTC ISSUES PAPER

Association of Tourist Railways (Victoria) Inc.

Independent Transport Safety and Reliability Regulator of New South Wales

Professor Neil Gunningham of the Centre for Occupational Health and Safety Regulation at Australian National University

Department of Infrastructure, Victoria

Mr Keith Jones of Sustainable Transport Coalition (Conservation Council) WA.

Department of Infrastructure, Energy and Resources, Tasmania

Department of Transport and Urban Planning, South Australia

Queensland Transport

Cooperative Research Centre for Railway Engineering and Railway Technologies

ARUP (Consulting Engineers)

Mr Rob Burrows (not available for public release)

Department of Transport and Regional Services, Australian Government

Queensland Rail

Barclay Mowlem Rail Group

David Ferris of the Railway Technical Society of Australia

Department of Infrastructure, and Planning and Environment, Northern Territory

Rail Tram and Bus Union

Department of Planning and Infrastructure, Western Australia

Australasian Railways Association

John Holland Pty Ltd

## APPENDIX C RAIL SAFETY CONFERENCE – JUNE 2004

**Group 1 question:**

Please provide your views on whether the roles and responsibilities in the current co-regulatory framework are appropriate, clear and well understood?

Include comment on areas where you believe improved role definition, independence or accountability is required.

**Group1 comprised:**

Facilitator: Mr Phil Halton

Scribe: Christine Roche

Dr John Glastonbury
Mr Andrew Kitto
Mr Tim Ryan
Mr Greg Martin
Mr Graham Edkins
Mr Barry Moore
Mr Greg Ford
Mr Roger Jowett
Mr Kent Donaldson
Mr George Erdos

**Group 2 question**

Please comment on the adequacy of process regulation (accreditation and audit) as it presently applied to regulation of rail safety in Australia.

Are rail safety regulators / rail organisations suitably resourced (in order to undertake audits) and skilled (in order to assess appropriateness / acceptability of SMS and practices)?

What are your views on the ALARP criterion as an appropriate means to manage conflict between safety and efficiency objectives?

**Group 2 comprised:**

Facilitator: Mr Phil Sochon

Scribe: Mr Keith Lloyd

Mr Bryan Nye
Mr Mike Mohan
Mr Kym Bills
Ms Jan Powning
Mr Keith Hunt
Mr Erik Finger
Ms Julie Bullas
Mr Don Pulciani
Mr Adrian Ponton
Mr Juhyan Pak

**Group 3 question:**

Regulatory harmonisation can improve economic efficiency, market openness and safety. However, achieving regulatory harmonisation is a resource intensive process in itself. As well, harmonisation can mean that regulatory standards are less well adapted to the particular circumstances of a state or a particular country. In the context of rail safety regulation in Australia:

Where is harmonisation important or desirable? At what level? (regulatory practice or rules and procedures or both) How much? What are the key priorities for harmonisation?

How might harmonisation be achieved (i.e. what are the mechanism by which harmonisation can be achieved)? What are the key constraints preventing harmonisation?

**Group 3 comprised:**

Facilitator: Mr Rex Deighton-Smith

Scribe: Ms Isa DiTrocchio

Mr John Frost
Mr David Marchant
Mr Howard Lister
Ms Lynelle Briggs
Mr Gerard Joseph
Mr Steve Walker
Ms Natalie Pelham
Mr Bruce Kennedy
Mr Brett Baker
Ms Virginia Hickey
Mr Mike Peter

**Group 4 question**

Please provide your views on whether the roles and responsibilities in the current co-regulatory framework are appropriate, clear and well understood?

Include comment on areas where you believe improved role definition, independence or accountability is required.

**Group 4 comprised:**

Facilitator: Mr John Shalders

Scribe: Ms Donna Soo

Mr David Maertin
Ms Carol Rowe
Ms Carolyn Walsh
Mr David Bowden
Mr Robin Stewart-Crompton
Mr Tony Wilson
Mr John Fullerton
Ms Catriona Scott
Mr Pieter Rienks
Mr Tony Henwood

**Group 5 question**

Please comment on the adequacy of process regulation (accreditation and audit) as it presently applied to regulation of rail safety in Australia.

Are rail safety regulators / rail organisations suitably resourced (in order to undertake audits) and skilled (in order to assess appropriateness / acceptability of SMS and practices)?

What are your views on the ALARP criterion as an appropriate means to manage conflict between safety and efficiency objectives?

**Group 5 comprised:**

Facilitator: Prof Fred Affleck

Scribe: Mr Dave Jones

Mr Jim Wolfe
Ms Catherine Herriman
Mr Glen Summers
Mr Stuart Hicks
Mr David Apps
Mr Tim McSweeney
Mr Flett Steele
Mr Stephen Cantwell
Mr Marc Thompson
Mr David Spence

**Group 6 question**

Regulatory harmonisation can improve economic efficiency, market openness and safety. However, achieving regulatory harmonisation is a resource intensive process in itself. As well, harmonisation can mean that regulatory standards are less well adapted to the particular circumstances of a state or a particular country. In the context of rail safety regulation in Australia:

Where is harmonisation important or desirable? At what level? (regulatory practice or rules and procedures or both) How much? What are the key priorities for harmonisation?

How might harmonisation be achieved (i.e. what are the mechanism by which harmonisation can be achieved)? What are the key constraints preventing harmonisation?

**Group 6 comprised:**

Facilitator: Marc Thompson

Scribe: Ms Giselle Pethard

Mr Leon Welsby
Mr Rob Burrows
Mr Julius Sigut
Mr Martin Lacombe
Mr Craig Hill
Ms Kirsty McIntyre
Mr Keith Wheatley
Mr Hubert Guyot
Mr David Ferris
Ms Marina Rizzo (I think she left early)