

# EXPLORING A JUST CULTURE APPROACH IN RAIL SAFETY REGULATION

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## SUMMARY

Victoria's rail safety regulator, Transport Safety Victoria (TSV) is exploring the value, benefits and implications of a just culture approach for rail organisations and regulators. Modern rail safety regulation aims to promote continuous improvement in the management of rail safety. Achieving this outcome relies on good regulatory decision-making driven by legislation and policies based on prevailing societal values. These decisions should be guided by regulatory good practice, supported by findings from safety science research. The just culture approach seeks to balance the need to hold people accountable for their actions while facilitating opportunities to learn from accidents. The just culture concept has been applied in industries such as aviation and healthcare and has been the subject of enquiry in the fields of human factors and sociology. While not explicitly identified, the principles underpinning just culture have also been considered in regulatory and legal theory.

This paper explores the literature and offers some observations from the regulator's perspective on why and how a regulator might adopt a just culture approach, the impact on adoption within industry, and the barriers that may prevent effective adoption by the regulator. A proposition is made that the regulator's ability to employ the full spectrum of the regulatory toolkit (from influencing and education through to administrative sanctions and prosecution) to achieve improved system safety may be enhanced by the incorporation of a just culture perspective. The benefits and challenges of such an approach are discussed.

## INTRODUCTION

A topic of exploration within Victoria's rail safety regulator, Transport Safety Victoria (TSV) has been the value, benefits and implications of the 'just culture' approach both across the rail industry and within the regulator itself. The just culture concept is widely accepted within modern safety science and is often promoted to safety critical organisations as a means of enhancing organisational learning by improving reporting about incidents and accidents.

The just culture approach seeks to balance the need to hold people accountable for their actions while facilitating opportunities to learn from accidents. It is 'just' in that punishment is reserved for wilful violations and destructive acts. Actions arising from human error are seen as an opportunity for learning and organisational improvement. The success of this approach depends on a mature understanding of the causes of human error. Error is considered a symptom of wider organisational or systemic deficiencies, and the inevitable outcome of human activity. People who 'make' errors often inherit error-provocative situations and while the potential for human error can be mitigated, it can never be entirely eliminated. Contrary to some misconceptions, the just culture approach is not a free pass for poor behaviour. Implemented well, it can provide a framework for decision-making about the need for and extent of punishment, which takes into account research on human behaviour and complex socio-technical systems and the systemic causes of accidents.

The just culture approach is the product of modern thinking on the causes of accidents in complex socio-technical systems and is increasingly supported by evidence from research in a number of safety critical industries<sup>1,2</sup>. It has been applied in industries such as aviation and healthcare and has been the subject of enquiry in the fields of human factors and sociology. Parallels to the just culture approach may be drawn in regulatory and legal theory particularly responsive regulation<sup>3,4</sup> and from guidance such as the model litigant guidelines<sup>5</sup>. Further support for a just culture approach may be inferred from some regulatory commentators. For example, it has been suggested that deterrence activities such as prosecution, if not undertaken thoughtfully, could lead to situations where regulated organisations become uncooperative and defensive<sup>6,7</sup>. Thus sharing of critical information is restricted and the safety outcome reduced. Hence just and fair intervention by a regulator could be a key feature in promoting safety.

A topic that has received some attention in the research literature is how the attitudes and behaviours of the regulator might influence the adoption of the just culture approach within an industry and how adoption by

the regulator might directly serve the goal of improved safety performance. Modern safety regulators can be considered a part of the wider system<sup>8</sup>. Their activities influence the functioning of the system and provide a final defence in a complex arrangement of defences in depth<sup>9</sup>. This idea is a departure from previous thinking which had less understanding of the complexity of socio-technical systems. It is now well understood that in highly defended systems, accidents, when they occur tend to be complex and systemic in nature and not the direct outcome of failures by frontline workers<sup>9</sup>. As such, the laws administered by regulators and the way in which regulators position themselves within the regulatory space must allow for more sophisticated responses than in the past, or risk diminishing the impact of the regulators' role. Modern rail safety regulation promotes continuous improvement in the management of rail safety. Achieving this outcome relies on sound regulatory decision-making driven by legislation and policies based on prevailing societal values. These decisions should be guided by regulatory good practice, supported by the findings from safety science research.

This paper explores a sample of the existing literature and offers some observations from the regulator's perspective on the impact of regulator position on the adoption of just culture, its benefits, how a regulator might adopt such an approach and the barriers that might prevent effective adoption. It is proposed that in addition to promoting just culture in industry, the regulator's ability to employ the full spectrum of the regulatory toolkit may be enhanced by the adoption of a just culture policy that provides criteria for when (and what) intervention should occur.

### **TSV'S CURRENT REGULATORY APPROACH**

The relatively recent rail safety legislation in Victoria and across Australia has provided regulators with a modern framework that allows for more graduated interventions and a greater focus on risk management and safety management systems. This legislation enhances the regulator's scope to facilitate safety improvement through a range of regulatory mechanisms, including the introduction of a chain of responsibility where all stakeholders have safety duties including those 'upstream' involved in all aspects of the rail system such as procurement, design, operations, management, and maintenance.

This legislation was implemented following serious accidents in New South Wales at Glenbrook, in 1999<sup>10</sup> and Waterfall in 2003<sup>11</sup>, and in Victoria (for example, Broadmeadows in 2003<sup>12</sup>). It reflects rising public concern (as noted by Justice McInerney in the report on the Glenbrook accident) following these events and others in the United Kingdom (UK). It also brings Australian rail safety legislation in line with the changes to safety regulation that have occurred internationally over the last 30 years.

TSV's regulatory approach<sup>13,14</sup> fits broadly within the concept of 'responsive regulation'<sup>3,4</sup>. In this graduated intervention model, enforcement begins with cooperative strategies (education and influencing), which are located at the base of the 'enforcement pyramid'. Interventions then progress through administrative tools such as improvement notices and prohibitions to more punitive strategies (such as prosecution, suspension and revocation of accreditation) if the earlier strategies fail<sup>13</sup>. Improvement notices sit around the middle of the pyramid. In TSV these are considered notices of improvement for system deficiencies that by law are required to be remedied rather than punishment. Some in the rail industry may consider these notices punishment. However, there is anecdotal evidence that after five years of the Victorian rail safety legislation, operators (while they would prefer not to have received them), are also beginning to see them as a reasonable tool in the normal interaction between regulator and the accredited body.

TSV will generally provide guidance and education in the first instance and use the least interventionist tool necessary to achieve the desired regulatory outcome. However, a graduated approach does not mean that regulatory tools are used sequentially, nor that TSV will hesitate to use more interventionist tools in order to achieve an improved safety outcome. This minimises regulatory burden while maximising public value for regulatory resources. It allows for the circumstances of each case to be considered, including the duty holders' safety maturity, their attitudes and behaviours, their systems and their capacity for change. The regulator can then tailor its response accordingly.

Such 'responsive regulation' seeks to build commitment to compliance with the law through the internalisation of norms regarding compliance (i.e. it's the right thing to do). Legislation that provides the regulator scope to respond flexibly is essential for this approach to be successful. This thinking is consistent with Westrum's<sup>15</sup> safety culture maturity model. This three-stage model, later adapted to five stages<sup>16</sup>, measures maturity from pathological through reactive, calculative, proactive and finally generative stages. Once an organisation reaches the proactive and generative stages, safety thinking is internalised in the manner sought by responsive regulation.

The development of TSV's intervention strategy and parallel interest of TSV staff in the just culture concept has raised a continuing discussion regarding how the two fit together, if at all, and how TSV might encourage the adoption of good practice in terms of just culture. It is the authors' view that the responsive regulation approach does not automatically imply just culture. However, the just culture approach could provide a useful frame of reference for decisions about where on the continuum regulatory action should be taken at both the

individual and organisational levels. Implemented well, it should build trust, willingness to report, and a more effective regulator-regulatee relationship. The flow-on effect should encourage recognition of the benefits of just culture in the industry. The just culture approach has typically been applied within organisations to individuals with the purpose of making them feel comfortable about reporting incidents. It is reasonable to extrapolate this idea to interactions between organisations. Therefore, a review was undertaken to investigate what other regulators have made of the just culture approach, the evidence for adoption and what barriers may exist.

## THE JUST CULTURE APPROACH

The concept of just culture is drawn from the broader idea of ‘safety culture’ now common in modern thinking about system safety. It can be distinguished from its earlier incarnation, the ‘no blame’ approach, as it requires people to be held responsible for their actions, but only in circumstances where sanctions are just and fair. It is similar to the no blame approach in that its focus is on understanding the causes of an event so that learning can occur. It is dissimilar to the no blame approach because under a just culture approach blame is considered, but only when appropriate (i.e. blame is reserved for wilful violations and destructive acts). Both focus on understanding the causes of an event so that learning can occur.

Safety cultures evolve gradually to meet the needs of the organisation in response to local conditions, past events, the character of the leadership and the mood of the workforce<sup>9</sup>. In essence, when organisations and agencies describe wanting to achieve a positive or healthy safety culture they are aiming to create organisations that are open, just and informed, and in which reporting and learning from error is the norm. Reason<sup>9</sup> proposes that a just culture creates an atmosphere of trust, encouraging and rewarding people for providing essential safety-related information. At the same time a clear line is drawn between behaviours that are acceptable and those that are not. Reason argues that the foundation of a healthy safety culture is a functioning “just culture”, one in which members of an organisation, from the CEO to frontline assistants, controllers, or engineers, understand that genuine errors will not be punished but investigated and understood. Without a just culture, it is considered nearly impossible to achieve the other features of a positive and healthy safety culture described above. Since the 1990s, the just culture model has gained acceptance in high-risk industries such as healthcare<sup>1,17</sup>, offshore oil and gas<sup>18,19</sup>, nuclear power<sup>20</sup> and aviation<sup>2,21,22</sup>.

The way an organisation responds to errors makes a critical difference. Marx<sup>1</sup> popularised the term ‘just culture’ within the patient safety realm. He argues that discipline needs to be tied to the behaviour of individuals, their intentions, and the potential risks their behaviour presents rather than the actual outcome of their actions. Traditionally, individual responsibility has been emphasised and individuals held accountable for all errors or mishaps that occurred within a system. The response to errors and mistakes in this traditional culture is typically harsh disciplinary measures with the intention of deterring similar future behaviour. Leape argues that, “...the single greatest impediment to error prevention is that we punish people for making mistakes”<sup>(23,p.95)</sup>. He goes on to argue that using punishment as a means to deter human error rather than changing the system encourages individuals to only report errors that they cannot conceal. A punitive approach therefore blocks the information required to identify flawed systems and construct safer ones. In a punitive system, no one learns from his or her mistakes, and the mistake is, destined to be repeated. In contrast, a just culture recognises that individuals should not be punished for system failings over which they have no control. A just culture approach recognises that many errors represent predictable interactions between people and the system in which they work, the inevitable outcome of human fallibility and poor systems design<sup>24,17</sup>. To quote Reason, “the best people sometimes make the worst mistakes”<sup>(24,p.760)</sup>, and therefore disciplinary action is not always the optimal solution, even though it may be commonly applied. The just culture approach requires organisations to carefully design their performance management system to ensure it drives optimal workplace behaviour.

### Determining accountability

The just culture approach is not a free pass for people to do the wrong thing. Nor is it the case that the approach does not identify human errors that have been made and who made them.

A prerequisite for a just culture is that all members of an organisation understand where the line is drawn between unacceptable behaviour that deserves disciplinary action and the remainder where punishment is neither appropriate nor helpful in furthering the cause of safety<sup>25</sup>. Marx<sup>1</sup> has addressed this issue, distinguishing three classes of behaviour: human error, at risk behaviour, and reckless and malicious or wilful violations.

- **Human error.** Human error occurs when an intended action fails to achieve an intended outcome, and inadvertently causes an unintended result. Sometimes these errors occur simply because the systems or conditions that people work within fail them<sup>26</sup>. The just culture response is one of consoling, educating and improved design of systems<sup>9</sup>.

- **At risk behaviour.** At risk behaviour tends to involve violations (or rule breaking) that creates a risk to safety, resulting in an unintended outcome<sup>26</sup>. The behaviour may feature short cuts and poor habits in order to get the job done. The individual involved has no expectation that there is a risk to safety<sup>27</sup>. While the behaviour amounts to a breaking of rules, it has not occurred with malicious intent and may well be the norm within the workforce and the organisation. With at risk behaviour, it can be difficult to decide what the person should have foreseen, and whether sanctions should apply. A number of tools have been developed to help with this process (for example, Reason's<sup>9</sup> culpability decision tree). The just culture response to this behaviour involves coaching, incentives, and disincentives.
- **Reckless behaviour and malicious or wilful violations** Malicious wilful acts intend to cause harm. Reckless behaviour is action taken with conscious disregard for safety. These are acts or omissions in which a person knows or can be reasonably expected to foresee the outcome, but proceeds despite this knowledge<sup>26</sup>. In a just culture approach, these behaviours require sanctions and/or punishment<sup>27</sup>. Again, it can be difficult to determine what the person should have foreseen. Research over a number of decades has found that with hindsight, people can exaggerate what they think they knew in foresight (e.g. Fischhoff<sup>28</sup>). Therefore, investigators sometimes erroneously believe that the outcomes were clear to the person in question prior to the event.

## THE APPLICATION OF JUST CULTURE BY REGULATORS

There is literature on the adoption of just culture approaches by regulators. Some regulators have experimented with its adoption. These include the Norwegian Petroleum Safety Authority, the Danish Aviation regulatory authority, the National Patient Safety Agency (UK), the Care Quality Commission (UK) and some United States nursing boards (for example, the North Carolina Board of Nursing<sup>29</sup>).

The Norwegian Petroleum Safety Authority requires petroleum companies in Norway to develop a positive safety culture. It identified health, safety and environmental culture as a priority area<sup>18</sup>. The authority enacted a regulation in 2002 specifying, "The party responsible shall encourage and promote a sound health, environment and safety culture comprising all activity areas and which contributes to achieving that everyone who takes part in petroleum activities takes on responsibility in relation to health, environment and safety" (18,p.993). The Norwegian regulator, the Petroleum Safety Authority<sup>30,31</sup> offered guidance on what this meant through the publication of a pamphlet suggesting methods on just culture development. Its guidance notes on safety culture have a focus on just culture<sup>19</sup>. The outcomes were reported to be positive, with reports of recordable injuries increasing with employees' confidence in management in 2003 and 2004<sup>31</sup>. Reports are a key element in the foundation of a just culture, as they are a valuable as a means of learning, and so increased reports of errors and mishaps are to be encouraged.

In 2001, the Danish parliament passed laws mandating the establishment of a compulsory, non-punitive and confidential system for the reporting of aviation incidents. The Danish Aviation regulatory authority body, Statens Luftfartsvesen, uses this reporting system, ensuring immunity against penalties and disclosure. Any breaches against the non-disclosure guarantee are punishable offences<sup>32</sup>. Prior to these laws being passed, the Danish Air Traffic Controllers Association argued that the incident reporting system discouraged controllers from reporting incidents.

Following recommendations from the chief medical officer in the UK, the National Health Service established the National Patient Safety Agency (NPSA) as a Special Health Authority in 2001. While this agency does not have enforcement powers, its core function is to improve the safety of NHS care by promoting a culture of reporting and learning from adverse events<sup>33</sup>. It does this primarily through its patient safety division, which runs the National Reporting and Learning Service (NRLS)<sup>34</sup>. The NRLS has undertaken a range of just culture initiatives to increase reporting. The most significant of these was the creation in 2003 of a confidential online reporting system for reporting of medical incidents. The NRLS has developed guidance materials, tools, and campaigns to strengthen reporting and promote learning. Medical professionals are encouraged to report errors without fear of blame and with confidence that reporting will result in action<sup>33,35</sup>. These include:

- A national framework providing guidance on reporting and learning from incidents<sup>36</sup>.
- A framework for strengthening safety culture by being open and learning from incidents<sup>34</sup>.
- A guidance document on creating an open and fair culture while balancing accountability and openness<sup>33</sup>.
- Patient safety guidance and campaigns focused on developing a positive safety culture through just culture implementation<sup>37,38</sup>.

## WHY DETERRENCE IS NOT ENOUGH

The traditional view of regulation and justice is punishment of the guilty through prosecution. Following an accident, especially where fatalities are involved, it is likely that there will be public, political and media

pressure for someone to be held accountable. For example, following the Gretley mining accident in NSW, in which four workers were killed, it was reported that the regulator was under political and public pressure to prosecute. Following successful prosecution, substantial penalties were imposed on the owners and operators of the mine including one of the managers<sup>7</sup>.

Prosecution is based on the rationale that safety can be maintained by punishing the guilty parties, apparently acting as a deterrent to future behaviour that might lead to accidents. While prosecution should be available as an intervention, the 'punitive-deterrent' strategy seems rigid when considered from a just culture perspective. A more sophisticated approach is required to improve safety in complex socio-technical systems. Such an approach needs to reflect the findings from safety science, and social, behavioural and regulatory research. The following issues are worthy of consideration including: human fallibility, imperfect systems and the use of punishment as a deterrent for intentional behaviour.

### **Human fallibility and imperfect systems**

Research in psychology<sup>26</sup> suggests that people are fallible as a result of innate limitations which are determined by our biology, for example, our evolved cognitive abilities, such as, selective attention, and the impact of distraction and fatigue under contemporary industrial workloads. Threatening people with punishment will not stop them forgetting a crucial item under pressure. Nor will it prevent errors that arise due to poor systems design (such as design that does not match how people perceive and process information, build models of the world, or how decisions are made under pressure).

Research on accidents in complex socio-technical systems has identified contributing factors from the organisational and management system<sup>9</sup>. These 'latent' failures are associated with system failures removed in time and/or space from the operational locus of the organisation and originated unintentionally by people such as designers, managers and maintenance staff. These failures are considered 'latent' because the causes of the failure can lie undetected and dormant for considerable periods until they combine with other factors and are revealed in an accident situation<sup>9</sup>. Incidents, in a just culture, are therefore situational realisations of earlier systems deficiencies and should be treated accordingly. Incidents are a valuable insight often allowing continual improvement, but only if we see them as opportunities for learning.

### **Punishment as a deterrent for intentional behaviour**

The following section considers situations involving intentional behaviour, where people are aware that their actions are wrong. Is punishment in the form of prosecution a deterrent for future actions? There are two ways that punishment can deter future acts. The first is the idea of specific deterrence. That is, having experienced negative consequences, the prosecuted entity (be it a person or company) is less likely to perform the behaviour again through fear of experiencing those consequences again. The second is the concept of general deterrence. That is, by becoming aware of negative consequences imposed on someone else, other non-prosecuted entities are less likely to engage in that behaviour through fear that they will receive these consequences.

There is mixed evidence for the effectiveness of punishment in deterring future offences. The evidence is particularly weak for general deterrence. General deterrence is based on rational choice theory, which views individuals and companies as 'utility maximisers' who logically weigh up the costs and benefits of compliance and make a decision based on maximising benefits and minimising costs<sup>39</sup>. However, research has shown that decisions may not always be made in a rational and logical fashion and may be subject to a range of cognitive biases, which lead to poor decision-making<sup>40</sup>. Decision-making involves complex psychological mechanisms. For example, research has shown that experts do not systematically compare options to select the best one, but use schemas developed from past experience to efficiently choose an option that is known to work in similar situations<sup>41</sup>.

Research in the Occupational Health and Safety (OHS) regulatory field<sup>39</sup>, has found that prosecutions were successful in changing attitudes and self-reported behaviours of non-prosecuted companies. This research concluded that general deterrence was an outcome of prosecutions through the creation of an industry-wide culture of compliance. However, these authors note that prosecution of offences under the OHS Act must be used routinely in order to create such a culture and to deter non-compliance by other regulated companies. Routine prosecutions are not currently the norm in the Australian rail industry. As such it is unknown whether occasional prosecutions would have a similar effect as found in the OHS arena. Psychological theories (for example, Skinner's theory of operant conditioning<sup>42</sup>) suggest that punishment of individuals is effective when it occurs each time the undesired behaviour occurs and in close proximity to the behaviour. The need to impose sanctions immediately and consistently has also been noted in the regulatory literature<sup>43</sup>. However, in practice workers or organisations may engage in undesirable behaviour, even routine violations, on a regular basis – but will often only be exposed to prosecution by the regulator in the rare occasion that an incident or accident is the outcome. Further, regulatory prosecutions can be considerably delayed from the time of the behaviour.

Modern approaches to regulation provide more opportunities to intervene prior to prosecution. As a result they allow for the incorporation of just culture criteria which helps decision making about what intervention to employ by taking into account human fallibility and the complexity of systems. Given the opportunities provided by learning from accidents through a just culture approach, Dekker<sup>8</sup> has argued that the cost of initiating and defending prosecutions would be better spent on system improvements (e.g. better technology), to remedy the underlying issue, rather than focusing on blame.

## HOW CAN REGULATOR PROMOTION OF JUST CULTURE HELP DRIVE SYSTEM SAFETY?

Drawing from evidence in a variety of safety critical industries, the following section summarises the general benefits of a just culture approach and why the adoption of a just culture approach by the regulator may help it meet its goal of improving system safety and be more effective than traditional models. Some indications are available from the accident record the causes of which should provide a strong motivation for just culture (the prerequisite for a positive and healthy safety culture). For example, the absence of a positive and healthy safety culture has been implicated in a number of major rail accidents in the UK including the King's Cross fire<sup>44</sup>, Clapham Junction<sup>45</sup>, and Ladbroke Grove<sup>46</sup>, and in Australia at Waterfall<sup>11</sup>.

### Improved reporting and promotion of learning

Before a hearing of the US Congress, Leape asked how could the, "...report gathering function of regulators be modified to become a force for error reduction rather than an incentive for error concealment?"<sup>(23,p.97)</sup>. The US rail regulator, the Federal Railways Administration (FRA)<sup>47</sup> seems to agree. In seeking to build on existing safety improvements, the FRA acknowledged that it did not know enough about how and why accidents occurred. The FRA identified that the Federal Employee Liability Act (FELA) was a barrier to organisational learning and safety improvement. They note:

"Within the railroad industry, FELA, a law passed by Congress in 1908, enables railroad employees the right to recover damages for any injury that results from the carrier's negligence, through court proceedings. However, FELA may exacerbate the desire to deflect blame and liability so that each party can make the case that the other party is responsible. When an unsafe event occurs that involves injuries, FELA encourages both parties to focus on protecting their legal interests at the expense of improving safety"<sup>(47,p.4)</sup>.

To mitigate these effects, the FRA has developed a non-punitive confidential reporting system run through the Bureau of Transportation Statistics<sup>48</sup>.

Studies in the healthcare industry have identified a punitive environment as a barrier to learning. Research<sup>1</sup> focused on blood transfusion safety found that the effectiveness of data collection and analysis of transfusion errors, adverse events, and near misses, depended on the willingness of individuals to report this information. Errors were widely perceived as a reflection of personal negligence, indeed, medical negligence was defined as the "failure to meet the standard of practice of an average qualified practicing physician in the speciality in question"<sup>(49,p.383)</sup>. As a result, only a minority of medical errors tended to be reported, typically those errors that cannot be covered up<sup>50</sup>. Further, because a punitive inquiry tends not to go beyond identifying culpable people, there was an unwillingness to understand the whole system, and therefore the benefits of improved system design were not realised.

Leape's study<sup>49</sup> into accidental injury to patients hospitalised in New York during 1984 highlights how a blame culture diminishes learning. This study involved physicians reviewing patient records and identifying injuries that were caused by medical staff error during diagnosis, treatment, procedures, and care. A quarter of the injuries reviewed were deemed to involve negligence by the individual staff member. However, a deeper examination of the incidents found that many of the errors were underpinned by factors beyond the control of the individual. For instance, the authors concluded that negligence was generally not due to an individual's incompetence or disregard for the standard, but rather their ignorance of what the standard was. This was preceded by poor dissemination and reinforcement of practice guidelines. Further, over half of the incidents reviewed were deemed to be caused by errors in management, many of which were underpinned by high patient volumes and the staff being able to spend only a limited amount of time with each patient.

A focus on individual culpability leads to a culture in which everyone blames someone else for what occurred, with no incentive to understand the systems' issues at play. Certainly no-one is likely to reveal more than they have to. Following an accident, information may be hidden and records destroyed to avoid litigation. Further, if there is a perception that an individual may be prosecuted following an accident, legal or union representatives may advise the person to decline interviews with investigators – either those within the company, those employed by the regulator or independent investigators. Anecdotally, this has sometimes been the case, leading to difficulty in establishing the facts so learning can occur. These and other findings have led to the widespread implementation of just culture approaches in healthcare around the world. In the UK, as a consequence of the just culture implementation in healthcare, incident reporting improved significantly. For example, between October and December 2004, the total number of incidents reported in England and Wales reached 26,508 compared to the previous year when 158 incidents were reported. The

period from January to March 2011 show the total number of incidents reported climbed to 312,980<sup>51</sup>. These figures show clearly the dramatic change in the health industry's reporting culture.

The implementation of just culture initiatives in the aviation industry has been found to significantly increase reporting of incidents, particularly of 'low risk' events and near misses<sup>52,53</sup>. Baines<sup>51</sup> attributed increased reporting to:

- Belief that the just culture principles would be followed and that punitive action would be considered within the just culture policy.
- A better understanding of reporting requirements through training.
- More effective investigations and dissemination of findings.
- Belief that reporting will make a difference in improving safety.

Following the implementation of non-punitive reporting in Denmark, Naviair, the Danish Air Traffic Control service provider employing all air traffic controllers saw a major benefit for the organisation's main product, flight safety<sup>31</sup>. During the first 24 hours of operation, Naviair received 20 reports from air traffic controllers. One year after the reporting system was implemented, Naviair had received 980 reports compared to the previous year's 15 reports<sup>54</sup>.

In summary, there is strong evidence that reporting has safety benefits, and all organisations should consider the just culture approach to enhance reporting. From a regulatory perspective, prosecution may reduce the amount of information the regulator receives from industry, and as in the Danish example, may encourage individuals and/or organisations to not collect or be secretive about their own data. As well as increasing incident reporting, when organisations experience regulators being just and fair, they will be more likely to share safety-related information. This goal is explored in the following section.

### Trust and Fairness

Trust is important for building the regulatory relationship. Gunningham and Sinclair<sup>7</sup> report that the international evidence-based research suggests that fairness is required to develop trust. They cite Murphy, (2004)<sup>7</sup>. "The key to creating trust is to act in ways that citizens will experience to be fair". They argue that, "...those who perceive that they have been treated fairly are more likely not only to trust the regulator but also to accept its decisions and comply with its requirements"<sup>(7,p.20)</sup>. They report that when OHS prosecutions of mining companies increased and a more adversarial approach was initiated in response to the Gretley accident, trust between the regulator and regulated was damaged. One inspector within the regulator stated that the focus on prosecutions "makes it very difficult to build a relationship with the mines... it is a major source of mistrust"<sup>(7,p. 12)</sup>.

Gunningham and Sinclair<sup>7</sup> also report a strong community sense of fair play which has moral connotations. "Prosecution against those who neither intended harm nor were reckless in their behaviour ... is widely perceived to be unjust, and this has caused the law to lose its legitimacy in the eyes of duty holders. The resultant defensiveness leads to an unwillingness to examine the causes of accidents and incidents for fear of being prosecuted"<sup>(7,p. 20)</sup>. Achieving both fairness and the perception of fairness requires a nuanced prosecution policy which is provided for in modern legislation. For example, the ability to issue notices enables a quicker, easier and less expensive process than court action and is a less harsh way of dealing with more minor issues. It is more likely that enforcement action will occur, and that it occurs "tightly-coupled" (linked closely in time) which may provide for a stronger preventive effect<sup>43</sup> consistent with behavioural theories mentioned earlier<sup>42</sup>.

There is recognition of the need for fairness in the legal field. Consistent with all Australian governments, Victoria has had guidelines which set standards for how the State should behave when party in legal proceedings since 2001. "The guidelines provide that the State should act fairly and consistently, avoid litigation where possible, pay legitimate claims without litigation, and keep litigation costs to a minimum"<sup>(5,p.1)</sup>. Well implemented, just culture approaches build trust<sup>48</sup> and because there is an in-built concept of 'fair and just' they provide a frame of reference for decisions about intervention.

**Hindsight bias.** The phenomenon of hindsight bias is relevant to the concept of fairness particularly when developing the findings from investigations. Investigation findings are known to be subjective in nature, and depend on the experiences and attributes of the investigating team<sup>55</sup>. With the benefit of hindsight, investigators may be primed to read more culpability into actions. Other cognitive biases such as the fundamental attribution error<sup>26</sup> can also play a part. This bias describes the tendency to attribute other people's actions to innate deficiencies in the person, but attribute one's own actions to situational factors. The impact of these types of biases on investigation findings may reduce the fairness of the process and are a barrier to organisational learning. The just culture approach helps guard against these and other biases, by attempting to structure decision-making about culpability.

## Safety culture maturity

According to the UK's Health and Safety Executive<sup>56</sup>, there are ten elements that are indicative of an organisation's safety maturity. These are: shared perceptions about safety; a focus on safety versus productivity; management commitment and visibility; active participation of employees; communication; learning; training; positive industrial relations and job satisfaction; resources available for safety; and trust. Hopkins<sup>57</sup> in his examination of the Glenbrook (NSW) rail accident, found a less mature safety culture exhibiting widespread deficiencies in these elements, which compromised the system's operational safety. These included safety not being prioritised, poor awareness of risks, low accountability for actions, inadequacies in rules and procedures, rule-breaking and ineffective technology.

The just culture approach, because it promotes learning, can motivate an organisation toward greater levels of safety maturity including proactive scrutiny and continual improvement of its safety management systems. However, Hudson<sup>58</sup> noted that regulators may be barriers to the development of the parties it regulates. While strong regulatory intervention can provide firm direction for less mature or sophisticated organisations, this approach can discourage more mature organisations' attempts at developing proactive, generative, and innovative solutions to safety problems. A tendency to focus on compliance with the law reflects minimum standards and tends not to encourage continuous improvement. Therefore, a modern regulator faces the challenge of enforcing base standards without stifling the progress of organisations that seek to be high-performing. This need for continuous improvement that encourages consideration of innovative solutions is built into the 2006 Victorian Rail Safety Act (see Objects and principles, part 1, section 11 (1c))<sup>59,14</sup> and therefore enhances a just culture approach that might also be introduced.

## By-products

Adoption of a just culture approach may have by-products for industry.

**Transparency.** The transparency that comes with a successful just culture approach may lead to unexpected benefits. For example, in the UK health system, personnel are encouraged to fully disclose what has occurred when a patient is injured. This is unlikely to occur unless a just culture approach is in place. Unexpectedly, it has been found that the injured parties are less likely to pursue litigation. Often the key concerns of those injured and their families in these circumstances are to be treated with respect and to understand what has occurred<sup>34</sup>. Thus, everyone feels validated and the costs of litigation are saved. In contrast, Hopkins<sup>60</sup> argues that following the Longford accident, Esso adopted a defensive and secretive approach to reduce its legal liability. However, the result of this strategy was the imposition of higher penalties than would have otherwise been. The compensation awarded to the operator's children would not have been as high had the company not blamed the staff member involved for the explosion<sup>60</sup>.

**Productivity benefits.** Improved productivity may be another by-product of a just culture. From a continuous improvement perspective, the lessons learnt can be used to identify and remedy deficiencies in organisations' non safety-critical processes and practices, improving efficiency and effectiveness. Leape<sup>17</sup> notes that in healthcare, evidence from industry indicates the reduction of errors and accidents produces savings that more than cover the costs of data collection and investigation. This of course does not take into account the savings associated with the cost of not having accidents and the avoidance of legal action.

**Social and personal benefits.** The benefits of a just culture approach extend beyond learning. Blame cultures have been found to lead to increased stress, decreased motivation, and high turnover in employees<sup>61</sup>. However, environments that foster trust and justice lead to higher job satisfaction, motivation and commitment to the organisation<sup>62,63,64</sup>. Ultimately, moving to a just culture approach can have profound effects on the social fabric of an organisation and shifts how people think about safety and, consequently, how they behave and perform at work. However, it may be difficult for organisations to appreciate the true value of a just culture; therefore, through modelling the approach the regulator can promote its benefits, and enhance receptivity and then adoption.

## BARRIERS TO EFFECTIVE ADOPTION

There is a range of barriers to the effective adoption of a just culture approach within the regulator.

### Public and media pressure

Dekker<sup>8</sup> suggests that the public is becoming increasingly intolerant of accidents. There is a perception that safety-critical industries are accident-free and should present zero risk. This is exacerbated by a tendency to measure accidents by their outcomes. It is expected that after a catastrophic railway accident in Australia, the public and media will expect someone to be held accountable. This increases political pressure to find a culprit – be it an individual rail safety worker or a rail company. In such a situation the regulator may find itself under intense public and political pressure to prosecute. Therefore, there is a need to manage the media and public response through proactive education. An example of such an approach is the Eurocontrol guide to dealing with the media<sup>53</sup>.



## **Poor implementation of just culture approaches**

A just culture approach is not implemented merely by the development and signing of a policy. It needs integration throughout the organisation. Anecdotally, some just culture implementations have managed to leave an underlying blame culture in place. Hudson and Vuijk<sup>25</sup> found that just culture can be implemented in ways that emphasise punishment (for example, in BP prior to the Texas City accident) and that there can be a focus on frontline worker accountability rather than management. Hudson and Vuijk<sup>25</sup> propose a 'meeting expectations' approach, which includes rewards for expected or exemplary behaviour, that consequences apply both to workers and their supervisors / managers, and that staff administering the program must have completed an appropriate training course and assessment.

## **Systems are required**

Without proper guidance there may be confusion about the implications of a just culture approach. Systems for decision-making about the type of intervention are required to bring transparency and clarity to the just culture approach adopted. In particular where the regulator is under external pressure to prosecute, a just culture policy with relevant criteria would provide a transparent process for deciding whether prosecution is required, and who should be prosecuted for both individuals and organisations. The regulator should be proactive in providing reasons for and against prosecution in high profile cases.

## **Maturity of thinking and behaviour**

There will always be a tension in the relationship between a regulator and organisations it regulates. Social and emotional intelligence<sup>16</sup> on both sides are required to manage this relationship well and to reap its benefits. For example, rigid thinking within the regulator about its role, resistance to change following the introduction of new legislation and a lack of skills could cause a just culture approach to falter. Like any organisation, a range of views and skill sets exist within the regulator regarding just culture approaches. If a just culture approach is to be adopted by the regulator, it is essential that organisational commitment is demonstrated through well educated, skilled and committed regulatory staff able to employ the personal and organisational flexibility provided for in the legislation. Likewise, both the regulator and the regulated organisations seeking to benefit from the just culture approach need to develop mature relationships founded on mutual respect and understanding of the role of the regulator as a defence in depth.

## **Influence of other parties**

It is possible that the regulator could undermine a just culture strategy that a regulated organisation has implemented. Where an organisation has decided not to take disciplinary action but the regulator still decides to prosecute an individual, the benefits of the original decision would be lost. However, even where the regulator supports a just culture approach and makes decisions about prosecution in line with this, there are several other parties that may be involved. For example, an OHS regulator may still choose to prosecute an individual if their actions fall within the scope of an offence under OHS law. Further, as noted previously, the relevant Minister or government department may exert pressure to prosecute, as might insurance companies. While independent investigators conduct 'no blame' investigations, the way in which their findings are expressed and are subsequently interpreted could influence the general perception of the individual's level of culpability. Finally, a worker's union acts in the worker's best interests, but if an individual view of safety is taken this could lead to a focus on individual actions and a possible lack of support for individuals involved in serious accidents. This should not inhibit organisations, especially operators, seeking to introduce just culture approaches and there is an opportunity to take the lead in this area. However, to encourage success, a co-operative, public and documented approach involving as many of these parties as possible would develop understanding of the just culture philosophy and how it should be implemented.

## **CONCLUSIONS**

This paper has summarised the background and philosophy of the just culture approach, which has been employed by some regulators primarily in the context of improving reporting of incidents by individuals. There is preliminary evidence for benefits to the regulator's goal of improved system safety through increased reporting by adopting a just culture approach. The literature does not yet reveal whether the adoption of a just culture approach by the regulator leads to similar adoption in industry or what other benefits may accrue through broader application of the approach. However, these findings encourage further exploration of the potential benefits of the approach. Leadership is required to ensure that performance management systems are designed to drive optimal behaviour.

Within a regulator's office, the success of a just culture approach depends upon the regulator's ability to be flexible in its application of its legislation. Jurisdictions with a requirement for punitive action against regulatees or conversely, limited legislative basis for punitive action are likely to have trouble adopting the approach successfully. The enforcement pyramid with its graduated intervention approach adopted in Victoria, allows the regulator to make decisions about how to intervene. The just culture approach adds

another dimension to this decision-making that is supported by growing research evidence and meets a commonly held desire for fair and just intervention that promotes trust.

Given our understanding of system safety developed over the last 40 years, there is a moral and pragmatic imperative to deliver the safest systems by taking account of human fallibility and the imperfection of systems. While more research is required, the just culture approach has the potential to provide sound criteria for making these decisions in structured and systematic ways. The just culture approach is not a free pass for poor behaviour. Therefore, specific criteria for determining when to intervene need to be well documented and communicated clearly; so that the parameters of acceptable behaviour are known and understood by all parties. As this discussion continues within TSV, a next step will be to draft criteria for assessing organisational behaviour and test them internally against a range of case studies.

The just culture journey is one regulator's and the industry should consider in order to achieve improved safety outcomes. In adopting such an approach regulators need to seek mature relationships with regulatees, and demonstrate organisational commitment through educated, skilled and committed regulatory staff. Likewise, regulated organisations aiming to benefit from the just culture approach need equally skilled employees and also to seek mature relationships with the regulator founded on mutual respect and an understanding of the role of the regulator as a defence in depth. Both rail safety regulators and the rail industry in Australia should explore further the principles of just culture and its potential application. As we move towards the implementation of the National Rail Regulator in Australia with modern legislation, how just culture is positioned as a part of the regulatory approach will be increasingly important.

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