

# Risk Takers and Risk Makers

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## **Introduction**

Over the last 10 years, I have read about, heard about and been involved in a number of surveys and research projects, many discussions, many conference presentations, read statistics after statistics, and witnessed a lot of brow beating and wringing of hands about why we haven't been able to eliminate workplace fatalities, injury and disease. These experiences have been mainly related to the mining and minerals processing industry in Queensland, Western Australia and the Northern Territory,

During this time I have also experienced two fairly widely held views. Risk taking by employees is prevalent in the mining industry, and it is strongly influenced by the culture of organisations.

Now if we think the statistical measures used are valid (this issue is widely debated), and we believe that they are not at all manipulated by organisations (a lot of scepticism exists in many workplaces), we would believe that we have made substantial inroads into eliminating workplace injury, disease, and fatalities.

The Minerals Council of Australia (MCA) reports in their latest (1999-2000) Safety and Health Performance Report, that the industry LTIFR has reduced from 69 in 1989-1990 to (estimated) 10 in 1999-2000. Fatalities were 10 in 1998-99, 33 in 1996-97, but were 7 in 1995-96. The MCA's Australian Minerals Industry Safety Survey Report (1 July 1999 to 30 June 2000) reported 18 fatalities for the year. There have been five fatalities in the first half of the 2000-2001 reporting year.

**Using these figures, over the last ten years in this industry, 22 people have been killed at work, on average, every year.**

**The MCA (1998-99) reports that there are other Australian industries with worse performance.**

If, this was a simple problem, you would think we could have solved it by now.

It is a multi-faceted problem, and

**it has, in my opinion, a three pronged solution, that as an industry we simply have not been able to come to grips with.**

- 1. designing and implementing effective management systems**
- 2. understanding accident and injury causation phenomena**
- 3. eliminating risk taking at work**

***To be successful in eliminating workplace injury, disease and fatalities, I believe that organisations have to systematically approach the management of the health and safety aspects of their operations and activities, they have to understand the phenomena associated with accidents and injury causation, and they have to eliminate risk taking at work.  
(All that is then left are acts of God)***

## **THE CONTEXT - SYSTEMS**

OH&S management systems are a vital part of effective safety management, however they can be mechanistic, can be seen as the aim rather than the means, do not themselves adequately address the significant issue of risk taking at work. To illustrate I will ask a relevant, systems type question - **Do you understand the concept of Class 1 personal damage?**

## **THE CONTEXT - PHENOMENA**

OHS management systems can address accident and injury causation phenomena but will only do so if they are designed and implemented by someone who understands the phenomena issue and only if they utilise appropriate technical and scientific skills in the risk management processes. This aspect of health and safety management is also not well understood. To illustrate, another relevant question - **Do you understand the concepts of meta-stability, or phylogeny/ontology?**

## **THE SUBJECT - RISK TAKERS AND RISK MAKERS**

My involvement in systems development and auditing over the last five years has confirmed that the systems and phenomena aspects of health and safety management are not anywhere near as well understood nor as widely applied as we would like to think, or as they should be, but they are not the subject of this paper.

***It is 12.00 noon on Saturday 2 September 2000 and I am trying to finish the first draft of this paper. I am passionately and emotionally involved in these OHS issues right now. Yesterday I completed a full health and safety system audit of a large gold mine in northern Australia. This is a big mining company but the site really doesn't know where to start with a systems approach. It mostly manages by the 3G's - good weather, good luck, the gold price.***

***The mid-day news is on. A lump has formed in my throat, tears run down my cheek. Another miner has been killed - underground in a rock fall, at Big Belle mine. A couple of months back there were three miners killed - when an underground dam failed, at Bronzewing mine. I have to stop writing.***

This paper is about **risk taking and risk making at work** and a research project that I undertook to obtain the perceptions of this issue from some of Australia's most credible OHS professionals and practitioners, who as a group, don't appear to have been asked.

*At the end of it, hopefully, I will have increased your understanding of who takes risks and makes risks at work, why they do, and what can be done to eliminate it.*

*At the end of it, each of you will reflect on your own knowledge and experience of this issue. You will discover that the paradigm you viewed health and safety management through will have changed, as mine did during the research project.*

*The paper covers the rationale and purpose of the project, the project objective, the research process, what the process achieved (the findings), my own observations and reflections.*

### **Rationale and Purpose of Project**

In the introduction I mentioned my involvement in surveys, research, discussions, conferences, the brow beating and wringing of hands. Despite the progress, I consider the statistics to be an indictment of our industry and indeed our working society. Collectively, we appear unable to eliminate accidents, injuries, disease and fatalities at work.

I believe that they can be eliminated and I am passionate in that belief. I wanted to find out how, and to contribute to achieving that end.

As a result, I conducted a literature review and made inquiries of my peers prior to and during the development of the project definition. It confirmed the widely held views that in many organisations, risk taking at work was common amongst employees and was linked to the culture of organisations (both organisations worked for in the past and the organisation being worked for at the present).

In June 1999, the Minerals Council of Australia released their Safety Culture Survey Report covering approximately 50 Australian mining and minerals processing companies, and 7100 employees. The survey results were categorised by the various groups in workplaces ie management, operators, tradespeople, etc. The Report provided a lot of very valuable results and conclusions, including that risk taking was a serious safety culture issue. The MCA survey framework was however, limited to organisational and employee group perceptions, which are important, but not necessarily educated, experienced and informed.

It excluded what I believe is the most vital group of educated, experienced and informed people, if our aim is to solve the problem of risk taking at work - the safety professionals, practitioners, and academics.

I felt that their view of the causes of risk taking at work would be informed, objective, open, and credible. So I decided to ask them.

### **Project Objective**

The defined project objectives were to research a sample of the Australian mining industry's perception of the level of risk taking by employees in that industry, and the 'safety culture' components which significantly affect risk taking (unsafe behaviour) by employees at work.

*I have described the paradigm that I began with. I didn't think it would change. However, during the time I conducted the research I was exposed to many mining operations, both large and small. That exposure, combined with the data that I was receiving from the research at the time, changed my paradigm of OHS management and affected my view of the project objective.*

### **What was done and how - The Process**

The research methodology included **READING** literature to collect data - that is reviewing what other people have written about their work and experiences in books, articles, conference papers, manuals; **TALKING** to experienced, knowledgeable and credible people to collect data and gain operational perspectives - that is reviewing what other people have said about their work and experiences (professionals and practitioners who are actively involved in 'doing it', and academics who know about 'doing it'); and then **OBSERVING AND REFLECTING** on my own experience and new knowledge in light of the analysis of the data and perspectives obtained.

The process was:

– ***data collection***

Literature searches and review of industry and safety related journals, proceedings from Mining Industry Health and Safety Conferences in 1997, 1998, and 2000.

Internet searches and review, using the key words "risk management", "risk taking", "safety culture", "safety management", of a wide range of data-bases/internet sites.

- ***interviews***

Discussions of these issues with people directly, and by telephone/fax/e-mail, and a survey with both closed and open questions. The survey was sent to three OH &S professionals from Industry Representative Associations, six OH &S professionals from private organisations with credible safety performance, three consultant organisations which are actively involved and recognised in this field, two State workplace safety regulators, two Worker representative associations, and two academics in this field. A copy of the explanatory correspondence is attached as Appendix A.

My planned research process changed here as I was able to personally attend the "2<sup>nd</sup> Northern Territory Minerals Industry Health and Safety Conference" in Darwin. This 2 day conference was an opportunity to gain information interactively, first hand, from a greatly increased range of OH&S practitioners and professionals and conference delegates, and to discuss their knowledge and experience of alternative perspectives or related issues.

- ***personal observation***

Additional opportunities to personally observe risk taking (and as it turned out, risk making) behavior at a number of mining operations, ranging from small extractives to major mining and minerals processing, occurred during the course of the research.

At the end of the analysis of the data and perspectives obtained I reviewed my own 20 odd years of industry experiences, in light of the research process and the analysis of the research findings.

**What was achieved**

The "searches" and survey were to seek examples that supported or did not support my initial observations that there is a significant incidence of risk taking at work by employees and that it is linked to "organisational culture".

- ***Data Collection Results***

*Literature Search* - *Industry and safety related journals*

The search identified no articles on risk taking and one article on safety culture.

- *Conference Proceedings*

The search identified eight papers on the topics of risk taking and/or safety culture.

- *Internet Search*

The search engines used were Altavista and Dogpile, and surprisingly little information resulted from the search criteria "risk taking" and "safety culture".

A summary of the findings is:

"supports the view that safety culture was a dominant factor in workplace accidents but not specifically a factor in risk taking".

"claimed that "one of the main factors in the unacceptable level of fatalities in the Western Australian mining industry was poor safety culture".

"a positive safety culture is derived from the workforce's experience of the attitudes and behaviour of management".

"culture influences the actions of people at work"

"in the majority of all (workplace) accidents, it is the (unsafe) actions of the people that are responsible".

“people (at work) take risks because the risk was not recognised, was inherent in the task and was underestimated, was ignored, was accepted, or there was no incentive to do the job in a safe way”.

“such risk taking can be traced back to safety culture”.

“the development of risk taking behaviour in an organisation is not something that happens at employee level”.

“management’s encouragement of safe behaviour by the ‘worker”, and management (from the top) setting the example (by not tolerating unsafe behaviour- risk taking) as the key elements in improving safety performance”.

“individuals in their private and work lives normalise risk and are willing to accept some risk in many things that they do (“Risk Homeostasis Theory”), that is they set an internal “risk set point”. This “set point” is claimed to be strongly affected by cultural factors which “increase the perceived cost of risky behaviour and decrease the perceived benefit of risky behaviour”.

“ what people at work experience through their interaction with management and management systems, is a major driver of their behaviour”.

“unsafe acts (risk taking, resulting from unsafe attitudes) it is being rewarded by management and/or the management system because unsafe acts are rarely measured and dealt with in a way that discourages them. The unsafe (risk taking) attitude is thereby reinforced and strengthened and any anxiety or dissonance about risk taking is likely to be eventually extinguished”.

“the Minerals Council of Australia’s Safety Culture Survey indicates that “management may (inadvertently) be encouraging risk taking behaviour by recognising quicker, more productive work practices over safe work practices” , further “workforces, faced with this conflict between what management say and what they do, become disillusioned and cynical about management commitment and credibility” and “this cynicism is one of the priority safety culture weaknesses”.

“the unsafe acts of people (breaking safety rules at work) are a result of the culture of the site”.

“staff risk awareness is a reflection of a company’s safety culture”

“personnel in companies with weak safety culture are likely to, at worst, ignore both statutory and company requirements”.

## – ***Interview Results***

### ***Survey***

The sectors in the selected sample of OH&S practitioners and professionals to be surveyed was representative of the stakeholders and “players” in the minerals industry and enough surveys were sent to have a good probability of a response from each sector selected.

The individuals to be surveyed were selected on the basis of their credibility ie achieved performance, qualifications, proven knowledge and experience, acceptance by industry and/or academia. The survey response was 63%, with a response from each sector in the sample so the response is considered representative.

In addition to the survey responses, I spoke to the OHS professional from the Qld. Mining Council (Industry Representative Association); the OHS professionals from Woodside Petroleum and The Groote Eylandt Mining Company (private enterprise); OHS consultants from The Australian Safety Centre, Nikki Ellis and Associates, and Geoff McDonald and Associates. (Consultants); the Health and Safety Advisor from the Qld. Division of Workplace Health and Safety (regulator); the Health and Safety advisor from the Australian Workers Union (worker representative association); the former Unit Co-ordinator for the OHS Degree and Grad Dip from Central Qld University (academics in this field).



The results for each question were surprisingly consistent, and are as follows:

1) Do you feel that there is a significant level of risk taking by employees at work?

Strongly Yes						Strongly No
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2) Do you feel that risk taking has contributed to workplace accidents that you are aware of?

Strongly Yes						Strongly No
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3) If you had to estimate the percentage of workplace accidents you know about over the last 3 years, which you feel have occurred as a result of someone taking a risk, what would it be?

< 5%			5% to 10%			>10%
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4) Have any workplace accident investigations you know about, over the last 3 years, found that risk taking by an individual was a contributing factor?

Strongly Yes						Strongly No
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5) Do you believe that the culture of organisations has an influence on the incidence of risk taking?

Strongly Yes						Strongly No
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6) The Minerals Council of Australia recently carried out a survey of "Safety Culture" and I have listed six of the cultural factors they found had a strong affect on safety performance ie positive effect if in existence, negative effect if not. Could you rank these from 6 to 1 in the order that you consider they most influence risk taking, 6 being the strongest influence.

RANK	CULTURAL FACTOR
Strongest	risk awareness of individuals
Second	acceptance of personal responsibility for safety
Equal third	effective, cohesive leadership on safety commitment to safety by immediate supervisor
Equal fourth	quality (meaning excellent) management systems and processes recognition for safe work performance

7) If there are any other factors that you believe have a major influence on risk taking at work please describe them briefly in the space below.

- in serious accidents (life changing), a lack of knowledge of the phenomena involved.
- the majority of risk taking and risk making is by management
- dissonance between personal and organisational values can lead to forgetting of safety consciousness
- visible and meaningful management commitment to safety
- job security
- the type of industry
- what management permits, they approve
- competing priorities of safety and production, especially in smaller operations where margins are small

#### *Conference Attendance and Discussions*

The "2<sup>nd</sup> Northern Territory Minerals Industry Health and Safety Conference in Darwin included presentations by two people who are nationally recognised (Corrie Pitzer, Director IOSA and SAFEmap, and Ray Parkin, GM Safety, Shell Coal, and Performance Measurement Group - Minerals Council of Australia) for their research and knowledge in the field of workplace culture and its influence on risk taking.

These highly topical presentations were:

"the (MCA) Safety Culture Survey - What the results mean" by Corrie Pitzer and Ray Parkin) who presented a summary of the findings of this survey, and "New Thinking on Mine Disasters" by Corrie Pitzer.

The most significant information provided by the presentations and subsequent discussions with the presenters and other conference delegates was as follows:

- Safety, or risk awareness and consciousness, was found to be the fourth reason for doing a job in a certain way.
- There had to be a strong incentive, positive or negative, for working in a safe way.
- The Minerals Council's Survey showed that organisations that had a strong overall positive culture showed characteristics (regarded as strengths) which are believed to reduce the propensity for risk taking.
- The Minerals Council's Survey also showed that organisations that had an overall negative workplace culture also had higher identified levels of risk taking. They showed the following characteristics.
  - low levels of management credibility
  - limited real acceptance of personal responsibility for safety
  - safety was not seen as a positive company value by employees
  - a lack of recognition for safe work
  - safety programs were rigid and difficult to change (improve)
  - a belief that you have to break rules to get the job done
  - a belief that it is not possible to achieve zero accidents (both management and employees)
  - people are worried about dangers in their workplace

#### **Key Findings**

**Data collection - The key findings from the literature search that I conducted were that there is a substantial body of experience and research knowledge that confirms the existence of a strong link between a poor safety culture and higher levels of risk taking, and between the level of risk taking and the level of workplace accidents. What was also strongly supported is that management is a major contributor where it tolerates risk taking.**

**Interviews - The key findings from the survey, the conference, and the discussions were that there are strong perceptions that the level of risk taking at work is significant, that it has been a contributing factor in a significant number (~7%) of accidents, and that the culture of an organisation is strongly linked to the level of risk taking in that organisation. It is interesting that the union response is that there is no risk taking by employees.**

**Another key finding is that management is perceived to be a major contributor, to both the level of risk taking and a poor safety culture, by taking risks, making risks, and condoning risk taking.**

### **Observation and Reflection**

My original objective was "to understand a sample of the Australian mining industry's perception of the level of risk taking in that industry, and which 'safety culture' components significantly affect risk taking at work".

After analysing the paradigm change that occurred for me during the project, and reflecting on my own 20 years of experiences with organisational management and management systems, I can outline this project's findings in the same terms as my objectives ie

"I have a strong indication of the Australian mining industry's perception of the level of risk taking in that industry; I believe that I now understand which "safety culture" components have the major affect on risk taking at work; I believe that I now understand who is taking the risks and how that influences the "culture"; and I now understand the significant effect that management systems have on risk taking at work".

The perception, that I obtained, of the level of conscious risk taking in the industry is not as high as I first thought it would be, but is still considered high. Unconscious risk taking though is perceived to be a factor in a significant percentage of accidents, and is seen to be very strongly linked to organisational culture.

One of the most significant aspects of my new understanding, is that there are risk takers and risk makers. Australian minerals industry management, as both risk takers and risk makers, has to take much of the responsibility for the outcomes - unacceptable accident, injury and fatality rates.

**One of the most profound observations from my experience and the research findings is that if people at work experience (see, hear, read about, are involved in) risks being normalised by management or the management system, they will normalise them. If they experience risks being ignored by management or the management system, they will ignore them. If they experience risks being accepted by management or the management system they will accept them. If their subsequent risk taking behaviour is rewarded, by being ignored or accepted, their underlying attitude is strengthened and the risk taking behaviour becomes a part of working life ie it becomes the "safety culture" of the organisation.**

Much of my experience in industry is with management systems. In light of the research findings my understanding of the influences of such systems has changed as well. There are two significant observations that I can now make in this area.

Good organisational management systems for safety and health reduce risks in workplaces, and are a significant contributor to a positive workplace culture, which reduces the propensity for risk taking.

HOWEVER, such systems can result in a belief that "It is safe, I am safe". I confirmed this view underground at a Northern Territory gold mine during the project. I now know that this is flawed logic, which lowers the awareness of risk by normalising it (can do attitude, risks accepted, risk taking is routine). Some management systems are often complex, making them difficult to follow. Risks are often kept secret, no one wanting to be the bearer of bad news (we often "shoot" the messenger). The result can be a culture for disasters.

I can summarise my observations and reflections by saying that my initial paradigm regarding the effect of a poor safety culture was that risk taking occurred fairly often, by employees who were basically disaffected by their employment environment and didn't care (any longer, if they ever did).

My new paradigm, is that risk taking (conscious and unconscious) and risk making, by both management and employees, with management approval, inculcates a culture of risk taking by employees.

I finish with some of Pitzer's words (1998),

"it is the upstream processes in a business ie the culture of the organisation and the management systems (or lack of) which produces or allows risk taking behaviour, and ultimately reinforces it as the culture of the organisation".

**Appendix A**

**FACSIMILE**

**ATTENTION:**  
**COMPANY:**  
**FAX NO:**  
**COPY:**  
**SUBJECT:**

**FROM:** Terry Forsyth  
**DATE:** 11 April 2000  
**FILE/REF:**  
**NO. OF PAGES:** 2 total

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This facsimile contains information that is personal and which may be confidential.. Please let me know immediately by telephone if this facsimile has been sent to you in error.

Dear YYYY.,

I have been a safety practitioner for a number of years and am currently conducting a research project for my graduate diploma in Occupational Health and Safety at CQU. The topic that I have chosen is "risk taking at work and the links to organisational culture".

One of the data collection methods that I am using is fax communication of a 1 page survey to obtain data and perceptions of safety practitioners and professionals. I regard this as a vital source of highly relevant information but a neglected group in the recent Minerals Council Safety culture survey.

The 1 page survey attached will be sent to only 18 people around Australia, including 6 companies with creditable safety performance (Osborne Mine, Woodside Petroleum, BP refinery Brisbane, WMC MT Keith, Callide Coalfields, BHP Gregory and Crinum mines), 3 consultants, 3 industry representative associations, 2 unions, 2 workplace safety regulators, 2 academics in the field.

The survey is to tap your personal practical knowledge and experience, and is not about a particular organisation or workplace. Could you please take a few minutes to complete it and fax it back to me at 08xxxxxxx. If remaining anonymous is important, please post it to me c/o xxxxxxxxxxxx Darwin, NT 0801. I need it back by the 12<sup>th</sup> of May.

If you would like some feedback on the survey, please indicate on the bottom of the survey sheet.

Thanks in advance for providing your input on this subject and helping me with my research project.

Terry Forsyth

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Torlach, J ., "Mining Fatalities Inquiry - Western Australia - Opportunities and Initiatives", Qld. Mining Industry Health and Safety Conference "New Opportunities", Aug/Sept 1998, Yeppoon, Qld.

Wells, D ., "Safety culture - an integral part of improving safety performance", Minerals Council of Australia 2000 Safety and Health Culture Conference, Apr 2000, Sydney, NSW.

### **Internet search**

National Safety Council of America, URL <http://www.nsc.org>

National Institute for Occupational Safety and Health, URL <http://www.cdc.gov/niosh>

Worksafe Australia, URL <http://www.allette.com.au/~wsal>

Work Cover NSW, URL <http://www.workcover.nsw.gov.au>

Qld. Government Division of Workplace Health and Safety, URL <http://www.gil.com.au/va/whs>

IOSH, URL <http://www.iosh.co.uk/about/culture/1.html#gen1>

Lawrence Livermore National Lab, URL <http://www.llnl.gov/pe/exsc/doc.html>

Swiss Re group, URL <http://www.unionre.ch/e/publications/publications/society/safety.html>

### **Safety Reports**

Minerals Council of Australia, Safety and Health Performance Report of the Australian Minerals Industry 1998-99

Minerals Council of Australia, Australian Minerals Industry Safety and Health - Safety Survey Report for 1 July 1999 - 31 March 2000

Minerals Council of Australia, Safety Culture Survey Report of the Australian Minerals Industry July 1999