The Next Steps Towards "Zero Harm"

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Abstract

The number of fatalities, serious bodily injuries and high potential injuries in Australian mines is unsatisfactory according to community standards. People are still being killed and there is little evidence of a sustained improvement trend over the last decade. Lost time injuries have reduced dramatically, but are now plateauing. However, over the last few years other, more important safety indicators are trending upwards. Research has found that hundreds of serious injuries are not being reported which would have a significant effect on safety indicators in the Industry. Recent research has demonstrated that the current approach to prosecution is counter productive, as it inhibits thorough safety investigation and creates a defensive rather than a proactive safety culture. Furthermore, the time taken to conduct judicial inquiries is taking far too long in order to finalise the outcomes. The issues with the implementation of safety management systems will be discussed. Fatigue and awareness issues as well as travel times to and from work are having a major impact on safety at work, which is particularly evident when employees are working 12-hour shifts. There is also no agreement as to what constitutes the most appropriate legislation in the three mining states This paper will consider the abovementioned issues and make recommendations for improvement towards "zero harm".

Introduction

In order to look at the next steps towards zero harm it is necessary to look at past safety performance. A thesis has recently been completed on the impact of legislation and other factors on the safety performance of Australian Coal Mines. The major outcomes are as follows;

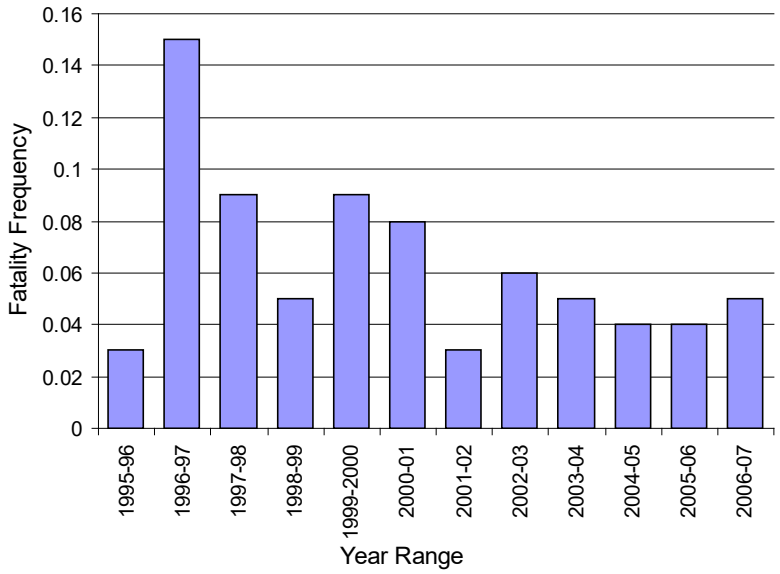
1. The current trends in safety performance;
2. Legislation and Risk Management;
3. Safety and Health Management Systems and the effects that fatigue and awareness issues are having on mine safety performance
4. To investigate the current philosophy regarding prosecution policies which include the issues of litigation and professional privilege and their impact on safety performance. This paper will devote most of the discussion to this subject.

1. **Current Trends in Safety Performance**

The number of fatalities, serious bodily injuries and high potential injuries in Australian mines is unsatisfactory according to community standards. People are still being killed and there is little evidence of a sustained improvement trend over the last decade.

Although the LTIFR is now plateauing, the fluctuating annual fatality numbers continue to cause concern. In fact the 14 fatalities recorded in 2006-07 is higher than the preceding six -year average of 11. The FIFR has increased from 0.4 in 2005-06 to 0.5 in 2006-07 Figure 1. It is interesting to note that over the past six years the LTIRF is going down and the fatalities are increasing.

Figure 1. Fatality Frequency Rate - Australian Mines - 1995-96 to 2006-07 (MCA 2007)

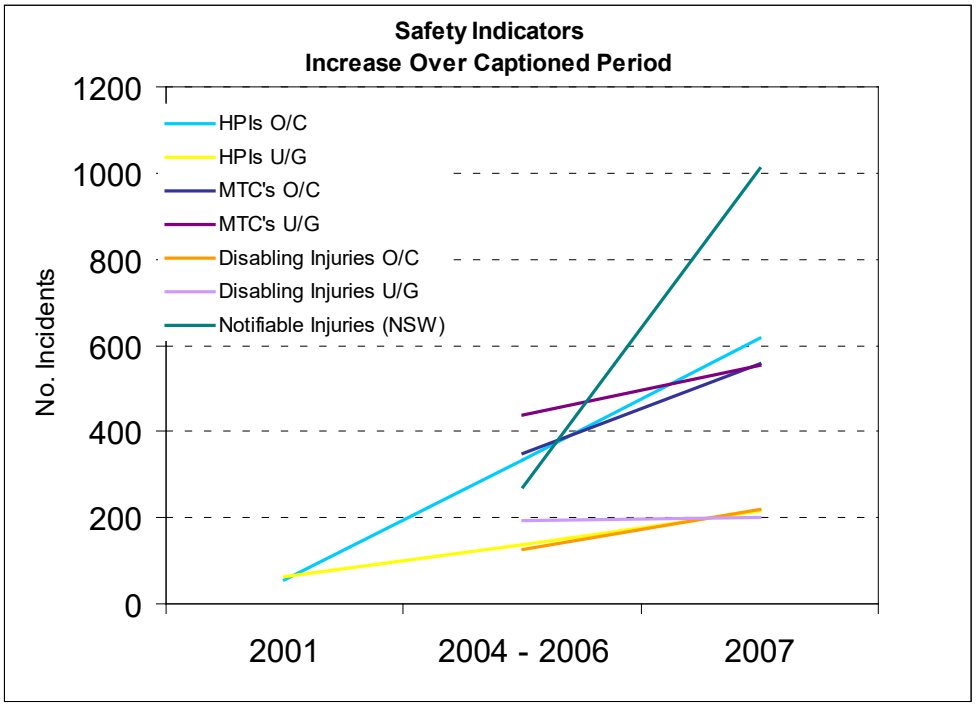


NSW & Qld Coal Mines

When analysing the statistics in the coal mining industry in Queensland and New South Wales Lost Time Injuries have reduced dramatically, but are now plateauing. However, over the last few years other more important safety indicators are trending upwards. It can be observed from Figure 2 that in Queensland the HPIs have increased by 1100% in the open cut mines and 346% in underground mines. From 2003-04 the medical treatment cases have increased by 59% and 26 % in the open cut and underground mines respectively. Disabling injuries over the same time period have increased 75% in the open cut with only a small increase in the underground mines.

In NSW the serious bodily injuries have remained static from 2001 to 2006-07. However the notifiable injuries have increased by 370% from 2005-06 to 2006-07 figure 2, which indicates that miners are still being seriously injured. The alarming increase in HPI both in open cut and underground operations illustrated in Queensland Figure 2 is a cause for concern.

Figure 2 Safety Indicators Over Captioned Period 2001-2007



The above mentioned statistics may be much worse since according to the Queensland Ombudsman's Report (2008), hundreds of serious injuries are not being reported which would have a significant effect on these safety indicators in the Industry.

2. Legislation

Some of the most important differences between the Queensland and New South Wales legislation are, that a large open cut mine in Queensland can be essentially managed by a person with no mining experience or qualifications. This means that the Queensland legislation has departed from common mining practice in terms of essential qualifications and experience. This may ultimately prejudice the safety and health of the mining workforce.

It must be very difficult and unprofessional for a Site Senior Executive (SSE) at an underground or open cut mine to achieve the management of standards, control of operations, supervision, oversee technical work, monitor and carry out assessments in the working environment without the appropriate mining qualifications and experience to undertake these responsibilities. In order for an SSE to control events at a mine, he or she first of all must understand the consequences involved in the often-complex decision-making that takes place at a mine especially since he is the most senior person in the eyes of the law. This statement was some what supported by the coroner in Queensland (Hennessy 2007) after an inquest into the death of a truck driver who said that "the site Senior Executive is required to have a competency in order to establish and maintain the mine Occupational Health and Safety Management System". The fact that NSW has not followed this direction would tend to indicate would tend to indicate disagreement with the Queensland approach.

In Queensland, the only person requiring a statutory qualification at an open cut mine is an open cut examiner.

Since the position of undermanager is now not mandated by legislation to be in charge of a shift, it is now possible in underground mines, for miners to be supervised by persons who do not have any mining qualifications. Admittedly the area has to be inspected by a deputy. However, the industry cannot justify unqualified persons supervising the workforce simply because it is short of experienced qualified people. The position of undermanager has traditionally been the link between the mine deputy and the mine manager. Many mining personnel have found that they were able to achieve the level of the undermanager's qualifications, but were not academically able to obtain mine managers qualification. The position of undermanager was an excellent training ground for potential managers. Over the years this position has been the lifeblood of the underground coal mining community. The mining industry in Queensland has lost this vital link between the Deputy and Manager and as a consequence, lost a vital safety management role in underground coal mines.

There are instances whereby the undermanager in the absence of the SSE has acted as the SSE at a large underground mine in Queensland. This illustrates the inadequacies of the current law in Queensland since there is no requirement for an SSE to have any mining qualifications.

At the time of writing the thesis the turnover in staff within the Queensland inspectorate had been considerable. It has proved very difficult to recruit inspectors. One would have to assume that the inspectorate has been downgraded because recent changes in legislation would seem to confirm this

- An inspector in Queensland no longer requires a first class certificate of competency or any mining engineering qualifications to meet the new criteria for an inspector.
- There is now essentially no distinction between an inspector and an inspection officer; they are all now acting as inspectors.

According to the Queensland (Ombudsman (2008) miners lives are at risk in Queensland because of the shortage of inspectors and that the Department was understaffed and in a state of flux and that the inspectorate may not be fulfilling its compliance role.

It may be concluded that the inspectorate in Queensland will be continued to be downgraded until it operates in a similar fashion to the US model, whereby several inspectors go to a mine site and tick boxes, such that eventually the inspectors who tick the boxes have little or no knowledge of what constitutes an operating mine. The days of the mine manager being able to work in close harmony with the inspectorate will have disappeared to the detriment of safety in the coal mining industry.

2.1 Case for National Safety and Health Legislation

The arguments in favour of having one set of national OHS laws for Australia are very clear. At present there are at least 11 separate statutory regimes applying throughout the country, each with its attendant regulations and codes of practice. The conventional arguments in favour of conformity are that it will lead to more equitable outcomes in that employees will be protected to the same standards where ever they work and that economic efficiency will be promoted because employers and employees, and other duty-holders will have only one set of laws with which to comply. This lack of uniformity in the Australian OHS legislation needs urgent attention. For example, duty holders in the coal mining industry in Queensland

operate with different Acts and Regulations than those in NSW and yet are operating with the same hazards in both underground and open cut operations. There is a lack of uniformity when developing inspection, enforcement policies, strategies, level of fines, infringement notices, and the considerable variation in health and safety representative provisions.

The current legislation in Queensland and New South Wales is part prescriptive and part regulating. In response to this approach the mining industry has developed a risk management philosophy. Provided that the people involved with risk assessments are properly trained in their use they have proved to be very beneficial to safe working procedures.
The CFMEU considers that staff, are not properly trained to conduct risk assessments nor take into account the full nature of the risks involved (CFMEU, 2005). They would prefer a stronger regulatory framework (i.e. prescriptive), to ensure improvements in safety performance of the industry.

3. Safety and Health Management Systems (SHMS)
Although SHMS are enshrined in legislation it has been shown that the most important deficiencies are the amount of paperwork generated during an audit process and the fact that this process weakens the input of employees because of updating all the elements. It has been suggested that the SHMS are so cumbersome that they become another system that sits in the site library or safety manager's office collecting dust. The size of the document has the potential to limit availability to the workforce and that it is usually written in such a manner that it is difficult for employees to understand or locate the information they require.

One of the biggest problems is the lack of understanding by the workforce of the key elements due to their complexity and in some cases the limited communication by management. It has been demonstrated that some employees are unable to read and others have difficulty in reading basic literature. This is further exacerbated by the large number of contractors who are now employed in the industry and who move from site to site. This would suggest that some employees would have to rely on their own understanding and experiences of safety systems to get them through with little or no knowledge of the mines requirements.

The discussion shows two examples of mines being closed in order to improve the safety performance; it is not unreasonable to suggest that there are many more instances. After the death of a truck driver the coroner was scathing in her comments regarding the controls and activities in place to ensure that contractors are carrying out their task in a safe manner (Hennessy 2007).

Safety and Health Management Systems (SHMS) are an important part of the way forward, however in order to improve the implementation they need to be less complex and the elements need to be standardized across the industry. More system audits should be conducted rather than compliance audits. Most importantly, mine workers need sufficient training in order to understand their obligations under the SHMS
The research has shown that one of the effects of awareness and fatigue issues suffered by mine workers today is the move away from the traditional eight-hour to a twelve-hour shift and four and seven day rosters. The Howard Governments industrial

relations laws encouraged companies to move to these longer working hours for productivity reasons. Mineworkers initially rejected these new arrangements but have now overwhelmingly accepted them because of life style considerations to the detriment of fatigue considerations throughout the mining industry. Given that the effects of fatigue are similar to the effects of moderate alcohol consumption it is difficult to understand why fatigue performance impairment has not been subjected to similar levels of intervention.

It has been demonstrated that vehicle crashes are occurring, where miners are driving to and from work, through the effects of fatigue. (Mabbott et al, 2005). It has been established that miners in NSW are working long hours when compared to international mining operations. From current information it is known that Queensland miners would be working similar hours if not longer. These hours are most probably understated due to the fact that overtime is not tracked and therefore not reported.

Industry now accepts that fatigue is a problem and is in the process of implementing fatigue management plans, which vary considerably across the industry with the larger companies leading the way. One way to address fatigue is to concentrate on risk assessments, work hours and sleep opportunity. The move back to eight-hour or nine-hour shifts should be contemplated particularly in underground operations, which would improve safety in the industry. In the interests of improving safety the industry should not expect a miner to work a 12-hour shift underground.

4. Prosecution

The function of prosecution in achieving compliance with OHS legislation is a highly contentious issue in the mining industry. This is particularly so in New South Wales following the Gretley disaster where the Department of Primary Industries (DPI) has developed a new found enthusiasm for prosecution especially after a fatality. It decided to prosecute not just companies but also individual mine managers and other statutory office holders.

The Departments prosecution policy (Mineral Resources (NSW) 1999), and the approach of the Investigation Unit charged with investigating serious incidents and fatalities, has precipitated a seething dispute between the New South Wales Mineral Council and major mining companies on the one hand, and the mine safety regulator and the trade unions on the other (Gunningham, 2007).

The companies believe that prosecution is counter - productive and inhibits appropriate safety investigation, moves away from a no blame culture, encourages a defensive rather than a proactive approach to OHS and drives away potential mine managers at a time of critical labour shortage. *" Increasing numbers of future mining industry professionals are electing whilst they are still at university not to enter into mine management"* (Galvin 2005).

4.1 Prosecution Policies

In the Moura Inquiry recommendations no mention was made of any charges being brought against BHP Billiton and its management, even though the company sent men underground in a highly dangerous situation. The mining union did not pursue legal action either. In the Gretley case two companies and three managerial staff were prosecuted which was the first time in the history of coal mining in Australia where

companies and staff had been prosecuted. In this case the inspectorate, urged by the unions, vigorously pursued prosecution. The shift in policy has caused huge disquiet and controversy in the industry especially in management ranks.

4.2 The NSW Mineral Council Position on Prosecution Policy

The NSWMC argued that prosecution is counter productive, inhibits thorough safety investigation, which stimulates a defensive rather than a proactive safety culture. *"The automatic prosecution policies are now impacting negatively on the objective of reaching zero harm"* (Galvin 2006).

The reasons for this are as follows

- The lessons from serious incidents and accidents are not being used to prevent a recurrence of the incident or accident until many years after, because of legal privilege and the other considerations related to the pending charges. It creates a climate of distrust between the parties, which is in complete opposition to finding out what happened, why did it happen and what can be done to prevent a recurrence.
- This policy does not encourage near miss reporting simply because the findings could be used against the company in possible future prosecutions.
- Since recent prosecutions have not only targeted the companies concerned but individual duty holders it has become a major disincentive for young people to consider a management role in the mining industry.
- It moves away from the no blame culture, which the industry must have if the safety of the mining industry is to continually improve.

This attitude promotes a defensive culture where the respective parties are encouraged to seek client privilege. To understand what "Client legal privilege" means in terms of finding out the facts regarding an incident or accident the following statement explains the situation:

" Documents produced for the purpose of obtaining legal advice or in the anticipation of possible prosecution may be subject to client legal privilege. This means there is a basis to say those documents do not need to be produced to the inspector or to a court or a tribunal" (Humphrys, 2001)

Companies are advised by the legal profession to be very careful about generating reports about the incident or accident. Employees are encouraged not to write written documents in relation to accidents without the prior approval of the manager, because they may be damaging to the company's legal position and the legal position of its directors, managers and employees. The prosecuting authority must prove its case beyond reasonable doubt. It is not for any company or individual facing prosecution to help prove the case against them. It is the inspector's responsibility to carry out the investigation. Some companies will volunteer all relevant information and provide the inspector all the information the company has in its possession. Other companies may not wish to co-operate at all. In Queensland more and more companies ensure proper communication and co-operation with an inspector while at the same time managing the legal process and taking steps to protect the company's legal position of its directors, managers and employees.

4.3 The Unions Position on Prosecution Policy

The mining unions agree with the developments regarding prosecution because they believe that they act as a deterrent to company law breaking and are actively

encouraging the inspectorate to further expand the use of prosecution to a much wider set of circumstances. The mining unions are of the view that this prosecution policy is required in order to improve OHS in the industry. The enthusiasm for prosecution in NSW has become infectious because there are definite moves in Queensland to travel down the same path with pressure being put on the inspectorate to recommend prosecutions.

4.4 Trust Between Management and the Mines Inspectorate

NSW mine operators and industry associations widely report that trust between themselves and the mining inspectorate is at an all time low (Wran & McClelland 2005). Managers in NSW who have the most contact with the inspectorate have indicated that prior to the prosecution policy being introduced the relationship between management and the inspectorate was very helpful and constructive. It is now strained and difficult. This about change is due entirely to the prosecution policy. Previously, management and the inspectorate have worked together to achieve a common goal, which was that of zero harm. The relationship has broken down and mistrust between the parties has destroyed the constructive interactions regarding compliance and improving compliance outcomes. Instead of working together to achieve a common goal the parties are working against each other.

The industry needs to encourage open reporting, investigation and the creation of a safety culture that is just. Reason's *"just culture"* emphasises that *" valid feed back on the local and organisational factors promoting errors and incidents is far more important to safety than assigning blame to individuals"* (Reason 1997, 1998).

4.5 Discussion

The mining industry has made some significant improvements in safety performance due to the companies, unions and the inspectorate working together to achieve a common goal of safety improvement and thus zero harm. Since the Gretley prosecutions this working harmonious relationship has deteriorated to the detriment of safety improvement in the NSW mining industry.

The lessons from incidents are not being learned due to the fear of being prosecuted, which creates a climate of distrust between the parties. Companies are encouraged to seek client legal privilege and near miss reporting is being affected because the findings could be used against the company in future prosecutions. Audits and high potential incidents are also subject to prosecutions, which lead to lock up of vital information in order to prevent recurrence. More importantly it promotes a defensive attitude and moves away from one of the most important parts of any safety improvement programme that of a no blame culture.

The conviction of companies and managers sends a message that, where the lives of many workers are at high risk from known hazards, companies need to be very careful in planning and executing work, and to be mindful of the consequences if they do not. According to Gunningham (2007), achieving a balanced approach to prosecution is not easy. On one side the evidence suggests the extreme 'advise and persuade' policy that Queensland and Western Australia inspectorates have favoured will possibly fail to send appropriate signals to the recalcitrant. On the other side the tough prosecution policy that New South Wales has applied to fatalities will also fail in preventative terms. The Gretley decision demonstrating the vengeful prosecution against those

who neither intended harm nor were reckless in their behaviour is considered unjust, and this has caused the law to lose its legitimacy in the eyes of duty holders.

The CFMEU have been critical of the NSW Government for not prosecuting the DMR in the Gretley inquiry and stated there is a lack of regulatory protection for the growing number of contract workers within the mining industry. They expressed concern that the safety standards for contractors was lower than full time employees since they receive much less training and induction for safe operating. Since contract workers now make up a large percentage of the workforce this is a major problem facing the industry.

The differences in the philosophy adopted at the Moura and Gretley inquiries have highlighted the impact these outcomes have had on the mining industry. The main differences are:

- In the case of Moura the purpose was to determine the nature and cause and for the panel to make findings and recommendations.
- In the Gretley Inquiry the purpose was to find the cause of death and ascertain the case for prosecutions.

The Moura Inquiry was completed and the report published within one and a half years after the accident. However the Gretley Inquiry took eight and a half years to complete and in the process changed the industry safety culture throughout the mining industry.

A comparison of the time taken for the investigations in the Wardens Court in Queensland from November 1998 to 2001, the Prosecutions in NSW from August 1995 to April 2007 and the Coroners Court in Qld from December 2002 to March 2007 is shown in Table 1. It can be observed that the average time taken for the Wardens Court was just over six and a half months compared to over four and a half years in NSW and over 2 years in Coroners Court in Queensland.

Table 1. Comparison of the Time Taken to Conduct Inquiries

Wardens Court in Qld	**Nov 1998 to March 2001**	**Average Time Taken for the Inquiry**	**6.7 Months**
Prosecutions in NSW	**Aug. 1995 to April 2007**	**“**	**4.7 years**
Coroners Court in Qld	**December 2002 to March 2007**	**“**	**2.2 years**

(Information sourced from Qld & NSW Government web sites)

One would have to conclude that the Wardens Court is not only more efficient in its process, but because there is no fear of prosecutions, it was able to find out what happened, why it happened and what needs to be done to prevent a recurrence without the fear of the legal process and legal privilege. Instead of information being locked up, the Warden’s Court outcomes allows for free flow of information where lessons can be learned and trust between all parties can be restored.
The NSW Mineral Council made the following comments in its submission to the review of the OHS Act 2000 (Williams 2005) regarding the prosecution of the mine

manager who had recently been found guilty by the Full bench of the Industrial relations Court despite the Court finding that:

- He took up his position just months before the collapse of the roof of a mine he was managing;
- He had limited opportunity to become completely familiar with the mine and its operations;
- He carried out underground assessments and did not notice anything untoward in respect of the state of the roof;
- He attended conscientiously and diligently to all his safety responsibilities in the period before the incident;
- He found nothing in the reporting system that alerted him to a risk arising from the instability of the roof; and
- He was not involved in the critical planning stages where decisions were made about assessment procedures.

The mine manager would be subjected to the possibility of a term of up to two years imprisonment if he had had a prior conviction. Mine managers are now simply unwilling to place themselves 'in the firing line' where prosecutions can occur for acts or omissions outside their control and in spite of their best efforts.

The then Prime Minister John Howard called on State Premiers to support him in reforming occupational health and safety laws that apply to the mining industry. The Prime Minister declared that the existing laws are imbalanced and unfairly target mine managers. State laws are inhibiting productivity by effectively scaring off prospective senior staff and that the laws need to be overhauled to reflect a "sharing of the burden" (Howard 2006).

With regard to offences involving recklessness being treated as a criminal offence it is interesting to note the following comment contained in the Robens report:

"We recommend that criminal proceedings should, as a matter of policy, be instituted only for infringement of a type where the imposition of exemplary punishment would be generally expected and supported by the public. We mean by this, offences of flagrant, wilful or reckless nature which either have or could have resulted in serious injury" (Robens 1972).

In January 2008 BHP Billiton (BHPB), one of the biggest mining companies in the world, prevented mine investigators from accessing the scene of a fatal accident for more than 24 hours after the incident occurred. The Minister for Mines in Queensland was forced to call a meeting with BHPB in order for them to cooperate. In the event of a fatal accident the Chief Executive Officer or his immediate subordinate is one of first persons notified of a fatality. This kind of behaviour just demonstrates the lengths this company was prepared to go to, in order to protect against litigation. This kind of behaviour has no known precedent in Australia. One month after this incident the company in February 2008 settled out of court to the tune of $300,000 after two workers were seriously injured at the Goonyella Riverside mine. The company had been charged with neglecting its duty of care obligations under Queensland's Coal Mine Health and Safety Act 1999.

In September 2008 BHPB suspended operations following two fatal accidents in its iron ore mines in WA. In preventing these fatalities in the future it would help if there is open honest dialogue instead of protecting the company's interest for fear of prosecution.

In conclusion it must be stated that if prosecution policies continue, valuable information which could help prevent accidents and incidents will be lost to the detriment of attracting mining engineers into mine management positions (Galvin and Laurence, 2006) and improving safety in the Australian mining industry. One way of preventing this from happening would be for the industry to adopt the no blame culture and move to a system like the Wardens Court in Queensland where there was a free flow of information without the fear of prosecutions. The findings and recommendations are completed in a much shorter time frame which means that the lessons learned are available more quickly than the current outcomes in both Queensland and New South Wales with a consequent positive outcome for safety improvement.

5. The next steps towards "zero harm"

It is recommended that instead of the industry going down the path of a prosecution policy, which is a detriment to the interests of safety improvement, the industry consider a system similar to the Wardens Court of Inquiry where there is no fear of prosecution. As a consequence discussion is open and free which results in a better outcome in less time than the current process. This would also encourage young mining engineers into mine management and enable the stakeholders to trust each other, which is so necessary for safety improvement.

It is recommended that companies consider using contractors for specialist work tasks or for peaks and troughs at their work sites. This would dramatically improve the implementation of safety management systems especially for small contractors.

It is recommended that the effects of fatigue performance impairment should be subjected to similar levels of intervention when compared to the effects of moderate alcohol consumption. Also, more research into fatigue measurement should be carried out so that fatigue issues can be better managed.

It is recommend that more training be given to mine staff in order that they are able to conduct appropriate risk assessments with the workforce. Also, further training should be given to the workforce so that they understand their obligations under the SHMS.

It is recommended that 12-hour shifts for underground miners should be addressed.

It is recommended that the industry conduct more system audits rather than compliance audits.

It is recommended that the legislation deficiencies in Queensland regarding the SSE and Undermanager be addressed.

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