

minesafe

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Government of Western Australia
Department of Mines and Petroleum
Resources Safety

Mines inspectors welcomed aboard

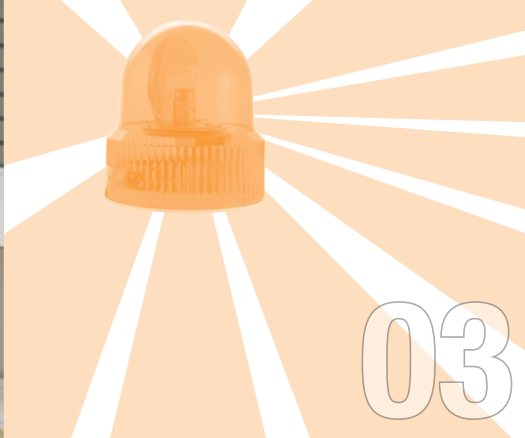
GENDERED BEHAVIOURS AND
SAFETY — THE STORY SO FAR

DRUG ABUSE — PLAYING
RUSSIAN ROULETTE WITH
SAFETY AND LIVES?

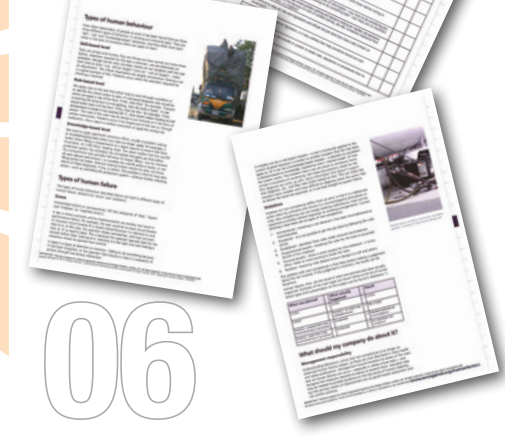
HEARING AWARENESS WEEK
2011



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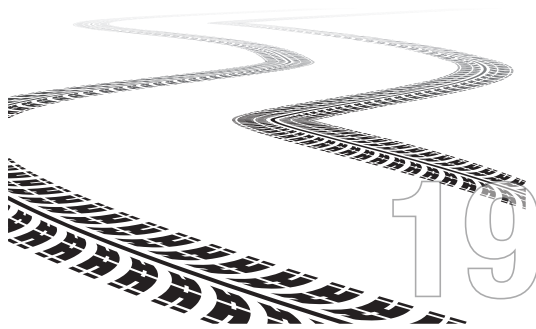
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Welcome to the second issue of *MineSafe* for 2011. It is only a few months since the last issue, but I am sure there is something here to interest you.

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This issue includes a welcome to the first batch of fully fledged mines inspectors trained under the safety reform strategy, sources of information on human factors in the workplace, an update on the link between gendered behaviours and safety, a call to standardise incident management, and safety alerts about dozer belly plates and recycling drums.

Addressing risk is a common theme in this issue. You will also find the answers to questions about working in the mining industry, how the new zero blood alcohol laws affect dangerous goods drivers, and what MINESHREPS means.

I draw your attention to information on how you can subscribe to Resources Safety's email alert service, and the safety alerts reproduced at the back of each *MineSafe*.

As always, enjoy your reading.

Simon Ridge

Acting Executive Director, Resources Safety



Dave Harvey (left) and Joe Sanchez

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MINES INSPECTORS WELCOMED ABOARD

The Department of Mines and Petroleum recently completed its first program of intensive training and development of mines inspectors. Twenty-two of those who graduated were recruited in the past year under the Reform and Development at Resources Safety (RADARS) strategy.

The program, which ran over six months, covered a wide range of behavioural and technical competencies. Most courses were presented by consultants although Resources Safety staff members were involved in course development and presentation. For example, experienced inspectors contributed work examples, case studies and role playing exercises to ensure that the courses addressed the specific roles and activities of mines inspectors.

To graduate — and enable the attainment of nationally recognised qualifications at a later time — participants were required to successfully complete assessments both during and after the courses. Many participants commented on the challenges provided by these rigorous assessments. Course leaders were selected from current university lecturers, who are well conditioned to the scrutiny of assessment processes.

Joe Sanchez, a mechanical and structural engineer who joined the Department in January this year, said “Some topics, like ‘Stakeholder

Management’, ‘Dealing with Conflict’ and ‘Leading and Influencing Change’, were outside of my comfort zone but I am glad I pushed through the pain barrier to achieve the required competencies! Not only so I could meet the training requirements but also because I believe these skills will be important in my life as an inspector.”

Key outcomes of the RADARS strategy will be for Resources Safety to achieve a consistently high standard of regulatory services and be seen to be “adding value” to industry’s efforts to improve safety.

“The mines inspectors’ training program ensures we will have a uniform regulatory approach into the future”, said Andrew Martin, an electrical engineer who was recruited in January.

Dave Harvey, who has a mineral processing background, concurred and added, “The ‘Regulatory Compliance and Investigative Skills’ course combined with the ‘Record Book Entry and Notice Writing’ workshop gave us a sound foundation so that inspectors can maintain a consistent approach to the way we interact with stakeholders. It also highlighted to us the role of inspectors in compliance and enforcement capacities.”

The training and development program will continue for all new mines safety staff. A similar intensive program is being developed for petroleum safety inspectors, and another will be developed for dangerous goods officers. These new programs are expected to be rolled out during 2011 and 2012.



ROADSHOW ROLLS OUT IN OCTOBER

In October 2011, the seventh annual Mines Safety Roadshow is travelling from Perth to regional venues. Presented by Resources Safety, the roadshow aims to raise awareness of issues that affect workplace safety and health culture, and provide a forum to discuss how these issues might be addressed at the operational level and in the boardroom.

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Most resource companies have yet to confront the issue of mental health in any meaningful, strategic way. However, it is critical to safety and should be a vital component in induction and training programs. To ensure better outcomes, mental health must also be properly integrated into OHS policies and practices. Presenters from the Australasian Centre for Rural and Remote Mental Health are using a workshop approach to explore the topic at this year's roadshow.

The roadshow also looks at how to raise and solve safety and health issues at the workplace, including the importance of effective communication and consultation, and the role of safety and health representatives.

There are presentations on the current status of the safety reform process at the Department, including the Reform and Development

at Resources Safety (RADARS) strategy and activities of the Ministerial Advisory Panel (MAP), as well as presentations on industry performance and regional safety issues.

If you work in the mining sector and would like to learn more about occupational health and safety issues, find out what is happening in mines safety reform or take the opportunity to meet Resources Safety staff, then registering for the 2011 Mines Safety Roadshow is a must.

The roadshow will be presented at the following venues:

- Perth – Tuesday 4 October
- Port Hedland – Tuesday 11 October
- Karratha – Wednesday 12 October
- Newman – Thursday 13 October
- Bunbury – Tuesday 18 October
- Kalgoorlie – Thursday 20 October

All events start at 8 am, finish at 3 pm, and include morning tea and lunch. Attendance is free but you must register.

For further information about the roadshow or to register, visit www.dmp.wa.gov.au/events or contact Resources Safety:

Telephone: (08) 9358 8154

Email: RSDComms@dmp.wa.gov.au

NEWS ABOUT OHS LEGISLATION WILL BE TRULY HARMONISED

In a true demonstration of goodwill and commitment to a positive outcome, UnionsWA, WorkSafe WA, the Association of Mining and Exploration Companies, the Chamber of Minerals and Energy WA and the Department of Mines and Petroleum have formed an alliance to ensure that the transition to the new occupational health and safety harmonisation laws is supported by consistent messages.

Representatives from these key stakeholders are meeting regularly to formulate a consistent set of appropriate messages that can be delivered by multiple avenues to those working in the mining sector. Web-based podcasts, and in-flight and pre-shift audiovisual presentations are being considered for message delivery, as well as the usual broadcast and print media.

A key outcome of the Department's Mining Industry Forum held in early 2011 was the identification of the need to provide appropriate

information about the harmonisation process to all levels within the industry. Those working in the mining sector must receive relevant information about the changes and benefits that are expected to be delivered. This is particularly important for supervisors and elected safety and health representatives, who will play an important role in answering "shopfloor" queries on the subject, and will be instrumental for the effective implementation of the consultation and risk assessment processes.

The precise time line to enactment of the new laws will be determined as the model laws pass through the State Parliamentary process. In the meantime, we can familiarise ourselves with the central philosophy and structure of the new laws, and prepare for their introduction in 2012.

Further information on the model legislation is available from the Safe Work Australia website at www.safeworkaustralia.gov.au

DMP LEGISLATIVE PROGRAM AS AT 9 SEPTEMBER 2011

DANGEROUS GOODS SAFETY

Resources Safety continues to progress amendments to reduce the regulatory burden and streamline administrative processes associated with dangerous goods safety legislation. Amendments to the security risk substances regulations have been finalised, and changes to the regulations on explosives and the storage and handling of non-explosives are ongoing.

The licensing structure for dangerous goods sites in Western Australia is being overhauled. Amendments will include introduction of a cost-recovery regime for the regulation of dangerous goods safety. Three sets of regulations will be abolished and the remaining four will be significantly amended. There has already been a move from three-year terms to annual licensing, as allowed by recent amendments to the regulations, in preparation for the licensing changes.

PETROLEUM AND GEOTHERMAL ENERGY SAFETY LEVIES

The Department of Mines and Petroleum is developing legislation to enable the imposition of safety levies to pay for the cost of regulating occupational safety and health under the State's suite of petroleum legislation. The Petroleum and Geothermal Energy Safety Levies Bill 2011 is in its final draft form and will be introduced into Parliament in the coming weeks. A supporting set of regulations will then be drafted to accompany the Act.

PUBLIC COMMENT ON MODEL WHS LEGISLATION

The six-week period for public comment on draft national health and safety legislation relating to the mining industry opened in July. Visit the Safe Work Australia website at www.safeworkaustralia.gov.au to find out more about the process and to view submissions.

UNDERSTANDING HUMAN FACTORS — BRIEFING NOTES ARE A VALUABLE RESOURCE

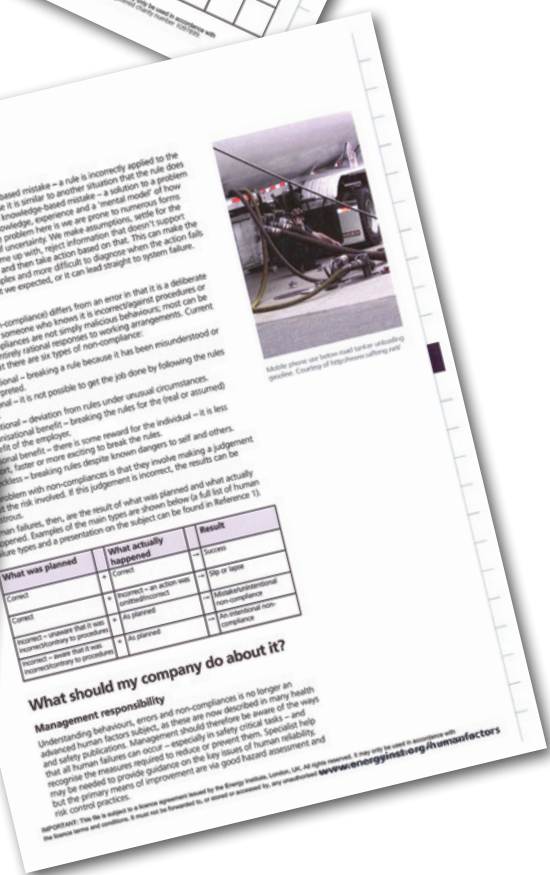
Understanding how human factors influence human performance is increasingly important as a management aid. There are many reference books and websites concerned with human factors and ergonomics and, although these terms are in common use in industry, it can be difficult to understand the influence in the workplace of particular human factors.

To improve industry's understanding of key human factors in the workplace, the UK-based Energy Institute's Human and Organisational Factors Committee has released a resource pack of briefing notes on human factors. Originally published in 2003, the resource pack has since been extensively reviewed, revised and expanded, with new case studies and other content added. It has also been redesigned to make it easier to read and more practical to use. The second edition was published in July 2011 and is available to download or purchase at www.energyinst.org/hfbriefingnotes

The briefing notes provide definitions and introductory discussions of the human factors most pertinent to the workplace. There are also:

- checklists of questions to gauge whether an organisation has a problem related to dealing with human factors;
- guidance on what the organisation should do to address each human factor issue;
- both "negative" and "positive" case studies (illustrating both consequences and potential solutions);
- potential performance indicators; and
- further reading lists.





Human factors briefing notes

No.	Title	Provides guidance on:
1	Introduction	Using the briefing notes and the importance of human factors
2	Alarm handling	Alarm 'flooding', standing alarms, nuisance alarms and others
3	Organisational change	Avoiding problems when restructuring an organisation
4	Maintenance	Ensuring reliable servicing, repair, testing, calibration and inspection of tools and equipment
5	Fatigue	Avoiding performance deficits associated with excessive mental or physical fatigue
6	Safety critical procedures	Ensuring the usability of all forms of work instructions
7	Training and competence	Ensuring workforce competence through selection, training and assessment
8	Ergonomics	Good design of tasks, workplace, tools and equipment
9	Safety culture	Securing appropriate values and management and workforce attitudes to safety
10	Communications	Ensuring the correct transfer of information especially at shift handover
11	Task analysis	Methods for examining work tasks
12	Human error and non-compliance	Understanding how and why tasks fail to meet objectives
13	Human reliability analysis	The principles and methods used to assess errors
14	Behavioural safety	Improving safety behaviour through observation and feedback
15	Incident and accident analysis	Learning lessons from untoward events
16	Human factors integration	Incorporating human factors into projects and organisational systems
17	Performance indicators	Lead and lag indicators of human performance for human factors topics
18	Leadership	The effect of leaders' influence and direction on health and safety
19	Pressure and stress	Coping with work demands and other sources of pressure
20	Occupational safety vs. process safety	The difference between personal and major hazard safety

Available from the Energy Institute, London www.energyinst.org/hfbriefingnotes

GENDERED BEHAVIOURS AND SAFETY — THE STORY SO FAR

A year ago, Dr Dean Laplonge, lead gender studies researcher at Factive cultural research consultancy, wrote an article for MineSafe introducing the idea of a link between gendered behaviours and safety. He argued the importance of taking this link into consideration as a means of driving better safety on mine sites. What has happened since then? How far has this debate moved along? Here, Dean updates his thoughts on gendered behaviours and safety in the mining industry. What do you think? Send contributions to this discussion to the Editor at RSDComms@dmp.wa.gov.au

Last year's safety roadshow series run by Resources Safety took up the topic of gendered behaviours and safety as its main theme for discussion. Travelling to Tom Price, Kalgoorlie, Bunbury, Newman and Perth, we were able to engage with about 400 mining personnel to gauge their thoughts on how "toughness" affected their workplaces.

The final report concluded that while there were some incredibly motivated and strong-willed individuals working in mining, many felt they were controlled by a culture of aggression, dominance and hyper-masculinity. Many more felt it was important to act like this to survive. What the workshop participants hoped for was the development of an industry-wide culture in which difference was more willingly accepted and where compassion was more evident.

In response to the discussions we had in the roadshow workshops, Resources Safety is developing resources to give employers ideas on how they can address issues such as sexism, homophobia and aggression in their workplaces.

In July this year, I presented the keynote speech at the New South Wales Minerals Council's OHS conference. I have given numerous talks and presentations on gendered behaviours and safety over the past year, but this was by far the largest crowd. I feel it is fair to say that the issue of gendered behaviours in the mining industry has finally been recognised. It is surely now considered an important topic of debate.

But after the debate, what then? What actions are being taken to address the impact gendered behaviours might be having on safety?

Despite my fears that it might happen, we have as yet seen no attempt by private consultants to offer quick-fix solutions to complex gender issues. This is not to say it won't happen. I still believe it could be highly tempting for an organisation to develop and offer such an approach. It would no doubt make them a lot of money. But any attempt to "fix" gendered behaviours by locking people into a classroom for a two-hour training session will fail. It will also have a negative impact on the overall debate.

There has been some talk about the natural eradication of risk-taking behaviours by men due to the influx of women into the mining industry. Who hasn't heard the story of the female truck drivers who took greater care of their vehicles, resulting in fewer injuries and less wear and tear on the tyres? It is almost becoming a legend in its own right! But we need to be extremely careful here. We should be wary of assuming that all women do not take risks and that we can rely on women to sort out issues associated with gendered behaviours. The belief that a greater number of female employees will naturally "tame" our men is misguided. It assumes that all women are always soft and gentle, when this is clearly not the case. It also allows us to skirt around the issue by refusing to look at the existing behaviours of men while we wait for the wonder women to come in and clean things up. If this isn't an example of sexism in action, I don't know what is!

In brief, I would say that there has been a slow response to the debate in terms of direct action by mining companies. I was recently encouraged by the advice of a man who has decades of experience in the industry. "Don't give up", he told me. "If you were trying to get us to build something big and visible, we would all be there alongside you. Then we could all step back and say, wow, look at that huge thing we have built! But you are dealing with cultural issues, the unseen, the unnoticed. It is not masculine to be interested in that!" The fact that he had made this link between gender and where we are willing to focus our efforts inspired me.

On reflection after this conversation, I have come to the conclusion that there are three main reasons why there has been little direct action on the part of mining companies to address gendered behaviours that affect safety.

The first is that when we are talking about gendered behaviours and safety in the mining industry, we are primarily talking about men. And when men are asked to think about gender, they tend to get



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2010 Mines Safety Roadshow at Bunbury

nervous. Recent wider social debates about gender have resulted in better opportunities for women in the home, in the workplace and on the streets. As the position of women has changed, so too have the expected and permitted behaviours of men. Some men may therefore see any focus on gender as leading to a reduction in their rights, their power and their dominance. I once heard a mine manager announce to his exclusively male leadership team that he wanted 30 per cent of their positions occupied by women within five years. You can imagine the look of terror on their faces. The one thing this manager didn't consider, however, was that one of those positions might actually be his! My point is that when it is primarily men who are being asked to approve of any work that involves gender and when this work involves looking at the behaviours of men, resistance is likely to be actively shown or covertly practised.

The second reason is because of confusion over where gender fits in the workplace. There is certainly no natural space for it because it is not something we consider important to the everyday workings of a mine. Whenever gender becomes an issue, it is usually something to do with women, so it is handed over to human resources, where we assume they know how to deal with "that sort of thing". But the link between gendered behaviours and safety has less to do with any corporate policy on diversity or inclusion, and more to do with the way safety personnel and crews in the field approach safety. Despite a recognised link between gendered behaviours and safety, it is extremely rare to find anybody working as a safety specialist who views safety through a gendered gaze. Training in safety just doesn't consider gender so we are not used to including it in the development of everyday safety practices.

The third reason is a lack of clearly defined resources to address gender issues. We have to be utterly honest here and admit that we actually don't know how to address issues related to gendered behaviours with absolute certainty. The mining industry tends to be an industry that likes absolutes, at least when it comes to plans that are expected to deliver precise outcomes within defined timeframes.

It is a very masculine thing to believe we know where we are going and what will be the results. But when it comes to dealing with gendered behaviours issues, this is never going to be on offer. We are always dealing to some extent with the unknown. Any willingness to investigate gendered behaviours in the workplace must take this uncertainty and lack of resources into account.

In conjunction with my colleagues at the University of New South Wales, I have now developed a few methods for responding to gender issues. As we have trialled these, we have been amazed at the differences in attitudes to gender issues we see at different worksites and among individual work crews. We are also challenged by the array of gender-related issues that we have to deal with. Development of the responses draws on existing notions of gender auditing and action research. In applying these concepts to the mining industry specifically, we hope to encourage mining companies to investigate seriously what it means to be a man working in a dangerous environment when contemporary cultural meanings of what it means to be a man encourage — and perhaps even dictate — risk-taking behaviour. And we are learning as we go.

I am convinced that the issue of gendered behaviours and safety is not a passing fad; it is of vital importance to this industry, as it is to any industry in which there are high percentages of men working in dangerous environments. We know that men engage in more at-risk behaviours than women. We know that masculinity demands men take risks in their daily lives to show how truly masculine they are. Australian masculinity, in particular, approves of risk-takers who can show their heroic strength. We cannot erase the link between what it means to be a man and taking risks. We also know that the Australian mining industry has an employee ratio of about 85 per cent men to 15 per cent women. These pieces of knowledge put together are surely good enough reason to take this issue very seriously. If we were aware of any reason, other than gender, why 85 per cent of our workforce was more at risk, I think we would be responding much faster than we are.

REDUCING THE POTENTIAL FOR HUMAN ERROR IN MINING

Barry Healy is Resources Safety's Training and Education Officer. He regularly contributes to MineSafe's "Barry's bookshelf" series, although the book reviewed here was on a mines inspector's shelf and not Barry's!

The “holy grail” of mining safety is the elimination of human error through good design of equipment, systems, policies, procedures and training — the mining sector constantly works towards this end. Yet human error remains the most common cause of workplace accidents according to Geoff Simpson, Tim Horberry and Jim Joy in their book *Understanding human error in mine safety*, published in 2009 by Ashgate Publishing.

In the introduction they tackle some myths about human error.

The first is that human error translates only to “frontline operator error”. However, for that to be true either managers, supervisors designers and others in the production chain don't make errors, or they aren't human!

The second myth is that accident-prone people are the problem. However, the head of the UK Health and Safety Executive has pointed out that while operator error is a major cause in 90 per cent of accidents, 70 per cent of accidents could have been prevented by management action.

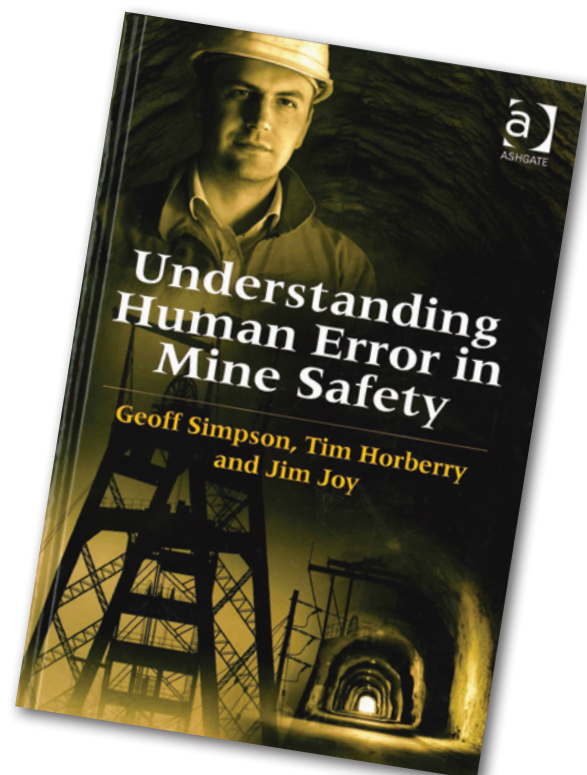
Of course, human factors, human behaviour and leadership interact. Workers' errors can be both active (doing something foolish) and passive (not responding to hazards), or the potential for human error may be built into the equipment provided.

An example cited in this book is workers driving mine vehicles too fast (operator human error) because their vehicle was not fitted with a speedometer (management human error).

A very useful section in the book covers a procedure to ensure that feedback from accident investigations is fed into risk assessment processes, rather than used just to deal with the particular task that went wrong. This is vital because, by definition, an accident is a failure of the risk assessment process, so feedback is valuable raw material for improving methods.

The key point is that human error should form the starting point for proper analysis of incidents by providing a valuable input to a full examination of safety systems. The workplace is not improved by simply identifying the guilty (frontline operator) party when something goes wrong, giving them a window seat and one-way ticket home, and ignoring the need for a deeper investigation.

Despite the fact that this book deals almost exclusively with the British coal industry, it is easy to read and practical enough to earn a place on any manager's or safety professional's bookshelf.



IRSST COMPARES QUALITATIVE TOOLS FOR ESTIMATING MACHINERY RISKS

Established in Quebec since 1980, the *Institut de recherche Robert-Sauvé en santé et en sécurité du travail* (IRSST) is a scientific research organisation that aims to:

- contribute, through research, to the prevention of industrial accidents and occupational diseases, and also the rehabilitation of affected workers;
- offer the laboratory services and expertise necessary for the activities of the public occupational health and safety prevention network; and
- disseminate knowledge and to act as scientific benchmark and expert.

Funded by the *Commission de la santé et de la sécurité du travail*, the board of directors of IRSST includes an equal number of employer and worker representatives.

The Institute recently released Studies and Research Projects Report R-684, part of its series on the safety of industrial tools, machines and processes. Prepared by Yuvin Chinniah and others, the report covers the experimental analysis of methods used to estimate risk associated with industrial machinery. The work was carried out cooperatively by IRSST and the Health and Safety Laboratory (HSL) in Harper Hill, United Kingdom.

The researchers analysed 31 qualitative approaches that conform to International Standard ISO 14121.1:2007 *Safety of machinery – Risk assessment – Part 1: Principles*. For each risk estimation tool, they investigated the influence on the outcome of the risk estimation parameters used, and estimated the risks for 20 hazardous situations. Their aims were to:

- compare the performances of the tools in estimating risk; and
- determine whether risk for industrial machines is rated uniformly using different tools.

The tools analysed include Australian Standard AS/NZS 4360:2004 *Risk management*, which has been superseded by AS/NZS ISO 31000:2009 (see article on page 12).

The researchers found significant differences in the risk estimated using different tools for the same hazardous situation — in other words, the estimated risk depended on the tool used. Contributing factors to the variability of the results included the complexity of the risk estimation tool and its architecture. Methods that follow the two configurations proposed in ISO 14121.1:2007 produce similar average risk levels, but both configurations have tools that either underestimate or overestimate the risk associated with hazardous situations.

The researchers concluded that simple risk estimation tools (i.e. two parameters) can be as effective as more complex methods (e.g. four parameters). They also noted that of the 31 tools analysed, nine tended to underestimate high risk scenarios and 14 tended to overestimate low to mid-low risk scenarios. Moreover, the researchers found that some methods are inappropriate for assessing machinery risk, despite the tool's documentation stating otherwise.

Their analyses of the behaviour of the various risk estimation tools led the researchers to propose a series of rules to reduce the variability. Their recommendations provide those using risk estimation tools with a guide to the most appropriate methods to apply to industrial machinery.

The researchers plan further studies using large samples from different industries to validate the risk estimation tools they consider most promising.

Do you want to see the research results?

To find out more about this work, download Report R-684 *Experimental analysis of tools used for estimating risk associated with industrial machines* from the IRSST website at www.irsst.qc.ca/media/documents/PubIRSST/R-684.pdf

IMBEDDING RISK MANAGEMENT IN BUSINESS PROCESSES

Australian Standard AS/NZS ISO 31000:2009 *Risk management – Principles and guidelines* is an important resource for managing an organisation's risks and achieving its objectives. The Australian standard adopts the 2009 International Standard ISO 31000, which was itself based significantly on an earlier Australian standard (AS/NZS 4360:2004).

Australian Standard AS/NZS ISO 31000:2009 is a generic standard intended to provide a common approach that complements other standards that deal with specific risks or industry sectors. It can be applied throughout the life of an organisation and cover a range of business activities, including strategy development and decision making, operational matters, and specific projects, products, services and assets.

Although the 2009 standard provides generic guidelines, it is not intended to promote uniformity of risk management across all organisations. The design and implementation of risk management plans must consider the specific needs of particular organisations.

There are three main parts to AS/NZS ISO 31000:2009:

- Principles
- Framework
- Process.

Although the superseded 2004 risk management standard (AS/NZS 4360:2004) provided a risk assessment process, the Principles and Framework parts of the new standard address the incorporation of risk management in an organisation's business processes.

The Process part of the new standard is an update of AS/NZS 4360:2004 but emphasises the importance of an organisation's management system supporting of the risk management process.

The Principles, Framework and Process aspects of the new standard provide an important mechanism for dealing with the anticipated "due diligence" requirements in the proposed new Work Health and Safety legislation. Due diligence under the Model Act means taking reasonable steps to:

- acquire and keep up-to-date knowledge of work health and safety matters;
- gain an understanding of the nature of the operations of the business or undertaking of the person conducting the business or undertaking, and generally of the hazards and risks associated with those operations;
- ensure the person conducting the business or undertaking has available for use, and uses, appropriate resources and processes to eliminate or minimise risks to health and safety from work carried out as part of the conduct of the business or undertaking;
- ensure the person conducting the business or undertaking has appropriate processes for receiving and considering information regarding incidents, hazards and risks and responding in a timely way to that information; and
- ensure that the person conducting the business or undertaking has, and implements, processes for complying with any duty or obligation of the person conducting the business or undertaking under this Act (e.g. reporting notifiable incidents, consulting with workers, ensuring provision of training and instruction to workers about work health and safety); and
- verify the provision and use of the resources and processes referred to above.

Standards documents on risk management

AS/NZS ISO 31000:2009 *Risk management – Principles and guidelines*, Standards Australia

HB 158-2010 *Delivering assurance based on ISO 31000:2009 Risk management – Principles and guidelines*, Standards Australia

HB 327:2010 *Communicating and consulting about risk*, Standards Australia

IEC/ISO 31010:2009 *Risk management – Risk assessment techniques*, International Electrotechnical Commission (IEC)

ISO Guide 73 *Risk management – Vocabulary*, International Organisation for Standardization (ISO)



Do you need a guide to the International Standard?

Here are some useful links.

www.inconsult.com.au – Risk management update: ISO 31000 overview and implications for managers

www.airmic.com, www.Alarm-uk.org or www.theirm.org – A structured approach to enterprise risk management (ERM) and the requirements of ISO 31000



FREQUENTLY (AND NOT SO FREQUENTLY) ASKED QUESTIONS

Resources Safety's mines inspectorate regularly receives queries from industry members about both technical issues and the application of mines safety legislation. Most of these enquiries are directed to the vast library of guidance material housed at the Resources Safety website. However, some queries crop up time and again, or are unusual and require a specialist response.

Here we have paraphrased some of the frequently, and not so frequently, asked questions and our responses, which we hope you will find interesting and useful.

Q. What are the requirements under the *Mines Safety and Inspection Act 1994* and regulations for recording work time and breaks for drivers at a mine site? Regulation 3.134 of the Occupational Safety and Health (OSH) Regulations 1996 refers to recording break times.

A. There is no mines safety regulation that specifies the number of hours of work or the breaks to be allowed at a mine site, nor the recording of work times and breaks as provided under OSH legislation. However, the risks due to fatigue are as important at mine sites as they are elsewhere and therefore must be minimised.

These issues are generally covered by the duty of care requirements in Section 9 of the *Mines Safety and Inspection Act 1994*, and by the code of practice and accompanying risk management guidelines on working hours, which were published jointly in 2006 by WorkSafe and Resources Safety. The code and guidelines are available from the Resources Safety website.

You should follow the mine's approved procedure for balancing your work and rest times. Discuss this with your supervisor or manager.

Q. Are there any special requirements regarding the provision and construction of medical facilities at mine sites, such as the number of square metres or beds per 100 workers?

A. In general, Division 3 of Part 4 of the Mines Safety and Inspection Regulations 1995 deals with emergency preparation, including the availability of first aid facilities. Regulation 4.24 requires the principal employer and registered manager to provide first aid equipment and other medical facilities, and provides guidance on the factors that should be considered when deciding on the type and quantity of equipment and the size of medical facilities. Regulations 4.25 to 4.29 give further details on these requirements.

However, these regulations do not specify numbers for beds, rooms, ambulances and other equipment. As you are probably aware, there is wide variation in the size, location and complexity of mines, and in the hazards associated with the material being mined or processed. All of these factors contribute to the different levels of risk and must be considered when deciding on the provision of appropriate first aid and medical facilities.

Mine managers need to conduct risk assessments to determine the facilities required for a particular mining operation. For example, a sand-loading operation in the Perth metropolitan area with five employees has different risk levels than a remote mine that employs 1,500 workers and uses chemicals. Similarly, a mining operation with 1,500 employees in the Kwinana area would be treated differently to a mine with the same number of employees in the remote Kimberley region.

Resources Safety has not issued any guidance material for risk assessment in this specific context. General information on risk assessment is available from many sources, including Australian Standard AS/NZS ISO 31000:2009 *Risk management – Principles and guidelines*.



Q. Could you clarify who is responsible for reporting to Resources Safety when a contractor on a mine site is injured? Is it the contractor or the mine operator?

A. It is the responsibility of the registered manager of a mine site to notify Resources Safety when any workers on that site are injured, including contract employees. The report is submitted to the Safety Regulation System (SRS), usually by someone delegated by the registered manager.

As a contractor, you must report injuries and specific incidents prescribed in the legislation, including “near misses”, to the person delegated by the registered manager so they can notify Resources Safety. The Resources Safety guideline on accident and incident reporting contains further information.

Q. What are the requirements regarding colour-blind people in the mining industry, and are they allowed to work underground?

A. The mines safety legislation is silent on the health requirements for individuals in the Western Australian mining industry, including underground operations.

Depending on the nature of the work, employers may stipulate minimum medical standards for their employees but they must be mindful of any applicable anti-discrimination laws.

Unless specific job requirements are such that an individual with colour blindness cannot perform the job safely (e.g. electrical work requiring the ability to distinguish the colour of wires) or unless an individual’s colour blindness could endanger others, there is nothing specified in the *Mines Safety and Inspection Act 1994* and regulations prohibiting their employment. This situation is covered generally under the duty of care requirements in Section 9 of the *Mines Safety and Inspection Act 1994*, rather than by a particular provision.

For colour blindness, an employer must consider each case and make a decision based on the level and type of colour blindness and nature of the job to be performed.

Q. May a new graduate be a responsible person at a mine?

A. It is not clear what you mean by “responsible person”. In the Mines Safety and Inspection Regulations 1995, a “responsible person” is defined as:

- the principal employer at the mine;
- any other employer at the mine; or
- the manager of the mine.

You are probably not asking if a new graduate can hold any of these positions.

Employees, including new graduates, can be given various roles, some of which may have statutory responsibilities. There are many positions that, under the *Mines Safety and Inspection Act 1994* or regulations, require a statutory certificate or particular qualification (e.g. mines surveyor). There are also positions that have no formal qualification requirement and a person may be appointed to such a position with some responsibilities under the Act or regulations. However, before such an appointment is made, the appointing authority must ensure that the person is competent for the role.

Q. Is certification required for cap lamps in Western Australian mines?

A. Regulations 10.6 and 10.7 (for flame safety lamp) deal with this subject. You may like to review these and other applicable statutes, which are available from the State Law Publisher (visit www.slp.wa.gov.au).

Certification is not required by Resources Safety for cap lamps used in underground mines, but they do need to comply with applicable Australian standards (or others where there are no Australian standards). Generally, cap lamps approved in other Australian jurisdictions are acceptable in Western Australian mines.



DRUG ABUSE — PLAYING RUSSIAN ROULETTE WITH SAFETY AND LIVES?

As everyone involved in the resources industry knows, comprehensive drug testing is used throughout the industry to ensure employees present free of drugs and alcohol, which can impair their ability to work in a safe manner. The combination of mining operations and non-therapeutic drugs is not a good mix. Not only is the safety of the person affected by drugs compromised, but also the safety of any co-workers who might interact with the affected person.

However, there are more reasons to avoid drug abuse than just safety at work, although that alone should be sufficient reason. The serious long-term consequences of sustained drug use can have a major impact on an individual's physical and mental health.

Two of the most commonly used illicit drugs are cannabis and methamphetamines.

Cannabis

Regular long-term use of cannabis may cause or contribute to a number of health problems, including serious mental illness.

The British Medical Journal published a research paper in 2002 showing that heavy users of cannabis at age 18 are at least six times more likely to be diagnosed with schizophrenia in their thirties than those who do not use cannabis. The paper by Louise Arseneault and others also clarified that it is cannabis use, rather than other drugs, that is linked with schizophrenia.

In 2007, Theresa Moore and other researchers concluded in *The Lancet* that "there is now sufficient evidence to warn young people that using cannabis could increase their risk of developing a psychotic illness later in life". They found in their review of 35 long-term studies of cannabis users that its use increased the risk of developing a psychotic illness, including schizophrenia, by 40 per cent. This figure was doubled for frequent or heavy users.

Papers published in 2005 by Cécile Henquet and others in 2005, and in 2008 by Chris Hollis and others and Monique Konings reported a significant link between cannabis use and mental health disturbance in young people who are genetically predisposed to mental health problems such as schizophrenia.

Other health problems linked to long-term cannabis use are:

- chronic cough, wheeze, shortness of breath, or chronic bronchitis — cannabis smoke contains many substances that irritate the airways. Cannabis users tend to hold the smoke in their lungs for longer periods than cigarette smokers, which aggravates respiratory problems;
- increased risk of cancers of the lung, mouth, throat and tongue — cannabis smoke contains numerous carcinogens;
- for regular cannabis users, an increased likelihood of psychotic symptoms in people who have a personal or family history of mental illness. Cannabis also appears to worsen psychotic symptoms for people with schizophrenia, and using cannabis can lower the chances of recovery from a psychotic episode;
- reduced fertility in both men and women;
- increased risk of low birth-weight babies and birth defects if cannabis is used during pregnancy; and
- impaired immune system.

Synthetic cannabinoids

The long-term effects of using synthetic cannabinoids are as yet unknown. There have been no studies of the effects of synthetic cannabinoids on the body and brain.

Smoking any substance is likely to damage the lungs, but as yet there is no specific scientific evidence about the specific dangers of using these synthetic marijuana-like products, sold under names such as "K2", "Spice" and "Kronic".

Synthetic cannabinoids were created in the 1990s by researchers looking for a substance that would contain pain relief similar to that provided by marijuana, but without the negative side-effects. They found that while such products do relieve pain, there are negative side effects such as seizures, elevated blood pressure and nausea.

Professor John W. Huffman, one of the early researchers involved in synthesising cannabis, has been quoted in a March 2010 interview published on the American website *Livescience.com* as saying, "It's like playing Russian roulette. You don't know what it's going to do to you."

A number of people have already been admitted to hospitals in Western Australia after an adverse reaction to synthetic cannabinoids. In July this year, five people were admitted to a Perth hospital in one night after reportedly using synthetic cannabinoids. They reported symptoms including heart palpitations, high blood pressure and general feelings of sickness.

Methamphetamines

There is a strong link between the use of methamphetamines, such as “speed” and “ice”, and depression, suicide, serious heart disease, amphetamine psychosis, anxiety and violent behaviour. Methamphetamine abuse can also cause neurotoxicity, which can result in persistent cognitive problems such as memory loss, impaired attention span and reduced executive function (system in the brain for thinking, acting and solving problems).

The Canadian-based Centre for Addiction and Mental Health has undertaken one of the few studies examining methamphetamine use and long-term medical consequences, and the results were published in July 2011 by lead researcher Russell Callaghan and others. Their examination of almost 300,000 Californian hospital records spanning 16 years showed that people who abuse methamphetamine or other amphetamine-like stimulants were more likely to develop Parkinson’s disease than those who did not.

Methamphetamine is also very addictive. According to a study published by Alasdair Barr and others in 2006, after stopping methamphetamine use, more than 20 per cent of people who have been addicted develop a long-lasting psychosis resembling schizophrenia. The psychosis can persist for more than six months and is often untreatable.

Injecting or snorting amphetamines or similar substances increases the risk of addiction. The way methamphetamine is taken can also cause health problems.

- Snorting the drug over a sustained period can lead to nosebleeds, sinus problems and damaged nasal passages.
- Injecting the drug with used or dirty needles increases the risk of hepatitis B and C, HIV infection, blood poisoning (septicaemia) and skin abscesses.
- Injecting the drug over a sustained period can result in blocked blood vessels caused by either the drug itself or other substances mixed with it. Constricting blood flow can seriously damage the liver, heart and kidneys, as well as cause inflamed blood vessels and abscesses.

People who have an especially strong reaction to methamphetamine can overdose after taking just small amounts of the drug. Symptoms of methamphetamine overdose include:

- psychosis;
- faster, irregular or weak heartbeat;
- heart attack;
- bleeding from blood vessels in the brain;
- very high fever; and
- death.

Game for drugs?

Is it worth playing Russian roulette with not only workplace safety and workmates’ lives, but personal health and wellbeing?

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THE HAZARDS OF CUTTING DANGEROUS GOODS DRUMS

Australians are known for their resourcefulness. For example, many old 44-gallon drums have had a lifetime well beyond their use for transporting and storing fuel.

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Cut the top off a drum, add a hole or two and *voilà*—an incinerator! Cut a drum in half lengthways and the end product could be a water or feed trough for animals. Add a stand and a grid or plate for cooking, and there stands a bush barbie for feeding the hordes. There are some interesting blogs on re-using such drums.

Unfortunately, however, the process of cutting an old drum can be fraught with danger. In a recent safety alert, Resources Safety warned of the hazards associated with using an angle grinder to cut dangerous goods drums if the containers hadn't been thoroughly cleaned.

Two people have died recently in Western Australia and another was seriously injured when using an angle grinder to cut up a 205-litre drum previously used to store dangerous goods. In each incident, sparks from the angle grinder ignited residual flammable liquid inside the drum, causing an explosion.

If you are thinking of buying, selling or re-using a drum previously used for dangerous goods, read Dangerous Goods Safety Bulletin No. 0111 so you know the requirements — and the hazards.

WHAT DO THE NEW ZERO BAC LAWS MEAN FOR DANGEROUS GOODS TRANSPORT?

A crash involving a motor vehicle carrying dangerous goods, such as explosives, can have a severe outcome. Dangerous goods can be highly volatile or noxious and present a danger to people's health and the environment if spilled.

In recognition of these dangers, effective from 1 October 2011, an amendment to the *Road Traffic Act 1974* will make it illegal for drivers of vehicles carrying dangerous goods in bulk to have any alcohol in their bloodstream. The Zero Blood Alcohol Content (Zero BAC) laws have serious consequences for the livelihood of a person convicted of transporting bulk dangerous goods when they have alcohol in their system.

Under the amended law, drivers convicted of having 0.02 g or more of alcohol per 100 mL of blood (i.e. 0.02 per cent BAC) will have their dangerous goods or explosives driver licence cancelled and will not be permitted to apply for a new licence for five years.

A conviction for a BAC of up to 0.02 per cent may also lead to ineligibility for these licences. Once ineligible, a person cannot apply for a new licence for five years.

Dangerous goods and explosives drivers are reminded that they must notify Resources Safety within 14 days if their motor vehicle driver licence is cancelled. Penalties apply for failing to do so.

More information on dangerous goods and explosives drivers licences is available in the safety guidance and FAQs section of the Resources Safety website — check out dangerous goods transport.

You can also contact Resources Safety Customer Services by phone (08 9358 8001) or email (rsdclientservices@dmp.wa.gov.au) for further clarification.

More information on the Zero BAC laws is also available from the Department of Transport at www.transport.wa.gov.au/licensing

Some sobering facts from the Road Safety Council of Western Australia

- If you drink and drive or take drugs and drive, you are more likely to be involved in a crash.
 - Alcohol is currently a factor in almost a third of crashes in which people are killed and seriously injured on Western Australian roads. With a blood alcohol content (BAC) of 0.05, the risk of being involved in a crash doubles.
 - Over the five years to 2010, there were more than 1,200 serious, alcohol-related crashes in Western Australia.
- If these crashes had not happened, more than 300 people would not have died, more than 1,300 people would not have been seriously injured, and the Western Australian community would have saved about \$2.3 billion dollars.
- In 2007, illicit drugs were detected in almost 30 per cent of people fatally injured in crashes in Western Australia.



Mines inspectors Graham Bloomfield and Craig Cullen with Expo visitors

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HEARING AWARENESS WEEK 2011

Four million Australians, or nearly one in five people, are affected by significant hearing loss — more than one-third due to excessive noise (termed “noise-induced hearing loss”).

Hearing loss affects learning, communication, safety, employability and personal relationships. The impact of noise-induced hearing loss is severe and highly relevant in both industry and the community — but it is 100 per cent preventable.

Held from 21 to 27 August, Hearing Awareness Week 2011 was an important community health and safety initiative coordinated by the Deafness Forum. It sought to raise awareness of hearing impairment and ways to protect hearing.

Chevron Australia saw an opportunity to play an active role in Hearing Awareness Week by helping to raise awareness of the impact of noise and hearing loss across its workforce and the business community. The company is committed to ensuring every member of its team goes home safely every day — and that means without any damage to their hearing.

Chevron worked closely with the Deafness Council of Western Australia, the Western Australian government and community groups to coordinate a week-long program of activities in Perth and field locations providing information on practising good hearing health.

Highlights of the week included a noise expo, held in Perth in the lobby of the QV1 building on 23 and 24 August. This event featured more than 30 booths providing information on the work of charities, equipment and service providers, universities and government agencies, including Resources Safety, along with Chevron initiatives relating to noise reduction. A highlight was a presentation from children from local deaf schools.



Hon Nick Goiran MLC, Kylie Aitkenhead (GrowSmart) and Hon Peter Abetz MLA at the GrowSmart stand



Photos courtesy Chevron Australia

Jim McLoughlin (SVT Engineering) in "Mythbuster" mode at a workshop



Paul Higginbotham (Telethon Speech & Hearing Centre) and Rick Biddle (Chevron Australia)

Mines inspectors attended the Resources Safety stand on both days and reported excellent interaction with occupational hygienists and other health and safety professionals from industry and the public sector, occupational health and safety students from Curtin University, and the general public.

Resources Safety prepared two expo posters — one on the theme of “protect” and the other on “prevent”. These were well received by industry participants and are now available online.

A breakfast hosted by Chevron in conjunction with the Deafness Council of Western Australia was held on 25 August and featured a presentation by Paul Higginbotham, CEO of Telethon Speech & Hearing. Paul covered the operation in the Pilbara of the new Telethon Speech & Hearing Mobile Earbus, sponsored by Chevron. The Earbus is a specially modified bus that provides a free hearing and ear screening service for indigenous children who are at risk of middle-ear problems.

Chevron also held a series of workshops for personnel on topics including:

- noise reduction at the design stage;
- personal media-player noise and hearing loss in children;
- impacts of hearing loss, and strategies and options for coping with hearing loss; and
- engineering challenges and solutions.

Interpreters were used during the week to accommodate the needs of attendees from the deaf community.

The mines inspectors who attended the workshops reported that the week’s events provided many opportunities for discussions and networking, and a forum for gaining an insight into current trends and options for noise management.

PROTECT

At work and home

120 dB - Underground drilling

140 dB - Jackhammer

110 dB - Mill

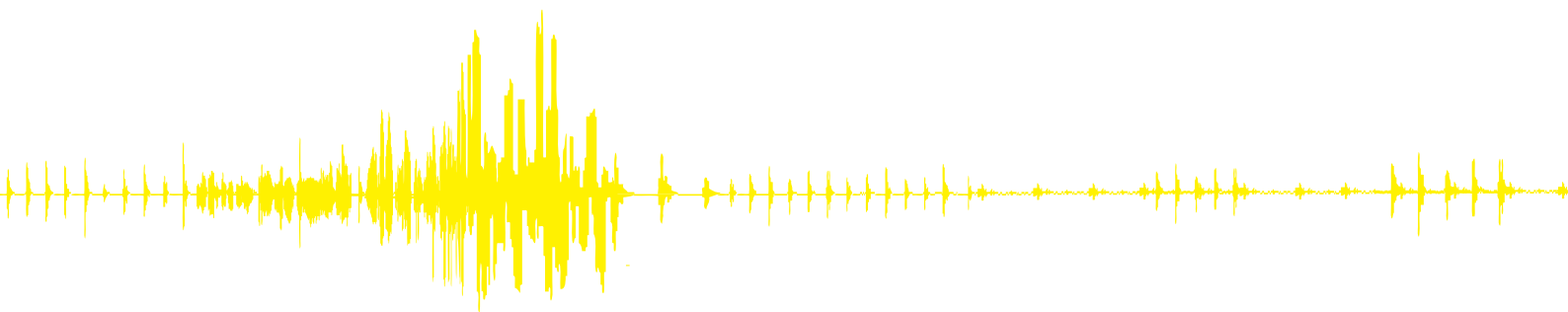
110 dB - Haulage truck

140 dB - Jet plane taking off

**3 dB increase
= doubling of
sound energy**

PREVENT

Think about design and "buy quiet"



Resources Safety has released two new posters relating to noise and noise-induced hearing loss. Check out the occupational health section of the Resources Safety website at www.dmp.wa.gov.au/ResourcesSafety

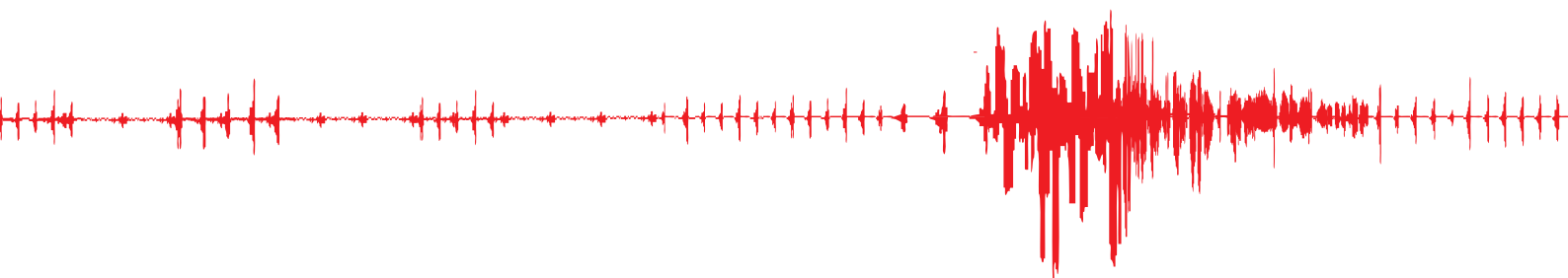




Photo courtesy MMG Century

QUEENSLAND INNOVATION ADDRESSES DOZER HAZARD

In November 2010, Resources Safety issued Mines Safety Bulletin No. 93 to alert industry to the dangers associated with lowering and raising bottom guards or belly plates on heavy earth-moving equipment during inspections, maintenance and repairs. Serious or fatal crush injuries can result if the guard is not appropriately restrained or supported when the nuts or bolts securing it are loosened. A recent innovation from Queensland tackles this hazard.

At the 2011 Queensland Mining Industry Health and Safety Innovation Awards held in August, MMG Century was recognised for its inventive approach to injury prevention with the Strongback Power Lift. The device is a remote-controlled platform used to reduce the risks associated with dozer maintenance.

It was developed to assist tradespeople to safely remove the belly guards from the underside of dozers. Each gusseted steel plate weighs about 215 kilograms. Century General Manager Karl Spaleck said that the device differed from other products in the market because it had been developed especially for use with dozers.

“The Strongback Power Lift has a low centre of gravity to improve stability and tracks to allow the device to be used on flat and uneven surfaces. Another important feature is the use of a remote control to guide the platform out from under the dozer.

“These features reduce the physical effort involved in the task and needed to handle the 215 kilogram part, and enable the operator to carry out the task with full visibility and clear of the dangerous dozer blade.”

Mr Spaleck said that a training package had been developed to assist tradespeople to safely operate and maintain the unit.

“Helping our people to stay safe is more about providing the right equipment for the job. It’s also about providing them with the knowledge they need to do the job right. Safety is a key value at Century and we’re continually working to do things better and safer.”

The pilot program for the Strongback Power Lift will continue at Century’s Lawn Hill mine site throughout 2011.

Further information on this device and another 28 submissions in the Innovation Awards is available from the Queensland Resources Council’s website at www.qrc.org.au/conference

TEAM SKILLS SCENARIO MORE THAN A PIPE DREAM

What do you get when you add:

- twelve six-metre, two-tonne sections of concrete pipe;
- two five-tonne, 30-inch diameter valves;
- four CCTV cameras and monitors; and
- a set of walkie talkies?

This year's team skills scenario at the 2011 Surface Mine Emergency Response Competition held in Kalgoorlie in May.

For Barry Arber, the team skills event manager, the scale of this scenario was something he had dreamed of creating. And what better timing than at this year's 100th anniversary of mine rescue competitions in the Goldfields.

Barry said, "This was definitely a scenario that I have wanted to do."

The storyline for the scenario also had elements from recent incidents in the Goldfields, adding an air of realism.

The event infrastructure took about three days to set up and involved a crane and a number of trucks. But how difficult was it to get everything in place?

"It had its moments", Barry said. "I had to coordinate a lot of resources at the same time."

The pipeline stretched for 72 metres in total and, with the valves added, weighed some 34 tonnes.

"Material came from far and wide and obviously there was a bit of weight to manage and secure", Barry said.

Barry also organised the installation of the CCTV and monitoring equipment.

When the scenario was set up, the 800-mm diameter pipe stretched for 30 metres from an entry point to a T-junction and emergency exit, then for a further 42 metres to a Y-piece and ventilation area.

"It was quite a long pipe", Barry said. "We also had two 30-inch block valves, which have a crank geared head end on them. They take a thousand turns to open and close, so that is a mission on its own."

The scenario was challenging enough to set up, let alone compete in. Barry said that he hoped the teams had appreciated what was needed to work through the scenario.

"They were given a number of steps that they needed to carry out that were fairly specific to each task" he said. "If they followed those instructions and came up with a plan based on those instructions, completing the scenario was possible."

Barry said that he enjoyed putting teams in challenging scenarios.

"The team skills event is a very difficult discipline", he said. "It has a wide scope and it is important to utilise the whole team."

The use of CCTV and walkie talkies in this year's event also threw a curveball at the captains.

"Removing the captains from their team and setting up command and control in a separate area effectively divorced them from the team", Barry said. "They were certainly challenged when communicating with their teams."

For Barry, that is what it is all about.

"It is encouraging to see these teams being challenged and I hope they benefited from the experience", he said. "It is what teams actually got out of the scenario that is ultimately important."

See the July issue of MineSafe (volume 20, number 1) for more news about the Chamber of Mineral and Energy Western Australia's 2011 Surface Mine Emergency Response Competition.



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TYC

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REALISING THE PIPE DREAM

As promised in the last issue, here is the first-hand account from *MineSafe's* Beau Pearson about being a "casualty" in the team skills event!

When I put my hand up to volunteer to be a casualty in this year's Surface Mines Emergency Response Competition run by the Chamber of Minerals and Energy Western Australia, little did I know what I was getting myself in to.

I had covered two previous competitions in the Goldfields and one in the South West for MineSafe and, while I enjoyed the experience covering the competitions as a neutral observer, I thought it was now time to get my hands dirty.

I arrived on site early in the morning and met with Event Manager Barry Arber to run through the scenario, described below.

- I am a pipeline maintenance worker repairing a water pipeline when an earthquake causes an uncontrolled release of water.
- I am washed down the pipe and end up behind a valve. There is another valve near the entrance of the pipeline and both need to be raised before the team can enter to rescue me.
- Unfortunately, for the rescue team, the valves need to be manually raised via a crank on the surface. It takes 1,000 full turns to raise or lower one of the valves!
- The earthquake has also caused chlorine gas to be released and I am forced to wear my self-rescuer respirator.
- There are a number of CCTV cameras that cover both the inside and outside of the pipe.
- Although I have been knocked around, I have no physical injuries. I am, however, very disorientated and scared.

Once Barry finished briefing me, I was kitted up in full overalls, hard hat, self-rescuer, safety glasses, gloves and knee pads. I then made my way down the trench to the pipeline. Here is my in-the-moment account as the scenario unfolds.

It is still early in the morning. The chill from the desert-spawned breeze cuts straight through my protective clothing. I crouch down and cautiously make my way into the pipe.

My hard hat rhythmically taps out an industrial tune on the concrete roof, as I crawl the 40-odd metres along the pipe until I see a CCTV camera in front of me. I settle down about a metre from the CCTV lens.

"Are you in position?" crackles an indeterminate voice over my walkie-talkie.

I briefly consider replying "roger that" but self-consciousness dictates a short, stammered "yep".

After about 30 seconds I come to the distinct conclusion that it is rather difficult to make yourself comfortable inside an 800-mm concrete pipe on a brisk May morning in the Goldfields. Nevertheless I rest my head on my gloved hands and watch as my breath kicks up dust into the thin slivers of morning light that infiltrate my concrete cocoon.

It is hard to keep track of time and I begin wondering when the scenario will start. Perhaps it has already started and I just haven't realised it? The distant screams of casualties from a neighbouring scenario pierce the dark silence.

Then, a duel-toned siren erupts. The sound reverberates through the concrete pipeline and permeates my body. I put on the self-rescuer and stare up at the CCTV camera. The scenario has definitely started.

The siren plays its dreadful melody for what seems an eternity. The radio crackles to life as the emergency response team runs through their checks. I have been given explicit instructions not to initiate contact on the radio, so I listen quietly to their official-sounding chatter.

Having seen the control room, I know that the teams will see me if they look closely at one of the monitors. I am directly in the line of sight of a CCTV camera, just beyond the second valve. Clearly no-one has seen me yet.

At long last the siren is relieved of its incessantly annoying duties and only the occasional voice over the radio breaks the refreshing silence. Still no-one has tried to contact me but the radio chatter implies a discernible increase in activity on the surface.

In the world outside my concrete pipe, team members have donned their breathing apparatus (BA) and entered the trench. I can tell by the sound of steel-capped boots on metallic stairs that they are at the first valve.

I hear the valve door slowly open as two members of the team start winding the crank. The crank is more like a torture device than industrial infrastructure. No doubt the team members winding it feel likewise, as each rotation lifts the valve an almost imperceptible amount.



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The radio crackles.

“Hello, maintenance worker, are you there?”

At last they have made contact with me.

“Help!” I shout into my walkie talkie. “I’m stuck in the pipeline!”

My voice is a combination of mock desperation and helplessness.

“We’re working on getting a team through to you”, comes the reassuring response.

The voice on the walkie talkie asks my name, what kind of injuries I might have and all the usual tick-box type questions you should ask when assessing a casualty in an emergency. The voice also tells me that he is the captain of the emergency response team. Over the next 15 minutes he tries to calm my increasingly desperate cries for help.

I also hear the conversations between the captain and his team as he guides them through the pipeline. The rescuers successfully negotiate the first valve and I see the distant flickering of a cap lamp as it bounces off the darkened concrete surrounds of the pipeline.

Another few minutes pass and I hear the wheezing sound of the BA equipment as the two rescuers crawl their way through to me. The light brightens, until I see them at the T-junction. They contact the team captain to confirm that they have made visual contact with me. They see that I am behind the second valve and they try to coax me out.

“I can’t make it past the valve”, I tell them. “You need to open it and help me through.”

If truth be told, I could just squeeze under the valve gate but, once again, I had been instructed that teams need to raise the valve and make physical contact with me.

The rescue team relays my plight to the team captain. I hear rushed footsteps as people climb the second valve station outside and start to crank open the valve. Once it is raised about 10 cm, the rescuers grab my hand and pull me through.

“Are you okay to crawl out of here?” one of the rescuers asks.

I gingerly nod my head and start the long crawl out of the pipeline.

It takes only ten metres for my kneepads to slide down to my shins. I feel every loose piece of rubble scraping my kneecaps. Ever the professional, I don’t break character to adjust the pads but put up with the increasing discomfort.

I slowly become aware of a dim, dusty light as we get closer to the pipeline’s opening. A hand reaches into the tunnel and pulls me limply into the bright light.

Now that I am free of my concrete tomb, the attending medic removes my self-rescuer, straps an oxygen mask onto my face and lies me down on a stretcher. Vital signs are checked and the medic asks me a number of questions. I respond in a dazed, lethargic fashion.

I am just about to be handed over to the fictitious ambulance officers when Barry yells “Time!” And with that clarion call, the scenario is over.

I whip off the oxygen mask and jump out of the trench. No doubt the rescue team wonders where that energy had been during the long crawl out of the pipeline! While clearly not an Oscar-winning performance, I think I did an alright job of being a casualty. In fact, I actually enjoyed being a part of the scenario and seeing what the team was capable of.

Then the realisation hits me — one team down, more to come.

“I might have to superglue those kneepads onto my knees”, I ponder.

MARK YOUR DIARY



Want to know when the roadshows are on?

Receive the latest news about Resources Safety's publications, safety alerts, events and safety reform progress – subscribe to our email alert service.

Visit www.dmp.wa.gov.au/ResourcesSafety and sign up today.

CALL FOR INDUSTRY-WIDE APPROACH TO INCIDENT MANAGEMENT

Stuart Wilson, Principal Advisor for Crisis and Emergency Management at Newmont Mining Corporation, has 20 years of experience in crisis and emergency management. He adjudicated the incident management scenario at the recent Surface Mine Emergency Response Competition held in Kalgoorlie. Stuart has called for a single, industry-wide standard for incident management.

.....
What do you think of Stuart's proposal? Should there be an incident management standard for the Australian mining industry or adoption of an existing system? Send contributions to this discussion to the Editor at RSDComms@dmp.wa.gov.au

Mining executive Stuart Wilson believes that a uniform approach to incident management in mining will increase efficiency when managing multi-agency responses. A single system would also mean that management staff moving between companies would already be familiar with how they are expected to manage an incident — rather than having to learn a company-specific system. Their ability to respond immediately in a new position could save lives.

As the current resources boom takes hold, maintaining a highly trained team in a site- or company-specific incident management system is becoming increasingly difficult as people move around the industry.

“Having a system that standardises incident management across Australia would benefit the industry and improve the levels of professionalism in our management body,” Stuart said.

“As part of that standardisation, we should incorporate a formal and accredited training course into the certificates of competency requirements for managers.”

As national harmonisation of occupational health and safety regulation unfolds, Stuart believes now is the perfect time to adopt a national industry incident management system.

According to Stuart, the Australian Inter-Service Incident Management System (AIIMS) is an obvious choice because it is a nationally recognised and accredited system that is already used extensively in Australia by municipal and Commonwealth fire and emergency services organisations. It would allow seamless transitions between government and industry emergency services for major incidents such as those at Bronzewing in June 2000 and Beaconsfield in April 2006.



Terry Siefken, Resources Safety, and Stuart Wilson (right) adjudicating incident management scenario

He said, "Introducing AIIMS into the academic stream for mining graduates would be the first step in achieving a consistent approach to incident management training and improving industry management team standards.

"At the moment, many of our managers receive practical incident management training on the job. They learn by being thrust into the heart of an incident and it's 'sink or swim' for many. The cost of this approach could be too high, and industry should think about approaching this more systematically.

"Our managers, foremen and shift bosses are required to hold certificates of competency that qualify them to 'direct and manage workers'. However, as an industry, we typically do not train them to manage the emergencies that they may also be responsible for handling. It is time to pay greater attention to this critical qualification and introduce a universal training program.

"To maximise the industry benefits from AIIMS, the introduction of core training units is required. These units could be introduced during undergraduate and post-graduate studies so that the industry leaders of the future are already equipped when they enter the workplace. The industry also needs to push for the inclusion of managerial and supervisory roles in the competency training."

AIIMS is scheduled to be progressively introduced to Newmont's six Asia Pacific operations over the next 12 months. Adapted from the American Incident Management System, AIIMS has been the standard incident management platform used by Australia's police and fire and emergency services organisations since the early 1990s.

"AIIMS operates efficiently on multiple levels for any type of incident — imminent or actual, natural, industrial or civil — where a management system is required," Stuart explained. "It provides a common management platform that assists incident management teams to control the emergency effectively and efficiently. It is a field-based system and is not intended to replace companies' crisis management systems.

"AIIMS can be applied to an incident of any scale and includes expanded responses that can be adopted should the incident grow in size and complexity. It provides a standard framework likely to be used by all services involved with incident resolution, and provides the opportunity for an integrated management system.

"The system includes crucial communication management between teams and sectionalised incident role positions. It brings together personnel, procedures, facilities, equipment and communications, which facilitates an organisation's overall management process."

Stuart has called on the mining industry to lead the way by adopting a unified approach to incident management.

WORK FATALITIES ACROSS AUSTRALIA IN 2009–10

Safe Work Australia provides annual figures on work-related fatalities across all Australian industries. The figures for 2009–10 (summarised below) were released earlier this year and are available at www.safeworkaustralia.gov.au

Notified work-related fatalities

In 2009–10, there were 124 notified work-related fatalities comprising 111 workers and 13 bystanders. Most of the fatalities were men — 115 in total. Nine were women (including four bystanders).

Five industries accounted for seven out of every ten notified work-related fatalities. These were:

- fatalities in agriculture, forestry and fishing (23%);
- construction (17%);
- manufacturing (13%);
- transport and storage (11%); and
- mining (5%).

The most common causes of the fatalities were:

- vehicle incidents (26);
- falls from a height (20);
- being hit by falling objects (18);
- being hit by moving objects (18); and
- contact with electricity (12).

Of the 26 fatalities caused by vehicle incidents, ten occurred on public roads and 16 occurred elsewhere, including six fatalities during air travel.

Work-related traffic fatalities on public roads and incidents involving aircraft are usually investigated by the police and Australian Transport Safety Bureau, respectively, so work health and safety jurisdictions may not be notified of fatalities under these circumstances. Consequently, the numbers presented by Safe Work Australia are likely to under-report the number of work-related fatalities.

Notified worker fatalities

The 111 notified worker fatalities in 2009–10 were 40 fewer than for the previous financial year (151), a decrease of 26 per cent.

There was a 29 per cent decrease in the overall worker fatality rate, from 1.4 fatalities per 100,000 workers in 2008–09 to 1.0 per 100,000 workers in 2009–10. The 2009–10 figures provided both the lowest number of worker fatalities and the lowest fatality rate for the last seven years. The “intermediate production and transport workers” occupation group contributed almost one-third of all notified worker fatalities (36 fatalities) where the occupation was known.

Agriculture, forestry and fishing industry workplaces recorded 28 notified worker fatalities, the highest of all industries.

Other workplaces with high numbers of notified worker fatalities were:

- construction (21);
- manufacturing (16); and
- transport and storage (13).

Nearly one-third (30 per cent) of all notified worker fatalities where the age was known were aged 55 years or older. Workers within this age group represented 16 per cent of all employed Australians in 2009–10. This over-representation of older workers has been a consistent feature of work-related fatality notifications for every year since data collection commenced.

What's the difference?

Notified work-related fatalities

These cover workers (both employees and self-employed) who suffered a fatal injury at work, and bystanders who suffered a fatal injury as a result of someone else's work activity.

Notified worker fatalities

These cover workers (both employees and self-employed) who suffered a fatal injury at work but does not include bystanders.

Putting safety in the spotlight



safe work
australia
week 2011
23-29 october

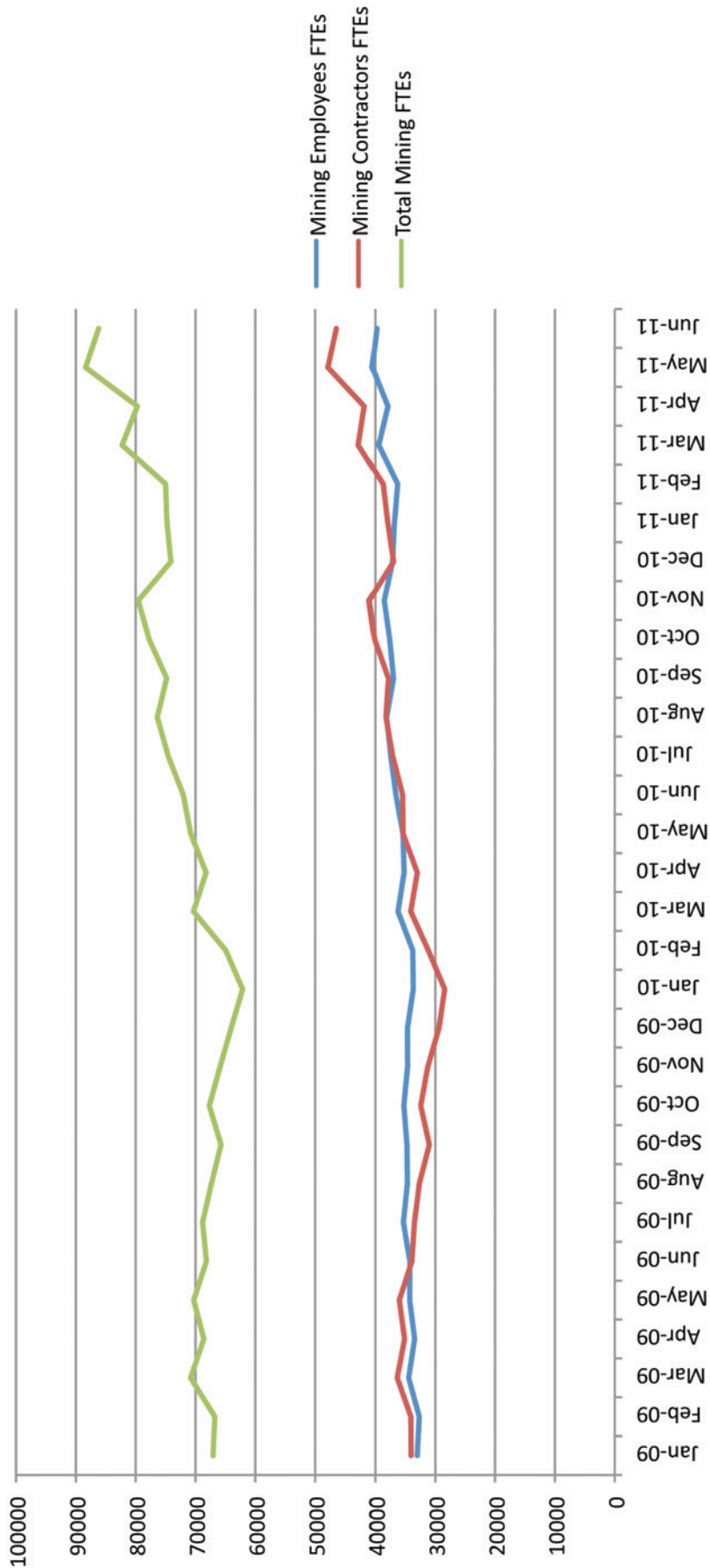


SAFE WORK AUSTRALIA WEEK 2011

www.safeworkaustralia.gov.au

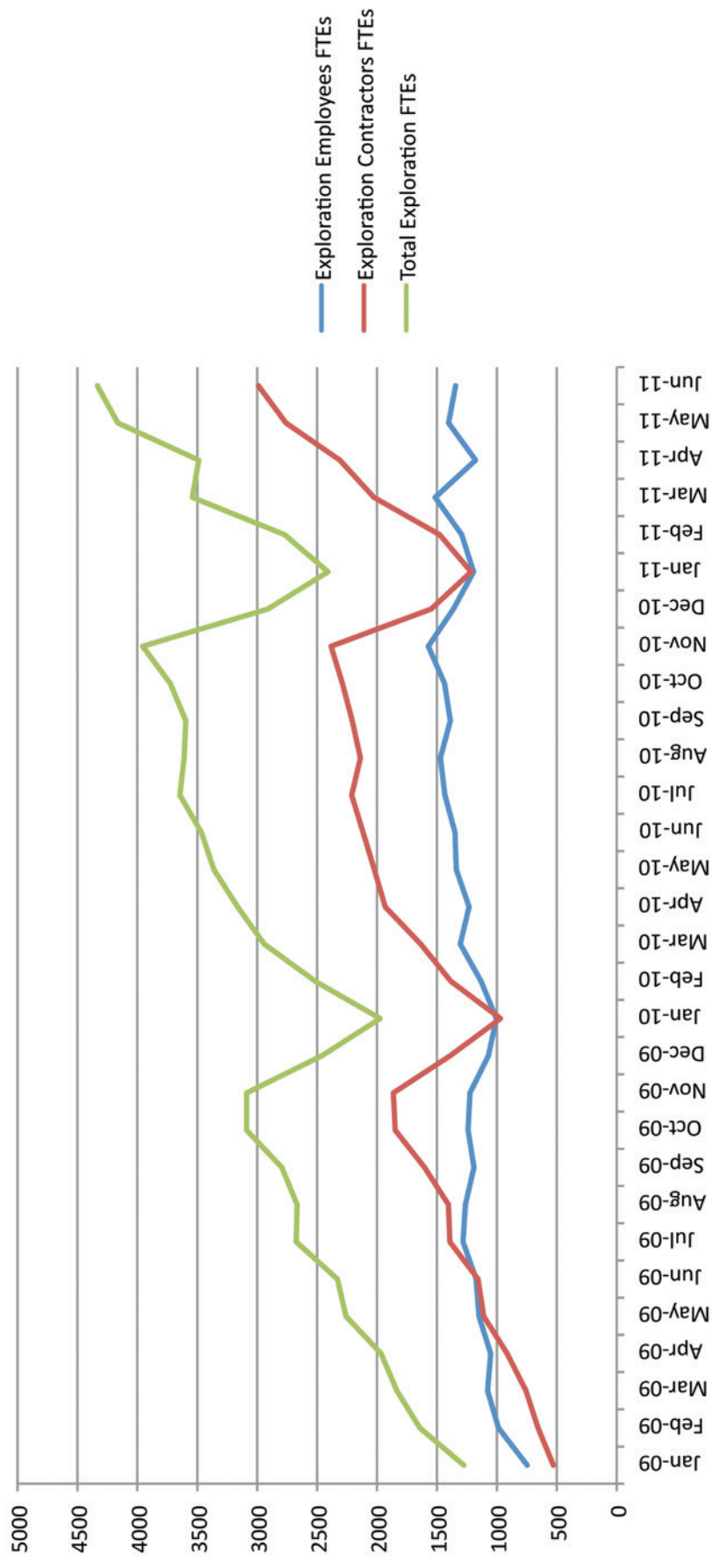
NOTE: Monthly mining workforce figures are plotted as full-time equivalent (FTE), where 1 FTE = 2,000 hours worked per year

MONTHLY MINING WORKFORCE



NOTE: Monthly exploration workforce figures are plotted as full-time equivalent (FTE), where 1 FTE = 2,000 hours worked per year

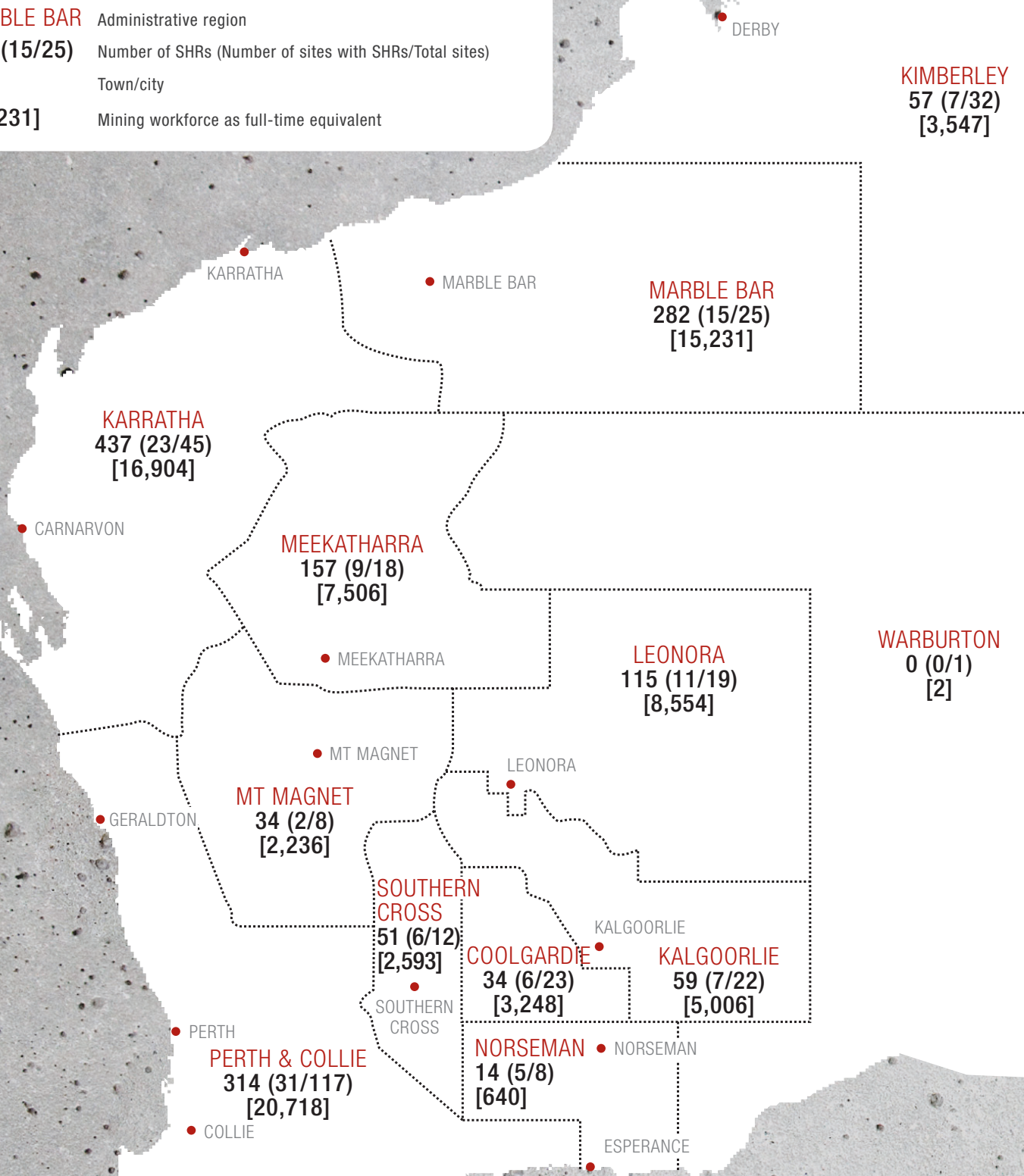
MONTHLY EXPLORATION WORKFORCE



CRUNCHING THE NUMBERS

DISTRIBUTION OF SAFETY AND HEALTH REPRESENTATIVES AS AT 30 JUNE 2011

- Mining registrars administrative boundary
- MARBLE BAR** Administrative region
- 282 (15/25)** Number of SHRs (Number of sites with SHRs/Total sites)
- Town/city
- [15,231]** Mining workforce as full-time equivalent



Total active (incl. C&M) mine sites = 330
 Mine sites with SHRs = 122
 Total SHRs = 1,760
 SHRs attached to mine sites = 1,554
 Others (e.g. exploration) = 206

WHAT ARE MINESHREPS?

They are mine safety and health representatives.

What do they do?

- M** Maintain communications between management and the workers they represent
- I** Inspect the workplaces of the people they are elected to represent
- N** Network with other safety and health representatives, particularly at Resources Safety's roadshows!
- E** Encourage workers to fix hazards or report them to their supervisor
- S** Steer or assist in accident and incident investigations
- H** Help and liaise with mines inspectors on site when requested
- R** Refer relevant matters to the safety and health committee
- E** Ensure workers know who is elected to represent them on safety and health matters
- P** Promote safety and health matters in the workplace
- S** Seek training as necessary so workers are educated about risk

Need to contact Resources Safety with a query or to provide feedback on the roles and responsibilities of a safety and health representative?

Telephone: 08 9358 8079

Email: mineshreps@dmp.wa.gov.au

Other resources

Visit www.dmp.wa.gov.au/mineshreps

MINES SAFETY SIGNIFICANT INCIDENT REPORT NO. 172

RUNAWAY UNDERGROUND CHARGE-UP VEHICLE AFTER BRAKES MALFUNCTION

ISSUED: 12 SEPTEMBER 2011

Summary of incident

A Getman charge-up vehicle tramping up the decline at an underground mine had parked and the operator alighted to assist another worker. The operator then reversed down the decline to speak to his offsider. He engaged the park brake but it failed to apply when the engine was turned off and the charge-up vehicle rolled backwards. The service brake also failed to stop the vehicle. The charge-up offsider successfully wedged rocks under a wheel and the vehicle came to rest against the decline wall.

No-one was injured and there was no serious damage to the charge-up vehicle.

Probable causes

The charge-up vehicle was examined in situ by maintenance fitters but there were no obvious defects. The vehicle was then towed to the surface where the park brake and service brake were tested. No apparent faults were found during initial testing and the brake malfunction could not be replicated.

Further investigation identified faults in the wiring of the park brake and de-clutch electrical circuits. The park brake, de-clutch solenoids and a number of switches were wired back-to-front, and other wiring associated with the brake system was incorrect. Wiring faults not related to the brake system were also found.

The investigation determined that the electrical system of the charge-up vehicle had been rewired by a third-party contractor but the maintainers had not been provided with a manual adequately identifying brake valve locations and associated wiring diagrams and specifications. Consequently, the rewiring did not meet the manufacturer's specifications and had led to the brake system failures.

Action required

Ensure all maintainers, including contractors, are provided with adequate information, such as service manuals from the original equipment manufacturer (OEM), so that vehicles are maintained within specifications (e.g. electrical wiring, valve positioning).

DANGEROUS GOODS SAFETY BULLETIN NO. 0111

UNSAFE DISPOSAL OF DANGEROUS GOODS DRUMS

ISSUED: 29 AUGUST 2011

Hazard

Two people have died recently in Western Australia and another was seriously injured when using angle grinders to cut up 205-litre drums previously used to store dangerous goods. In each incident, sparks from the angle grinder had ignited residual flammable liquid inside the drum, causing an explosion.

The two work-related incidents are described in WorkSafe Safety Alert 2/2011 Cutting metal drums with an angle grinder, available at www.worksafe.wa.gov.au

Requirements

It is an offence to dispose of a dangerous goods container unless it has been thoroughly cleaned and made free from dangerous goods. It is also an offence to supply dangerous goods in a container that is not properly labelled.

Recommendations

Establishments wanting to sell drums previously used for dangerous goods (e.g. motor repair shops) should:

- ensure that there are no residual chemicals in them; and
- remove the dangerous goods label.

Drums that have not been cleaned must be properly labeled and a material safety data sheet (MSDS) for the substance concerned available if requested by a buyer.

Buyers of drums should ensure that they only purchase drums that:

- have been thoroughly cleaned; and
- do not have a dangerous goods label.

If there is any doubt, they should not buy the drum.

Equally, if there is any doubt about the drum contents then angle grinders and other heat- or spark-producing equipment should not be used to cut the drum.

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DANGEROUS GOODS SAFETY AND LICENSING

including explosives, fireworks and major hazard facilities

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including publications, events and *MineSafe* subscriptions

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including exploration, mining and mineral processing

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mineshreps@dmp.wa.gov.au (safety and health representatives)
contammanager@dmp.wa.gov.au (contaminant monitoring and reporting)
minehealthreporting@dmp.wa.gov.au (health surveillance)

For a serious mining accident or incident, the mine or exploration manager must advise their District Inspector as soon as practicable

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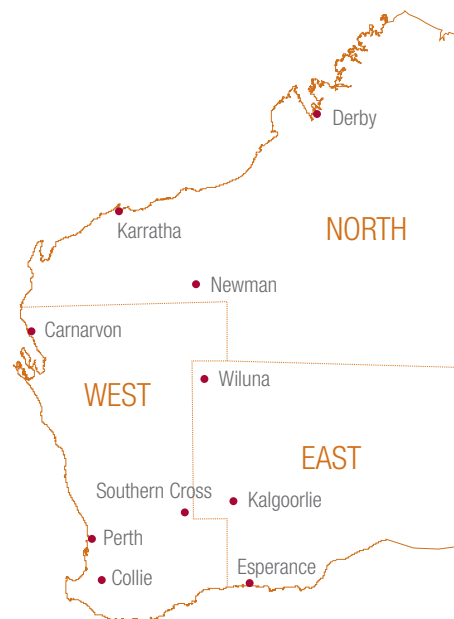
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