DEPARTMENT OF
MINERALS AND ENERGY
WESTERN AUSTRALIA

MINING OPERATIONS DIVISION

MINESAFE

Mining deaths still a major concern !

Mine manager killed by lightning

Electrical contractor electrocuted in switchboard

Plant operator crushed in rollover

... see inside cover

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Inside .....

PAGE SPECIAL FEATURES:

Sombre start to millenium

Three mining deaths in the first quarter of the year remind us of the importance of safety management and the need to remain alert to workplace hazards.

14 January 2001
The Underground Manager of a nickel mine was struck by lightning at around 3:00 pm whilst standing in open ground near a tailings dam. The weather was said to be hazy with typically oppressive thundery conditions. A storm was observed on the eastern horizon and thunder could be heard in the distance.

In the preceding week, a haul truck driver survived the effects of lightning while sheltering under a wheel arch of his truck. Fortunately, he suffered only shock and bruising.

In the same month, in a non-mining accident, a truck driver died after his road train was struck by lightning. He was handling the loading ramps at the rear of the vehicle when the incident occurred. His wife, in the prime-mover at the time, tried frantically but unsuccessfully to resuscitate him.

Refer to MOD Safety Bulletins 46 and 60 on the DME website: http://notesweb.dme.wa.gov.au/exis/SBULL.NSF for lightning hazard management.

20 March 2001
An employee at an iron ore mine was fatally injured when the Integrated Tool-carrier machine (or "IT") he was driving rolled over. The IT had a "crane jib" loaded on a forklift attachment and was being driven along a mine service road when the crane jib dropped off. The IT continued forward, drove over the jib and then rolled onto its side. The operator was found partially outside the cabin, pinned between the door strut and the ground. This incident is still being investigated and as a consequence only brief details can be given here.

26 March 2001
An electrical contract worker was electrocuted whilst installing a new 415 volt electricity supply in a limestone quarry north of Perth.

Downstream cable installation work had been completed. On the day the accident occurred, arrangements had been made to facilitate the installation of a circuit-breaker in an outdoor switchboard cabinet and final connection of the outgoing circuit.

The work to be carried out was thought to be well clear of isolating links (which had been removed to effect an isolation) in the lower part of the cabinet.

Again, only brief details can be provided at this stage; however, initial findings indicate that the deceased may have dropped an allen screw and, whilst reaching down to recover the screw, his forehead inadvertently and tragically touched live incoming terminals of the isolating links.

In a changing workplace, it is essential that all personnel understand the risks involved with each part of their job. Only then can individuals make timely and appropriate changes to their work procedures to keep the workplace safe.

Lightning strike! This time a communications tower, next time a drill mast?

Note: Lightning photographs were sourced from the website: www.stormguy.com

Guest Editorial - Safety & Health Reps

This is my first opportunity to provide the "Guest Editorial" for MINESAFE since commencing as Director of Mining Operations with the Department in September last year. In this edition, I am very pleased to be able to discuss something that I believe is crucial to the safety of our mines here in WA – the role of Safety and Health Representatives (S&H Reps).

S&H Reps provide a channel for safety and health matters to be discussed freely between management and the workforce, which makes it easier for both parties to work together and make the workplace safe.

The S&H Rep mechanism will, however, only work when employees and employers, through their site managers and their representatives, consult and co-operate in an open and constructive manner.

It is important to remember that S&H Reps are not safety officers, nor are they responsible for solving safety or health problems in the workplace. That responsibility lies mainly with the employer and management.

The Department believes that the effectiveness of our S&H Reps will be a major factor in the industry's safety performance in the future. With this in mind, the Mining Operations Division conducted a survey to help identify ways of improving the effectiveness of the S&H Rep system. The view from the 450 responses received showed that there is room for improvement; for example:

- 66% said their manager **always** co-operates with them, while 49% said their fellow employees **always** co-operate.
- 34% of S&H Reps felt that they were **always** able to fulfil the role.
- 50% had met an Employees Inspector of Mines and 49% had met a District Inspector.
- 54% said that they do not accompany the Inspector on inspections and 30% said their manager does not inform them when an Inspector is on site. 42% said they are never given an opportunity to talk privately to an Inspector.

The MOSHAB "Priority Areas Report" released in August 2000 considered that workplace consultation is critical to managing and ultimately improving safety in the workplace. A tripartite working party will be established later this year to discuss these recommendations and will be using the results of our survey to help identify ways of improving consultation and the effectiveness of S&H Reps here in WA.

I commend the efforts of all S&H Reps and would like to thank those S&H Reps who responded to our survey and hope to provide a report on the progress of the working party in future issues of MineSafe.

Simon Thompson - Director Mining Operations Division

Introducing our new minister

Hon Clive Brown MLA
Minister for State Development; Tourism; Small Business; Goldfields-Esperance

Following the State election in February, the Hon. Clive Brown MLA was appointed to the new post of Minister for State Development.

This role, which incorporates responsibility for minerals and energy, resource development and commerce and trade, has been instigated to develop synergies between sectors and agencies and help ensure the State's economy goes from strength to strength.

Before becoming a Minister of the Crown, Mr Brown was Opposition Spokesman for Multicultural and Ethnic Affairs, Public Sector Management, Youth, Community Development, Justice and a member of the Public Accounts Committee.

He was also Labor spokesman for Commerce and Trade, Small Business, Science and Technology immediately prior to the State election.

Before entering Parliament in 1993, Mr Brown had a distinguished career in labour relations, holding a number of senior positions in Western Australia.

He was secretary of the WA Miscellaneous Workers' Union, the largest employee organisation in the State, for two years from 1976.

His career in the union movement culminated in his election to the position of President and later Secretary of the Trades and Labor Council in Western Australia.

Mr Brown played a significant role as a founding director of a uniquely West Australian superannuation fund known as Westscheme, which has gone on to become the State's largest private sector superannuation fund with total assets in excess of $550 million.

The Minister was also director of a mining company that succeeded in winning a Western Australian and Australian export award and has been actively involved in the non-government sector as a Board member of a number of non-profit community organisations.

Stop welding electrocutions NOW!

The death of a boilermaker at a WA ship building company on 3 March 2001 prompts MINESAFE to again remind all persons involved in electric arc welding practices, that an electric shock arising from contact with the output welding circuit can prove fatal.

Accident details

The deceased had been using a standard manual metal arc welding machine to effect repairs in the lower internal parts of a ship. It was found that the deceased had been working in the confined space for almost 3 hours. The outside ambient temperature was 37^0 C and the workplace temperature may have been as high as 60^0C.

When found, the deceased's clothing and gloves were wet with perspiration. His welding helmet was in the raised position and a new electrode rod had been fitted in the electrode holder.

A pathologist's report gave the cause of death as being 'consistent with electrocution'.

Comments and recommendations

Welding electrocutions keep happening even though they can easily be prevented by using a commercially available safeguard called a welding 'Voltage Reducing Device'.

Following an accident underground in a Queensland mine, the Coroner handed down the following rider:

"The installation of Voltage Reducing Devices (VRDs) be compulsory on all alternating current welding equipment used for commercial or industrial purposes".

A welding VRD is a safety device that monitors the electrical resistance of the output welding circuit and only allows full welding voltage to be applied when resistance becomes low as an attempt is made to 'strike an arc'. Similarly, a VRD reduces the open-circuit electrode voltage to a safe level within seconds of welding ceasing.

In this way, harmful welding voltage is only present during the actual welding process, and not when the equipment is is either left on and unused, or when a replacement electrode is being fitted.

The sensitivity of a VRD is set such that the worst case electrical resistance presented by a current path through the human body will always exceed the level required to activate the device.

For further information refer:

- MOD Safety Bulletin No 23
- MINESAFE June 1998
- MINESAFE August 1999

or contact MOD's Electrical Engineer Denis Brown on (08) 9222 3546.

Workshop vehicle hoist collapses

A recent incident in a mine workshop reminds us that the dependable vehicle hoist, a faithful servant to the mechanic, can be a dangerous implement if not handled with care. In the relevant incident, a mine employee had raised a 4WD to the desired position and lowered the main hoisting platform to allow him to work in 'wheels - free' mode. A short time afterwards one of the locking pawls slipped , tilting the vehicle and destabilising the hoist. The support frame bounced down the racheted posts, the vehicle slid off the hoist, and rolled out the workshop door. The hoist was significantly damaged. The worker took quick evasive action to avoid injury.

Overall view of a 4-post hoist

The cause of the problem was that one of the safety support locking pawls had not engaged properly. 'Dirt' had accumulated in the support channel (see photo), altering the vertical position of that pawl, and preventing it from locking correctly in place.

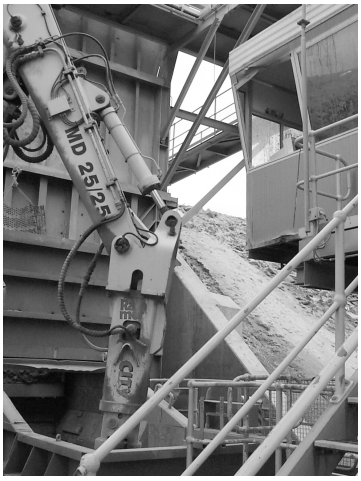
The lesson learnt from this is that operators must always ensure that each locking pawl is 100% engaged before releasing the hoisting platform and working underneath the hoist.

Close up view of support channel

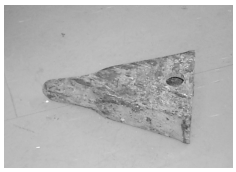
Any defect that prevents any safety lock from working correctly must be repaired before the hoist is put in full use.

ACCIDENTS the more things change, the more they stay the same

In mid-November 2000, at a surface gold operation in the Eastern Goldfields, a crusher operator was lucky to escape serious injury when a 40kg ripper boot that had detached from a large dozer and got into the crusher ore stream was "fired" from the jaws of the primary jaw crusher. The ripper boot was projected with sufficient force to enter the control cabin of the crusher several metres away and hit the ceiling. It landed on the floor immediately in front of the operator's desk. The operator heard a noise from the jaws and saw an object bounce within the jaw enclosure. The next thing she knew there was a blur passing through her field of vision as she threw herself back to the rear of the cabin, narrowly evading being struck by the ripper boot as it passed through the window. She was not physically hurt, but needed counselling to come to terms with her experience.



Rock breaker, jaw crusher and control cabin


40 kg dozer ripper boot

A protective grate has since been installed to prevent this from recurring.

The point of telling this story is not just the potential seriousness of the incident – although this was grave enough; it is the fact that it has happened before in similar circumstances and has been publicised by DME. The previous incident took place during 1994 and was written up and circulated around the industry as Significant Incident Report (SIR) No. 13. This SIR and all others issued to date can be found on the Department's web-site at www.dme.wa.gov.au along with Safety Bulletins and Technical Notes issued by DME. SIR No.13 includes details of the remedial action taken in the 1994 case and this bears a striking similarity to the "cure" found for the more recent incident.

If we are to learn the hard-won lessons of experience, we must keep that experience under continual review. Each mining operation should be looking out for information on accidents and incidents at other sites and seeking to learn from the misfortunes of others, both in WA, the rest of Australia and world-wide.

A number of organisations have web sites which contain information on accidents and incidents, including Worksafe WA and MSHA in the USA. This information is posted for a purpose – **it is there so that people can learn the lessons without suffering the consequences.**


Protective grate being lowered into position over the jaw crusher

Managing a shiftwork lifestyle

Staying alert on the job is the safety nemesis of all shiftworkers. This safety problem may be compounded by extended hours of work, the number of consecutive shifts worked, and by the direction and frequency of schedule rotations. Some of the factors that can reduce worker awareness include:

- The effect of the "human biological clock" and poor quantity and quality of sleep.
- The effects of stimulants taken to stay awake (emphasis on caffeine and nicotine) and depressants taken to encourage sleep.
- Gastrointestinal and cardiac disorders from irregular and improper food consumption.
- Stress levels from every day modern life and from the disruptive aspects of shiftwork on family and social life.

Shiftwork is an integral part of many sectors of the mining industry and often the shift worker is left alone to sort out his/her problems - with mixed results.
Shift workers should make themselves aware of these issues and are encouraged to talk any concerns over with their managers or relevant professional bodies. The interested reader may also consider attending a Marcsta-developed educational program titled *Managing a Shiftwork Lifestyle.* This program was launched by the former Minister for Mines who supported the intent and the content of the program. Further information on this program can be obtained by phoning: 08-9355 1400 or visiting the website: **www.marcsta.com**

The Westray Story . . . .

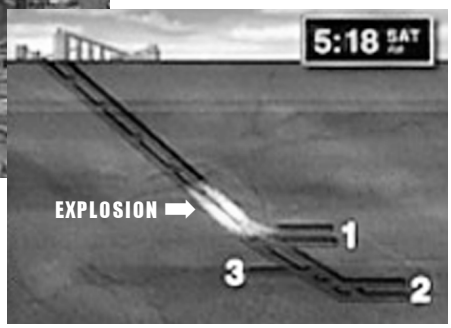
In the early hours of May 9, 1992 the tiny community of Plymouth, Pictou County, Nova Scotia, Canada, was shaken by a massive underground explosion at the nearby Westray Coal Mine. The entire shift of 26 men, underground at the time, were killed. Only 15 bodies were ever recovered. The damage to the mine workings was so extensive that attempts to locate the others became too hazardous. The mine was sealed, entombing 11workers. A specially constructed memorial was built on the surface, above the place where it is believed they lie.

The disaster was investigated in a Public Inquiry conducted by Justice K. Peter Richard, Commissioner, on behalf of the Province of Nova Scotia. In his conclusion the Commissioner wrote; *"It is unfortunate that we are unable to state with complete certainty what caused the death of the 26 miners in the early morning of 9 May 1992. Failing that we must analyse the known facts and the opinions based on those facts, and arrive at the most probable cause of death...".*

Mine surface infrastructure

This conclusion forms part of the outcome of a five year judicial inquiry which heard 76 days of testimony and reviewed many thousands of pages of documentation. Yet it was ***"unable to state....what caused the death of 26 miners...".*** One could be forgiven for questioning the thoroughness of an inquiry which produced so vague a result. The problem, initially, was one of physical evidence, the explosion at Westray being so violent and the damage so comprehensive that deduction, inference and eventually guesswork were the principal tools available to those attempting to arrive at a sustainable conclusion.

The immediate cause of the disaster was a methane/coal dust explosion. The transport machinery of a mine, in particular the belt conveyors, create accumulations of fine coal dust in the 'roadways'. If this material mixes with air an explosive mixture is formed. For well over 120 years it has been part of coal mining knowledge that a localised methane explosion can 'lift' the coal dust into the mine atmosphere, which if ignited explodes with extreme violence. If dust accumulations are kept low and ground stone dust is provided to 'dilute' the coal dust, the hazard can be controlled. To use a common expression; "this is not rocket science", nonetheless a methane/coal dust explosion killed 26 people at Westray on May 9, 1992. It is also worldwide coal mining practice to drain as much methane from the coal as possible and to disperse the remainder with adequate ventilation.



Schematic view of the working levels underground and the primary explosion site.

With all the knowledge available, how then, in the latter years of the 20th Century could something like Westray happen?

Justice K. Peter Richard wrote in his findings that; *"The tale that unfolds in the ensuing narrative ....is a story of incompetence, of mismanagement, of bureaucratic bungling, of deceit, of ruthlessness, of cover-up, of apathy, of expediency and of cynical indifference. It is a tragic story, with the inevitable moments of pathos and heroism. The Westray Story concerns an event that, in all good common sense, ought not to have occurred. It did occur – and that is our unfortunate legacy".*

The totality of the destruction in the workings and the lack of "hard" evidence regarding what had actually happened underground that day, caused the investigation to focus on the circumstances which created the environment in which something so dreadful and so patently avoidable could occur. It is this aspect which makes the Westray disaster, *(with hindsight it can scarcely be called an **accident**)*, of such relevance in all mining provinces, coal and non-coal alike.

In the context of West Australian metalliferous mining the question could reasonably be asked; "how can this relate to our situation ?" Coal mining, methane/coal dust explosion, Eastern Canada?

In the 1980's this area of Nova Scotia was an employment blackspot with unemployment figures running at 17.6%. Local, *(Provincial)*, politicians were very anxious to see the coal mining potential of the area turned to advantage and were most receptive to positive proposals. Consequently when an enterprise called Curragh Resources indicated a strong inclination to open a coal mine in the area it was received most favourably. The fact that companies such as Placer and Suncor had looked at the prospect and found it unacceptable accounted for nothing when Curragh, a company lacking both underground and coal experience, showed an interest. The comment was made, subsequently, that the CEO of Curragh, Clifford Frame, was more adept at "mining provincial governments than orebodies".

Nova Scotia Power Corporation, a publicly owned utility, committed to buying 700 000 tons of coal per annum at about $C74 per ton, *a nice margin over $C29 per ton produced*, for a new coal fired power plant. Private finance was scarce, so he persuaded the Federal

. . A preventable disaster

Government to guarantee 85% of a $C100M loan from the Bank of Nova Scotia, together with a $C8.75M interest subsidy and a $C3.6M development subsidy. Frame then "milked" the provincial government of a $C12M loan. In this way the various levels of government ended up with all the risk of financing the mine and guaranteed the purchase of virtually all of its output.

"every attempt to change conditions was ignored by management, by regulators and by government"

The situation thus placed Frame and Curragh in a position of some considerable power in relation to the apparatus of provincial government; anything that was perceived to hinder the business of the mine was regarded as hostile and treated accordingly. Difficulties were experienced from the very start of the project. Major rockfalls, fires, coal dust accumulation on the floors, inadequate training and supervision, excessive methane levels, and the unrestricted use of oxy-acetylene cutting torches underground (a practice prohibited by law) were reported to the Inquiry. The Inquiry found that *"while inspectors did find shocking conditions and safety violations and even issued some orders for their correction, they refused to enforce the law or shut the mine down."*

It was known that individual miners engaged in unsafe practices but the Inquiry exonerated them of any responsibility, finding that *"every attempt to change conditions was ignored by management, by regulators and by government".* Workers who complained were threatened with sacking and unemployment rules of that time penalised "voluntary" quitters. An attempt by the workers to join a union, before the explosion, was frustrated by management manoeuvring.

The greatest single contributor to the disaster was seen, possibly, to be the bonus pay system. It unashamedly focused on production above all else. A miner who worked "flat out", ignoring "time wasting" safety issues could expect to increase his annual wage from $C43000 to at least $C51000. Many miners actually achieved an increase of 23%, to $C53000. This incentive was backed by a severe penalty for missing work, the bonus being reduced by 25% for every day's absence.

Surviving miners, testifying at the Inquiry, declared that everyone was aware that the mine was very dangerous and that a disaster was possible. This was tolerated *"because the money was too good"*, or *"we might get a union in here later and things will get better"*. A "macho" ethic developed which held that the risk was part of the "manliness" of the job. As one miner put it, *"You have to evaluate how much risk they considered it was and how much risk it was losing the job. Any man has to weigh that in the balance"*.

Regulatory control of this situation was found by the Inquiry to be virtually absent. *"From the initial licensing of the mine to its eventual operation, from the mine plan to the training of miners, Westray had failed to comply with regulations and government inspectors had refused to enforce the law. Inspectors and government officials responsible for ensuring compliance knew or ought to have known about the violations"*.

The Westray disaster, as can be appreciated, generated enormous amounts of legal, political and media activity, which continues today, and an article such as this can only touch on the issues raised.

Putting aside the coal mining aspects, could something like this happen in WA's metalliferous mines? MINESAFE considers such an event unlikely as WA has a strong mining regulatory authority, supported by the well-framed Mines Safety and Inspection Act 1994 (MSIA) legislation. This legislation not only provides the specific minimum safety standards for mines, it includes the following provisions relevant to the Westray disaster:

- every employee is to be given adequate instruction and training in safety procedures and systems of work and in the tasks required of the employee.
- each mine must elect a suitable number of safety and health representatives from within the workforce to participate in the development and application of appropriate safety systems; thereby providing all employees with a formal mechanism to contribute to resolving safety issues.

In contrast, the apparent 'risk taking' culture at Westray (primarily driven by their bonus system), is perceived by some to exist in the WA underground mining industry and is clearly worthy of further debate and scrutiny.

Management systems that directly or indirectly encourage risk-taking behaviour must be avoided.

The miners at Westray, and their families, were the ones who paid a frightful price for the shortcomings of all those responsible.

The challenge to us all is to ensure that a "Westray" never happens in Western Australia.

The memorial in honour of each miner who perished - 26 beams of light radiating from a miners lamp.

Sources:newsworld.cbc.ca/flashback/1992 & gov.ns.ca/labr/westray/exec.htm

'Dodgy' power tools for sale – *Take heed!*

MINESAFE has been advised that unscrupulous persons have been approaching workers in Eastern States construction industries and selling unapproved electric power tools. While similar reports have not yet been made in WA, the possibility exists and everyone must remain aware that the import, sale and hire of unapproved power tools are strictly illegal and their usage could be dangerous.

Electric power tools offered for sale throughout Australia must have a 'Certificate of Approval' issued by the relevant Authority. This practice assures purchasers that electrical appliances conform with applicable 'Australian Standard Approval and Test Specifications' and afford high levels of safety regarding risks from fire and electric shock.

The warning that this problem had already occurred in Victoria, South Australia and New South Wales came from the Victorian electrical safety regulator who advised:

- The power tools are offered for sale with carry cases and are marked with well-known trade names.
- The equipment may be marked with a voltage rating other than 240 volt and/or have non-Australian connecting plugs.
- The power tool carry cases may include a travel adaptor for Australian use.

Reports indicate that the power tools had no original markings and were subsequently marked with fake brand names and pseudo-approval numbers. Using either hire cars or unidentified vans, 'salespersons' visited building sites, approached workers and bartered until a sale was reached. The types of power tools offered for sale include hammer drills, sanders, jigsaws and drills.

Clearly, all persons approached in this manner must exercise due diligence and be mindful that the use of substandard hand power tools could lead to serious injury (or worse). Anyone offered a 'cheap' power tool and having the slightest doubt that it is a genuine item should note details of the product, salesperson and vehicle, and immediately contact a regulatory authority. (OOE 94225200, DME 92223546 or WorkSafe 93278777)

Australian electrical equipment approval markings include:

- an alpha-numeric index indicating the origin of approval (N for NSW, V for Victoria, W for WA etc);
- Standards Australia Electrical Safety Standards Mark (five ticks in a box);
- Standards Australia Electrical Safety Type Test mark (a capital T with a tick); or
- Regulatory Compliance Mark (a triangle enclosing a circle with a tick in it).

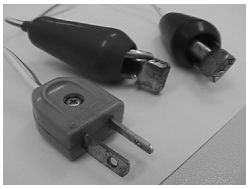
NEVER ECONOMISE ON SAFETY!

Portable generator *'Prohibition Notice'*

The investigation of a recent non-mining fatality uncovered dangerous defects associated with a portable generator and compelled the Office of Energy to issue a prohibition notice.

Accident details

A farmer attempted to recharge the batteries of a truck using a 12 Volt charging lead and portable generator. The generator incorporated a 12 Volt DC socket-outlet for battery charging purposes and a 240 Volt AC socket-outlet for the supply of 'mains' voltage appliances. The pin configuration of the 12 Volt charging lead plug did not prevent insertion into the generator 240 Volt outlet, and the farmer was electrocuted after inadvertently making this tragic mistake and trying to connect the charging lead to the battery.



The prohibition notice specifically applies to the following equipment and prohibits the sale, hire or use of these items until the modifications specified in the notice have been effected by an authorised electrical repair agent:

- *Honda E300 generators which incorporate both a 240 Volt AC socket-outlet and a 12 Volt DC socket-outlet (which has a similar configuration to a 240 Volt socket) for battery charging purposes.*
- *Honda 12 Volt DC two core flexible leads (for battery charging purposes) with a plug that can be plugged into the 240 Volt AC socket-outlet and exposed alligator type clips for connection to battery terminals.*

Though the manufacturer has advised that these items have not been sold since 1977, several reports received since the notice was issued indicate that this type of generator, with the defects outlined, are still being used.

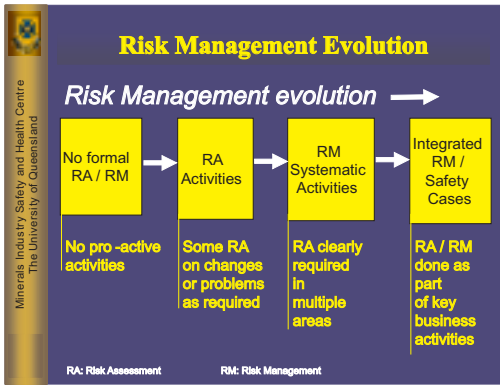
MINESAFE urges responsible persons to immediately arrange a close examination of the pin connection arrangements for portable generators. Similarly, the connecting plugs and socket-outlets of all other electrical equipment intended to supply or operate at extra-low voltage should also be checked to ensure this extreme hazard will not arise.

MOSHAB priority No.1: risk management

The Mines Occupational Safety and Health Advisory Board (MOSHAB) has implemented a three-step program aimed at improving the awareness of risk management at all levels of the workforce.

The first step in this program sought industry commitment to develop an industry-wide strategy to improve risk management. This was achieved at a meeting with over 100 CEO's and senior executives in November 2000, opened by the Minister for Mines.

Key speaker Professor Jim Joy, Minerals Industry Safety and Health Centre, University of Queensland, reported that mining fatalities in Australia during the 1990's averaged 22 per year (1 in 3,500 employees) and that in order to reduce these numbers, the safety culture at most mine sites needed to be improved. He explained that the status of workplace safety culture at individual mine sites can be defined by what he called the "risk management evolution". He implored those present at the briefing, to evaluate their own workplace safety culture and assess whether risks are either eliminated, mitigated or tolerated at their workplace. This is the first step towards developing "integrated risk management" (see figure following).



Prof. Joy urged CEOs and senior executives to participate in their organisation's safety and health risk management process.

Risk Management Workshops for Mine Management

In the second step, officers from the Department of Minerals and Energy (DME) and representatives from industry developed and presented workshops on Risk Management - specifically for Mine Management.

The workshops were a two way process. Firstly, presenters explained mine management's role in risk management, their responsibilities, communication requirements, and how to apply risk management tools. Attendees were then encouraged to discuss risk management concepts and identify successes and barriers to effective risk management programs.

The outcome of these discussions will be used to produce a Guideline on effective implementation of risk management in the workplace. MOSHAB intends publishing the notes from the workshop and papers presented on the DME's website at the conclusion of the workshops.

The popularity of the workshops required an extra two sessions in addition to the original program.

The workshop dates were:

Perth – 28 March, 13 June
Bunbury - 2 April
Leinster – 14 May
Meekatharra – 15 May
Karratha – 16 May
Kalgoorlie – 23,24,25 May.

The third step in the MOSHAB risk management program, to be implemented later this year, will target supervisors, operators and those in safety and health advisory and representative roles.

More information regarding MOSHAB priorities can be obtained from Tracy Long or Cassie Lines at the MOSHAB Secretariat on 9222 3310, or by visiting the MOSHAB webpages at www.dme.wa.gov.au/moshab.

MOSHAB on the 'Net'

MOSHAB is now 'on-line' at **: www.dme.wa.gov.au/moshab.** This site serves as a useful place to browse for those interested in the development and administration of mining safety in WA and provides details of MOSHAB's activities and relevant published material.

The main features of the site include:

- Membership and functions
- Codes of Practice
- Guidelines and Reports
- Media statements; and
- Minutes of its meetings

MOSHAB acknowledges the services provided by the Department of Minerals and Energy in the development and housing of the website.

Check the site out today.

Amendments to Gas Regulations

Authorisation Holders and gas fitters at minesites need to be aware of recent amendments to the *Gas Standards (Gasfitting And Consumer Gas Installations) Regulations 1999* (effective from 19 December 2000). The amendments were necessary to:

- include recommendations of Parliament's Joint Standing Committee on Delegated Legislation (following the Committee's review of the 1999 regulations);
- update references in the regulations to the latest editions of national technical standards; and
- make the regulations easier to follow.

The amendments are summarised as follows:

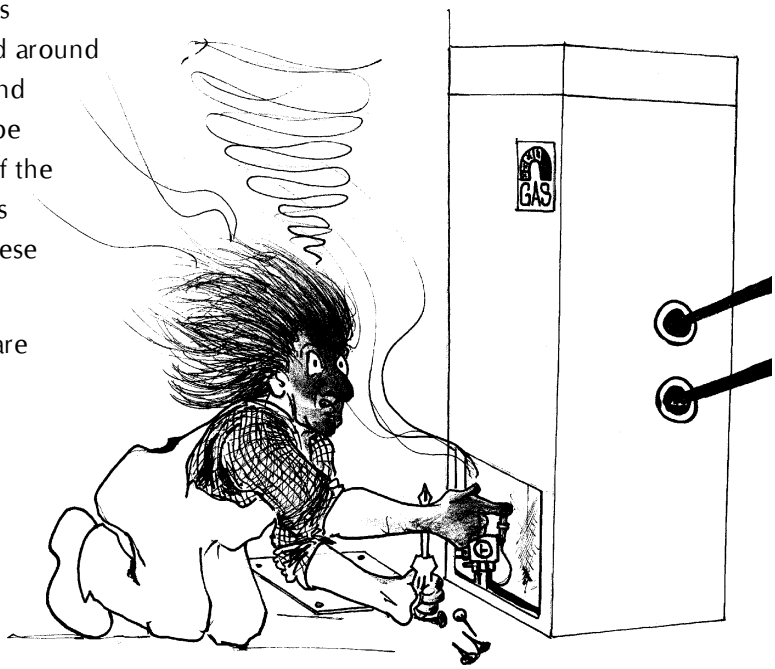
- It is made clear that the design of a gas appliance is not the responsibility of the installing gas fitter. The gas fitter must obtain a copy of the approval of an appliance or ensure that it is correctly badged before it is installed.
- The form of notification of completed gasfitting work may be varied with approval from the Director of Energy.
- The approval process for industrial gas appliances is clarified. Changes incorporate a requirement for gas fitters to seek approval before modifying any existing Type B gas appliance.
- A gas fitter must report any existing defects or unsafe conditions in a gas installation.
- AS 5601/AG 601 – 2000 Gas Installations is adopted, replacing an older code. Several separate regulatory requirements that are now covered in the code are removed.
- AS 3814/AG 501 – 2000 Industrial and commercial gas-fired appliances is adopted, replacing an older code.

Although the changes are encouraged to be implemented immediately, there is a six-month transition period for changes to Schedules 6 and 7 when the previous requirements will also be acceptable.

Copies of the amendments can be obtained from the State Law Publisher. Gas fitters should make sure they obtain a copy of the amendments and update their regulations.

Safe lighting of gas appliances

Camp staff and others lighting small gas appliances found around living quarters and messes need to be aware of some of the potential hazards when lighting these appliances.



Gas appliances are safe to use when operated and maintained correctly. However, there are occasions where a delay in igniting the gas burners may be experienced. This can result in an explosive ignition with the possibility of a flash flame exiting the appliance.

When lighting gas appliances for the first time or after an interruption of the gas supply, always observe the lighting instructions. Avoid putting your face too close to the gas burners, if you need to take a look, use a mirror and keep your face well away.

Special attention should be given to gas fired water heaters and barbecues as they are generally installed and operated outside in a harsh environment.

Some handy operating hints include:

- Regularly service gas appliances.
- Replace any covers removed for lighting.
- Replace the aluminium foil on the fat tray of barbecues regularly.
- With portable gas appliances, use soapy water to check the connections after changing the gas cylinders.
- Avoid using aerosols in the vicinity of naked flames.

Gas appliances are subject to tests and approval prior to sale. When operated and maintained in accordance with the manufacturer's instructions, they will give many years of safe and enjoyable use.

When lighting your gas appliance, don't make it into a barbeque for one!

What's On

AUSTRALIAN CENTRE FOR GEOMECHANICS
Surface Support Liners: Membranes,Shotcrete and Mesh
Perth, 21 -24 August 2001
For further information contact:
Josephine Ruddle Ph: (08)93801864, Fax: (08)93801130
Email: acg@acg.uwa.edu.au
On-line registration at www.acg.uwa.edu.au

EXAMINATIONS - WA Certificates of Competency
First Class Mine Manager's
Underground Supervisor's
Quarry Manager's
Restricted Quarry Manager's
The above examinations are to held on Monday 6 Aug 2001, Mining Law only, in Perth only.
Applications close on 6 July 2001

Monday 15 October 2001
MINING LAW AND PRACTICAL, **STATEWIDE**
(Applications close on 15 September 2001)
Application forms can be obtained by telephoning the Dept of Minerals & Energy on (08) 9222 3683 or 9222 3269.
FEE: Currently $100.00 + 10% GST (i.e.$110.00)

MINE ELECTRICAL SUPERVISORS SEMINAR/DINNERS
Forthcoming quarterly electrical safety seminars facilitated by MOD's Electrical Inspectors, focus on current safety concerns and promise an interesting evening.

Lightning Hazards and Safeguards Kalgoorlie 28 June, Karratha 25 July & Port Hedland 26 July 2001.

For further details and registration, contact Bob Anderson ph: 9734 122, email: b.anderson@dme.wa.gov.au or Mick Hayhow ph: 9021 9418, email: m.hayhow@dme.wa.gov.au
Only a DINNER FEE of $25 applies.

INDUSTRIAL FOUNDATION FOR ACCIDENT PREVENTION
Conducts regular courses on:
Occupational Safety and Health Training, and Construction & Equipment Skills Training.
Contact: Christine Williams ph: (08) 9310 0218,
Fax: (08) 9310 8548

Staff Changes

Bob Hopkins celebrates retirement with DME Director General Lee Ranford

Bob hangs up his steel-capped boots.

After 14 years in DME's Mining Operations Division (MOD), including 2 years at its helm, Bob Hopkins has retired. Bob's 37 years as a mining engineer started after graduating from Nottingham University in the UK and then spending most of his early years working in mines in Zambia, Zaire, and South Africa, before moving to Australia in the mid-1980s.

For a while, he worked for a Sydney-based coal mining contracting and engineering company, before joining the Department as State Coal Mining Engineer in 1986. In this role, Bob was responsible for a review that resulted in significant improvements to the occupational health and safety legislation for the State's coal-mining industry.

Bob said *"As part of the review, I brought in an international consortium of consultants to establish the coal industry council, a collective of union and industry representatives and ourselves. It was a big initiative for the State Government at the time. They took up the challenge and responsibility to improve health and safety in the years that followed, and soon the figures began to speak for themselves."*

In 1998, Bob became the General Manager of Mining Operations, as part of a new look MOD that also saw the creation of the Mining Policy Secretariat headed by the State Mining Engineer.

'Retirement' now sees Bob continuing in casual work with an engineering consultancy, as well as indulging his love of a British motoring icon, the MG.

Antony Mehanni has finished his 12 month contract as Systems Administrator for the Mining Operations Division.

New Publications

Safety Performance in the Western Australian Mineral Industry 1999/2000 Digest and Poster.

Safety Bulletin No 58: Struck by Ventilation Doors – Death of Charge-up Assistant in a Blasting Accident.

Safety Bulletin No 59: Hazards from Falling Rock in Alimak and Gig Rising.

Safety Bulletin No 60: Lightning Strikes – Managing the Risks.

Guideline: "Occurrence, Accident and Occupational Disease Legislative Reporting Requirements under the *Mines Safety and Inspection Act 1994* and *Mines Safery and Inspection Regulations 1995*." The guideline will be published on the DME and MOSHAB websites.

Incident Alert

Recently, four employees of a diamond exploration group, including the exploration manager and a consultant geologist were standing at the bottom of an unsupported costean, some 1.2 metres wide and 7.5 metres deep, when it collapsed. One person escaped unharmed, two of the others were partially buried and the fourth man was completely buried and could not be located immediately. Fortunately, the others were able to locate and uncover the buried man's head within a few minutes. Although his injuries were minor, he was hospitalised for observation overnight. All suffered shock.

In a similar event in 1986, one of two exploration workers perished after the walls of a costean in which they were working collapsed (see photo).

View of the costean wall collapse that fatally injured an exploration worker in 1986.

Comments and recommendations

These two events illustrate that, even though the magnitude of the risk is obviously high, it is not uncommon for some persons to be complacent. Constant vigilance is required to ensure that sudden collapses of ground do not put people at risk.

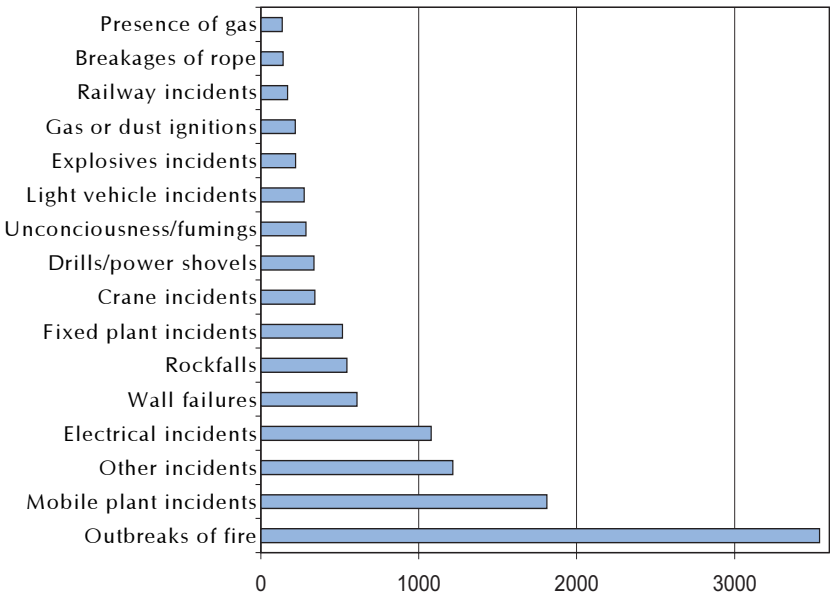
Statistics show that the frequency and severity of injury from collapsed ground varies greatly - depending on whether the incident occurs in an underground or surface mine.

In the last 5 years, twelve of 100 injuries from rockfalls in Western Australian underground mines have resulted in fatal injuries; whereas no fatals were reported for wall collapses in open pit mines. The main factors contributing to higher injury and fatality rates in underground mines are the confined spaces people work in, the lower degree of visibility and that personnel may work directly beneath (undetected) unstable ground. As these working conditions also exist in deep costeans, great care should be taken by individuals working in costeans; as it is by persons working in underground mines.

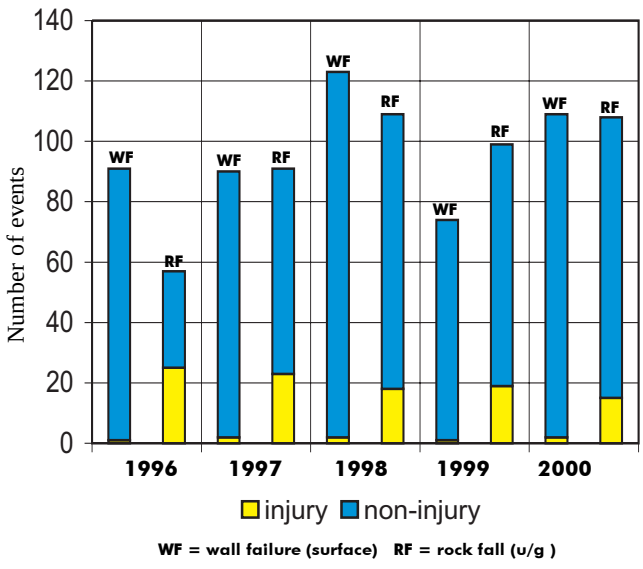
Where entry is required into costeans over 1m depth, a full risk analysis should be conducted and the necessary support provided to the costean walls prior to entry. Alternatively, it may be viable to "lay back" or batter the sides of the excavation, where appropriate, to reduce the likelihood of collapse of the full wall height. The degree and type of effort required to stabilise costean walls will depend on the characteristics of the materials/site being excavated, the length of time the costean is required to stay open and the dimensions of the costean.

Watch Out!

Number of incidents reported since 1994



Wall failure & rockfall events 1996-2000



WF = wall failure (surface) RF = rock fall (u/g)