



DEPARTMENT OF
MINERALS AND ENERGY
WESTERN AUSTRALIA

MINING OPERATIONS DIVISION

MINESAFE

Perth Quarry Becomes an Innovative Mine Safety Training Facility □□□ See page 2



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PERTH QUARRY BECOMES AN INNOVATIVE MINE SAFETY TRAINING FACILITY

BORAL QUARRIES operates and maintains a quarrying operation at Orange Grove, an outer metropolitan suburb east of Perth. The company's quarry workforce is engaged in the operation of screening and crushing plant, and off-highway earthmoving equipment.

The company has given safety training a boost by working with Central Metropolitan TAFE to provide practical training for employees and students in their quarry at Orange Grove. Boral has also provided a dedicated training centre on the property, which Central Metropolitan TAFE has equipped and furnished. The facility offers classroom tuition and allows students to walk out of the door and into a working quarry, close by, to carry out practical learning on site. With the increased number of fatalities in the mining industry, there was a realisation that a facility of this type, where training can be delivered to existing employees and new entrants, was badly needed.

An area of the quarry has also been set aside for TAFE to use as a training facility for their drilling course and forms part of the training centre. An operating drill donated by Wallis Drilling is set up in this area. Murray Day, Director at the Central Metropolitan College of TAFE and Wally Lukic, State Manager of Boral Quarries, have already noticed the improvement which the new practical component of the learning has brought to the training of Driller's Offsiders. Drill Hands have, for many years, been over represented in industry injury statistics during their first few months of work.

"My training at Central TAFE as a drill offsider landed me a job in 3 weeks. It's hard, hot and dirty work, but I know how to work safely."

As well as Driller's Offsiders, the training centre will cater for a

range of other course work at TAFE, including the training of Pit Technicians, Geological Field Assistants and students in the Certificate IV course in Surface Mining. For existing and potential Quarry Managers, the centre may be used as a resource for their career path learning to Diploma level of the recently endorsed National Competency Standards for the Extractive Industries.

"I had offers of work before I completed the course. I finished the course. I wanted to learn all I could on safety and drill operation. I got a job in a week, and I am learning quickly about the practicals of drilling."

BORAL and TAFE have some hard and fast rules for students, which emphasise the sense of reality brought to the training. All students must satisfactorily complete a competency based induction before they can enter the quarry, have all the right PPE and be accompanied by a lecturer. The induction is the student's first introduction to the priority given to safety and is reinforced by the knowledge that a breach of the safety rules in the training situation, means an automatic failure of the course. The emphasis on safe behaviours means that these students enter the workforce with the right attitude towards their own safety and the safety of others. Maintaining that attitude is, of course, a joint responsibility between the employer and employee, but the comprehensive start to employee training makes that a lot easier for both.

Boral and TAFE have signed-off on a Memorandum of Understanding that secures the availability of the training centre for at least the next five years, during which time Boral also expects to benefit operationally from many of the projects that TAFE students will undertake as part of their study.

GUEST EDITORIAL

Over the past year there has been a greatly increased focus on safety in mining in Western Australia, following a run of fatal accidents in the industry during 1997, which regrettably continued until mid year.

The Mines Occupational Safety and Health Advisory Board (MOSHAB), which carried out an inquiry into fatalities in the last quarter of 1997, has been actively pursuing the implementation of the recommendations of the Inquiry Report. This was done through the MOSHAB Standing Committee and a series of work parties set up to carry out the assigned tasks.

Regular reports have been given in MINESAFE on the progress of these activities.

A further initiative developed and completed during the year was the conduct of a survey on risk taking behaviour in underground mines.

This project was carried out by a team of three MOSHAB members, Mr Pat Gilroy (Chamber of Minerals and Energy), Mr Henry Rozmianiec (Trades and Labor Council) and Mr Bob Leggerini (Employees Inspector of Mines), supported by Ms Tracy Long as Secretary and co-ordinator.

The survey was very well received and not one individual declined to participate. Approximately half the total underground workforce, (including supervisors) were included in the survey, which was completed with speed and thoroughness.

A report on the survey which incorporates the findings, conclusions and recommendations, will be available for distribution during December 1998 – January 1999, a brief summary will be widely distributed to personnel at all minesites.

The report contains valuable information which will assist all mines in continuous improvement in safety performance. An issue of overwhelming importance identified by the workforce is the need for thorough and comprehensive training for miners and supervisors.

It is intended to repeat the survey in two year's time.

As Chairman of MOSHAB I am extremely pleased with the way the Board, its Standing Committee and work party groups have pulled together during the past year, with concrete results from those efforts.

I expect this year to be a turning point in the drive to the goal of the elimination of fatalities and serious injuries within the first few years of the new millennium.

I commend the process of continued improvement in safety at work to all of you, and wish you well for the year to come.

In closing I wish to record my personal sorrow at the death of Catherine Stedman who was admired and respected by all who had the pleasure of working with her.



Lee Ranford
**DIRECTOR GENERAL
CHAIRMAN MOSHAB**

OBITUARY

Catherine Stedman

It is with the deepest sorrow that we record the passing of Catherine Stedman, who founded MINESAFE and so ably edited it since its inception in 1989.

Catherine's untimely death came as a severe blow to all of her friends and colleagues in the Department of Minerals and Energy, and throughout the minerals industry.

She has been a friend, counsellor, and mentor to many, and our heartfelt sympathy is extended to Colin, Tiffany and Jeff and to all of her extended family.

Catherine has contributed much towards the improved safety and well being of so many in the mining industry, and the wider community, and her memory will live in the hearts and minds of all who knew her.

Our industry and our lives are richer for her contributions.



Catherine Stedman

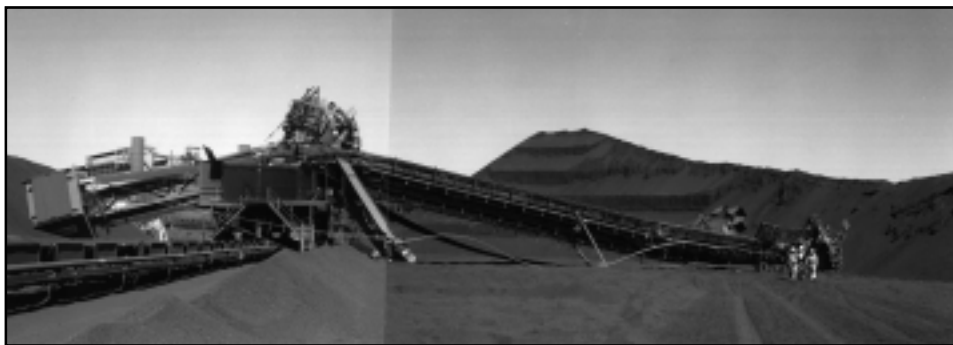
STRUCTURAL SAFETY OF RECLAIMERS, STACKERS AND SHIP LOADERS

A Mining Operations Division taskforce has coordinated the development of risk management plans in conjunction with BHP Iron Ore, Hamersley Iron and Robe River Iron Associates for this type of machine operated by these companies in the iron ore industry. The development of these plans has been a comprehensive process and has been ongoing since November 1996.

The Division initiated the safety review following the structural failure of three machines in the iron ore industry, between 1993 and 1996, which resulted in the deaths of two operators and serious injuries to a maintenance engineer.

Essentially a risk management plan identifies all possible risks that may jeopardise the structural integrity of a machine, and formulates management processes which eliminate all such identified risks. Such a plan is a "live" document that must be maintained throughout the life of the machine, and evolve to identify and manage newly created risks associated with modifications or upgrades to the machine.

In September 1997, the taskforce conducted a presentation to representatives of operators of all



September 1993. The operator was killed when the bucket wheel shaft failed on this reclaimer, causing the machine to collapse.

remaining machines in the mining industry of WA. Taskforce members provided a synopsis of the risk assessment process to assist other operators to develop their own risk management plans.

The operators of all such machines in the mining industry of WA have now been requested by the

Division to develop risk management plans for each machine.

For further information contact Mark Butson Tel: (08) 9222 3607



January 1995. A maintenance engineer received serious injuries when the mast frame and counterweight boom collapsed on this stacker.



July 1996. The operator was killed when the mast frame collapsed on this reclaimer.

THE HEAT STRESS HAZARD

In December 1997 a young vacation student died while working as a sampler on exploration activity in the central north of the State.

The cause of death was not determined by post-mortem examination, but the pathologist reported indicators consistent with death due to extreme heat. (Refer to Significant Incident Report No. 95 – Death of Exploration Worker) August 1998.

It is of critical importance that the hazards of heat stress are fully understood at all levels and that all identified risks which may arise for personnel are effectively controlled or eliminated.

New employees must be fully trained to understand how to prevent heat stress, particularly on exploration work in isolated areas. The issue is covered in the generic MARCSTA Induction. Particular account must be taken of the need to acclimatise when moving from a cooler area of the State to work in hot and humid regions.

In normal circumstances the body has a natural mechanism that protects it from overheating. Heat is transferred from the internal

organs and muscles to the skin; the sweat glands produce sweat and the sweat evaporates, cooling the body. Heat stress can occur when the body is unable to regulate its temperature.

Vigorous activity in a hot environment can cause the body temperature to rise significantly leading to heat strain and illness with typical symptoms of weakness, dizziness and nausea. Further rises in body temperature may lead to heat exhaustion or heat stroke.

- ◆ People most vulnerable to heat problems include; those who have just started on the job (unacclimatised), older people, those with certain medical conditions requiring medications, and those who are overweight or physically unfit.
- ◆ The main way to beat the heat is to drink plenty of water. People working hard in hot environments can lose up to one litre of perspiration each hour; If any of these descriptions fit you, help yourself by drinking a glass or two of cool water every quarter of an hour, even if you are not thirsty.

- ◆ Keeping fit and acclimatised helps to maximise the cooling process and reduces salt concentration in perspiration.
- ◆ Wearing the correct clothing is important, for example, face shields near heat sources, protective suits, wide brimmed hats, and clothes that 'breathe'. Heavy clothing can make overheating worse.

Alcohol is a major contributor to early dehydration, causing the kidneys to lose water. Avoid excessive alcohol intake. The colour of urine is a good indicator of dehydration, the more yellow the urine the more dehydration. An easily implemented urine test (the fantus test) has been developed to assess the degree of early dehydration.

The message is clear! Keep well hydrated by drinking half a litre of water every half an hour, keep physically fit, and minimise the intake of alcohol.

Copies of "Guidelines for the Management and Prevention of Heat Stress" are available from the Mining Operations Division.

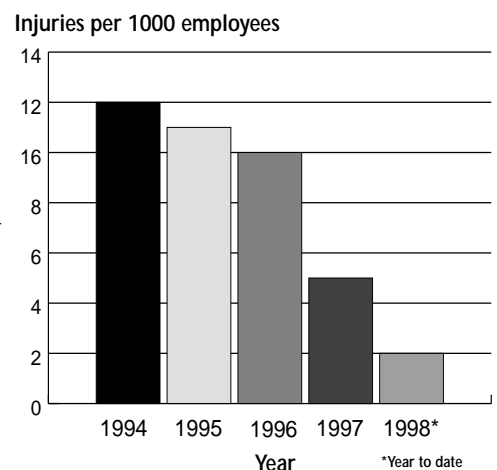
For further information contact Dr Brian Galton-Fenzi Tel: (08) 9222 3650.

INCIDENCE OF UNDERGROUND ROCKFALLS

The number of injuries per 1000 underground employees due to rock falls has shown an encouraging downward trend during the past five years. This result is a credit to the many organisations in the mining industry of Western Australia that have been involved directly and indirectly with the identification and control of rock fall hazards in underground mines.

The following graph demonstrates the reduction in the number of injuries, caused by underground rock falls, that have been reported to the Department of Minerals and Energy during the period from 1994 to 1998.

The challenge for the underground mining industry will be to maintain and improve upon the performance that has recently been achieved.



BIG BELL 'S HEALTHY LIFESTYLE

The past 5 years have seen a progressive change in the culture of fly-in fly-out minesites. Where it was once the practice to head straight for the wet mess after work, nowadays mining companies and their employees are looking for positive social alternatives. Hence the evolution of on-site health and fitness programmes, following on from a greater community awareness of the need for improved health and well being.

Another trend Australia wide has been the increase in Workplace Based Rehabilitation Providers. This shift has moved the role of rehabilitation coordination from external providers to the company itself, in an effort to reduce soaring rehabilitation costs and premiums. Big Bell mine has created a two-fold comprehensive Healthy Lifestyle Programme incorporating not only pro-active prevention strategies, but developing on-site rehabilitation of work-site injuries.

The first aspect of this multi-faceted approach involves prevention strategies such as a comprehensive fitness and sports programme, educational presentations including back care and manual handling, survival for shiftworkers, heart disease issues, nutritional



Eugenie Kestel instructs Tony Babic at the gymnasium.

awareness, and periodic ergonomic workplace evaluations. The second involves complete on-site physical rehabilitation management starting with pre-injury task assessments and the development of return to work plans, through to exercise rehabilitation prescription, and regular supervision with ongoing professional progress reviews of each case.

Big Bell has an Accredited Exercise Physiologist specially trained to implement the programme on-site. This multi-skilled health professional has the backing of a team of experienced colleagues,

whose constant support and input ensures on-going improvement and development of the programme. Benefits are both direct and indirect. The number of employees needing to be sent off site for treatment has been drastically reduced, due to early intervention on musculo-skeletal injuries. Exercise rehabilitation on site has allowed an early return to work for many injured employees previously forced to stay in the city. Furthermore, fitter, healthier workers show greater productivity, with an increase in work capacity and well being.

The Exercise Physiologist also plays an important role in the planning and implementation of physical training of Mines Rescue personnel.

The Healthy Lifestyle Programme is a comprehensive, pro-active initiative, tackling health, fitness and injury prevention and rehabilitation issues on-site. The programme is gaining increasing support and recognition from within the mining industry and was recently awarded a "Heart Week Award" from the National Heart Foundation.

For further information contact Eugenie Kestel from Worksite Fitness and Rehabilitation Tel: (08) 9343 9390.



Big Bell workers enjoying volley-ball at the village.

PROTECT YOUR HEARING ASSETS

Sound travels through air as tiny pressure waves in the air. These sound waves enter your ear canal and then your eardrum making it vibrate. Three tiny bones in your middle ear link the vibrating eardrum with the inner part of your ear. The last of these bones is connected to a bony structure that looks a bit like a snail shell, but is about the size of a pea. It is called the cochlea (pronounced cock-lee-ah). The cochlea is very complex inside as it contains fluid and about 30,000 tiny hair cells that move when the fluid moves with a sound. Each hair cell connects to the hearing nerves. When the hair cells move in response to a sound, they send messages along a pathway of nerves to the brain which turns this signal into what you hear. All this happens in a fraction of a second!

Each cell is tuned to a particular sound (or frequency). The hair cells can only take so much energy and commonly break down with excessive noise.

In the short term, noise-induced hearing loss may be temporary with recovery after a few hours or days break. Sometimes this temporary loss is described by employees as "getting used to the noise". However, this is in fact a warning sign of excessive noise exposure.

In the long term this hearing loss can become permanent; the hair cells are actually killed by the noise!

The cells which pick up high frequencies (eg. a telephone ringing) are damaged first followed by those which pick up the conversation frequencies. Speech becomes distorted and confused to the point where a simple statement like "pass the sugar" sounds like "ah er oo ah" or a badly tuned radio. Holding a conversation with any sort of background noise, for example at a party, becomes

extremely difficult.

Noise causes varying amounts of damage to different people's hearing. Some people are more sensitive than others so there is no exact level at which noise becomes a problem. It is known that there is a risk of hearing damage from exposure to noise levels above 75dB(A), and as the exposure increases so does the proportion of people who suffer hearing damage.

The MSI Act and Regulations place responsibilities on employers and manufacturers to take all practicable steps to reduce noise levels. On the other hand, employees are required to use work procedures which reduce their

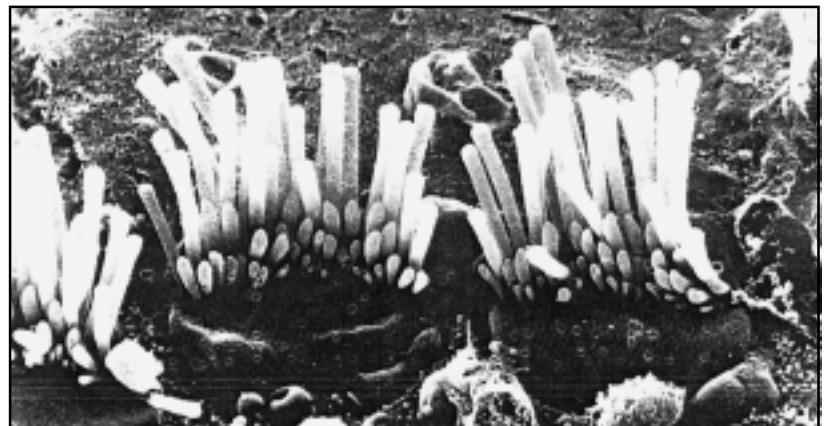
exposure to noise, and are required to wear earmuffs and earplugs where noise levels can not be reduced.

If you are required to wear hearing protectors, be diligent about it. Make sure they are in good repair and fit properly. Make sure you know when and how to use them.

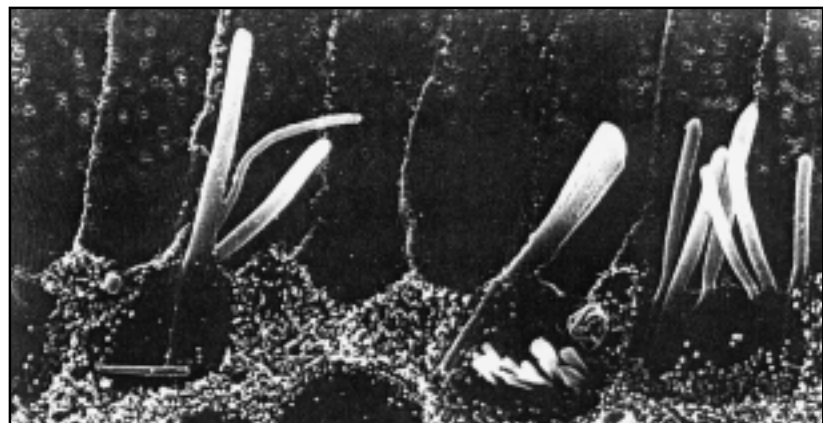
The effects of excessive noise on your hearing are permanent and can never be cured. Remember, the hair cells you have are the only ones you will ever get.

Protect your valuable hearing assets!

For further information contact Jerry Wilczewski Tel: (08) 9222 3128



A normal undamaged ear. With the help of an electron microscope, one can see the fine hairs of the haircells (or cilia).



A noise damaged ear. The electron microscope shows what has happened to an ear damaged by noise - the fine hairs of the cilia have been exposed repeatedly to high sound levels and are broken.

MINESAFE INTERNATIONAL

The MINESAFE INTERNATIONAL CONFERENCE for 1998 was held at Sun City in South Africa.

The first three MINESAFE Conferences were held in Perth (1990, 1993, and 1996), as a joint initiative of the Chamber of Minerals and Energy and the Department of Minerals and Energy.

The Conference in South Africa was jointly sponsored by the respective Chambers and Departments from Western Australia and South Africa, and was well attended by some 420 delegates, with seventeen countries represented.

Western Australia was strongly represented with in excess of 50

delegates, and 14 of the 52 papers delivered.

The theme of the Conference was "Combining our Resources for Improving Safety and Health in the International Mining Workforce."

There was a considerable focus on occupational health issues, as well



Occupational health session presenters (L- R) Dr Dave Barnes, Prof Ernie Mastromatteo, Dr Nic Ormonde and Tracy Long.

Hard at work behind the scenes (L - R) Mark Brown, Dr Lettie la Grange and Tracy Long.



DME and Chamber of Minerals and Energy information booth.

ONAL GOES OFFSHORE

as physical safety aspects, and substantial interest in experience in developing countries, reflecting the increasingly global spread of major mining activity.

The feedback from the Conference was very positive and several members of the Mines

Occupational Safety and Health Advisory Board attended and delivered papers.

Attendance at such forums keeps members up to date with new developments, and allows a valuable international network of

contacts in the mining safety field to be established and maintained.

MINESAFE INTERNATIONAL 2000 will be held in Perth in September 2000.



Some WA delegates enjoying the conference dinner.

Pre-conference tour of Impala Plats mine and the underground monorail system.



Tracy Long and Doug Austin at the information booth.

WMC BLASTING

At WMC Resources' request, the Department of Minerals and Energy assisted with the selection of experts to conduct a blasting audit at all their minesites in May and June this year.

Following the audit, all the WMC minesites, the Department, and MOSHAB were fully briefed. Action plans to address identified issues began immediately with the review and implementation of WMC 's Elimination of Fatalities Taskforce (EOFT) standards, particularly the explosive and blasting standards.

FINDINGS:

1. A lack of standards and procedures covering; blast design, issue of instructions, and monitoring of drilling and blasting was evident in the operations visited.
2. There was considerable variation in the quality of development work instructions provided to miners and supervisors.
3. Charging vehicles used in underground mines appeared to be poorly designed, particularly;
 - ◆ quality, inspection and maintenance of ANFO pressure loaders, and
 - ◆ poor design of charging vehicles and work platforms.
4. Safe transport of detonators and explosives from magazines to the point of use presented difficulties at virtually all mines audited.
5. Inconsistency of firing systems - the use of one or two electric detonators to initiate blasts exposes shot firers to less risk than using safety fuse.
6. All mines have established Safe Firing Positions, considerable effort has been put into establishing robust firing procedures.
7. All systems involved physical clearance of areas.
8. Tag boards are an integral part of the clearance procedure.
9. Mines with complex ventilating circuits and those experiencing seismic events associated with blasting, located the firing position a significant distance from the blast, and remote from the auxiliary fan starter. In some mines not enough consideration had been given to this issue and it was left up to the shotfirer.
10. Surface magazines were well established and maintained to a high standard.
11. With some exceptions the standard in main underground magazines needed to be raised. The main shortcomings resulted from:
 - ◆ inappropriate location,
 - ◆ inadequate stock control and management, and
 - ◆ inadequate delivery and transport arrangements.
12. Few of the underground mines had a safe and efficient system of handling explosives once they were unloaded at the portal/shaft area.
13. All but two mines were using contractors.
14. Drill and blast standards appeared generally higher when the contractor/principal relationship was obviously positive.
15. Worker turnover affected the performance of the general workforce, the technical workforce and site management, and this was a major issue at some mines.
16. Training systems at mines were unable to cope with these high rates of worker turnover and it is unlikely any training system could handle such rates.
17. There were good pre-shift communication and co-ordination meetings at all sites.
18. Radio systems offer an opportunity to improve underground blasting operations.

AUDIT

RECOMMENDATIONS:

- ◆ Increase the level of technical control over drilling and blasting activities by placing responsibility for these activities on a Drill and Blast Engineer.
- ◆ Improve the presentation and technical quality of mining work instructions.
- ◆ Review existing procedures relating to "breakthroughs" and clearing of misfires.
- ◆ Introduce a planned maintenance program for all pressure ANFO loaders.
- ◆ Introduce design standards for specialist charging vehicles and work platforms.
- ◆ Introduce new procedures for electric firing.
- ◆ Review blast clearance provisions.
- ◆ Review ventilation and re-entry procedures.
- ◆ Establish design standards for main underground magazines and review explosive transportation arrangements.
- ◆ Take advantage of underground radio systems to assist with blast clearance procedures.

The audit reinforced the work already under way at WMC. The EOFT explosive standard gained from the audit, because as it finished, the expert team developing the standards met to consider the findings. This meant that the development of the explosives standard included the findings of the audit.

An important outcome of the audit is that it provided a lot of valuable information and suggestions that can be used by the whole industry.

For further information contact Peter Plavina (WMC Resources) Tel: (08) 9442 2000.

CHANGES TO RADIATION SAFETY REGULATIONS

Significant amendments to PART 16 – RADIATION SAFETY of the Mines Safety and Inspection Regulations 1995 were gazetted in November 1998. The changes were considered and approved by the Mines Occupational Safety and Health Advisory Board. The purpose of the amendments is:

- ◆ to ensure that particular aspects of the regulations concerning the use and storage of radiation sources and irradiating apparatus in mines are applicable to all mines, not just those at which radioactive ores are mined or where exposure to radiation in excess of the prescribed level is considered likely, and
- ◆ to clarify the intent of the regulation concerning the management of radioactive waste generated from mining and processing radioactive ores so that, as far as practicable, there is no restriction on the future use of the disposal site at the mine, in the long term.

For further information on aspects of the amendments contact Ian Marshman. Tel: (08) 9222 3651. Copies of the amendments are available from the State Law Publisher, 10 William Street, Perth. Tel: (08) 9321 7688.

PROFILE: PETER CROOKS

There are many quiet achievers in the mining workforce, and once in awhile they come to MINESAFE'S attention. One such person is Peter Crooks, who is currently the Elimination of Fatalities Taskforce (EOFT) Co-ordinator at WMC St. Ives Gold Mines.

Peter started his mining career as an underground miner in Castlemaine, Victoria, and went through the tough times brought about by mine closures before he moved to Kambalda in 1990. He started with WMC Resources as a serviceman, and went through the company training scheme for airleg miners at Long Shaft before starting work at Otter Juan. Peter became an underground supervisor at Otter Juan and the Victor Decline.

In July 1996, unknown to Peter, his life was about to take a dramatic turn. He was appointed as a workforce representative on the Elimination of Fatalities Taskforce, which was made up of people from all levels in WMC Resources. His part-time involvement was a small beginning, but by October, Peter had been appointed as a full time member of the EOFT, primarily to participate in the development of

the Underground Ground Control Standard, and the Underground Mobile Equipment Standard. In July 1997 he became the EOFT coordinator at St. Ives Gold Mines where he now coordinates the implementation of the 10 EOFT standards completed, and assists in the development and review process of 10 other draft standards.

Peter spent six years in mines rescue and was the Captain of the Kambalda Team during 1996 and 1997. His years with the rescue team identify Peter as a man with the safety and welfare of his fellow workers close to his heart. **What motivates him now?**

His reasons are the same, but having been closely involved with eight fatalities over the past four years, he has seen the devastation that tragedy causes in a small community. Peter has a wife, Andie and two sons Ben and Daniel. He knows several children though, who no longer have a father.

His experiences have helped Peter to find a direction, and define certain truths for him. He believes that when someone says work

safely, it doesn't matter if they mean it or are just paying lip service. It gives you the right to do whatever it takes to do the job safely, and working in a dangerous industry, is no justification for accepting death. He knows that everyone wants to eliminate fatalities, but also knows that people's attitudes and behaviours have to change if that is to happen. In his own company, Peter has seen the difference that involving the workforce has made, and therein perhaps is his message to the rest of us. The biggest barrier to change is the resistance to involving the workforce, so remove that barrier if you are serious about safety. **That's good advice.**



The MINESAFE committee wish readers a safe Christmas and New Year (L-R) Mark Brown, Christine Gillard, Chris Stublely, Jo Duggan, Jim Torlach and Mark Butson.



MINE RESCUE COMPETITIONS

SOUTH WEST EMERGENCY RESPONSE TEAMS' COMPETITION



An emergency response team erecting a temporary bridge over the Collie River.

South west emergency response teams competing at the Collie River.



KALGOORLIE UNDERGROUND MINE RESCUE COMPETITION



John Shipp (registered manager, centre) with the KCGM Gold Diggers team.

Hamish Bohannon (registered manager, seated left) with apprentice, Jack Bohannon and WMC Kambalda emergency services.



Peter Beilby (registred manager, standing right) with the Black Swan Nickel team.



WHAT'S ON

FLAC

PERTH, FEBRUARY 8-9 1999
VENUE: UWA COMPUTER LAB

This course is designed to provide basic training for engineers and scientists who wish to use FLAC to solve practical problems in rock or soil mechanics. It will consist of an introduction to FLAC, and more advanced aspects of FLAC modelling, including applications of the FISH programming language.

FLAC 3D

PERTH, FEBRUARY 10-11 1999
VENUE: UWA COMPUTER LAB

This course is designed to provide basic training for engineers and scientists who wish to use FLAC 3D to solve practical problems in rock or soil mechanics. It will consist of an introduction to FLAC 3D, and more advanced aspects of FLAC 3D modelling, including the FISH programming language.

UDEC

PERTH, FEBRUARY 12 1999
VENUE: UWA COMPUTER LAB

This course is designed to provide an introduction to UDEC covering modelling strategies and the command structure of the program, with illustrations. It is expected that registrants will have some prior experience with other explicit codes such as FLAC.

TAILINGS - CORPORATE RISK AND RESPONSIBILITY

PERTH, MARCH 10 1999
VENUE: NOVOTEL LANGLEY PLAZA

This seminar has been designed for Senior Management with the objective of stressing the importance to mining companies of the Risks and Responsibilities imposed by the short and long-term containment of the tailings residue. There is a growing recognition that the management and decommissioning of tailings storages can have a significant effect on the economics of mining operations, and should be addressed as early as possible.

MINING IN HIGH STRESS AND SEISMICALLY ACTIVE MINES

PERTH, APRIL 15 -16 1999
VENUE: IBIS HOTEL

This workshop will be the third in a series of workshops on rockburst and mine seismicity. It will include the following:

- ◆ Focus on Australian experience with rockburst and seismicity.
- ◆ Mining in high stress but not necessarily seismically active conditions. Difficulties and solutions for mining in high stress.

- ◆ Presentations from experience, and point of view of operating mines rather than theoretical aspects.
- ◆ Special emphasis on mine planning and design issues.

For further information contact:

Christine Neskudla or Gillian Macmillan

Tel:(08) 9380 3300

Fax: (08) 9380 1130

Email: acg@acg.uwa.edu.au

EXAMINATIONS FOR CERTIFICATES OF COMPETENCY

First Class Mine Manager's

Underground Supervisor's

Quarry Manager's

Restricted Quarry Manager's

Mining Law Examinations only will be held in Perth on 15 February 1999. Applications close on 15 January 1999. The fee is \$100.

Mining Law and Mining Practice Examinations will be held statewide on 19 April 1999. Applications close on 19 March 1999. The fee is \$100.

For applications and further information contact
Alan Sheppard Tel: (08) 9222 3683.

ELTIN WINS NATIONAL TRAINING AWARD

Mining services group Eltin Limited has won the mining category of the Employer of the Year Award in this year's Australian Training Awards, presented at the Burswood Convention Centre during November.

Organised by the Australian National Training Authority (ANTA) the annual awards recognise the achievements of Australia's employers, training providers,

community organisations and vocational students.

Eltin spent \$3.5 million on training over the past financial year. Initiatives undertaken by the company in recent years include an annual apprenticeship program, an innovative pre-employment aboriginal mine training program, management training courses for supervisors and managers and a pilot program to fast-track adults

with past trade experience to become qualified tradespersons. The pilot program for tradespersons, developed in conjunction with the WA Chamber of Minerals and Energy and TAFE, received a special commendation from the ANTA.

Congratulations to Eltin on a fine achievement!

NEW PUBLICATIONS

MOD PUBLICATIONS

Significant Incident Report 94:

Fall from Height in Gig Rise – Fatal Accident (August 1998)

Significant Incident Report 95:

Death of Exploration Worker (August 1998)

Significant Incident Report 96:

Remotely Operated LHD – Brake Failure (September 1998)

Significant Incident Report 97:

Radio Operated Crane – Uncontrolled Movement (September 1998)

Significant Incident Report 98:

Jumbo Drilling Rig – Underground Fire (September 1998)

Significant Incident Report 99:

Remotely Operated LHD – ‘Runaway’ (November 1998)

“ADVANCING SAFETY” - AN AUSTRALIAN WORKPLACE GUIDE

Advancing Safety – An Australian Workplace Guide due out in late 1998 is a companion volume to Enhancing Safety – An Australian Workplace Primer. Together the two books cover all the material in the National Diploma in Occupational Health and Safety. Advancing Safety – An Australian Workplace Guide will be a valuable asset for TAFE and University students in OHS as well as people with responsibilities for health and safety at work.

The first ten chapters are accompanied by practical activities based on the material in the chapter, the last two chapters are action-oriented. All chapters include further reading. The book includes a useful list of references on current topics appearing in OHS journals, and on accident models. It has a section on information sources and a list of useful Websites.

For further information and orders contact:

Training Publications
Tel: (08) 9227 3360
Fax: (08) 9227 3298

OBITUARY

John Charles (Shaun) Argus

(7 September 1931 to 19 October 1998)

Shaun started his mining career at the New Coolgardie Gold Mines and at the Gold Mines of Kalgoorlie, Mt Charlotte where he became Mining Engineer towards the end of his service there. He obtained an Associate Diploma in Mining from the School of Mines Western Australia.

With his qualifications in his hand, Shaun embarked on a long mining career rising rapidly to high levels of responsibility. He worked at a number of mining operations throughout WA and while at Wiluna Gold Mines decided to join the Department of Minerals and Energy in 1990.

Shaun was initially based with the Department in Perth then transferred to the Karratha Office, where he worked diligently as a District Inspector of Mines in the Karratha Region until his retirement last year.

Shaun will be sadly missed by all his family and friends.

STAFF CHANGES

Congratulations to **Anne Thomas** on her appointment as Administrative Assistant with the Karratha Inspectorate and to **Sylvana Deluca** who was appointed as Environmental Officer Agreement Acts.

Welcome to **Samantha Lloyd** who is joining the Division for three months as a Project Officer.

Congratulations to **Mike Rowe** who has been appointed Manager Occupational Health.

INCIDENT ALERT

UNDERGROUND FIRE

INCIDENT

A twin-boom development jumbo drilling rig caught fire in an underground metalliferous mine and was extensively damaged.

The fire started while the machine was unattended and was well established when discovered by the dayshift jumbo operator on arrival at the workplace.

All personnel were evacuated from the underground workings until the fire was extinguished some 29 hours later by the mine's rescue team. No injuries were sustained.

CAUSE

The 1000 volt electricity supply to the jumbo's trailing cable (and 24volt from the batteries) had not been isolated after use by the preceding dayshift.

During the nightshift while the machine was unattended, a 10kg rock fell and deflected into the driver's cabin damaging the dash console and causing a fire to start from internal (live) 24volt wiring.

The rock may have been dislodged from the backs following a blast that was fired two levels above.

COMMENTS AND PREVENTATIVE ACTION

Mines Safety and Inspection Regulation 10.41(1)(a) states:

"The operator of a trackless unit in an underground mine must ensure that the unit is not parked or left unattended unless the engine or power supply has been switched off."

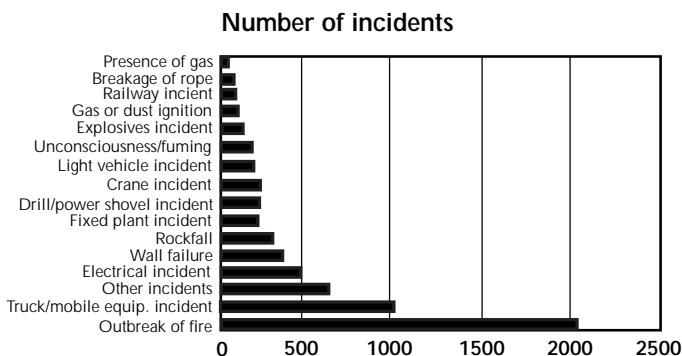
The above requirement (and long-standing industry practice) applies equally to trackless units fed by trailing cables, and must be fully understood and practised by relevant supervisory, operating, training and maintenance staff.

Less obvious is a recommendation to take the additional precaution of switching off the vehicle's engine battery isolator. In this incident, the machine's dash console wiring was also energised from the on-board 24volt batteries, and it is likely that the fire would still have occurred even if the trailing cable had been switched off.



WATCH OUT!

NUMBER OF INCIDENTS REPORTED SINCE 1994



FIRE INCIDENTS BY TYPE SINCE 1994

