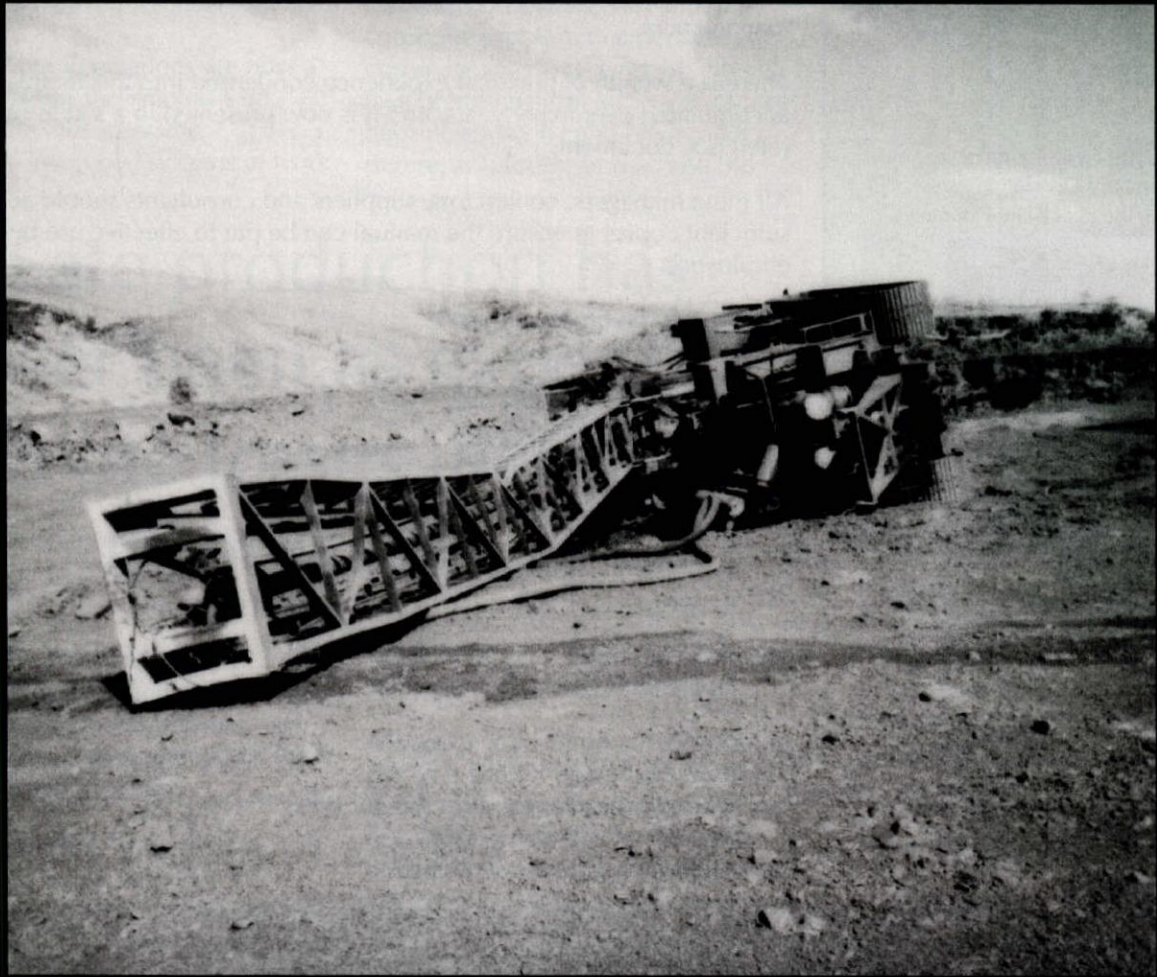




MINESAFE

ISSUED BY THE MINING OPERATIONS DIVISION OF THE DEPARTMENT OF MINERALS AND ENERGY (WA)



BOOM CRASH DRILL RIG

The mast of this drill rig was being lowered whilst the machine was in an unstable position. All operators must ensure their machines are stable prior to moving the mast.

MINESAFE IS PUBLISHED BY

The Mining Operations Division
6th Floor, Mineral House
Department of Minerals and Energy
Western Australia
100 Plain Street
EAST PERTH WA 6004

Editor: Catherine Stedman
Associate Editor: Anna Patton
Ed. Asst. Mark Butson
Chris Stubley
Typesetting: Kimberley Williams
Jo Duggan
Graphic Design: Frank Richards

Enquiries: Tel: (09) 222 3310 / 222 3545
Fax: (09) 325 2280

MINESAFE is published four times a year by the Mining Operations Division in conjunction with the Policy and Planning Division. Articles and news items may be used freely, although we would appreciate acknowledgment, as well as a copy of any publication in which they are used.

IT'S HERE

The SAFE MINING manual is now available from CCH, the publisher.

The SAFE MINING manual is comprehensive and serves as a practical guide for the identification of hazards and the management of associated risk across the mining and mineral extractive industries.

The finished product is an excellent publication, presented in a manner which makes it very easy to look up any issue, as well as cross reference other sources for more detailed information.

A clear and logical introduction shows how to use the manual, and the first section deals with a practical approach to hazard identification and risk management.

There is a wealth of practical experience condensed into this manual, accumulated over many years, and it is now presented in a single convenient reference document.

All mine managers, contractors, suppliers and consultants should acquire sufficient copies to ensure the manual can be put to effective use by all their employees.

Copies may be ordered from:

CCH Australia Ltd
Wesfarmers House
40 The Esplanade
PERTH WA 6000
Tel: (09) 322 4589
Fax: (09) 321 1683

The editor and friends at the Meekatharra car wash. June 1996



The Mines Safety and Inspection Act and Regulations hit the Government Bookshop in February 1996 and instantly went to the top of the mining industry best seller list. The content was foreshadowed in almost every issue of MINESAFE over the past two years, the industry was widely consulted, and several information days were held around the State.

The Act and the Regulations are now a reality. For many, the emphasis on accountability, risk assessment, training, and integrated systems of work

available resources. By the same token, it is the undeniable right of all employees to expect every practicable measure will be taken to ensure they are not exposed to hazards in the workplace.

The bottom line is that phrases like "we don't have the people", "he/she can't be spared" and other equally common situations on site are very much a corporate problem that demands a corporate solution. Undermanning, lack of training and lack of resources have never been valid reasons for putting employees at risk, and the

Safe production has never been as expensive as the losses incurred through injury

may result in short term pain as organisations identify and assess the impact of discrepancies between the intent of the legislation and established company operating systems.

Safe production has never been as expensive as the losses incurred through injury, equipment damage and lost production. Training has never been as expensive as poor performance that results from deficiencies in knowledge and skills, and preventative measures such as risk assessment have never been as expensive as corrective measures after the event.

It is the undeniable right of operators to decide how they will allocate their

intent of the new legislation consigns this type of thinking to the past.

Asking how many people need to be put on a site, or how much training needs to be done is a bit like asking how long is a piece of string? The answer is, as many people and resources as it takes to ensure that the intent of the Act and Regulations are met. In some cases it may mean more personnel, in other cases changes in the organisation of work, but for everyone it means assessing the opportunity costs and doing what is reasonable and practicable to ensure that the foreseeable consequences of decisions and actions are positive ones for the wellbeing of all employees.



Catherine Stedman
Editor

A handwritten signature of Catherine Stedman in black ink.

The MINESAFE team on behalf of our readers, send a special greeting to those in the Pilbara who endured the devastation caused by Cyclone Olivia.

FUMING HAZARDS UNDERGROUND

THE PROBLEM

Although fuming has been a recognised hazard in underground mines for centuries, and the subject of repeated hazard alerts issued by the Inspectorate in the past 12 years, incidents continue to happen regularly.

Several cases in the past 12 months could have had fatal consequences.

Most of the recent incidents involved residual fumes from blasting, resulting either from inadequate secondary ventilation of stope/development headings, or from failure to use, or the improper use of ventilation systems and equipment.

Another common source of fuming is a build up of diesel exhaust gases; again due to sub-standard ventilation in conjunction with incorrect use of diesel equipment.

There are several readily identifiable factors contributing to the incidents of fuming:

- Failure to recognise that the confined and limited atmosphere in underground workplaces is made hazardous (or lethal) by amounts of contaminant fumes that would quickly disperse on the surface in the open air.
- Not understanding the hazards and associated levels of risk presented by toxic or asphyxiant gases in the fumes.
- Not understanding ventilation fume clearance systems, and the timing for clearance to be effective.
- Either sub-standard or totally inadequate secondary ventilation systems, or the lack of control and maintenance of adequate systems and procedures.
- Failure to use ventilation clearance systems properly because of ignorance or apathy.

The primary responsibility for setting up and maintaining the controls required to ensure safe conditions rests with management, and is put into effect through an adequate standard of supervision.

Too often there is evidence of the whole process being taken for granted by managers, supervisors and miners.

EFFECTIVE FUME CLEARANCE

It is the duty of the mine manager to ensure that an effective primary and secondary ventilation system is established and maintained. (Refer Regulation 9.22).

It is the role of the Ventilation officer to monitor the system and advise the mine manager on the system performance, and of any deficiencies and the measures needed to remedy them.

Regular checks are required on fume clearance performance, particularly as ventilation circuits are changed and extended.

It is not enough to rely on the vigilance or ability of the individual miner to cope with changes in ventilation characteristics. (The capacity of the miner to comply with his obligations under

Regulation 9.22(5) is generally limited to his sense of smell and sight and his assessment of whether the vent flow is normal).

OTHER FUMING HAZARDS LIKELY TO ARISE

Toxic fumes may be present underground after a sulphide dust explosion, most commonly sulphur dioxide and possibly hydrogen sulphide.

Ammonia fumes may be generated by contact between ANFO and cement used in grouting or in cemented fill.

An accumulation of diesel fumes may arise due to either one of the following, or combinations of:

- inadequate volume flow
- recirculation of contaminated air
- too many diesel units operating in an area
- defective engines producing excessive fumes

Fumes may also result from fires underground.

REPORT SUSPECTED HAZARDOUS CONDITIONS

If you have any reason to suspect a fume hazard

- **Do not enter the workplace, withdraw from the area immediately and report the condition.**
- **Do not re-enter the area until a competent person has ensured that it is safe to do so.**

The manual SAFE MINING recently published by CCH Australia contains excellent practical guidance on underground ventilation and the management of related hazards. Information about the manual is on page 2 of this issue of MINESAFE.

FAMILIARITY BREEDS CONTEMPT

ROCKFALLS - INJURIES AND FATALITIES

Over a long period of time rockfalls in underground mining workplaces have been a major direct cause of serious and fatal injury.

Whereas in recent years the pattern of fatal accidents altered somewhat in that a high percentage involved machinery and mobile equipment, the background of rockfall injuries and high potential incidents continued.

In the last six months there have been three fatal accidents in underground mines due to rockfall.

The care and attention to detail required to maintain a safe working environment in underground excavations can never be over-emphasised.

The essential elements of this in relation to workplaces are contained in Regulation 10.28(2) viz:

- (a) *due consideration is given to local geological structure and its influence on rock stability;*
- (b) *rock damage at the excavation perimeter due to blasting is minimised by careful drilling and charging;*
- (c) *due consideration is given to the size and geometry of openings;*
- (d) *appropriate equipment and procedures are used for scaling;*
- (e) *appropriate measures are taken to ensure the proper design, installation and quality control of rock support and reinforcement;*
and
- (f) *the installation of ground support is timed to take into account rock conditions.*

Many of these (minimum) requirements are not being adequately met.



The starting point is the issue of size and geometry of openings, in conjunction with minimising rock damage at the perimeters of the excavation by design and control of perimeter blasting.

Scaling is critical and is too often limited to "rattling the backs" with the drill jumbo, without close quarter sounding, inspection and scaling.

Consideration must be given to the use of purpose built mechanised scaling equipment where ground conditions create too great a risk of exposure to injury in manual scaling.

Close attention must be given to the rock structure to assess its stability and what support will be needed.

Correct design and application and quality control of the support, and the timing of its application are critical. These require technical input, and are important management responsibilities

which can't be left solely to the miner to determine.

Rockbolting operations present hazards with a high risk potential, and effective management of the risks is vital.

In large headings and in particular in less than highly competent ground conditions, purpose built rock bolting jumbos allow exposure of persons to be eliminated or minimised.

Your attention is drawn to Safety Bulletins 14 and 17, which deal with some elements of these hazards.

J M Torlach
State Mining Engineer

PERSONNEL PROXIMITY DETECTION EQUIPMENT

Courtesy of CEGELEC (UK), field trials of the company's 'ReMINDER' personnel proximity detection equipment have been carried out above and below ground at two WA minesites.

The equipment was originally designed for British Coal and intended to provide a warning to surface haul truck drivers should either personnel or light vehicles be close to the plant. Considering a haul truck driver's restricted path of vision, and that incidents have occurred where haul trucks have run-over light vehicles, the merits of such a safeguard are self evident.

The system utilises radio transmission which operates between a truck mounted detector and battery operated transceivers (tags) carried by personnel or fitted to light vehicles. Drivers are provided with two alarm levels, an 'amber' alarm when a tag approaches within a 15 metre radius of the detector, and a 'red' alarm at 10 metres. Tags also have a built-in alarm and can be worn by each haul truck driver; the system automatically recognises when a driver enters the vehicle's cab and ceases to respond to that particular tag. Any number of tags and detectors can function within the same area without any invalid interaction.

Underground trials with the 'ReMINDER' system installed on machines at the Boddington Gold Mine and the Forrestania Nickel Project clearly demonstrate the equipment could be further developed to provide an effective safeguard for operators of remote controlled machinery (LHDs in particular).

The 'ReMINDER' system is still at the prototype stage and yet to be commercialised. However, this Department will be strongly recommending that CECELEC take the project 'off the shelf' and further develop the concept.

For further information contact Denis Brown Tel: (09) 222 3546.



MOBILE CRANES COURTING DISASTER

CRANE OPERATORS AT FAULT IN SERIOUS INCIDENTS

Recent investigations into incidents involving mobile cranes should set alarm bells ringing for employers and employees.

The most recent incidents could have resulted in serious and fatal injuries.

Crane operators are failing to adhere to the basic rules of crane operation. The most common errors are:-

- Overloading cranes.
- Not reporting defects
- Carrying out unauthorised repairs

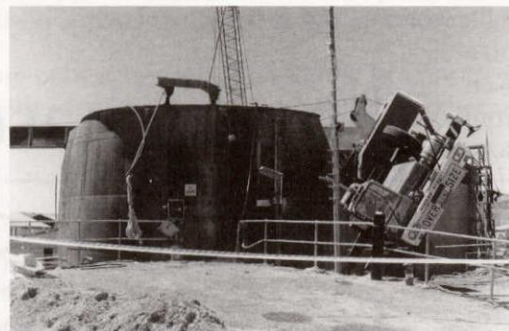
With crane incidents becoming more frequent, it is only a matter of time before a serious accident occurs.

Operators involved in the incidents investigated were experienced. Refresher courses in crane operation may be an answer.

Employers must accept that merely obtaining the relevant certificate to operate a crane is not the end of an operator's training.

Both employers and employees need to familiarise themselves with relevant regulations pertaining to cranes (Part 6 of the Mines Safety and Inspection Regulations 1995).

How will you feel if your next incident is not a near miss?



EXPLOSIVES SECURITY

IS YOUR STORAGE, SECURITY AND TRANSPORTATION UP TO STANDARD?

Mines District Inspector Jim Griffin, recently came across 32 electric detonators on the south shoulder of Great Eastern Highway 100 km west of Kalgoorlie. Apparently a white plastic bag containing the detonators had burst

on impact and there were detonators scattered along the verge for 20 metres.

While there is no way of knowing whether this particular bag of explosives came from a minesite in the area, this incident is a good opportunity to remind all sites to check, and check again that storage security and transport procedures are up to standard and fail safe.

NOISE MANAGEMENT IN MINES

The Mines Safety and Inspection Regulations 1995 have revised some aspects of the occupational noise regulations governing noise management in mines.

The regulations reflect a shift from narrowly focused hearing conservation to more comprehensive noise management.

The key change in the current legislation involves lowering the action level for occupational noise exposure (LAeq,8h) on an average day from 90 dB(A) to 85 dB(A). This amendment has effectively brought the mining legislation in line with the National Standard for Occupational Noise.

As in the repealed legislation, the action level is not a "never to be exceeded" limit but the level at which certain actions are required in order to avoid exposing employees to unnecessary risks to their hearing. These actions need to be considered in the context of regulation 7.4 which is qualified by "as far as practicable" noise reduction measures to be introduced irrespective of the action level stipulated in regulation 7.3.

As a result the new exposure standard will not place any additional responsibility on managers to instigate more engineering noise control measures other than those already practicable in terms of economic and technical factors. However, the current administrative noise control measures on minesites need to be

reviewed due to changes to the action level.

These include:

- Provision of adequate personal hearing protectors
- Location of warning signs
- Information, instruction and training of employees exposed to noise above the new exposure standard

Existing noise reports should assist the mine manager in conducting such a review.

administrative controls aim to reduce exposure duration. Furthermore, reduction of the LAeq,8h value of the noise to which an employee is exposed is achievable by reduction of sound pressure level, exposure duration or both. Reduction of peak noise level (LPEAK) is achievable only by reduction of sound pressure level.

Regulations 7.6 and 7.7 deal with the last step in the "hierarchy of control", namely, personal hearing protectors and consequential requirements such as display of safety warning signs and the necessary training provided to employees.

By definition, and as referred to in regulation 7.2, the noise to which a person is exposed is the noise in the environment external to any hearing protectors that may be worn and thus cannot be reduced by them. However, hearing protectors are an acceptable form of risk control if the noise to which persons are exposed still exceeds the action level after all practicable engineering and administrative controls have been implemented. Hearing protection should also be supplied as an interim measure while engineering noise controls or time limits are being planned and implemented.

Regulation 7.8 reflects a more cost effective approach for preparation of noise reports by deleting the need for noise reductions prior to such an arrangement. At the same time, a new timeframe for noise reports has been introduced to ensure their completion within 12 months from the commencement of mining operations. The manner and form in which the noise

The purchase of quieter machinery, changing to less noisy procedures and redesigning work areas, can all contribute to reducing mine noise levels.

Regulation 7.5 details requirements for situations where employees are already exposed to noise above the action level. The essence of this regulation is the requirement to implement the standard "hierarchy of control" such as engineering controls and administrative controls in that order of preference. Engineering controls and administrative controls are the only ways to reduce the noise to which an employee is exposed. Typically, engineering controls do so by reducing sound pressure levels while

reports need to be prepared is referred to in regulation 7.10. A set of approved procedures containing information on compliance with regulations 7.10 and 7.6 is currently being prepared.

Noise control planning now forms a part of the manager's duties under regulation 7.11. This requirement calls for preparation and implementation of a noise control plan within 6 months after the completion of a noise report. The noise control plan is a document which lists various noise control treatments that have been decided upon and the timetable for implementing them.

In summary the new legislation defines even more the basic elements necessary for implementation of a total noise management program in mines. Because of the many requirements of a noise management program and the fact that it is dynamic, it is possible to view the whole process as a 'change cycle'.

The best way for any organisation to do this is to set goals in its noise control policy and work towards these goals as planned. An example of a goal may be to achieve a specific overall noise level in a particular work area. The purchase

of quieter machinery, changing to less noisy procedures and redesigning work areas, can all contribute to reducing mine noise levels. The cycle can be entered at any point and as long as momentum is maintained, long term goals will be achieved.

For further information contact Jerry Wilczewski Tel: (09) 222 3128

HIERARCHY OF CONTROL MEASURES FOR NOISE

1. Reduce noise so far as is practicable by engineering control measures, such as use of enclosures and silencers.
2. Reduce noise by using administrative controls, such as job rotation and re-scheduling noisy tasks.
3. Reduce noise received by an employee by using personal protective equipment, such as ear plugs and muffs.

Regulation 7.6 allows the use of hearing protection devices as a solution to noise hazards only when reduction of noise sources and control of exposure have been applied to the full extent of practical limits.

Therefore, the use of hearing protection should be considered an interim measure to provide immediate protection whilst the other solutions are investigated.

Mine Workers Health Surveillance - Chest X-Ray Requirements

In discussions held between the Department, The Chamber of Mines and Energy, The Radiological Council, The Industrial Diseases Medical Panel and The Health Department, it has been determined that chest x-rays are not routinely required under Regulation 3.25 (Initial health assessment) and Regulation 3.26 (Periodic health assessment).

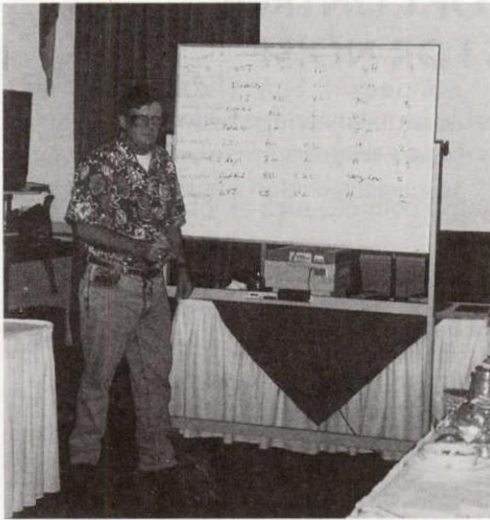
This recommendation will be considered by MOSHAB at the meeting of 11 July and it is expected that MOSHAB will recommend to the Minister for Mines that it be adopted.

Prior to the necessary consequential amendment to the Regulations to effect the changes the State Mining Engineer will be able to exempt employers from the obligations under Regulation 3.25 (2)(e) and 3.26 (2)(e).

An information paper will be issued to the industry providing the basis of the changes and the amended requirements.

These changes will not affect other requirements of the health surveillance program.

PEOPLE AND PLACES



*"OK- The priority 8 stays; can we get this risk assessment finished now?"
Enhancing safety and health - IFAP.*



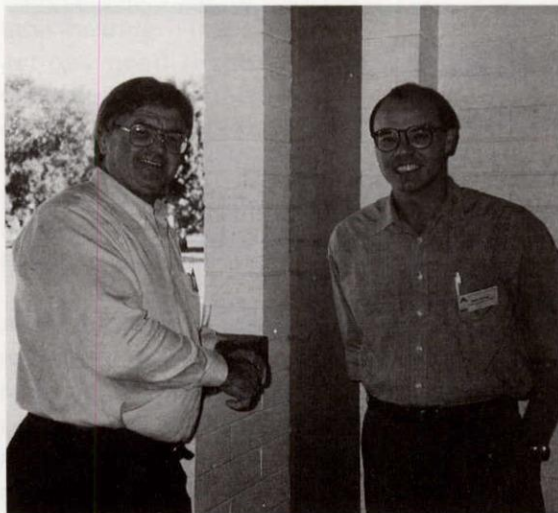
*"It's been great, Tim... now the country knows about us"
Paul Gauderton (Kent St) and Neil Hunte (Eastern Hills) are only too happy to talk about their School/ Industry partnership with Mt. McClure Goldmine.*



Dan Kirkwood with Alcoa's safety statistics at his fingertips.



It says what! Coming to grips with the MSIA and Regulations - Hill 50.



*"You mean the official coffee break's over?"
Des Caulfield (Mining Industry Training Advisory Body) and Kieth Ritchie (BHP - Port Hedland) in a serious seminar discussion.*



Employees from Pioneer Concrete, Herne Hill Quarry have achieved their National Safety Council 5 Star Health and Safety Rating.

MSI ACT 1994 AND MSI REGULATIONS 1995

DEFINITIONS

The meaning of "suitable", "adequate" or "appropriate"

The determination of what is suitable, adequate or appropriate is required in light of the duty of care obligation in the Mines Safety and Inspection Act. In brief the determination must be made such that it supports the purpose or intent of the law.

In this explanation it is necessary to clarify the meaning of these words before dealing with who is responsible.

It is also necessary to note, in this context, that the Act is the primary legislation. The regulations are subordinate legislation which give more specific direction on how the intent and purpose of the enacted law (ie. the Act) is to be complied with.

There are two very important sections of the INTERPRETATION ACT 1984 which have immediate relevance to these matters.

Section 18 (Regard to be had for purpose or object of a written law) has already been quoted in the March 1996 issue of MINE SAFE (Vol. 7 No. 1).

Section 19 (Use of extrinsic material in interpretation) is worth studying.

In essence it allows for and spells out what additional material, not forming part of the written law, may be used in its interpretation. However, in its final sub-section it points out:

"(3).....- regard shall be had, in addition to any other relevant matters to -

- (a) the desirability of persons being able to rely on the ordinary meaning conveyed by the text of the provision taking into account its context in the written law and the purpose or object underlying the written law."*

In short, reliance can usually be placed on the accepted meaning of words provided in a dictionary.

In this context:

Adequate - proportionate to the requirement - sufficient to achieve the purpose
- commensurate - up to the mark

Suitable - fit for purpose

Appropriate - suitable or proper

We are seeking to comply with the duty of care, which is open ended in terms of achieving as high a standard of safety performance as is reasonably practicable.

Hence the meaning of these words is that the measures to be taken are, at the very least, necessary and sufficient to ensure the safety of all persons concerned, within the scope of practicability inherent in the Act.

On the question of who is to make the actual determination of what is necessary and sufficient, the primary responsibility remains with the principal employer or employers as the case may be.

However, the determination can be delegated, and many issues are obviously handled by the manager, underground manager, supervisor or other officers authorised to do so.

In some cases the obligation to make the determination may rest with the individual operator or miner.

IDENTIFYING THE PRINCIPAL EMPLOYER

Quite often an operating company is a wholly owned subsidiary of a larger group. It is usually readily identified as the direct employer of the people at the mine.

The principal employer is defined in the Act as the employer who fulfills the following criteria:

- (1) is the proprietor
or lessee
or occupier
- (2) and has overall control and supervision of all of the following:
 - the mine
 - mining operations at the mine
 - the manager of the mine

J M Torlach
State Mining Engineer



MINING GEOTECHNICAL CONSIDERATIONS

The Mines Safety and Inspection Regulations 1995 contain two new regulations 10.28 and 13.8 that deal with the geotechnical considerations in underground and open pit mines respectively. These regulations identify issues that must be addressed in the design, operation and abandonment of a mine. The approach taken with these regulations may be described as 'performance standard' where regulations state the result that is to be achieved, as distinct from the 'prescriptive style' applying to explosives regulations for example.

The Department has recently issued an updated version of the *Guidelines on the Safe Design and Operating Standards for Tailings Storages* dated March 1996. This document has been prepared by the Department to assist in the design, construction, management and decommissioning of tailings storages in Western Australia so as to achieve efficient, cost effective and environmentally acceptable practices. The publication is available from the Mining Operations Division, 6th Floor, Mineral House, 100 Plain Street, East Perth - Tel: (09) 222 3310.

The geotechnical regulations and the tailings storage guidelines seek to encourage the application of best practice in the area of geotechnical engineering in the mining industry. Best practice in any field of human endeavour is achieved by constantly striving to find ways of improving safety, cost effective production and environmental quality for example. Geotechnical engineering has an important role to play in the overall context of the mining industry.

The inherent variability of soil and rock materials needs to be recognised as an important issue and addressed in a manner appropriate to the size of the particular mining operation. There are a considerable number of geotechnical engineering methods that can be applied to address the soil and rock stability issues in a mine. Prudent safe practice on the part of a well informed and resourced mining company requires that it is aware of and applies sound geotechnical engineering methods in the operation of a mine.

The three most significant geotechnical challenges facing the mining industry in general are considered to be the:

determination of the rock mass geotechnical properties;
design of appropriate rock support and reinforcement for seismically active ground conditions; and
successful implementation of geotechnical design recommendations in an operating mine.

The fundamental rock mass properties in hard rock mines that control virtually all ground behaviour issues are the pre-existing geological structure (planes of weakness) and the rock stress field either in isolation or in combination. Having an understanding of these two issues, appropriate to the size and type of the mining operation, is considered vital to sound mining practice. Our ability to obtain information on the rock mass properties and their variability has not advanced anywhere

near as rapidly as our ability to perform complex two and three dimensional analyses, that, five years ago would have been beyond the reach of most medium sized mines. The systematic collection, analysis and display of data on rock mass properties is vital for communication with the whole mine work force. The work force need to be aware of (and it is suggested even have the right to know) the best estimate of the quality of the rock mass with which they are expected to work with on a daily basis.

The design of appropriate rock support and reinforcement requires a good understanding of the rock mass properties briefly summarised above.

The occurrence of relatively small strain bursts, at comparatively shallow depths, in a number of underground mines during the past five years has highlighted the need for rock support and reinforcement systems that can withstand the dynamic loading associated with seismic ground behaviour. Conventional rigid ground supports, (for example, end anchored rock bolts) are not well suited to seismically active ground. Ideally, what is required is a rock support and reinforcement system that has the ability to yield or move with the rock during the seismic event.

The successful implementation of a soundly based geotechnical design requires considerable mining experience, engineering judgement and leadership to achieve the desired practical results. The most comprehensive geotechnical design can be rendered virtually worthless if it cannot be successfully implemented in a practical and timely manner.

Important issues to be considered include a balance between maximising equipment dimensions while keeping excavation sizes as small as reasonably practical, development of new stoping blocks on a just in time basis, sequence of ore extraction and its influence on the stress distribution in remaining pillars and abutments, and the use of fill to assist in stabilising large stope voids.

A considerable amount of work has been undertaken on the above challenges in Australia, South Africa, Canada and America during the past twenty years. The large amount of information on these challenges, primarily in the public domain, should be of vital interest to all those involved in the mining industry particularly those people who have a Duty of Care to their employees.

For further information contact
Adrian Lang Tel: (09) 222 3396.

MARCSTA INDUCTION

The Marcsta Generic Induction Package is up and running.

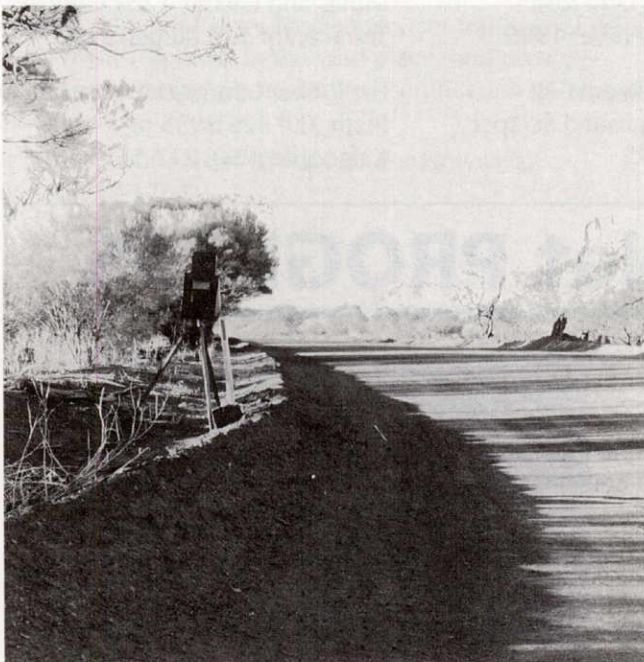
The first step was having the package nationally accredited. The second step was to put potential providers through their paces and to grant licences to successful applicants to deliver the Marcsta Induction Package.

Congratulations to the following people who have the distinction of being the first providers to receive Marcsta accreditation.

In alphabetical order, they are:

- Aveling, Tony (private)
- Bateman, Thomas (private)
- Chester, Alan (WMC)
- Dodge, Geoff (private)
- Fletcher, John (Byrne-cut)
- Hanlon, William (WMC)
- Kalem, Gary (WMC)
- Lemon, John (TCC)
- McCudden, Michael (WMC)
- Roberts, Victor (CSR)
- Simmons, Michael (WMC)
- Stedman, Catherine (private)
- Watkins, Dave (private)

We'll update the list in the next issue of MINESAFE.



A unique method of controlling speeding motorists at Tuckabianna - a cardboard multanova

NEW PUBLICATIONS

- **Safety Bulletin No. 12** - Effects of Tiredness, Drugs and Alcohol - February 1996.
- **Safety Bulletin No. 13** - Injuries Through Opening Enclosed Systems - February 1996.
- **Safety Bulletin No. 14** - Ground Support in Underground Mines - March 1996. Highlights key sections of the Act (Section 9), and Regulation (10.28). The Bulletin also contains information on the survey conducted on ground support, rock reinforcement design methods, criteria, usage levels, installation procedures and quality control issues. (Based on 1994 calendar year).
- **Safety Bulletin No. 15** - Re-entry After Blasting - March 1996. Refers to Section 9 of the Act, and Regulation 9.22(4) Managers' responsibilities related to procedures, and 9.22(5) Employees' responsibilities.
- **Safety Bulletin No. 16** - Hazard Alert - Use of Inert Gases in Mining / Industrial Processes - May 1996.
- **Safety Bulletin No. 17** - Use of the Bucket of a Loader as an Elevating Work Platform in Underground Operations - April 1996.
- **Safety Bulletin No. 18** - Operating Practice with Drilling Jumbos in Development and Stope Headings - June 1996.
- **Safety Bulletin No. 19** - Scaling and Rock Bolting in Large Stope and Development Headings - June 1996.
- **Safety Bulletin No. 20** - Seat Belts and Restraining Harness in Heavy Earth Moving Equipment - June 1996.
- **Safety Bulletin No. 21** - Surface Drill Rigs - Protection from Rotating Parts - June 1996.
- **Significant Incident Report 59** - Offloading Unpalletised Articles - July 1995.
- **Significant Incident Report 60** - Uncontrolled Movement of Elevating Work Platform - July 1995.
- **Significant Incident Report 61** - Caught in a Rotating Drill Rod - Fatal Accident - September 1995.
- **Significant Incident Report 62** - Anchorage of Underground Scraper Hoists - October 1995.
- **Significant Incident Report 63** - Remotely Operated Underground LHD - Near Miss - March 1996.
- **Significant Incident Report 64** - Fire on Front End Loader - March 1996
- **Guidelines to the Mines Safety and Inspection Act No. 62 of 1994 - April 1996.** The guidelines aim to assist people in the mining industry to understand the intent of the major provisions of the new Act, and in particular to highlight the new provisions and to describe their purpose in more general terms than is possible in the enacted law.
- **Alcohol & Drugs in the Workplace - Issues, Trends and Practices - May 1995.** This document is informative, factual, written in a simple style, and is essential reading for all levels of the workforce. It is aimed at both workers and management. Copies are available from the Chamber of Mines and Energy, 12 St George's Terrace, for \$25.00 per copy.

For further information contact Perth (09) 325 2955 or Kalgoorlie (090) 212 155.

STAFF CHANGES

Welcome to **Michael Burns** who has replaced John Robinson as Environmental Officer in the Kalgoorlie Inspectorate.



MINet PROGRESS

Work is continuing on the MINet project.

The new PC based AXTAT system will be implemented on 1 July 1996. Data collection for the new system, which includes non-injury incidents, has been collected since 1 January 1996. All of the data from the old system and the backlog of data for 1996 will be transferred into the new AXTAT system.

MODIS is currently being installed in the Mining Operations Division (MOD) regional offices. All MOD officers will have access to MODIS by July 1996.

EXIS has been developed further to include the AXTAT forms. Companies with access to EXIS will be able to complete the AXTAT forms electronically and "mail" them, via modem, to the Department. The first set of reports and graphs produced from AXTAT will be available for distribution to companies connected to EXIS in August 1996.

WHAT'S ON

AUSTRALIAN CENTRE FOR GEOMECHANICS



1996 COURSE

MINE SLOPE STABILITY

28-30 AUGUST 1996

VENUE: Department of Minerals & Energy, Theatrette
9th Floor, Mineral House, 100 Plain Street,
EAST PERTH

The format of the course will be based on two days of formal presentations and workshops, and one day set aside for operators to present and discuss their particular mine site problems.

For further information or to register expressions of interest, please contact Christine Neskudla:

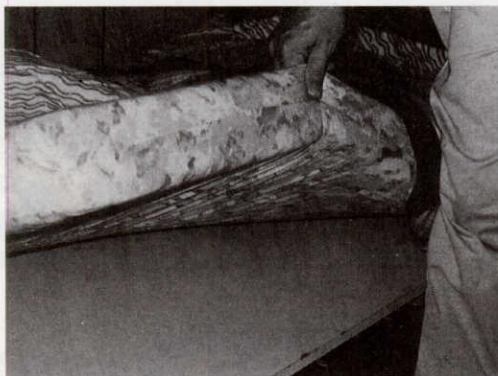
Tel: (09) 380 3300 Fax: (09) 380 1130

AUSTRALIAN STUDENT TRAINEE FOUNDATION

STRUCTURED WORKPLACE LEARNING WORKSHOP VOCATIONAL EDUCATION AND THE MINING INDUSTRY

The ASTF is a Commonwealth initiative that promotes school/industry partnerships which promote employer input and involvement in workplace learning for Year 11 and 12. It provides nationally accredited supervisor training for those involved with students in the workplace, and provides students with nationally accredited certification at the high school level.

For further information contact Louise Flowerday,
Tel: (09) 322 1763.



**6 weeks on and 6cm of foam -
Does it really add up to a good nights sleep?**

MINESAFE INTERNATIONAL 1996

Perth, Western Australia 9-13 September 1996

Venue: Burswood Convention Centre

**THEME: Towards a Safer and Healthier Minerals
Industry in the 3rd Millennium**

PROGRAMME OUTLINE

DAYS 1 & 2

- National & International Perspectives & Future Directions
- Maintaining Occupational Health & Safety Standards Across International Operations
- Directions for Legislation & Regulation in the 21st Century
- Mechanisation, Duty-of-Care & Ergonomics
- Identifying & Coping with Future Health Problems

DAY 3

- Establishing Benchmarks for Professional Disciplines
 - Occupational Hygiene
 - Safety Management
 - Emergency Preparedness
 - Health & Medical Services

DAY 4

- Induction, Training & Retraining - The Key to Continuous Improvement
 - Duty-of-Care - When is it Satisfied?
 - The Role of Safety Reps, Supervisors, Management, Unions
 - Selected Case Studies
- Information Technology as a Training Medium

DAY 5

- Processes & Prospects for Global Co-Operation to Improve Industry Performance
- Positive Performance Indicators v Counting Lost Time Injuries
- The Pursuit of "Best Practice"
- Developed & Underdeveloped - is this Terminology Redundant?

FOOTNOTE: The MINEX Awards for excellence in safety performance for Australian mines will be presented at the Conference dinner on Thursday, 12 September 1996.

For further information, please contact
Mrs Beryl Ingleton:

Tel: (619) 325 2955 Fax: (619) 325 5885

INCIDENT ALERT

THE INCIDENT

The driver of a water truck lost control of the vehicle while travelling down a pit haul road. The operator failed to change down to a low gear as the vehicle speed increased, and the brakes were inadequate to slow down the vehicle. The truck went out of control and rolled over further down the haul road. Fortunately the driver was not seriously injured.

This incident is not unique; there have been several such incidents in the past.

CAUSES


1. The driver failed to select a sufficiently low gear at the start of the descent. Instead he began the descent in a high gear and attempted to change down to a lower gear as the vehicle gained speed. The driver was unable to engage the low gear causing the vehicle to speed out of control down the ramp in neutral.

2. The brakes had not been adequately maintained and therefore failed to slow down the truck and prevent this incident. This vehicle was a highway truck which had been modified to be used as a water truck. The manufacturer's recommendations for brake maintenance may have been inadequate for the assigned duty of this truck in the pit.

PREVENTATIVE ACTION

1. Operators must select a low gear at the top of a ramp and remain in that gear for the entire descent, and not attempt to change gear.
2. All service vehicles used for quarry operations should have a comprehensive brake maintenance program which is commensurate with the intended duty of the vehicle.




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