MINESAFE

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

AFTERMATH!

A 40 tonne articulated haul truck caught fire when the right hand rear wheel brake locked coming up the decline. The brake system overheated, and caught fire. The blaze spread to the front of the truck via the hydraulic oil lines, burning out the engine compartment, cabin and the hydraulic system. No one was hurt, but the potential danger was extreme, particularly for those people working downwind of the blaze.

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ARE YOU SURE THIS COULDN'T HAPPEN HERE?

IN LIGHT OF THE CONTINUING NUMBER OF MACHINERY FIRES HAPPENING ON MINESITES, A REMINDER IS NEEDED OF THE POTENTIAL HAZARDS OF A SYSTEM WHICH IS ASSUMED TO WORK AND NOT CAREFULLY MONITORED.

An Interstate Bulletin contains a notable incident where a fire started in the engine compartment of a Toro LHD unit when a rock fell into the engine compartment and damaged a hydraulic hose fitting. The fire started when hydraulic oil sprayed onto hot fittings.

A dangerous situation became potentially catastrophic as the following sequence of events developed:

The LHD unit was fitted with an on-board fire suppression system, which although operable, was not activated by the operator. When the operator became aware that a fire had started, he immediately stopped the loader. When he realised that the smoke and flames were getting worse, he then stopped the engine, climbed down from the loader and walked up the ramp to where a diamond drill crew was working.

The LHD operator and the diamond drill crew were surrounded by dense smoke, but none of the men utilised their self rescue units.

The LHD operator and the diamond drillers drove a personnel vehicle through smoke to a telephone to make an emergency call but the telephone was out of action. They then went to another location to make the emergency call.

Upon receiving notification of the fire, the Ambulance Officer activated the stench alarm. However, personnel working in one section of the underground operations did not receive sufficient stench gas to alert them of the danger, and an apprentice working in another section of the mine was not familiar with the smell of the stench alarm.

This incident is an example, which is an all too common experience in WA, a lack of an emergency response system, and training of persons underground in its use.

MINES SAFETY AND INSPECTION ACT

The Bill to enable the enactment by Parliament of the Mines Safety and Inspection Act has been drafted and is currently being refined, prior to seeking Cabinet approval to print and introduce the Bill.

It is anticipated that the Bill will be introduced to Parliament before it rises for the Winter recess.

This will allow a further two months for a wider appreciation of the Bill before its passage through Parliament commences in the Spring session.

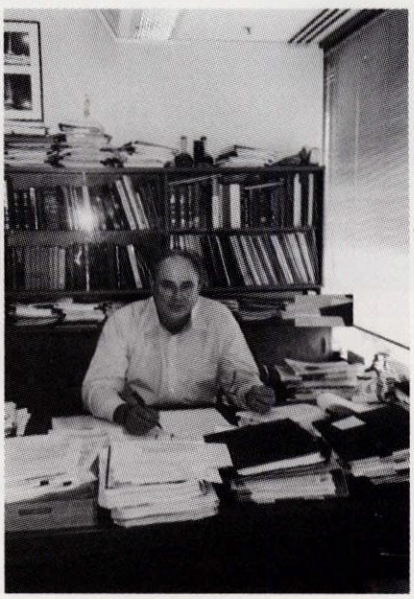
Consultation on its provisions has been widespread and the consolidation of a new Act and Regulations will be welcomed throughout the industry.

When the new Act is proclaimed, the existing Coal Mines Regulation Act and Mines Regulation Act will be repealed simultaneously.

Work is proceeding on preparation of a second draft of the proposed regulations, and it is expected that this will be available for circulation and comment by late June.

It is intended that a guideline document will be produced at the time of proclamation of the new Act, which will assist the industry to understand and assimilate new provisions and to more readily become familiar with its "structure" and content.

J M Torlach
STATE MINING ENGINEER



Jim Torlach

EDITORIAL

"YOUR PEOPLE ACHIEVE THE SAFETY PERFORMANCE THEY BELIEVE YOU WANT"

A fundamental truth which is in danger of becoming just another "buzz" phrase conveniently trotted out and paraded where image rather than conviction is required.

The words themselves mean little unless they are underscored by a demonstrated commitment to avoid placing production targets and safety principles on a collision course.

Another truth is that the mining process costs money - lots of it up front and continuously. That is not a matter of choice. Running a lean manpower operation is however, a decision that may ultimately prove far more costly than neatly balanced figures on a ledger indicate. This reality, unfortunately may not be brought home until a company finds itself defending an action that charges it with failing to provide "reasonably practicable" safeguards - safeguards that take "common practice and knowledge throughout the industry into account" as well as their availability, suitability and cost.

"The cost has to do with the expense and inconvenience necessary to put safeguards in place measured against the consequences of failing to do so. The cost is not a measure of whether the employer can afford to put the necessary safeguards in place...Individual employers could not claim that they did not know what to do about certain hazards if those hazards were widely known by others in the same industry, and safeguards were in place." (OCCUPATIONAL HEALTH SAFETY WELFARE COMMISSION GUIDANCE NOTE ON DUTY OF CARE).

In situations where contractors are employed at the mine, the problems associated with cost cutting involve both the principal employer and the contractor. The "top down" cost savings effected by a principal negotiating a contract may make good business sense, but the "bottom up" response of tenderers wanting to win the job often produces a domino effect when the cost savings required by the principal need to be accommodated. The problems are not mutually exclusive, and in the event of a serious accident or fatality, the onus of responsibility may be decided in a court of law rather than at the negotiating table.

Trained employees, particularly line management, who are given a mandate to implement best practice are themselves a safeguard, but one that is severely compromised where manpower shortages result in task overloads, postponement of training, and lessening the quality of that training. Equally the combination of demanding production targets and too few people on the ground increases the probability of injury or harm occurring. In a production orientated industry, many have yet to grasp the implications of that relationship. It is time they did.

It is sound practice to build an adequate margin of safety into the work system,so that corners are not cut.

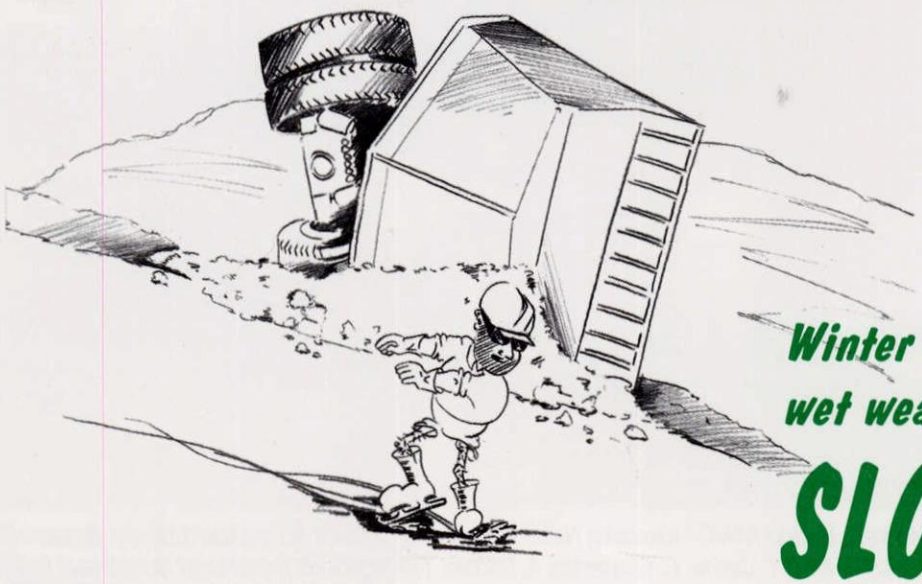
If employees believe that safety practice takes a back seat when production is paramount, that is how they will perform. It goes without saying that calls to work safely are in themselves useless unless there is a system in place that allows this to happen.

It is ironical to note that because of the legislated requirement for training of health and safety representatives, many mine employees are better informed and safety educated than the people who supervise them. This sitation provides more food for thought, swiftly followed by action- one hopes.

Catherine Stedman

Catherine Stedman

NUGGET KNOWHOW



Winter means wet weather.....

SLOW DOWN!

WE WANT MORE OF THIS! SAY UNDERGROUND MINERS

EDUCATION AND GROUND CONTROL IN THE WORKPLACE

A presentation on ground control, designed for underground employees, is available from DOME geomechanics specialists. The presentation provides participants with a better understanding of the factors that influence ground behaviour, and what can be done to improve rock stability in underground metalliferous mining. The presentation focuses on the practical aspects of ground control for the mine worker. The program is based on the shared understanding and experience of workplace ground control issues, and consists of a slide presentation and informal discussions in the office or cribroom.

The presentation takes approximately 1 hour and can be run at shift change if required. A multiple choice questionnaire, to gauge participant understanding, is available and program evaluation forms will provide feedback on possible improvements.

So far the program has been presented at eight mine sites to twenty different groups. Four more presentations were scheduled for the Yilgarn during late May.

PRESENTATION OUTLINE

INTRODUCTION

- Discusses why ground control is required

FACTORS CONTROLLING ROCK STABILITY

- Natural planes of weakness
- Rock stress
- Rock mass strength
- Blast damage

EXAMPLES OF GROUND RESPONSE

- Wedge failure
- Slab failure
- Spalling failure

REVIEW OF BARRING DOWN PROCEDURES

- Identify ground conditions
- Barring down equipment
- Barring down procedures
- Barring down in high headings
- Regular barring down of main access ways

SOME ROCK SUPPORT ISSUES

- Key points for good installation of mechanically anchored rock bolts, grouted rock bolts, cable bolts, Split Set and Swellex.

PRESENTER

Adrian Lang is a Mining Engineer with 20 years experience in the Australian metalliferous mining industry, including 16 years underground mine site experience. He is employed by the Department as a Geotechnical Engineer and can be contacted on (09) 222 3396.

Mariner's Decline (WMC - Kambalda Nickel Mines) L-R J.Green, R Strachan (Dome) J. Biggam, D. Clarke, P. King, T. Catlow, C. Charleston, A. Corkery, E. Rodgers, H. Tiefenbacher, A, Mitchell, F. Reed. W. Bates, D. Fernandez, M. Gilbert, J. Halden, P. Pryce, B. Douglas, P. Beardsell, R. Roehner, D. Sinclair, S. McBean.

OPERATOR TRAINING — DOING IT RIGHT!

Earlier in the year a truck driver was very seriously injured when she lost control of her truck travelling down the pit ramp. The truck drove through the marker berm on the ramp plunging approximately 40 metres to the bottom of the pit.

This trainee driver had been given minimal training in the operation of the truck before being allowed to operate solo in the pit; this was despite the fact that she had virtually no previous experience operating off-highway trucks.

This accident highlights some of the problems associated with training inexperienced staff. Operator training programs should have the following attributes:

- They should be formalised and structured. Training programs should highlight the specific skills necessary to perform a given task and teach those skills to the trainee. Training programs should be structured to allow a steady progression from the easy to the difficult.
- Skills learned by the trainee need to be formally assessed by practical tests and written examinations where appropriate. Specific levels of competence should be determined by management, in consultation with the workforce if appropriate, for every task. Trainees must clearly demonstrate their proficiency to perform that task before being allowed to undertake more difficult or complex tasks.
- The results of written examinations and practical competence tests of trainee operators should be recorded and stored for reference.
- The equipment used for training new operators should have seating for both the trainer and the trainee.
- The personnel doing the training must be highly competent operators with the experience and the aptitude to effectively train others. Special courses which "train the trainer" may not be required, but some instruction in training methods is desirable.
- The trainer should be able to devote the majority of his or her time to the task of operator training.

The application of these principles will not, in and of themselves, prevent all accidents and incidents from occurring; however, their application at your mine is likely to provide the cornerstone of safe equipment operation from which a superior safety program can be built.

BRANDRILL SAYS WELL DONE!

The Directors and Management of Brandrill recently presented a plaque to their employees at the Mt Morgan Operation in recognition of their commitment to a safe working place. The "marriage" of safety and production has produced 500 days without a lost time injury, and confirmed that leadership, and a team-work approach to daily activities sets a standard that is achievable for all.
In congratulating Brandrill employees, managing director, J Branson, emphasised that the plaque was in recognition of the efforts of individuals, and their attitude to teamwork, both now and into the future.

FROM THE EDITORS DESK.....

BARRIERS TO EFFECTIVE COMMUNICATION

"THERE ARE TWO SIDES TO EVERY ARGUMENT, AND I HAVEN'T GOT TIME TO LISTEN TO YOURS....."

OCCUPATIONAL HEALTH FILE:

BIOLOGICAL MONITORING ON MINESITES

The Department of Minerals and Energy (DOME) has recently assumed full responsibility for overseeing the biological monitoring of mineworkers.

Biological monitoring provides occupational health personnel with an important tool for assessing a worker's exposure to chemicals, which can 't be assessed when sampling the workplace air. For some chemicals, absorption through the skin or ingestion may be a significant pathway into the body. Biological monitoring allows an assessment of overall exposure to workplace chemicals through analysis of biological fluids, such as urine and blood. Chemicals commonly monitored this way include:

Lead (Fire Assay Laboratories)

Mercury (Retreatment of Gold Tailings)

Arsenic (Roasting of Arsenopyrite Ores)

Thallium (Heavy Mineral Separation).

The procedure for Department initiated monitoring is as follows:

- State Health Laboratory Services (SHLS) forms will be presented to the Inspectorate when blood or urine are required.
- The worker's consent must be obtained before a sample of urine or blood is collected.
- The samples are forwarded to SHLS for analysis.
- Following analysis, the results will be sent to the Department's Consulting Occupational Physician, Dr Brian Galton-Fenzi, for review.

Urine specimens should be collected in a sterile container!

- Once the review is completed, the results with explanatory comments, will be forwarded to the employee and the employer.

DOME will continually overview the biological monitoring program including target areas, trends and call up frequency. Summary information, without individual employee identification, will be made available to industry. The program will play an important role in assisting in the identification of deficient work practices or control measures. While reliance is usually placed on atmospheric contaminant sampling for such purposes, biological monitoring is a specific diagnostic tool for chemicals such as lead, mercury, arsenic and thallium.

Any queries on the program may be referred to Dr Brian Galton-Fenzi on 222 3650, Mr Mike Rowe, Principal Occupational Hygienist on 222 3050, or Ms Jenny Oosterhof, Occupational Hygienist on 222 3091.

QUIETER, SAFER TYRE BAY

Tightening wheel nuts can be a daunting task, particularly on large trucks. Any tyre bay fitter, will testify to the reality of aching arms after working an impact wrench ("rattle gun") around a truck wheel - that is if he can still hear your question!

Traditional methods of removing and replacing wheel nuts on heavy trucks are taking their toll on tyre bay fitters. We know that repeated use of impact tools, such as those required to break loose and tighten wheel nuts, may induce lateral epicondylitis (tennis elbow) in operators if work procedures are substandard.

Not long ago, the problem became serious for a north-west mining company as both their tyre bay fitters had been diagnosed with lateral epicondylitis. There was no doubt that the repeated use of air impact tools was the cause of this problem. The search then started for a suitable alternative that was acceptable in terms of quietness, ease of use and most importantly elimination of impact forces on the user.

A South Australian tool manufacturer met this challenge and a specially designed tool-pneumatic torque wrench was commissioned. The tool has lived up to all expectations and has advantages such as, accurate torque control, low air consumption, and considerably reduced operator fatigue. The weight of the tool was overcome by suspending it with a spring "balance" fixed to a frame . Castors allow the tool and frame assembly to be easily moved around from one wheel to the next. Mines Inspectors have recently tested the torque wrench for noise emission and found it emits only 78 dB(A) at the operator's ear level. This represents a 28 dB(A) noise reduction when compared with impact wrench operation.

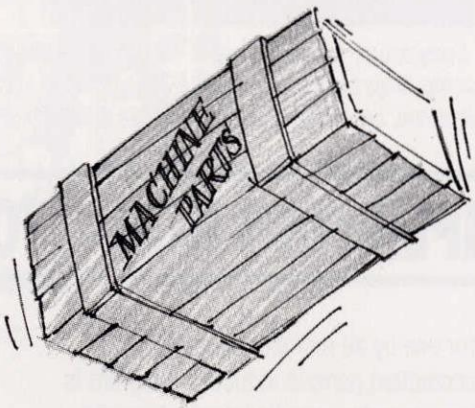
If you need more information on this subject, please contact our Senior Noise and Vibration Engineer - Jerry Wilczewski on (09) 222 3128.

Jerry Wilczewski (DOME) checks out the Pneumatic Torque Wrench.

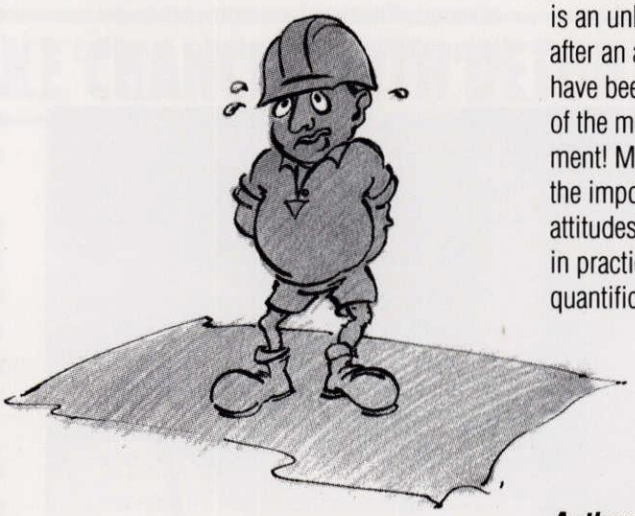
ARE MINE WORKERS FATALISTIC?

MANY SAY THAT MINE WORKERS ARE BASICALLY FATALISTIC IN THEIR ATTITUDES TOWARDS RISK. IN PRACTICAL TERMS THIS MEANS THAT MINEWORKERS REGARD ACCIDENTS AND INJURY AS INEVITABLE, AND THAT THEY BELIEVE THEY HAVE LITTLE CONTROL OVER IT. IS THIS TRUE?

The answer, as with most of these psychological questions is both Yes and No!



Why yes? Research, and comparisons with surveys in non-mining industries and jobs, shows that there is a stronger tendency amongst mine workers to view accidents as largely inevitable. It is obvious and logical that miners' work environments will induce this type of perception, given the high risk physical work conditions and high volumes of production.



But the answer can also be "no". The fatalistic perception of miners is not a fixed variable. It does not necessarily follow that a mine worker will be more fatalistic, because research also showed that the extent of fatalistic views on one mine site differs significantly from another site's. You can find changes over time in the "fatalism" of mine workers on the same site. In a recent survey on a mine in Western Australia, it was found that mining employees who were less fatalistic were also those who:

- tended to feel strongly responsible for their own safety,
- regarded their supervisors as considerate and willing to listen to their ideas,
- felt that their jobs/contributions are valued by supervisors,
- experienced a positive team spirit in their work teams.

It seems that supervisors can largely influence people's fatalistic views! Fatalism is not a given fact at all mining environments. It is a manageable variable. If management ensures quality of supervision and visibility of their commitment to safety, fatalism, and its impact on risk taking, actually decreases. Fatalism, as a key factor in our quest towards zero injuries, has not been well researched, and is not yet fully understood. This factor, and a number of so-called "attitudinal factors" has the most significant impact on accidents in an organisation. Traditionally management curtails risk taking through extensive procedures, control systems and improvement of the physical work environment. However, the most effective approach is to start managing the levels of commitment and motivation in the work force and if you know what to manage and where to start, **it may be easier done than said!**

Safety psychology is a fairly new topic in risk management, especially in the mining industry. For the mine manager it is an unknown quantity. Often, the reaction after an accident is "How could he/she have been so stupid?". This reaction is one of the most complex issues in management! Many mine managers today realise the importance of this question of "safety attitudes" but find it difficult to manage it in practice without a clear definition and quantification of the problem.

Author: Corrie Pitzer

Corrie Pitzer is a mining management consultant, specialising on the topic of key human factors in mining safety and productivity. He has researched and developed his concepts in and for the mining industry.

MINE RESCUE

The Kalgoorlie surface mines rescue competition was a hotly contested battle of brains and brawn, held over two days, which eventually saw the (Muja) SECWA Team emerge as the 1994 Champions, after winning the Hazchem, Breathing Apparatus, Theory and best Captain sections.

The competition took place at the Kalgoorlie Nickel Smelter, and four new teams were in the lineup. The trophy for the overall best new team went to Yilgarn Star (Orion).

A full report on the competition will be included in the June edition of **RescueNet.**

*Competition co-ordinator, Ian Ronald (DOMEWA) presents the **sling rig** trophy for best overall team to the Muja team captain, Craig Stonhan, while team members Scott Piercy, Doug Martin, Chris Brennan, Les Western and Terry Noble think about wall space for their new prize.*

SIMPLIFYING INDUCTION

The newly formed Mining and Resource Industry Safety Training Association is already hard at work developing a standard induction program for the contract mining industry, for use by all member companies. An accredited generic induction program is long overdue, and its introduction will eliminate the need for employees to be taken over the same ground, or variations of general induction, over and over again each time they work on a site or change employees. It is not uncommon now, for some short term contract employees, to be inducted up to sixteen times a year. The known record is 32 inductions for employees of specialist contractors who are often on site for only a matter of hours!

Bruce Anderson, (Henry & Walker), Des Shaw(Eltin), Terry Condipodero(J.R. Engineering) and Kim Sutton (Brandrill) the induction program sub-committee, sift through a mountain of precedents, possibles and platforms. .

The proposed induction card will not eliminate the need for site specific inductions, but will certainly do away with the over-exposure that currently prevails, which is characterised by the "snooze" syndrome well known to all inductees and induction facilitators.

A sub-committee of the association is working closely with TAFE to develop the program to a high standard, designed to have the same acceptance across the industry as any other certificate from an accredited body.

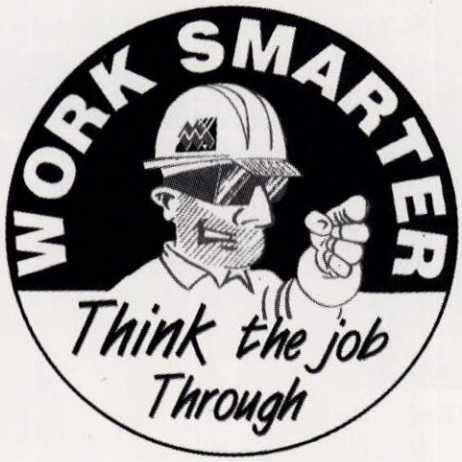
For further information contact:

Bruce Anderson:	**334 4777**
Kim Sutton:	**531 1777**
Greg Harris:	**334 8888**

LESSONS FOR THE MINING INDUSTRY

The fifth death in four years from forklift accidents has prompted Coroner David McCann to issue a strong statement urging changes to the Occupational Health, Safety and Welfare Act. To prevent the recurrence of similar accidents, Mr McCann has recommended that:

- every operator of a forklift vehicle in the workplace receive adequate training and should hold a licence issued by DOHSWA or an organisation acredited by the department as evidence of adequacy of skills to operate a forklift,
- seat belts and lateral seat restraints should be fitted to all forklift vehicles. DOHSWA should set appropriate compliance dates for new trucks and those already in service,
- these requirements should be implemented by way of Regulations made under the Act.

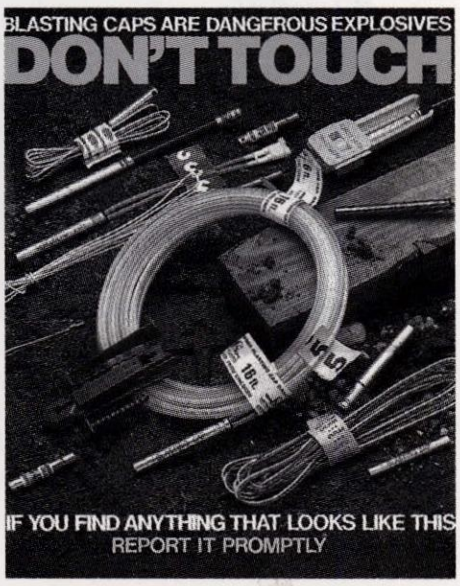


This extract has been taken from SAFETY WA, The West Australian Journal of Occupational Health and Safety, IFAP, Autumn 1994. For a copy of the full text of the article, please contact The Industrial Foundation for Accident Prevention (IFAP)

DON'T TAKE CHANCES WITH DETONATORS

- Detonators are potentially the most hazardous of all the components of an explosives system employed on minesites, their ability to inflict death or serious injury being out of all proportion to their size and appearance.
- As a general rule, detonators can be identified as a thin aluminium tube of approximately 6mm in diameter and from 4 - 10cm in length. Typically they have twin coloured wires on single plastic tubing protruding from an end, or appear as a small tube sealed at one end and open at the other. They contain between 0.4 - 0.9g of an extremely powerful explosive .
- Detonators are sensitive to heat, friction and impact, and as such should be handled with due care. Persons who are not familiar with or trained in the use of explosives, should, upon finding what appear to be detonators, notify their supervisor. The location of the detonators should be noted and marked for removal by competent persons.

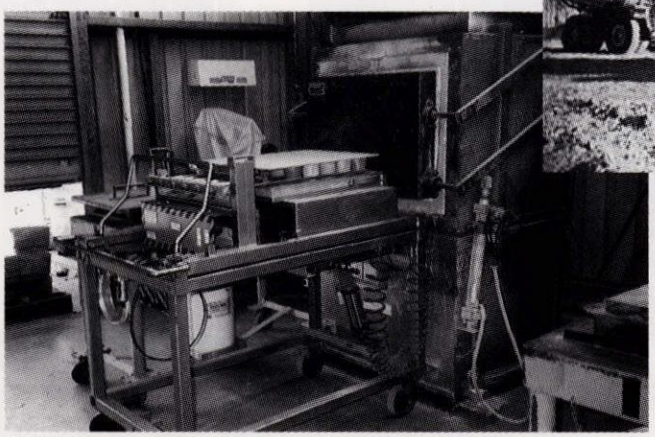
The dangers of detonators should be emphasised at induction. Minesites situated near communities should also think about promoting awareness programs, as children have been the victims of accidents when they have picked up detonators mistaking them for empty cartridge shells.



Photo, courtesy of the Institute of Makers of Explosives

THE GOOD.....

Leibherr 994 Face Shovel loading a Cat 785 dump truck. A second is waiting to load (Eltin)



A lifting device in the assay lab at Telfer saves backs, breaks and bother.

AND THE UNFORTUNATE ! ! ! !

A dump truck operator was lucky to escape serious injury after running into the rear of an empty truck parked in a passing bay, waiting for a loaded truck to come up the ramp. The operator did not wait at the top of the haul ramp - a procedure that would have avoided the accident.

Dumping short on a wet dump requires a system to be in place that avoids any likelihood of incidents like this happening.

Now that I have your attention.... Constable Vic Hussey (Community Police, Geraldton) debunks some well entrenched myths about drugs, at an Alcohol and other Drugs Seminar (Eneabba).

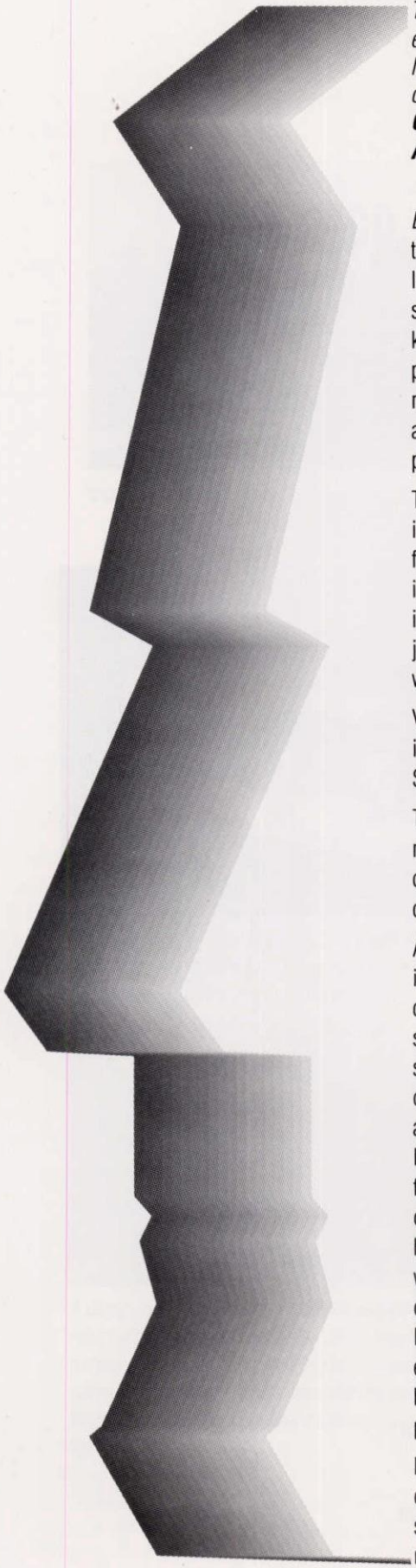
Industry and Inspectorate staff members at the end of a hard weeks work at an accident investigation (MORT) course.

What did you get for your answer? Greenbushes Tin and Charles Hull employees compare notes at a mining operations accident prevention workshop.

"C'mon Barry - give me back my chalk!" Catherine Smith (IFAP) and Barry Smith (KCGM).(L) Murray Hunter (Brambles) and (R) Glen Blakely (Brandrill) at an occupational health and safety course for supervisors.

Roche (Fimiston) Health and Safety Committee members are all smiles at hearing that up until the 8th April, 1994 employees had worked half a million man hours without a lost time injury.
L-R Mal Measey, Ian McLachlan, Boyd Coleman, Tony Pym, Gary Austin.

ORGANISATIONS HAVE NO MEMORY



Trevor Kletz, a safety manager of long experience in the chemical industry in the UK, has spent part of his retirement writing a book called ***"Lessons from Disaster: How Organisations Have no Memory and Accidents Recur".***

Extract: Kletz says that past incidents fade from the corporate memory when the people involved leave. He says you should never remove something or discontinue a practice until you know why it was put there. It might have been put there to prevent recurrence of an incident now forgotten. He talks about loss of information and skills associated with superseded trade practices.

There have been so many accidents in the chemical industry due to leakage of inflammable or toxic fluids past isolating valves, that ICI policy is to install a spade or blanking plate for maintenance isolation and not rely on a single valve, unless the job will be so short or access so difficult that there would be unreasonable risk in installing a spade.

Vessels have exploded because there was a valve installed between the vessel and the relief device: Sooner or later such a valve is bound to be closed.

There have been accidents due to the drain valve not being at the lowest point of a line. There was a caustic burn in the Northern Territory from this cause.

Another trap is to start work on a pump without isolating the suction as well as the delivery. There can be a head of liquid on the suction side. A special case of pressure in a pump casing is the sand slurry pump that runs for a while with the delivery line blocked. The impeller will churn water and the water in the casing can boil. If the suction line is blocked too, as is likely to happen when the flow of slurry stops, pressure will build up. Anyone opening a pipe flange could be scalded. When this happened on a quarry in the Northern Territory we were all surprised, although with hindsight it was obvious what had happened. Not long afterwards I read a paper by a quarry engineer of long experience, who warned about this very thing. It had happened before but the information was not possessed by everybody in the industry.

Engineered solutions to safety problems can outlast the memory of the problem. Then the solution might be dismantled because no one can remember why it is there, or on the other hand people might cling to the solution after the problem is gone. Kletz found U bends in drain lines from a pump house. No one knew why they were there, so he had them taken out. When a foreman got back from leave he said the U bends were installed long ago to prevent inflammable vapour from leaking back through the drains. On the other hand, a temperature restriction was put on process vessels after an incident. Years later when the process had been changed and the restriction was no longer necessary, operators were reluctant to let the temperature go above the old limit, although no one could remember why the restriction was there.

As usual, Kletz can not offer any simple remedies. He suggests that old accidents as well as recent ones be published in safety bulletins. Old incidents from the files should also be discussed at safety meetings. If you are asked to follow a work practice but you can see no reason for it, don't ignore it lightly. The reason might be forgotten but still valid. On the other hand of course, the problem might have gone away long ago. There is no easy way to tell, so beware.

An example of a rule that lingers on when the reasons are largely forgotten is the rule that oxygen and acetylene bottles should be secured in their trolley by safety chains. Probably not many people at any one mine can remember an oxy-acetylene fire - we hope so, anyway. Well, there was one on a Northern Territory mine in 1988. A fitter and welder was dragging a piece of steel mesh when he caught the wheel of an oxy-acetylene trolley and the trolley fell over backwards. The chain was not fastened and when he stood the trolley up, the acetylene bottle fell out. The regulator was broken off and a fire started. The two men there could do no more than stand back and wait for the fire to burn itself out. Fortunately no one was hurt.

So that's why you should always chain up oxygen and acetylene bottles in storage or on their trolleys.

This story also bears on the question of risk and probability. It is of course, most unlikely that any accident will happen and a fire will start. You could work all your life with unsecured bottles and be very unlucky to have this type of accident. But why take the risk? Some risks are unavoidable but this is not one of them. Where is the sense in taking even a small risk at work?

This article,has been reproduced from a publication issued by the Department of Mines, Northern Territory.

MANUAL HANDLING

CHECKLIST

	YES	NO
■ Is there frequent or prolonged bending down where the hands pass below mid-thigh height?	☐	☐
■ Is there frequent or prolonged reaching above the shoulder?	☐	☐
■ Is there frequent or prolonged bending due to extended reach forward?	☐	☐
■ Are awkward postures assumed frequently or over prolonged periods, that is, postures that are not forward facing and upright?	☐	☐
■ Does everyone understand what you mean by "frequent or prolonged"?	☐	☐
■ Is manual handling performed frequently or for long time periods by the employee(s)?	☐	☐
■ Are loads moved or carried over long distances?	☐	☐
■ Is the weight of the object:		
• more than 4.5kg and handled from a seated position?	☐	☐
• more than 16kg and handled in a working posture other than seated?	☐	☐
■ Are large push/pulling or other application of forces involved?	☐	☐
■ Is the load difficult or awkward to handle, for example, due to its size, shape, temperature, instability or unpredictability?	☐	☐
■ Is it difficult or unsafe to get an adequate grip on the load?	☐	☐
■ Is the task performed in a confined space?	☐	☐
■ Is the lighting inadequate for safe manual handling ?	☐	☐
■ Is the climate particularly cold or hot?	☐	☐
■ Are the floor working surfaces cluttered, uneven, slippery or otherwise unsafe?	☐	☐
■ Is the employee new to the work or returning from an extended period away from work?	☐	☐
■ Are there age-related factors, disabilities or other special factors that may affect task performance?	☐	☐
■ Does the employee's clothing or personal protective equipment interfere with manual handling performance?	☐	☐

**Adapted from "A CODE OF PRACTICE - MANUAL HANDLING"(Occupational Health, Safety and Welfare Commission of Western Australia)*

WHERE THERE IS DOUBT — FIND OUT

WHAT'S ON

WA CERTIFICATES OF COMPETENCY

- First Class Mine Managers
- Underground Supervisors
- Quarry Managers
- Restricted Quarry Managers

The examinations for the above certificates will be held sometime in September 1994
Enquiries can be made to:
Melanie Calder on (09) 222 3269

4TH LARGE OPEN PIT MINING CONFERENCE

Burswood Convention Centre, Perth, Western Australia
5-9 September 1994

For further information contact:
James Lawrence
Mining Operations Division
Department of Minerals and Energy
Western Australia
100 Plain Street
EAST PERTH WA 6004
Tel: (09) 222 3095
Fax: (09) 325 2280

SURFACE VENTILATION OFFICER'S COURSE

Sometime Mid-July

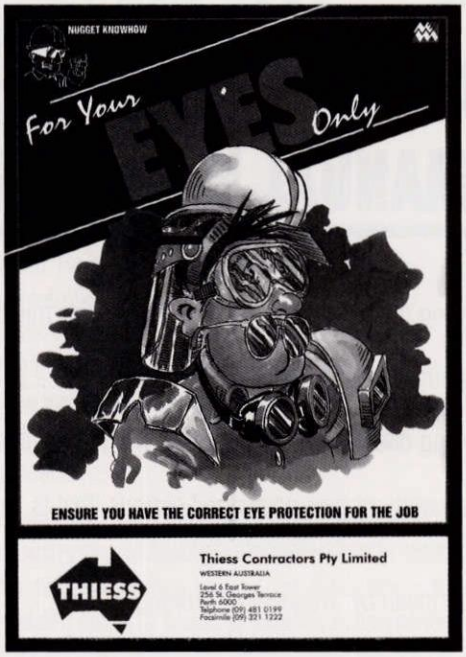
Venue: Department of Minerals and Energy
Level 9, Theatrette
100 Plain Street
EAST PERTH WA 6004
Tel: (09) 222 3532

VARIABLE WORK SCHEDULES

2 day seminar and workshop
22 and 23 August, 1994

For further information,
Contact:
The Chamber of Mines And Energy
Tel: (09) 325 2955

AVAILABLE NOW!



For copies of this poster, please phone: (09) 222 3532

NEW PUBLICATIONS

Significant Incident Report 42:
Remotely Operated Machinery - Fatal Accident

Significant Incident Report 43:
Remote Control Loader Fire In An Open Stope

Significant Incident Report 44:
Rockfall - Fatal Incident

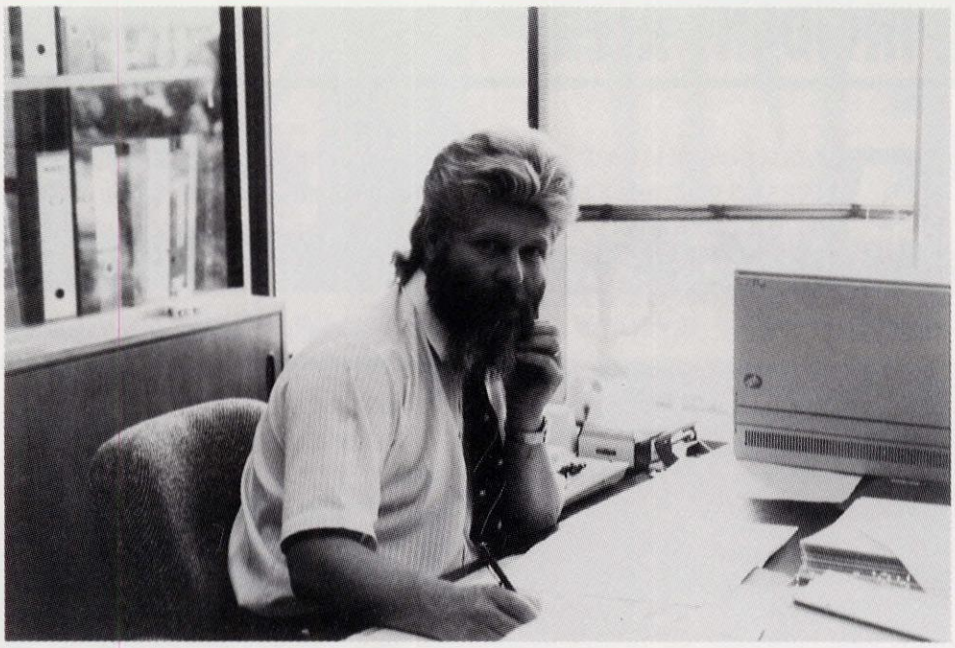
Significant Incident Report 45:
Fatal Agricultural Tractor Accident In Quarry

Significant Incident Report 46:
Contact With Overhead Powerline - Fatal Accident

Fatal and Lost Time Injuries in Western Australian Mines 1993

For copies please phone: (09) 222 3532

After a long and distinguished career with the Department of Minerals and Energy, retiring Regional Mining Engineer, Rob Ferguson, leaves the Collie (coal) Inspectorate . Trish Saunders says goodbye to the boss.



Mining Engineer (Projects) Chris Stubley, hard at work marking papers from the recent Underground Supervisor's examinations.

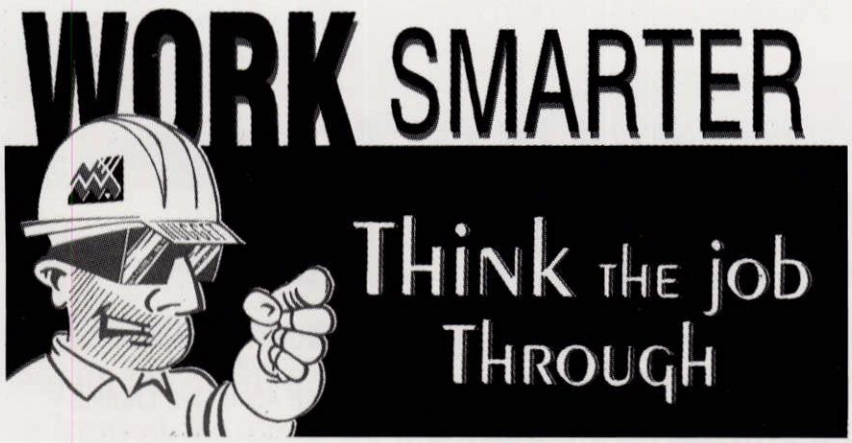
DO YOU WANT TO UPGRADE YOUR RESTRICTED QUARRY MANAGER'S CERTIFICATE OF COMPETENCY?

Many holders of Restricted Quarry Manager's Certificates of Competency (and their employers) mistakenly believe that without an Engineering Degree they are unable to sit for a Quarry Manager's Certificate of Competency.

There is a ladder plan that allows people wishing to upgrade their Restricted Quarry Manager's Certicate to become eligible .

You should contact TAFE EXTERNAL STUDIES for information.

CONTACT PERSON:
Kim Sweet
TAFE External Studies College
Prospect Place
PERTH WA 6000
Tel: (09) 227 3333
Fax: (09) 227 8393



CONGRATULATIONS

TO ALL THOSE WHO HAVE OBTAINED CERTIFICATES OF COMPETENCY SINCE JANUARY 1994.

AUTHORISED MINE SURVEYOR'S
Barty, Grant Charles

FIRST CLASS MINE MANAGER'S
Nicholls, David Robert Clinton

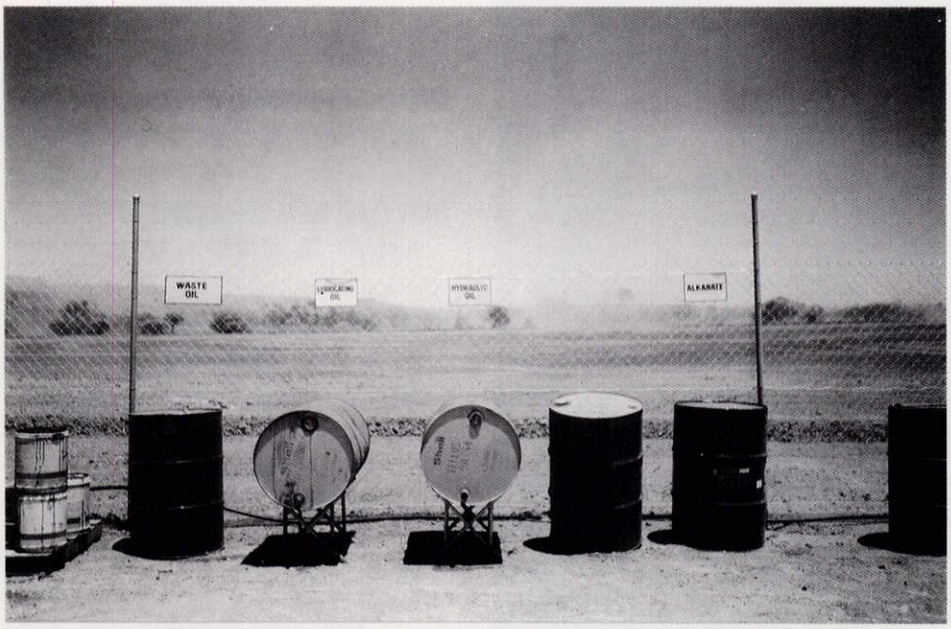
UNDERGROUND SUPERVISOR'S
Flynn, Kevin Quinn (Restricted)
Mills, Jason Paul
Stirling, Andrew
Paraha, Isaac James Dean
Wilson, Kim
Bardsley, John
Reilly, Jeffrey Donald
Garbin, Michael John
Orman, Richard Oswald
Moore, John Vincent
Flynn, Kevin Quinn
Green, Jaymie Ray

QUARRY MANAGER'S
Lee, Kong Leng
Lilleyman, Gregory Stephen
Husseini, Abdo Allatif
Cook, Trevor Victor
Brown, Donald James
May, Paul Richard Aaron
Zauer, Andrew Leonard

RESTRICTED QUARRY MANAGER'S
Bialobrodski, Richard Allan
Adams, David Malcolm
Naughton, Vincent Leo
Shaw, Dennis Joseph
Airay, Jason Samuel
Varallo, Thierry
Gent, Paul Gerald
Franklin, Harold Leslie

INCIDENT ALERT

A recent incident in which a 200 litre steel drum exploded, when an oxy acetylene torch was used to cut the lid, highlights the dangers of lack of correct and safe work practices.



GOOD WORK PRACTICE. Properly marked and stored drums avoid mistakes that could kill or injure. (Plutonic Gold Mine).

The individuals concerned were looking for an oil drum. Oil on the outside of the drum, led them to believe they had found one. The drum, in fact, contained degreaser.

On application of heat, the drum swelled and exploded so that the lid hit the roof of the workshop.

The oxy-acetylene equipment had been checked before it was used, but not the original contents of the drum nor its condition. Fumes were present in the drum and the bung had not been removed.

Preventative Action:

- Make sure the original contents of drums are identified before they are used for any purpose.
- Ensure drums are free of fumes by filling them with water before cutting by hot or cold means.
- Remove the bung.
- Avoid using oxy-acetylene if possible - cold cutting systems are preferable.
- Ensure employees are properly trained in procedures.