



DEPARTMENT OF
MINERALS AND ENERGY
WESTERN AUSTRALIA

MINING OPERATIONS DIVISION

MINESAFE



ROAD TRAIN TAKES A ROLL

We pass road trains every day on the highway and on haul roads around the State. Imagine this incident occurring just as you began to overtake or pass a road train travelling in the opposite direction ... See page 16.

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
Tel: (08) 9317 3485
Associate Ed: Anna Patton
Ed. Asst: Chris Stubley
Typesetting: Leader Press
Enquiries: Tel: (08) 9222 3310
(08) 9222 3545
Fax: (08) 9325 2280

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HAMERSLEY IRON PROSECUTED

The Department of Minerals and Energy prosecuted Hamersley Iron Pty Ltd, over the death of a plant operator at the Tom Price Iron Ore minesite. Hamersley Iron was found guilty under Section 9.1 (a) of the Mines Safety and Inspection Act 1994 for failing to provide a safe plant.

In the Perth Court of Petty Sessions on 26 February 1998, Magistrate Richard

Bromfield returned the guilty verdict after a four day trial and fined the company \$40,000 plus \$10,000 costs.

Mr Gino Geracitano was killed on 24 July 1996, when one of the main forestays which supported the boom of a bucketwheel reclaimer crushed the operator's cabin, following a buckling overstress in the mast frame.



Members of the Occupational Safety & Health Standing Committee of MOSHAB attend the first meeting for 1998.

EDITORIAL

Every issue of MINESAFE produces some response from readers. Often it is just a phone call to ask for more information on a particular article, or a comment about an article or picture that strikes a chord. Consistently, editorial receives queries about legislation from a range of people usually because what they read about regulation in MINESAFE is at odds with the way things work at their site.

The Act and Regulations are rapidly approaching the point where they can no longer be referred to as "new". The legislation is two years old, and while it has changed the way regulation works, there is little evidence that work systems have radically changed to fit the requirements. Readers provide that feedback, and many more have endorsed comments made to MINESAFE by their submissions to the Fatalities Taskforce. Two more deaths and a litany of entirely preventable incidents have given the industry a bad start to a new year. One reader has since said it all:

"Something needs to be done to stop these people dying needlessly" and "Maybe it is time to look at the big picture". There is no argument there, but the challenge for the industry is *who is going to do it?* The choices are simple:

Either individual sites start doing some serious navel gazing, or it will be done for them – that message was very clearly sent in on page 5 of the December, 1997 MINESAFE, and is on every page of the Fatalities Taskforce Report.

The lead-in time is definitely over, and it is time that everyone came to terms with the fact that change must happen, and the only point open for debate is who dictates the type and pace of change. The reference to individual sites taking responsibility is deliberate, because as long as we continue to talk about abstracts like "the industry" it makes it easy for people to think we are talking about somebody else. We are not – every site in this State is "the industry", and every site should now be thinking about tearing their systems apart, and examining them practice by practice, procedure by procedure and policy by

policy. It will take time, it will be expensive, and it will hurt. On average every site in this state has at least seventy-five experts on site who can tell you what you need to know. The experts are the employees. Talk to your workforce about the differences between what the paper words say, and what actually happens. There isn't a supervisor in the industry who hasn't at sometime said that supervisors are the meat in the sandwich: Ask them for specifics. Think about listening as a skill that none of us are very good at because we don't do it very often, then upgrade your skills. Listen then Act. Above all, do it with passion.



Catherine Stedman
Catherine Stedman, Editor

To The Editor...

The article by Stephen O'Brien (Alcoa) published in the December '97 MINESAFE should be compulsory reading for everyone in the industry. The article from the State Mining Engineer made interesting reading, and I have brought both items to the attention of all my workmates on site.

I have resigned as a Safety Rep as I was forever banging my head against a brick wall, and went to one too many safety meetings where the crew just looked at the floor, too scared to say a word.

Bringing problems to the attention of line managers usually met with a torrent of abuse or threats. I did manage to get some problems like people reporting for work under the

influence of alcohol or drugs addressed by going to senior management, but suffered the consequences. A common response by middle management to safety concerns was "If you don't like it, there's a plane out of here in the morning."

I am afraid that until we get good man management skills into all levels of the industry, we will continue to have accidents.

I am not a trade unionist, troublemaker or any of the other "labels" given to you when you press safety issues. I am just an average person who wants to do a fair days work and when R & R comes around, go home alive to my children.

At the request of the writer, this letter has been edited to protect identity.
Editor.

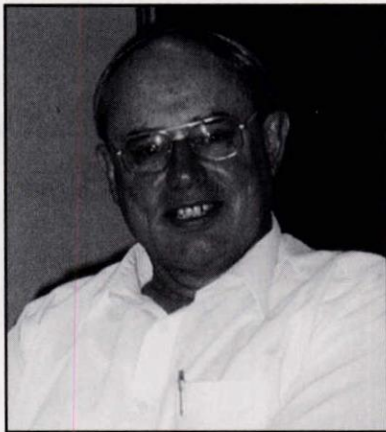


REPORT ON THE INQUIRY INTO FATALITIES IN

In September 1997 MOSHAB (Mines Occupational Safety and Health Advisory Board) established the tripartite **Prevention of Mining Fatalities Taskforce** to carry out an inquiry into mining fatalities, with particular attention directed to rock falls, and to report on its findings and recommendations within three months.

The inquiry was initiated following a double fatality caused by a rock fall in an underground mine in September in the Eastern Goldfields. There had been six other mining fatalities in 1997 to the beginning of September and there were 10 in total for the year – six due to rock falls.

The Taskforce, chaired by State Mining Engineer Jim Torlach, comprised representatives from the Inspectorate, the Chamber of Minerals and Energy and the Trades and Labor Council.



*Jim Torlach
State Mining Engineer,
Department of
Minerals and Energy*

The findings, including 23 recommendations and a preventative strategy, were published in the **Report on the Inquiry into Fatalities in the Western Australian Mining Industry**, which was released by the Minister on 8 January 1998.



*Tracy Long
Taskforce Secretary,
Department of
Minerals and Energy*

The Taskforce accepted submissions in person – through public forums or in private hearings, in writing and by telephone. Including those attending public forums, a total of 142 submissions were received.

The Taskforce found that while there had been a sustained improvement in occupational safety and health performance across the industry, the incidence of fatalities in the underground mining sector remained unacceptable and indicated a failure by this sector to adequately control the risk of exposure to rock falls. Ground control issues were not being adequately assessed or controlled and the industry had been slow to implement the risk management principles of the legislation.

The Taskforce called for an increased attention to geotechnical issues, particularly ground support, by both the industry and the inspectorate.

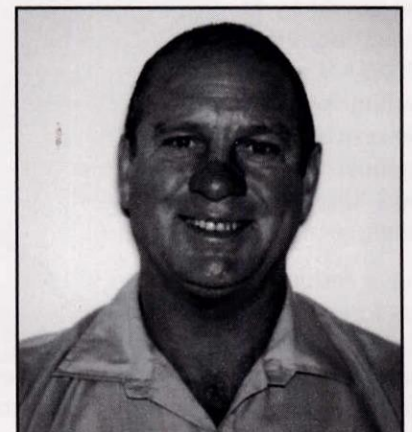
Recent increases in the fatality incidence have coincided with the rapid transition to contractor mine management and it appears that provisions to ensure that established

occupational safety and health management systems were maintained subsequent to this change were either not made or were not adequate.

Overall, work practices, the quality of supervision, the level of training and the degree to which consultation takes place were found to be inadequate, particularly in the underground sector.

The Taskforce also found evidence of a poor safety culture, particularly in the underground mining sector. The culture was linked to high turnover rates, the rapid elevation of inexperienced and inadequately trained young professionals to management roles, a reduced commitment or capacity to provide adequate training, and increased non-compliance with safety legislation.

The Taskforce found evidence of pressure to deliver production to the detriment of safety at all levels of the workforce. Moreover, remuneration schemes that incorporate production incentives without any safety components, which are common in underground operations, effectively encourage short-cuts and unsafe behaviour.

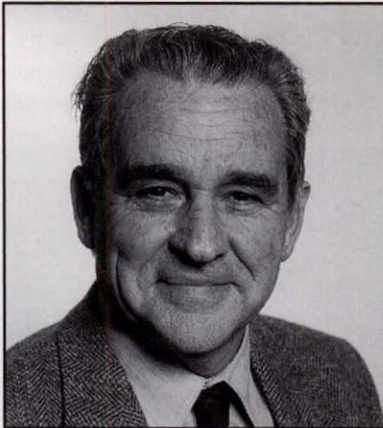


*Bob Leggerini
Employees' Inspector of Mines,
Department of
Minerals and Energy*

THE WESTERN AUSTRALIAN MINING INDUSTRY

This report identifies eight priority issues that warrant immediate attention, and four further issues, and provides 23 recommendations and a preventative strategy that defines time frames and the role of MOSHAB in monitoring their implementation.

MOSHAB met on the 27 January 1998 to determine a framework and process to implement the report's recommendations. Eight Priority 1 recommendations must be implemented by July 1998 while the remainder must be implemented by December 1998.

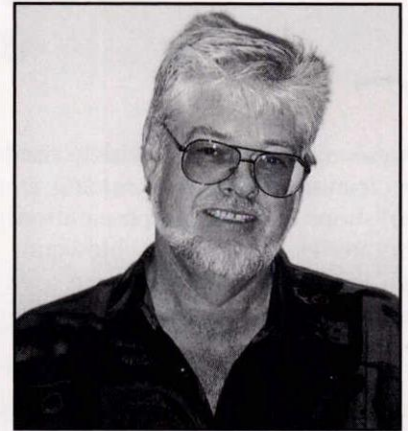


*Pat Gilroy
Deputy Chief Executive Officer,
Chamber of
Minerals and Energy*

Key recommendations of the report include:

- A review of the accreditation process for statutory mining positions.

- Development of an accredited, competency-based training program for underground mining employees.
- Increased focus on compliance with Regulation 10.28 – *Geotechnical Issues*.
- Development of a Code of Practice for securing backs in headings of extended height and width with continuous meshing, shotcreting or other surface treatment.
- Development of a Code of Practice for compressed work schedules, extended shifts and effective hours of work for airleg mining work.
- Employers conduct safety and health training for all supervisors and managers, with specific emphasis on hazard identification, risk assessment and risk control.
- A review of current industry incentive-based remuneration schemes.
- MOSHAB conduct a confidential survey of all underground employees to elicit their views on the role of the inspectorate and their understanding of the current legislation, including duty of care principles and consultative mechanisms.
- Department of Minerals and Energy produce guidance material on the fatality investigation process and the coronial inquiry process.



*Bob Bryant
Occupational Health
and Safety Officer,
Trades and Labor Council*

The Taskforce will hold a follow-up public forum in Kalgoorlie to discuss and report on the recommendations in mid-1998 to provide feedback and report on progress of the implementation of the report's recommendations. MOSHAB will carry out a review of the outcomes and implementation of the recommendations by July 1999.

Copies of the **Report on the Inquiry into Fatalities in the Western Australian Mining Industry** can be obtained by contacting the Mining Operations Division on

Tel: (08) 9222 3229 or via the Department of Minerals and Energy's website - <http://www.dme.wa.gov.au>

SAFER USE OF COMPRESSED AIR FOR CLEANING PURPOSES

Compressed air is widely used for cleaning purposes in mining workshops and sample preparation laboratories. Frequently, blowguns – high velocity air nozzles – are used to focus a single jet of air onto the object being cleaned.

These guns when misused can cause serious injuries. A jet of compressed air applied to the human skin can introduce air into the bloodstream and consequently lead to an embolism, a potentially lethal condition. High velocity air movement will inevitably create dust problems and unacceptable noise levels.

A new type of blowgun is on the market with an in-built pressure regulator, which acts to prevent the outlet pressure from exceeding maximum of 50 kPa (7.25 PSI) when in direct contact with the obstacle. Similarly, when the nozzle is no longer in the vicinity of the obstacle, the pressure builds up automatically, without the need for resetting. These guns can also reduce the “operator” noise exposure by 8-10 dB (A). The manufacturer claims that the gun produces a noise level of 83 dB (A) when tested with a service pressure of 600 kPa (87 PSI).

For more information contact:

Jerry Wilczewski
Senior Noise and Vibration Engineer,
Department of Minerals and Energy
on

Tel: (08) 9222 3128.



Test on a new blow gun – “A noise level of 83 dB (A) was recorded at the operator’s ear level during normal operations.”



Test on a new blow gun – “When in close proximity to any object, the gun pressure falls rapidly to below 50 kPa.”

ADJUSTMENT OF EXPOSURE STANDARDS FOR EXTENDED WORKSHIFTS

With the widespread practice of extended workshifts in the industry it is important to consider the impact the length of the workshift may have on exposure to chemical and physical hazards such as airborne contaminants and noise.

Exposure standards for these agents take into consideration the duration of the exposure as well as the duration of non-exposure, when the body would normally go through a recovery period.

The Time Weighted Average (TWA) exposure standards for airborne contaminants, which are embodied in the regulations, are assigned for conventional workshifts, that is, **eight-hour working day, five-day working week**. These standards may be

inappropriate where there are extended shifts and compressed work schedules.

Where these standards are applied to shifts longer than the "conventional" eight-hour day, five-day week, consideration must be given to reducing the exposure standard by a suitable factor. Any adjustments are part of the duty of care of an employer, and should be considered during the assessment and control processes as required by the *Mines Safety and Inspection Regulations 1995*.

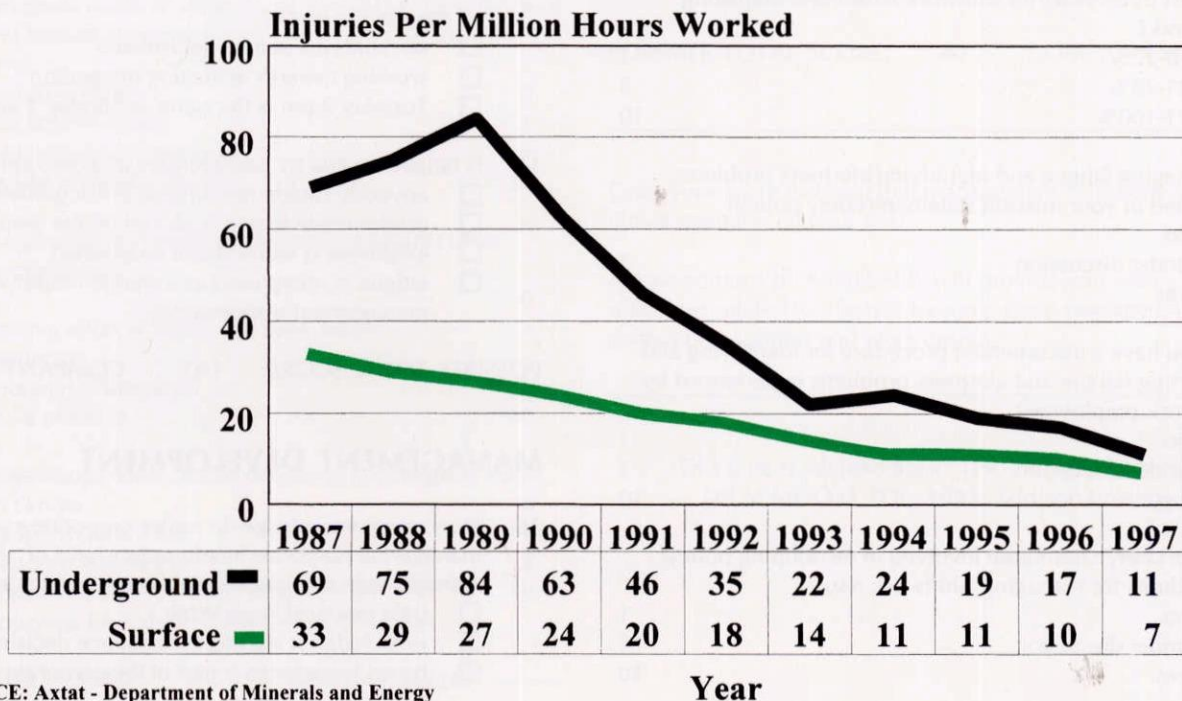
In summary, for atmospheric contaminants, a conservative adjustment would be to reduce the 8-hour TWA by about one-half when applied to the 12-hour workshift. Peak

Limitation and Short Term Exposure Limits (STEL) standards however, require no adjustment.

Similarly, the forthcoming amended Australian Standard 1269 outlines a new procedure for assessing employee noise exposure for shifts longer than 8-hours. In summary, shift duration of 12-hours will require any mining company to establish a 12-hour noise exposure target of 82 dB (A).

More specific details on the adjustment formula and guidance on how to apply these standards for extended work shifts will be included in a soon to be released Department of Minerals and Energy Safety Bulletin. Contact the Mining Operations Division for details.

WESTERN AUSTRALIAN METALLIFEROUS MINES Injury Frequency



SOURCE: Axtat - Department of Minerals and Energy

Year

QUIZ

Use this quiz to identify the shiftwork management winners, or problems in your Company. You may wish to benchmark your scores on this important Duty of Care issue against other Companies that participate in industry forums, Councils or regular meetings. The quiz is presented in two parts. This first part of the quiz examines management practice. A later issue of MINESAFE will look at lifestyle management.

CORPORATE CULTURE

1. How essential are 24 hour operations to your business?
 - optional 1
 - strong business reasons 5
 - essential - have no choice 10
2. What percentage of managers really appreciate the difference between 24 hour operations and regular 9-5 businesses?
 - 0-20% 1
 - 21-70% 5
 - 71-100% 10
3. Do managers and supervisors respect the physiological limitations of employees?
 - don't know 0
 - low respect 1
 - some respect 5
 - high level of respect 10
4. Does your corporate culture, and the decisions made by managers and supervisors because of it, present significant obstacles for maintaining performance and alertness amongst shiftworking employees?
 - yes - significant extent 1
 - partially - limited extent 5
 - No problem 10
5. What percentage of your managers/supervisors/employee representatives have attended a seminar or training program in the past three years on shiftwork issues and managing shiftwork?
 - 0-20% 1
 - 21-70% 5
 - 71-100% 10
6. Is managing fatigue and identifying alertness problems specified in your mission statement/safety policy?
 - no 1
 - under discussion 5
 - yes 10
7. Do you have a documented procedure for identifying and correcting fatigue and alertness problems experienced by shiftwork employees?
 - no 1
 - under discussion 5
 - yes 10
8. Is your safety committee involved in developing policy/procedures for managing shiftwork issues?
 - no 1
 - under discussion 5
 - yes 10
9. Does your reporting system continuously track and report fatigue related risks and costs?
 - no 1
 - partially 5
 - comprehensively 10
10. Have you done a cost benefit analysis of operating 24 hours a day, including fatigue related costs?
 - no formal analysis done 1
 - formal analysis underway 5
 - formal analysis completed 10
11. Do your safety audits determine whether the work environment, job design, policies and procedures optimise employee performance 24 hours a day?
 - not part of the systematic audit 1
 - only included for cause 5
 - automatically part of the audit 10
12. Are management and shiftworker hours staggered so as to maintain communication with alternate or back shift employees?
 - managers rarely see certain shift employees (less than once per month) 1
 - reduced contact with certain shifts (less than once per week) 5
 - regular manager/shiftworker contact (once or more per week) 10
13. Do you have a "seamless" 24 hour culture where quality, safety and productivity are the same at all hours of the day and all days of the week?
 - no. shifts are somewhat isolated 1
 - working towards achieving integration 5
 - Tuesday 3 pm is the same as Sunday 3 am 10
14. Is fatigue treated by management as a disciplinary problem?
 - anybody caught nodding off is disciplined or fired 0
 - predominate blame is placed on the employee 1
 - employee is warned and counselled 5
 - fatigue is recognised as a shared employee management responsibility 10

POSSIBLE TOTAL SCORE: 140 COMPANY SCORE: _____

MANAGEMENT DEVELOPMENT

15. How much knowledge do senior corporate executives and managers at corporate headquarters have of shiftwork management and special problems like fatigue?
 - little practical knowledge 1
 - knowledge is starting to influence decision making 5
 - broad knowledge is part of the corporate culture 10

SHIFTWORK

16. Is there a shift coordinator on site with the authority to take action when problems are identified?
- no 0
 - shift coordinator appointed, but no decision making authority 1
 - under discussion 5
 - yes 10
17. What percentage of managers have personal experience of working on rotating or fixed night shifts?
- 0-20% 1
 - 21-70% 5
 - 71-100% 10
18. Do all new managers who have not worked shiftwork get assigned to a shift roster so that they can experience the realities of working nightshift and the consequences of a shiftwork lifestyle?
- no effort to do this 1
 - sometimes, or on special occasions 5
 - standard company policy 10
19. Do you have a program to continuously develop management and supervisory skills and expertise in shiftwork management?
- no program 0
 - thinking about it 1
 - some managers/supervisors try to keep up 5
 - systematic effort to keep awareness & skills current 10
20. Do managers/superintendents/site supervisors work with the night crew from time to time?
- no 0
 - very rarely 1
 - some do but it is their decision 5
 - company policy incorporates this 10
21. Do design specs make an effort to recognise the importance of enhancing human alertness in planning rosters, tasks, work stations etc?
- no effort is made 0
 - some effort is made 1
 - left to individual managers 5
 - standard company practice 10
22. Do you regularly benchmark your practices against other shiftwork operations?
- no 0
 - no active effort is made, but have some knowledge 1
 - sometimes considered 5
 - regular practice 10
23. Do managers/supervisors make decisions in a fatigued state?
- don't know 0
 - it happens quite often 1
 - it happens sometimes 5
 - a systematic effort is made to protect all employees from the consequences of fatigue 10

POSSIBLE TOTAL SCORE: 90 COMPANY SCORE: _____

SUPERVISORY RESPONSIBILITY/ ACCOUNTABILITY

NB: "Supervisor" means team leader, foreman, leading hand, etc

24. Are all supervisors trained in techniques to keep employees alert?
- none have received training 0
 - some have received training 1
 - regular training is company policy 5
 - training is a prerequisite of appointment 10
25. Are call out procedures designed to respect shiftworker sleep time?
- no attention is paid 0
 - some attempts are made 1
 - policy to respect sleep time (except in true emergencies) 5
 - policy is strictly enforced and supervision is accountable 10
26. Is there a documented policy for which supervision is accountable, related to employee fatigue?
- no documented policy 0
 - policy exists but not always implemented 1
 - policy and procedures are clearly stated and known to all employees 5
 - policy and procedures are strictly enforced 10
27. Are staff meetings, tool box meetings, safety meetings, etc scheduled with appropriate respect to the night shift?
- meetings scheduled for management/supervisory convenience rather than shiftworker needs 0
 - some allowance is made for shiftworker hours 1
 - care is taken to plan around sleep schedules when possible 5
 - meetings are planned around sleep schedules so that all employees can participate 10

POSSIBLE TOTAL SCORE: 40 COMPANY SCORE: _____

Does your score indicate that management shiftwork issues demand closer attention on your site?

Future editions of MINESAFE will provide you with a range of questions related to lifestyle training, sleep management, shiftworker support and work design.

This quiz is adapted from "THE 24 HOUR MANAGER",
DR M MOORE EDE, 1993, Addison Wesley, USA.

SAFETY CULTURE (AS REFLECTED BY BEHAVIOUR)

“A consistent and worrying finding in the inquiry was the deterioration in the commitment to a strong safety culture evidenced by a decline in performance standards. In some instances, it appeared to be linked to the transition from owner operator to a contractor workforce.”

Given the ultimate responsibility of the principal employer, the issues are far too complex to explain in a short MINESAFE article, but cultural issues are a continuous thread running through the entire report, and through the summary of written, oral and telephoned submissions to the taskforce.

The recommendation is that: “MOSHAB implements a program to improve the safety culture, as reflected by behaviour, that focuses on management commitment and personal aspects of safety awareness at all levels of the workforce.”

So what is safety culture, and how exactly do you go about improving it?

A popular definition of safety culture is “the values, beliefs, rituals, symbols and behaviours that we share with others which help define us as a group, particularly in relation to other groups.”

Improving a safety culture means recognising key factors, and then taking action to include them in the industry norms. Some of those factors are:

- Organisational culture ultimately shapes employee perception of safety, the importance placed on safety, and how employees practice safety.
- An integrated organisational culture shows sub-group cooperation, a strong corporate identity, a positive climate and high employee morale.
- Senior management must be a part of, not apart from the organisational culture, as it is the **actual** not the **advertised** management practices which register with employees.
- Management must gain and keep the trust of employees.
- Before you can improve your culture, you must know what your present culture is, and how it works by researching and identifying current norms, beliefs and values.

- Management may direct people to change their behaviour, but it cannot direct people to change their values.
- The organisational culture must promote a value system based on openness, mutual respect, and trust.
- Without a recognisable set of core organisational values at work to guide desirable behaviours, any behaviour shifts will not last.
- The first impressions of new employees influence their later beliefs and values, so committed management needs to actively participate in integrating new employees into the organisational culture.
- Organisational language must promote a “we” rather than an “us and them” in all forms of communication, in all aspects of the system of work, and in all the daily “stories” that act as powerful transmitters of corporate beliefs and values reflecting both the past and present.
- Management must recognise that change is SLOW, and needs observable strategies and behaviours to act as guidelines along the path of change.

Changing or instilling a safety culture is hard work, sustaining it is even harder, but there are many examples in the industry that are proof that it will happen when there is total commitment to achieving results.

Reference: Merritt, AC & Helmreich, RL (1996) Creating and sustaining a safety culture: Some practical strategies.

PEOPLE AND PLACES



*Weekly Site Contractor's Safety Meeting
(Fluor Daniel-Murrin Murrin)*



"Newer" Department of Minerals and Energy Officers on site inspection – Telfer.

*Left to Right: Dean White (Quarry Manager – Telfer),
Torquil Briggs (District Mining Engineer – DME) and
Nick Hunt-Davies (Regional Mining Engineer – DME)*



*Try dodging these on the haulroad!
Christmas Island Phosphates.*

SURFING THE NET

EXIS NOW AVAILABLE ON THE WEB

EXIS, a dial-in computer system developed to enable the mining industry to access a multitude of information pertinent to safety and health, is now available (in part) on the World Wide Web (internet) via the Department's new home page at the following address:

<http://www.dme.wa.gov.au>

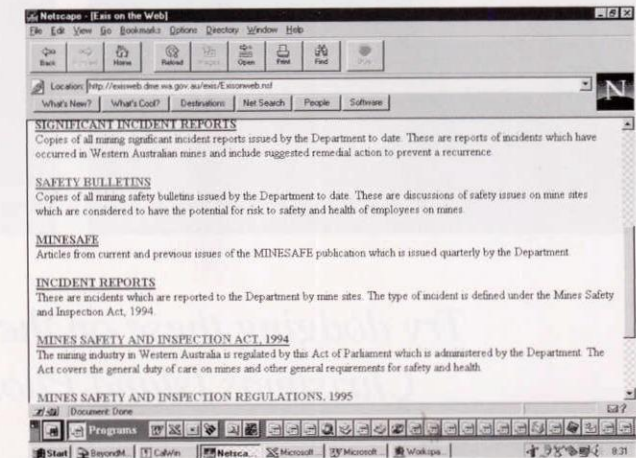
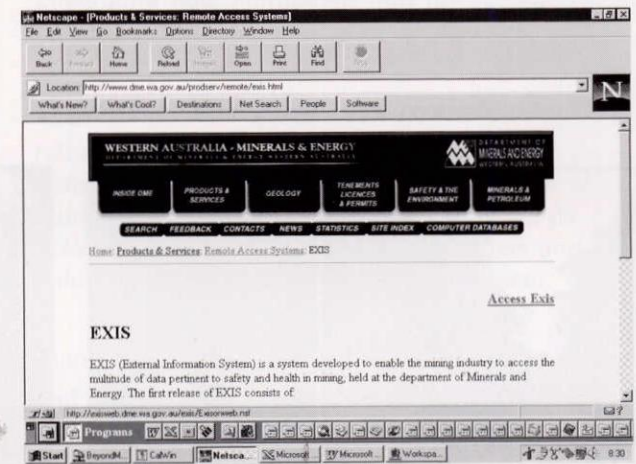
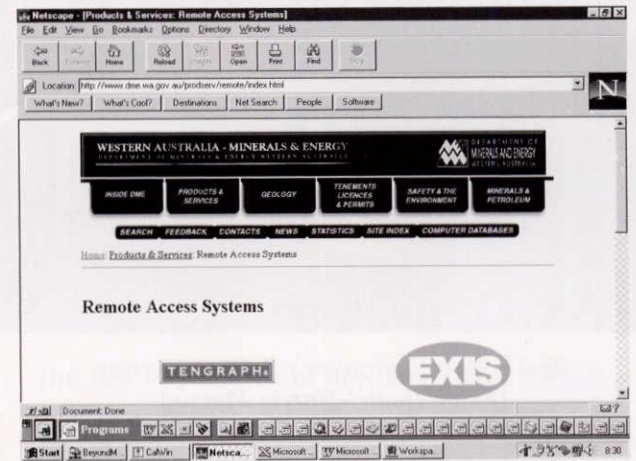
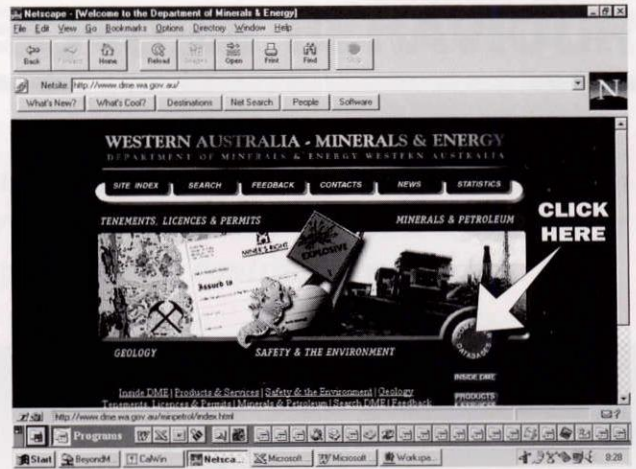
Users can access the following EXIS databases now available on the web:

- Significant Incident Reports
- Safety Bulletins
- Minesafe
- Incident Reports (formally FYI)
- Mines Safety Inspection Act and Regulations
- Mining Guidelines

Now mining companies have two access options to choose from, however, for those companies that wish to report to and access AXTAT information and/or contribute to the discussion database you will need to continue using the lotus notes dial-in facility.

To register for access to EXIS (via dial-in facility) you must complete the registration form in the EXIS brochure. To obtain a copy of the brochure call James Lawrence on Tel: (08) 9222 3095.

When you have been registered you will receive an EXIS Starter Pack. This pack consists of several 3 1/2" floppy disks, installation instructions and an EXIS User Guide.



FAILURE OF MULTI-PIECE TYRE RIM

There have been numerous failures of rims in Australia and overseas. People have been seriously injured and killed while attempting to remove wheels from mobile earthmoving equipment, with the tyre still partly or fully inflated. Rims that have developed defects, have disintegrated and catapulted quite large and heavy rim fragments considerable distances.

A Coronial Inquest into the death of a maintenance fitter was recently held following a fatal accident on a minesite. The fitter received multiple injuries when a split rim wheel and tyre assembly failed catastrophically whilst being fitted to a mobile crane. (See front cover of Minesafe Vol. 7 No. 4)

Details of the findings and recommendations are available in the newly released Department of Minerals and Energy Safety Bulletin No. 36.

REVISED NUGGET PAMPHLETS NOW AVAILABLE

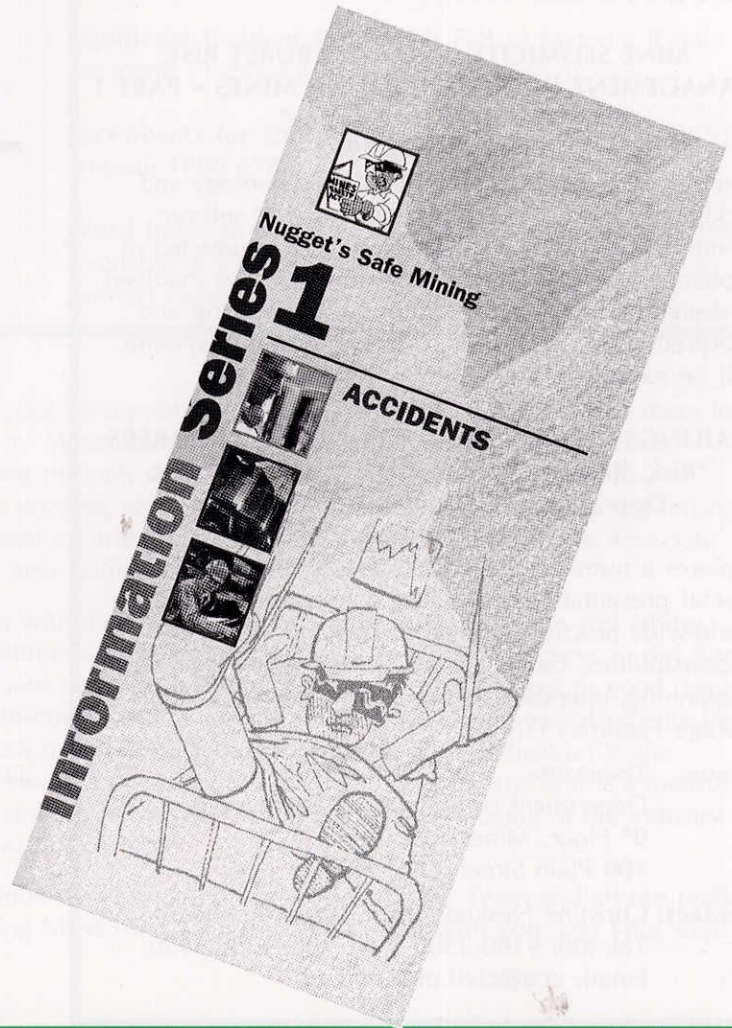
The Nugget Safe Mining Information Series, a set of 14 brochures, originally produced by the Department of Minerals and Energy for the Mining Industry have now been completely updated and relaunched for sale from IFAP.

The pamphlets are easy to read in a question and answer format with cartoon drawings.

The following titles are available:

1. Accidents
2. Classified Plant
3. Electricity in Mines
4. Employee's Inspector of Mines
5. Hazardous Substances
6. Inspectors of Mines and Their Powers
7. Mine Safety Law
8. Noise Control Regulations
9. Radioactive Minerals
10. Record Book
11. Resolution of Issues Related to Safety and Health
12. Respiratory Protection
13. Safety and Health Reps. and Committees
14. Underground Diesels

For further information contact
Andrea White on Tel: (08) 9310 3760
or
E-mail: orders@ifap.asn.au



WHAT'S ON

AUSTRALIAN CENTRE FOR GEOMECHANICS



MINE DESIGN FROM BOREHOLE DATA 26 March 1998

Designed to improve the economic analysis during pre feasibility studies of new deposits or during the extraction of adjacent ore blocks in existing mines. It will cover aspects of data collection, analysis, interpretation and prediction in order to yield the maximum amount of geotechnical data in conjunction with the initial orebody delineation process.

DILUTION CONTROL IN UNDERGROUND MINING 27 March 1998

Aspects to be discussed include orebody delineation schemes, geological control at the stope development stages, mine planning and excavation design methodologies, sequencing and extraction strategies including blasting, management of stress re-distribution and stope performance reviews.

MINE SEISMICITY AND ROCKBURST RISK MANAGEMENT IN UNDERGROUND MINES – PART 1 "World's Best Practice" 30-31 March 1998

Discusses the fundamentals of mine seismology and rockbursts, and the practical application of seismic monitoring. A second workshop will be conducted in September 1998 at which the technical issues involved in designing, installing, monitoring, transferring and interpreting the data from currently available systems will be explored.

TAILINGS MANAGEMENT FOR DECISION MAKERS "Risk, Responsibility and Liability in Planning, Operating and Decommissioning TSFs" 30 April / 1 May 1998

Explores a number of relevant case histories and special presentations by selected speakers illustrating world-wide practices and problems, and the responsibilities, liabilities and special issues involved in planning, operating and decommissioning Tailings Storage Facilities (TSFs).

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

Contact: Christine Neskudla or Gillian MacMillan
Tel: (08) 9380 3300 Fax: (08) 9380 1130
Email: acg@civil.uwa.edu.au

PROPOSED MOSQUITO AND MIDGE CONTROL COURSES SPRING 1988

A four-day mosquito course may be offered by the Health Department of WA at Mandurah or Busselton during spring 1998, if enough people are interested. The next epidemic of Ross River virus disease in the southern (winter/spring rainfall) region of Western Australia is likely to occur during 1998/99 or 1999/2000. Attendance at this course would prepare mining company staff with the knowledge base necessary to minimise the health impacts of Ross River virus disease in their area.

In addition, a one-day course on sampling and identification of chironomid or non-biting midges may be run by the City of Cockburn in Perth immediately after the mosquito course.

For further information contact
Sue Harrington or Tony Wright:
Tel: (08) 9385 6002
Fax: (08) 9383 1819

WA CERTIFICATES OF COMPETENCY

First Class Mine Manager's
Underground Supervisor's
Quarry Manager's
Restricted Quarry Manager's

Monday, 4 May 1998

Application forms are available from the
Department of Minerals and Energy, Perth

on:
Tel: (08) 9222 3682
or
(08) 9222 3683

Applications close on

Friday, 3 April 1998.

The application fee is \$100.00

STAFF CHANGES

The Department has two new recruits from South Africa. **Nick Hunt-Davies** who has been appointed Regional Mining Engineer (Karratha) and **Rob Mallinson** appointed to the position of District Mining Engineer (Kalgoorlie).



Nick Hunt-Davies



Rob Mallinson



Ivan Fetwadjieff

Welcome also to **Ivan Fetwadjieff** who has replaced Hazel Upton as Senior Scientific Officer in the Perth office.

NEW PUBLICATIONS

Safety Bulletin 34: Retrofitting of Roll-Over Protective Structures (ROPS) to Mobile Equipment on Mines (Regulation 4.15) - October 1997.

Safety Bulletin 35: Underground Rockfalls (Geotechnical Considerations) - December 1997.

Safety Bulletin 36: Split Rim Wheel and Tyre Assembly (Fatal Accident) - February 1998.

Significant Incident Report 86: Structural Failures of Large Span Semi-Portal Gantry Cranes - December 1997.

Significant Incident Report 87: Drill Rod Handling (Serious Accident) - December 1997.

Significant Incident Report 88: Remotely Operated LHD (Dangerous Occurrences) - February 1998.

Significant Incident Report 89: Remotely Operated LHD Machine (Fatal Accident) - February 1998.

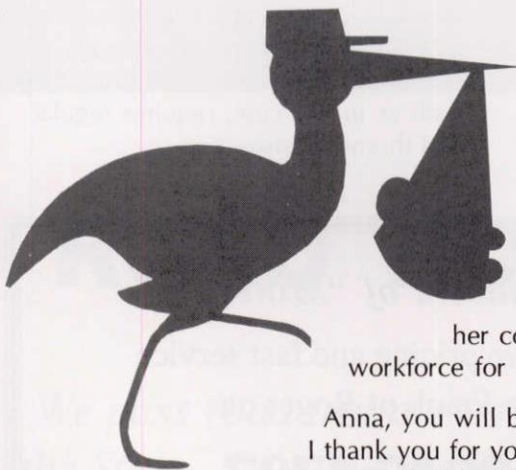
Significant Incident Report 90: Remotely Operated Machinery (Rockfall Fatal Accident) - February 1998.

Significant Incident Report 91: Fall of Material (Fatal Accident) - February 1998.

Fact Sheets for Shiftworkers. Available from MARCSTA. Freecall 1800 678 554.

Word Index to the Mines Safety and Inspection At 1994. Available at \$11.50 per copy or \$95.00 for ten copies. Contact Geoff Taylor on phone/fax: (08) 9457 6487.

Expecting . . .



When people pick up a publication like MINESAFE, it doesn't take them long to go through it. What takes a lot of time and effort is the information gathering, sifting through material, choosing pictures, doing layouts, overseeing the printing, and a host of other detail that makes up the finished product. A major contributor to that process is Anna Patton, the Associate Editor, who is now going on extended maternity leave.

Anna has been with the MINESAFE team since that first black and white photocopied edition almost nine years ago. As MINESAFE grew so did Anna's editorial skills and professionalism which she was able to put to good use as the Editor of RescueNet. Few people realise that Departmental officers like Anna, who work on MINESAFE, are volunteers. Her dedication to the additional workload imposed by MINESAFE is outstanding, and is a measure of her commitment not only to MINESAFE but also to the well being of the industry workforce for whom the magazine exists.

Anna, you will be missed very much, and on behalf of the MINESAFE Team and all our readers, I thank you for your help in making MINESAFE what it is today. We wish you, and your soon to be expanded family, well.

Editor

INCIDENT ALERT

INCIDENT

The rear (3rd) trailer of a road train recently rolled over onto its side on a mine haul road. A pivot point on the "A - frame" of the second trailer in front failed, causing all the load being taken on the side of the remaining pivot point. With the load wanting to

incident was rock spilled along the haul road for a considerable distance.

The pivot point consisted of a clevis and yoke arrangement with a large steel bolt passing through a rubber bush contained in the yoke. The rubber bush was intended to provide cushioning to the pivot and act as a

This went undetected and the outer steel section bent around the yoke did not provide adequate strength to prevent the steel sleeve from becoming distorted in an elongated manner towards the load bearing section of the sleeve. Over a period of time the distortion and shock loading increased until the steel sleeve and the outer steel section bent around it failed. This failure resulted in a shift in the load to one side causing the trailer attached to the pivot from behind to become out of control.



veer to one side, the rear trailer became unstable and rolled onto its side. The bogie of the rear trailer was torn away as the road train continued to move forward with the bogie still attached to the rear of the second trailer.

The driver did well not to lose complete control of the remaining trailers and managed to bring the road train to a stop some distance further along the haul road. The result of the

load-bearing surface. The yoke itself consisted of a steel sleeve with a section of steel bent around the outside of the sleeve to provide additional strength so the yoke could take the load.

When the bush became worn, it lost its ability to absorb shock loading through it and eventually a metal to metal situation developed between the steel sleeve of the yoke and the steel bolt passing through the clevis.

COMMENTS

Contributing Factors:

Inadequate design of the A - frame pivot point.

Inadequate inspection and maintenance.

PREVENTATIVE ACTION

Don't assume that plant is safe in design, especially where the plant is subjected to loads. Get the designer, manufacturer, supplier, or installer to verify that it has been designed, manufactured and tested in accordance with the intended use.

Where applicable, Australian Standards or other statutory bodies should be consulted. This should be done prior to acquiring the plant.

Ensure that plant is inspected and maintained in accordance with the manufacturer's specifications as a minimum. Plant subjected to loading such as in this case, requires regular and thorough inspection.


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