

# MONITOR

Official publication of the  
Mining and Resource Contractors Safety Training Association

## MARCSTA welcomes new Training Manager

Sheryl Henley is MARCSTA's new Training Manager. She comes to MARCSTA with a wealth of experience in workplace training and assessment accumulated over the past 12 years both in Western Australia and in the United Kingdom.

During the last two years her experience on site in the local mining sector has equipped her to fulfill the key training responsibilities at MARCSTA.

Sheryl has qualifications in training and assessment and also in occupational safety and health which will enable her to maintain the high standard of content in MARCSTA's occupational health and safety training programs.



## National review of OHS laws

An invitation for submissions to the National Review into Model Occupational Health and Safety (OHS) Laws has been issued.

All interested persons are able to contribute to the review by lodging a written submission. This provides an opportunity to influence the direction of OHS reform in Australia.

The advisory panel conducting the review has published an issues paper to assist anyone making a submission.

The review panel's recommendations will be designed to improve OHS outcomes and they strongly encourage all who are making submissions to explain how that might best be achieved in a model OHS law.

They suggest that before making a submission, interested persons consider the matters raised in the issues paper but need not address them if they have other concerns.

"The submissions will assist the panel in making well informed recommendations to the Workplace Relations Ministers' Council on the optimal structure and content of a model OHS Act," said chair, Robin Stewart-Crompton.

In developing the issues paper, the panel undertook preliminary consultation with key stakeholders in all states and territories. Consequently, the issues paper includes many issues that stakeholders see as central to the review.

The goal of harmonising OHS laws has the support of Commonwealth, State and Territory governments, including the Prime Minister, Premiers and Chief Ministers, and Workplace Relations Ministers.

The issues paper, together with a template for written submissions and details on how to lodge a submission by 11 July 2008, is at [www.nationalohsreview.gov.au](http://www.nationalohsreview.gov.au).

## MARCSTA training packages...

As a Registered Training Organisation, MARCSTA delivers occupational safety and health units of competency for the following national training packages: (Applications for recognition of prior learning may be lodged for all training programs)

Metalliferous Mining  
Transport and Distribution  
Business Services  
Resources and Infrastructure Skills  
Safety Awareness Training (Construction)

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MARCSTA is a not-for-profit Association. All proceeds are reinvested into the industry for future development of safety and training.

## The emerging role of the safety professional

A series of articles addressing the emerging role of the safety professional in today's business landscape is being featured in issues of Occupational Health and Safety.

The first article appeared in the April 2008 issue and the series will conclude in July 2008.

The series is relevant to all safety and health professionals and MARCSTA strongly recommends its readers to take the time to study the content.

See:

Part 1, <http://www.ohsonline.com/articles/60930/>

Part 2, <http://www.ohsonline.com/articles/61578/>

Part 3, <http://www.ohsonline.com/articles/63905/>

Source: The Emerging Role of the Safety Professional,



## MARCSTA achieves RTO renewal

MARCSTA was audited in April by the Training Accreditation Council (TAC) for renewal of its Registered Training Organisation (RTO) status.

MARCSTA is pleased that its continued approach to delivery and development of quality training and products has been recognised by TAC, with the granting of the RTO renewal for a period of a further five years.

## Back belts not particularly useful

In the March edition of the Monitor a research report found that there was no evidence to support the use of advice on training in correct lifting techniques as a tool to prevent back injuries.

A new systematic review conducted in the Netherlands has found that when measuring pain prevention or reduction in the number of sick days used, researchers found little or no difference between people who used lumbar or lower back supports and those who did not.

The researchers recommended that the general population and workers not wear lumbar supports to prevent low back pain or for the management of low back pain.



Source: ohs online, 28 April 2008

## Vehicle-mobile plant support stands

An incident at a Queensland coal mine has prompted the NSW Department of Primary Industries to issue a Safety Bulletin regarding the use of support stands for heavy equipment on earthmoving machinery typically in use at mines.

The Department has recommended that as no Australian Standard exists, the principles of AS/NZS 2538-2004 be applied. All mines must ensure that equipment purchased, leased or hired is appropriate and fit-for-purpose through a risk management process.

## New Victorian initiative to fight chronic worker diseases

A program to provide all Victorian workers with information on how to improve their health is to be introduced over the next five years.

Two types of free on-site screening tests will be offered:

- a self-assessment Chronic Disease "Tick Test" to identify physiological and lifestyle issues that contribute to the risk of developing a chronic disease; and
- a series of tests to identify a range of health conditions e.g. blood sugar level, blood pressure, cholesterol etc.

If the results identify a risk of chronic disease workers will be provided with advice about what steps to take and will be able to access a free lifestyle change program.

Workers from small and medium sized employers will be able to access all elements of the screening and support program free of charge.

Source: Incolink OnSite, May 2008, Issue 41

## Good start to Victorian inductions

Stacey Clark from Bendigo Regional Institute of TAFE tells us that each MARCSTA course has from 14-20 students.

Frequency has increased from one per fortnight to one per week. Consideration is being given to extending the course to other campuses of the Institute.

# Editorial

In March I was touring Tasmania. We visited the mining museum located near the School of Mines (see picture) in Zeehan. It was interesting to find that the School is 10 years older than WASM in Kalgoorlie. While heat and lack of water may have been the big problems in our Goldfields, I was struck by how the mountainous terrain in Tasmania must have presented a very different set of problems (and still does). What was also a top harbour for relatively small vessels with which to ship concentrate from the west coast of Tasmania, and relatively close to the mines as the crow flies, would now need major engineering. This would threaten its lifeblood as an eco-tourism Mecca.



During a clear-out, a news item in the Safety Institute Journal from 1994 was found. It tells of the day in February of that year when contractor representatives from twelve companies, with TAFE and the government attending, met to set up a safety association. Another company soon joined. That association, now the MARCSTA we know, has made remarkable progress since then, and has had I believe, a major impact on safety in mining. Ian Douglas' recent Ph.D thesis supports this.

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The same clear-out turned up an earlier John Deere Fundamentals of Machine Operation – Agricultural Safety, but the points it made about behavioural safety still ring true. It points out that personal safety and performance in part depend on psychological factors – emotions and moods. These can be created by personal conflict from confusion and uncertainty (eg. mixed messages from management), personal tragedy, domestic problems, difficulties on the job, money woes and other forms of insecurity. It says that these can contribute to accidents, and it recommends that an employee recognises when she or he is upset, and takes a break. Still sounds like good advice.

In a recent issue of an Australian aviation safety magazine, there was a picture of an extended crack in a wheel. It had originated from the downstroke of a "P" stamped into the metal with a die, to record a date. Food for thought there too.

As a parting note, those with an interest in one of the smaller cap copper miners will be pleased to see highlighted in the 2007 annual report: "Safety is a standing board agenda item".

Geoff Taylor (Adj. Prof.)



Monitor Editor,  
Geoff Taylor

## Extensive study of MARCSTA's worth

IAN DOUGLAS RECENTLY COMPLETED AN EXTENSIVE STUDY OF MARCSTA ON WHETHER IT WAS STILL RELEVANT IN THE ARENA OF WORKER OCCUPATIONAL HEALTH AND SAFETY INDUCTION TRAINING. HE HAS SUMMARISED BELOW THE RESULTS OF HIS PHD RESEARCH. MORE DETAILED INFORMATION MAY BE OBTAINED BY CONTACTING DR DOUGLAS DIRECTLY (PHONE 0420 549 601, EMAIL IDOUGLAS@SAFETYDOCTOR.COM.AU).

There are some who feel that, after more than 10 years in metalliferous mining induction training and having trained over 160,000 trainees during that time, the Mining and Resource Contractors Training Association's (MARCSTA) program may have run its course and become irrelevant or a 'timewaster' (Buckley-Carr, 2005).

A recently completed independent research study conducted by Ian Douglas, a PhD student at Edith Cowan University, into the MARCSTA system showed that this assumption

may not be valid. The three-year study (2004–2007), which involved surveying more than 1,600 randomly selected trainees from Western Australia and Tasmania, found that the MARCSTA program can be empirically shown to be a leader in 'closed-market' occupational health and safety (OHS) induction training programs. Analysis of associated research data validates MARCSTA as a leader in this area for not only the Western Australian and Tasmanian metalliferous mining industries but for other primary industries throughout Australia.

### STUDY DESIGN AND RESEARCH METHODOLOGY

The research project was based on the collection and analysis of qualitative and quantitative data. This empirical study was of a descriptive–observational nature using survey and case study research principles.

Five survey questionnaires were designed using four questionnaire formats — multiple forced choice, Likert, fill-in and true–false (Berdie and Anderson, 1974).

### RESULTS

Data gathered from the reaction level volunteers indicated that two thirds of respondents thought the course learning outcomes were clearly explained before the course commenced, and 80% felt that those outcomes had been met. Seventy-five percent of respondents thought that the OHS information they had received was not only relevant to the mining industry but would be important in their future work within the industry.

OHS-specific knowledge gained by people attending a MARCSTA general induction course for the first time was evaluated by conducting pre- and post-training testing. Study participants demonstrated a significant improvement in OHS knowledge (60%) across all age groups.

Several participants reported that they had applied the knowledge gained from the MARCSTA course to their home environment, leading to improved safety around the house, and they had shared this information with other family members. This is a very positive side effect of the MARCSTA course. One example given was wearing ear-muffs and eye

## Conferences and courses

Open Pit Slope Stability Course, Ibis Hotel, Perth, 24-25 July 2008. Fax: 08 6488 1130 Email: [acginfo@acg.uwa.edu.au](mailto:acginfo@acg.uwa.edu.au)

Queensland Mining and Engineering Exhibition Mackay, 22-24 July 2008. Email: [inquiry@reedexhibitions.com](mailto:inquiry@reedexhibitions.com)

Workplace Safety Show, Perth Convention Centre 12-14 August 2008. Email: [safety@aec.net.au](mailto:safety@aec.net.au)

Queensland Mining Industry Health and Safety, Townsville 17-20 August 2008. Email: [safeconf@acclaimsemm.com.au](mailto:safeconf@acclaimsemm.com.au)  
Website: [www.qldminingsafety.org.au](http://www.qldminingsafety.org.au)

World Mining Congress, Krakow, 7-11 September 2008. Email: [office@wmc-expo2008.org](mailto:office@wmc-expo2008.org)

MINExpo 2008. Las Vegas, 22-24 September. Fax 0011 1 630 434 1216 Website: [www.minexpo.com](http://www.minexpo.com)

24th International Mine Processing Congress, Beijing, 24-28 September 2008. Email: [impc2008@impc2008.org](mailto:impc2008@impc2008.org)

Goldfields Mining Expo, Kalgoorlie 28-30 October. Email: [inquiry@reedexhibitions.com](mailto:inquiry@reedexhibitions.com)

## MARCSTA members

### ORDINARY MEMBERS

Ausdrill Ltd  
Barmenco Limited  
BGC Contracting Pty Ltd  
Cemex Australia Pty Ltd  
Cooks Construction Pty Ltd  
GR Engineering Services

GRD Minproc  
Kellogg Brown & Root Pty Ltd  
Komatsu Australia Pty Ltd  
Roche Mining Process Engineering  
Skilled Group Ltd  
Terex Materials Processing and Mining Australia

Thiess Pty Ltd  
Total Corrosion Control  
Westrac Equipment Pty Ltd

### ASSOCIATE MEMBERS

AVELING  
Jako Industries Pty Ltd  
Mandurah Safety and Training Services Pty Ltd  
Mine SafeGear  
Safety First Risk Management  
Strudwick HR

protection when mowing the lawn. This precaution was reported to have prevented a relative from possibly receiving an eye injury from flying material flicked up while mowing the lawn.

Furthermore, an evaluation of the Western Australian metalliferous mining industry's OHS outcome performance indicators (OPIs) data demonstrates a strong temporal relationship between the introduction and continued use of the MARCSTA program and statistical improvements in OHS-related OPIs.

The data also show how successful this industry has been in reducing OHS-related OPIs compared to other primary industries on both a state and national level. With none of the other national primary industry groups having the benefit of a 'closed-market' induction program for the last ten years, a strong case could be put that a similar course or program is the missing variable when comparing these groups (particularly the six mining sectors – open-cut and underground metalliferous mining, open-cut and underground coal mining, extractive industry, and smelting and refining industries).

As part of the research, the MARCSTA training manual was the subject of a cohort study to validate it as a learning resource. The results indicated that the course training materials supplied to trainees were extremely high quality and there was the potential for the course information to be taught on a remote or correspondence teaching basis.

The refresher component of the program was also evaluated and, far from being seen as irrelevant by course attendees, the MARCSTA refresher course retained strong support from trainees attending for the third and fourth occasions.

Anecdotal data from the research suggest that, presently, many metalliferous mining industry employers are only paying 'lip-service' to the ongoing provision of employee OHS training. As many respondents said, 'You don't get any further OHS specific training on the job after your site induction is over'. The consensus was that the only ongoing training

being delivered was related to changes in work systems or technological change and, although these may have OHS components, the training was not specifically OHS-related. The only course of this nature attended by respondents was their biennial MARCSTA refresher course.

## RECOMMENDATIONS

The major recommendations derived from this research are listed below.

- The design of any refresher course needs to be tailored to meet the needs of each individual group of workers after a trainee has attended more than three such courses. The content of the program needs to be developed in conjunction with all in the training group but primarily the trainees themselves.
- Constant auditing, vigilance and management by the controlling body over the information being delivered by facilitators during training is crucial to ensure that the original intent of each program is not lost.
- As the numbers of facilitators authorised to deliver a particular course grows, so will the need for the originating organisation to maintain strict quality control over the information that must be covered by trainers during the delivery of the course.
- Where the opportunity exists, ideally both 'white' and 'blue' collar employees should attend these generic industry-based OHS training courses so that everyone is known to be at an accepted knowledge level regarding OHS for a particular industry. The knowledge should not be localised to an industry section.
- The use of a 'closed-market' industry passport system as opposed to the 'open-market' type is to be encouraged as the preferred option. The use of this style of system should ensure the course content

is kept relevant to the industry for which it was developed, and not become a general course for several different industries as evidenced by some courses worldwide.

## CONCLUSION

This unique national research study into an industry-based 'closed-market' generic OHS training passport system operated by MARCSTA clearly indicates that, from the workers' point of view, it has a crucial role to play. These types of training programs are designed to provide the potential employer with an assurance that new employees entering their industry who have completed the course have attained a recognised minimum acceptable basic level of knowledge relating to generic OHS hazards and risks commonly found throughout that industry.

With the Australian Safety and Compensation Council (ASCC) already concentrating on OHS induction passport systems in the national construction industry, it would be rash to think that the Council will not eventually look at introducing these national OHS passport induction training systems to other industries — including the other sectors in mining.

The findings of the research presented here should assist future development efforts along those lines from being misdirected, and could even facilitate the early successful introduction of similar industry-based programs for other industries.

Talk from metalliferous mining industry participants that the program may have 'run its course' is simply generated from those who fail to see the value of the MARCSTA course to their present and potential employees, which is unfortunate as the workers surveyed here support the program's continuation.

### References —

- Berdie, R.D., and Anderson, J.F., 1974. Questionnaires — Design and Use. The Scarecrow Press, Metuchen, 225 pp.
- Buckley-Carr, 2005. Time waster. Kalgoorlie Miner, 3 May 2005, p. 1



# Training provider profile *Donelle Fraser*



Donelle Fraser is the MARCSTA facilitator and OHS advisor for Strudwick H.R. Kalgoorlie. She gained the position following a move to Western Australia with her husband from Alice Springs.

Donelle is more commonly known as “C.T.,” a nickname she gained from her crew at Groundrush, Tanami, Northern Territory, as she was constantly saying ‘copy that’ either on the two-way or during meetings.

C.T. has had a diverse working career having worked in the banking industry from the age of 16 for 6 and a half years as an administrator of a redundancy fund for the building and construction industry, 12 years in the mining industry, and security shift manager for 3 years, before taking up her current position with Strudwick H.R.

She has completed and attended numerous courses, some of which are the Certificate IV

Assessor and Workplace Trainer, and Certificate IV in Occupational Health and Safety and she was an industrial paramedic whilst working at Groundrush.

C.T. is enjoying the MARCSTA Induction sessions and to date has had approximately 600 people attend since she became a MARCSTA training provider at the end of February. She has seen many changes in the mining industry and finds great satisfaction in having experienced people from the mining industry sharing their knowledge with the new starters. She believes her easy going nature is an asset in providing the training. We all benefit and learn from what we take away at the end of the day, she says.

## New training simulator at RMS

FMG have housed their new simulator at the RMS training facility in Joondalup. The picture shows the simulator set up for haulpak driving. It can also be set up for dozer or excavator operation. The front screen on which the forward view from the cab is projected can be seen. There is also a rear screen in operation when the dozer is in use, so that the ripper can be watched.

The driver’s seat is on a platform set on very responsive moveable supports, and without the seatbelt, going over the berm could throw the driver out of the simulator, trainer Brian Cloney explained.

Apart from its direct training function, the simulator can also be used for challenge tests of drivers claiming to have relevant experience.



## Smaller electronic devices pose risk from overuse

The American Society of Hand Therapists has issued an alert to raise awareness of the potential risks for people who combine prolonged grips with repetitive motion on small buttons and awkward wrist movements.

The Society recommends taking measures to prevent carpal tunnel syndrome, tendonitis and other hand, wrist or arm ailments.

A list of guidelines and exercises to help users of portable electronics to avoid these types of injury has been released.

Source: Health and Safety Report, Vol 6, Issue 2.

## Over exposure to diesel fumes can affect the brain

Dutch researchers claim that inhaling diesel exhaust can trigger a stress response in the brain that may have long term effects on brain function.

While previous studies have found very small particles of soot (nanoparticles) can travel from the nose and lodge in the brain, this is the first time researchers have demonstrated a change in brain activity.

Source: Occupational Hazards, March 2008

## Safety concerns shut down WA oil rig

Australia's National Offshore Petroleum Safety Authority (NOPSA) has issued a prohibition notice preventing petroleum operator Australian FPSO Management (AFM) from using the process plant on its offshore facility near Barrow Island, WA, until safety issues are resolved.

The issuing of the prohibition notice follows a recent inspection by NOPSA OHS inspectors of AFM's offshore facility, Four Vanguard, which is a floating production, storage and offtake vessel (FPSO).

Four Vanguard's process plant is a pressurised system for separating oil, water and gas from production wells.

NOPSA is concerned that a number of critical safety systems related to shutdown and emergency depressurisation within the process plant are not currently able to meet the necessary standards. The inspectors believe this is an immediate threat to the safety of the offshore workforce.

"Operators of offshore facilities must be able to demonstrate that their critical safety systems are going to work reliably to agreed and binding standards" said acting CEO of NOPSA, Ted Kirkbride.

Source: safety solutions, May 2008

## Training package for new fatigue laws supported by Ministers

The Australian Transport Council (ATC) has unanimously endorsed a training package to support heavy vehicle driver fatigue accreditation.

New South Wales, Victoria, Queensland and South Australia are working toward implementing the national Heavy Vehicle Driver Fatigue reform on 29 September 2008.

Drivers and schedulers working under the new Basic Fatigue Management (BFM) or Advanced Fatigue Management (AFM) schemes must now demonstrate that they are competent at managing fatigue risks. Drivers working under Standard Hours will not be impacted.

"It's basically a step-up from the existing Transitional Fatigue Management Scheme (TFMS) training requirements", said National Transport Commission (NTC) Chief Executive Nick Dimopoulos.

Drivers currently accredited in the TFMS scheme can operate under BFM hours until 30 April 2009.

Source: <http://www.ntc.gov.au>

## New publications

Hardcopy:

Anca, JM Jr. Multimodal Safety Management and Human Factors. Aldershot UK, Ashgate Publishing. [www.ashgate.com](http://www.ashgate.com)

Caputo, SJ. The Death of Spring. Philadelphia., Xlibris. (the story of US mining camps in the early twentieth century).

Jaynes, J. Managing Health and Safety. Oxford, Butterworth-Heinemann. (keyed to UK safety practitioner qualifications).

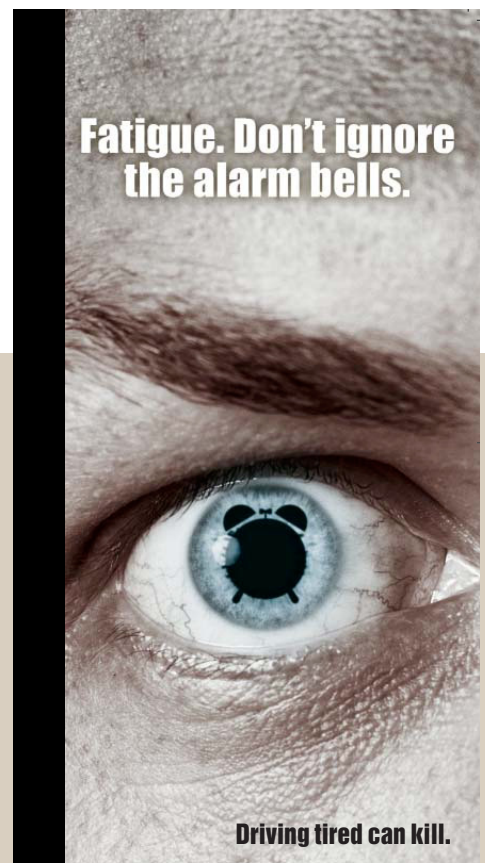
Tomlinsong. PD. Mine Maintenance Management Reader. Colorado, SME. Email: [cs@smenet.org](mailto:cs@smenet.org).

Electronic:

UK HSE: [www.hse.gov.uk/research/rrhtm/rr581.htm](http://www.hse.gov.uk/research/rrhtm/rr581.htm) (research on safety and health representative effectiveness)

[www.hse.gov.uk/construction/tripsandfalls/realexamples.htm](http://www.hse.gov.uk/construction/tripsandfalls/realexamples.htm) (speaks for itself)

Preventing Falls in Scaffolding and Falsework. (DVD). Email: [enquiries@nasc.org.au](mailto:enquiries@nasc.org.au).





Issue 2/2008

# Worker Health and Well Being

## Sleep in America Poll 2008

Sleep in America Poll 2008 shows that sleep problems continue to be prevalent for Americans.

- 29% fall asleep or become very sleepy at work.
- 20% have lost interest in sex because they are too sleepy.
- 36% of drivers say they have nodded off or fallen asleep while driving in the past year.
- 32% say they only get a good night's sleep a few nights a month.

Source: Sleep in America

## Miners drunk with fatigue

Miners working more than eight consecutive 12 hour day-shifts were fatigued beyond the impairment expected from a blood alcohol concentration of 0.05% according to researchers at James Cook University.

Similarly dangerous levels of fatigue were also observed at the end of the first 3 night shifts in the most comprehensive study on occupational fatigue ever conducted in the minerals industry.

Associate Professor Reinhold Muller and his team, reporting their results in the *Annals of Occupational Hygiene*, followed 55 miners at a fly-in/fly-out mine site through the 10 day and 8 night shifts of their 28 day roster, collecting extensive data regarding a wide variety of risks, causes and effects of fatigue.

"The main causes of fatigue were a roster of more than eight consecutive shifts, and a disturbed daily rhythm when changing over to night shifts." Associate Professor Muller said.

He said that while fatigue is recognised as an important issue in the minerals industry, very little sound research has been conducted.

The results of the study have been used to develop specific strategies to prevent fatigue, including reducing the length of the roster to eight consecutive day shifts, and increasing lighting in the workplace and scheduled power nap breaks for workers to overcome fatigue during night shift.

Source: James Cook University

## Why not substitute tea for coffee on the night shift?

Caffeine consumption is higher on the night shift than during the day or evening shift and substituting tea, which offers the same alertness effects also has additional health benefits:

- lower rates of cancer of the stomach, mouth, skin and lungs
- lower risk of heart attacks and strokes
- improved dental hygiene when drinking green tea.

Source: Working Nights, March 2008

## Shift workers overweight and unhealthy

According to a review by University of Queensland researchers shift work takes a serious toll on health with workers fatter, likely to have unhealthy eating habits and more likely to be smokers.

The researchers, led by Professor Catherine Turner, reviewed 17 studies from overseas and found shift workers had increased odds of being obese with low levels of "good" cholesterol and higher levels of "bad" cholesterol.

Failure to exercise was an additional concern.

The researchers noted the large proportion of shift workers in the labour force and the need to address their health and well being.

Source: AAP, March 2008

## Breakfast after a night shift

Breakfast following a night shift is important to the amount and quality of sleep for the worker.

It is best to eat something light and easily digestible such as a bagel, toast or a small bowl of grain cereal.

This will assist sleep and help to avoid putting on weight when sleeping.

Foods to avoid include red meat (which is hard to digest) and anything greasy (which causes indigestion). Also, stay away from alcohol because it will reduce sleep quality.

Source: Working Nights, April 2008

## Is shift work linked to organ disease?

University of Toronto researchers claim that disruption of an individual's natural sleep-wake cycle can be a contributing factor in the development of organ disease.

The research carried out on hamsters found that coordination of many circadian clocks throughout the body is critical for normal healthy organs and that long term disruption of circadian rhythms can ultimately result in heart and kidney disease.

Researchers said that they knew that circadian rhythm disruption had been linked to reduced longevity, so they decided to try and find out where, why and how longevity is compromised.

Source: ohsonline, April 2008



## Seven key issues for Queensland mining companies

As noted elsewhere in this issue there was a disappointing 12 months for safety in Queensland mines. As a result the inspectorate audited five coal and five metalliferous mines and identified seven common issues. The audits included management of contractors, fatigue, gas, ventilation, strata, maintenance and emergencies. These ten companies all had comprehensive safety and health management systems. All mining companies in Queensland have been asked by the Minister for Mines and Energy how they intend to address these issues. We thought it would be useful for companies in other states and territories to look at the same issues. Here is part of the Minister's letter showing the issues:

1. A 'disconnect' between formal risk assessments done by management teams and feeding this into job safety analyses done by individual teams;  
At some larger sites, there are formal risk assessments undertaken in isolation from the work teams undertaking the work. This has resulted in reliance on administrative procedures, including having work teams undertake a job safety analysis, as a method of 'controlling' the risk to an acceptable level. Unfortunately, the system does not seem to follow the basic principles of the [Queensland] Mining and Quarrying Safety and Health Act 1999 s27(3) and the Coal Mining Safety and Health Act 1999 s30(2), which require all of the following for effective management of hazards:
  - a) identify, analyse, and assess risk;
  - b) avoid or remove unacceptable risk;
  - c) monitor levels of risk and the adverse consequences of retained residual risk;
  - d) investigate and analyse the causes of serious accidents and high potential incidents with a view to preventing their recurrence;
  - e) review the effectiveness of risk control measures, and take appropriate corrective and preventative action; and
  - f) mitigate the potential adverse effects arising from retained residual risk.
2. Risk assessments do not reflect best practice and rely on subjective risk rankings.  
The risk assessment format used does not consider readily available information identifying risk and appropriate controls. This information includes safety alerts, operation and maintenance manuals, industry guidelines and handbooks, to name a few.  
In order to effectively manage risk, the quality of the risk assessment must reflect the current knowledge and understanding of the nature of the hazard. Instead of learning from innovation awards, high potential incidents, industry guidance and information and workers knowledge gained from other sites, many risk assessments appear fairly static, and do not change until an incident occurs on site.
3. Quality of incident investigations, intent of the legislation and addressing human error. Incident investigations are not uniformly comprehensive enough, do not always address organisational failures or human error issues and many recommendations were 'lost' in the system until the next incident happened.  
The aim of any incident investigation is to "prevent recurrence". Furthermore, the role of incident investigation is considered an important part of effective risk management.

A review of High Potential incidents and Lost Time injuries, uncovered a number of issues with the quality of incident/accident investigations. In some cases the findings of the investigation were 'more training' or low level controls. In others, the incident investigation determined that higher order risk control measures should be implemented to prevent recurrence, but this was not followed through. This allows for maintaining the status quo, and not moving forward to effectively manage any new hazards that may be introduced.

Most equipment and systems are mechanically safe if effectively maintained, operated within design limits or the constraints of the original equipment manufacturer's specifications. Many accidents can be attributed to human error and there is a need to identify where human error is a factor as part of the investigation process and then develop effective intervention strategies.

4. Understanding of Safety Management Systems – Some systems are too complex, difficult to manage and maintain, and are not well understood by the workforce.  
Each mine has in place a safety management system as required by legislation. Some mines' systems, however, are extremely complex and can lead to a level of misunderstanding of process. Nearly all of the mines audited had exhibited difficulty in organising training for their employees in the application of their safety management system.
5. Contractor Management – There are still problems relating to the management of contractors which in some cases results in the contractor's safety behaviour being at a different standard from that of the mine.  
Many of the mines audited displayed difficulty in implementing the processes required to have as much control on the activities of their contractors as they have with their full time work force. Deficiencies in contract management were identified in areas of process control, document control and systems training. All of the mines did however display a robust induction process for contractors. Recent directives to all mines in the area of contract supervision should go some way towards addressing the areas mentioned where improvement is required.
6. Emergency Management – While emergency management is generally good there is not enough emphasis placed on simulated emergency exercises which have been shown to be the best indicator of the status of a mine emergency response system.  
All of the coal mines audited did display the ability to manage through their processes the possibility of an emergency situation developing. Formation of trigger action response plans and emergency preparedness plans have gone a long way towards standardising the manner in which site emergencies are managed. In most cases, however, there would appear to be a deficiency in the amount of time allocated to practising for emergency situations through simulated exercises.
7. Document Control – Documents need to be more stringently controlled.  
All of the mines audited displayed varying degrees of ability to manage document control. Some mines' systems were complicated by amalgamations and changes of owners causing a certain degree of confusion and in some cases corporate memory loss. Security of document control was also highlighted as an issue at some mines with unfettered access to document control systems.

(reproduced courtesy Roger Billingham, Chief Inspector Metalliferous).

## Associate Member Profile - Strudwick HR

Strudwick Human Resources, is a Kalgoorlie-Boulder based recruitment company working directly with the pulse of the Goldfields Region.

Next year it celebrates 20 years of providing employment services to its clients and candidates and has become a force for providing jobs in mining for local residents and newcomers looking for good employment prospects and strong financial benefits.

Initially established as a recruitment organisation to provide office and secretarial staff to the commercial business, government department and mining sectors, Strudwick HR has grown into the largest locally owned and operated human resources organisation and quickly branched into mining, trades, technical, professional and senior appointments. In addition it provides training services, mine site safety auditing, human resource consulting and confidential typing services.

Strudwick HR operates its training and human resources services from modern and professional offices in Hannan Street Kalgoorlie in addition to providing recruitment

and placement services from its city operations, Lefroy Employment Group, based in East Perth.

With a growing workforce to manage, Strudwick identified that it was absolutely essential to provide a professional and well structured induction package to promote safety awareness and ultimately target zero lost time injuries.

Strudwick Human Resources forged a strong relationship with MARCSTA in 1998, and established a fully dedicated training centre to facilitate the course for not only its own personnel but for the wider community of mining companies and job seekers. It is proud to be an Associate Member of MARCSTA.

The statistics show that Strudwick HR has trained in excess of 10,000 MARCSTA card holders. This popular course provides a foundation on which to build safety as the standard in the modern mining industry. That is a far cry from the days of giving it your best shot and taking your chances.

Below: Julian Strudwick and some of the team of Strudwick HR planning future training courses and recruitment strategies.



## MARCSTA licensed training providers

Mark Adam  
Jayson Aveling  
Graham Bailey  
Ron Baker  
Carl Berglin  
Wayne Berkrey  
Danny Bogнар  
Stacey Clark  
Scott Clarke  
Brian Cloney  
Dale Cocker (U) (S)

Jim Dandie  
Geoff Day  
Peter Dowding  
Joe Duyvestyn  
Linda Elezovich  
Donelle Fraser  
Ross Graham  
Ray Hargreaves  
Sheryl Henley (C)  
Jeffrey Hickin  
Peter Jones

Ralph Keegan (S)  
Rob Lewis  
Joe Maglizza  
Les McIntyre  
Neil McMeekin  
Guy Mead  
Katherine Montague  
Rodney Pool  
John Preston  
Merryn Richards  
Jason Roberts

Victor Roberts  
Shane Salt  
Grant Shearwin  
Marcus Taylor  
James Titmus  
Peter Tynan  
Ron Van Baaren (C)  
Micheal White  
Graham Williams  
Paul Willoughby

All training providers listed provide general inductions.  
C denotes the Construction Safety Awareness program  
U denotes the underground program.  
S denotes the extended working hours program.



# news and views

NATIONAL AND INTERNATIONAL SAFETY,  
ENVIRONMENT AND EQUIPMENT INFORMATION  
FOR THE MINING INDUSTRY

Queensland Government Mining Journal for Autumn 2008 describes the world's first integrated coal-based gasification plant with carbon capture and storage (CCS). It will be operating by 2011 to deliver baseload power and hydrogen. The journal also notes the new (Queensland) heavy industry generic induction course, and how no safety awards were made to mines in 2007 because all statistical indicators deteriorated in 2006-7. Unannounced audits of ten mines identified five common themes and mines were asked to report back on how these would be addressed (see page 9). D. Cliff and T. Horberry write on driver fatigue (two out of three recent fatalities in central Queensland were miners). Six areas of applied safety research by SIMTARS are also described.

Mining Magazine for April 2008 has four pages on Minora's resin-grouted rockbolting, three pages on articulated dump trucks, four pages on the Caterpillar track dozer and motor grader, with best practice advice, Paul Moore has a six page review of heap leaching, and he also reviews raise boring, comparing it with alternative methods.

Mining Engineering for January 2008 notes the OneMine.org collaborative digital library of mining and mineral technical publications and how Peabody Energy are involved in a near zero emission coal-fired power plant with CCS in Tianjin. Moore Bauer and Steiner review the prevalence and cost of cumulative injuries over two decades of technological advances in US underground coal mining, Ascgo safeguards for conveyor rollers are described, as are Cummins new advanced sound attenuators for gensets.

In Australian Mining for April 2008 Jamie Wade's editorial covers some Chamber of Mines and Energy Safety and Health Innovation Awards, which include HWE's safe way of removing a worn down saver sub during drill rod attachment or removal (the 15kg slap spanners have been junked), Alcoa's hydraulic steering filter housing for haul trucks to reduce hand injuries (slipping pipe wrenches replaced by a hex spanner) and lifting jig and Dampier Bunbury Pipeline/Westnet Energy's vehicle safety and speed monitoring system to monitor driver behaviour on unsealed roads. Jessica Darnbrough writes on staff for mining contractors, Jim Ward on Sandvik top hammer drills, and Turck safety monitors to control power availability in emergency stop machine safety systems are also noted. There is a call for entries for the 5th Annual Australian Mining Prospect Awards which include best metalliferous mine, best contract miner and excellence in OHS.

Occupational Safety and Health Journal (RoSPA UK) for April 2008 mentions the UK Corporate Manslaughter and Corporate Homicide Act 2007, fatalities from traffic barriers with poor or no warnings or signs, House of Lords attribution of a subsequent suicide of a worker disfigured and brain-damaged at work to the company, five pages by Nick Cooke on trade union influence on health and safety improvements, Fortress Interlocks' gate access key which cannot be removed while the machine is in motion and checks any potential electrical energy even if the machine has been switched off, and Roger Bibbings on consistency and cohesion in HSE guidance ( a similar review could be useful in Australia).



## *Who's who?*

### **Chairman**

Ross Graham, Terex Materials Processing and Mining

### **Deputy Chairman**

Joe Maglizza, Cemex Australia PL

### **Director Safety and Health**

Patrick Gilroy AM

### **Training Manager**

Sheryl Henley

### **Committee of Management**

Warren Claydon

Allaine Coleman

Terry Condipodero

Peter Nicholls

Gary Round

Kim Stewart

### **MARCSTA Monitor Editor**

Geoff Taylor

## Around the world

### Depression going untreated

The American College of Occupational and Environmental Medicine reports that depression now affects more than six percent of the working population with the rate much higher when bipolar disorder and other forms of depression are included.

Unfortunately only half of the sufferers receive any form of treatment and less than half of these receive care consistent with current treatment guidelines.

Source: [ohsonline](http://ohsonline) 14 April 2008

### TB an age-old disease still a threat

Tuberculosis continues to be a major international concern says the World Health Organization with 9.2 million new cases and 1.7 million deaths occurring in 2006.

It is a particular occupational health concern for workers in health-care facilities and correctional institutions where there is an increased work-related risk of exposure to the TB bacteria.

One important factor is the continued growth of multi-drug-resistant TB which poses ongoing challenges for diagnosis and treatment.

Source: NIOSH Science

### South Africa bans asbestos

South Africa has announced a prohibition on the use, processing or manufacturing, of any asbestos or asbestos containing products in a major victory for the global campaign against asbestos.

South Africa was a major supplier of asbestos to the world, producing 97% of the world's crocidolite and 100% of the amosite. It was the fifth largest producer of chrysotile. In regions where asbestos was mined there have been significant public health problems due to asbestos pollution leading to a national strategy to halt production of the product.

Canada and Zimbabwe remain significant producers of asbestos. There is international pressure on both industry and governments in these countries to ban asbestos.

Source: [ohs.reps](http://ohs.reps) safety net journal, 136

### Worldwide social networking site

There is a new social networking site for those with an interest in OHS. See [www.enhancingsafety.ning.com](http://www.enhancingsafety.ning.com)



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