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# MARCSTA Monitor

Official Publication of the Mining and Resource Contractors Safety Training Association

## Message from the CEO



Pat Gilroy

As stated in previous editions the commitment to quality both in the training courses offered and in their delivery continue to be the pre-occupation of the Management Committee of MARCSTA.

In the past months the annual review of the General Safety Induction has taken place with a view to launching the 2001 Manual in January 2001.

Suggestions for improvement provided by inductees during the year, the input of providers and members, and the views of the regulatory authority have all been included in the review.

This will be followed immediately by review of the refresher program and then the underground induction, which is gradually gaining support.

In February 2001 MARCSTA expects to launch a much needed one-day, competency based program on Managing a Shiftwork Lifestyle developed to comprehensively address the safety and health concerns associated with working long hours and compressed work schedules.

The program has been designed and developed by Circadian Technologies, Inc to fill a glaring void in the areas of shift scheduling, sleep hygiene, circadian physiology, fatigue management, substance abuse, nutrition and stress management for example. The purpose is to educate shiftworkers on how to self manage the physical and mental stress of shiftwork and will go a long way to meeting duty of care obligations for both employees and employers.

A further initiative being considered is a program to demystify the risk management process and equip all levels of the workforce with better skills for identifying and managing the everyday workplace risks to safety. Traditional approaches to risk management have been too complex with poor transfer of learning in the workplace.

All existing and future training initiatives will continue to provide the lowest cost quality programs available to industry today.

MARCSTA members will enjoy cost reductions for all newly developed programs.

## MARCSTA at Minesafe 2000

The fifth Minesafe International Conference in Perth in September was as usual a credit to the organising committee. The mine rescue competition held over two days in the grounds of Burswood, a line up of leading edge speakers, the after dinner presentation by Dr Karl Kruszelnicki, the hypothetical mine emergency at "Connaught north of Goolkarlie" devised by Martin Knee from DME, the international research workshop and a well-attended trade show all made the event a must for those interested in mine safety and health. Yet the event was tinged with sadness at recent events at Big Bell and Sons of Gwalia.

MARCSTA was on hand at the trade show, as was one of our providers TRACMIN.

MARCSTA training attracted particular interest from inspectors Pomat Manuai and Firoz Patwa from Papua New Guinea and Zakariah Letshuti from South Africa. Pomat, from PNG's Department of Mining, attended a MARCSTA induction at TRACMIN to gain a first-hand impression.

Right:

Pomat Manuai, PNG Dept. of Mines, and Rennie Sterle (TRACMIN) at Minesafe International.



Right:

Vic Roberts at MARCSTA's Minesafe booth.



Right:

Elaine Cullen from US NIOSH and Ben Sheppard from ISMSP at the MARCSTA booth.



MARCSTA wishes all readers the compliments of the season

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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 Monitor circulates widely throughout the mining industry and contractors to mining companies in Australia

# NEW BOARD AT THE HELM

Terry Condipodero from JR Engineering Services was elected new chairperson of MARCSTA at the Annual General Meeting on 18th August. The new vice chairperson is Joe Maglizza from CSR Readymix.

The new committee is made up of Ross Graham from NS Komatsu, Warren Claydon from Skilled Engineering, Des Shaw from BGC Contracting and John Lemon from Total Corrosion Control.

Guests at the meeting included Jan Mussett from Edith Cowan University, Brian Bradley WorkSafe WA Commissioner, Jim Torlach State Mining Engineer and Kim Sweet, now a private consultant, who assisted with the original course development.

Stepping down as chairperson, Greg Harris outlined some of the highlights of MARCSTA's five years to date. He noted the continuing level of safety induction training MARCSTA provides. He also noted how MARCSTA has established its viability in an industry employing 35,000 people. A recent step forward has been the acceptance of the course on major southwest sites and the Kwinana strip.

In a short address the State Mining Engineer, Jim Torlach emphasised that competing contracting companies had successfully worked together to overcome "induction fatigue" with a common course. He said he was particularly glad about the common underground course.

In his Education Committee report, Joe Maglizza highlighted the production of the new format Induction Manual and accompanying Facilitators' Guide this year.

Financially MARCSTA as a non-profit organisation is in good shape in spite of significant legal costs to defend its quality reputation.

MARCSTA is set to take on new challenges with confidence in the coming year.



Vice Chairperson, Joe Maglizza (left) and Chairperson Terry Condipodero (right) at the AGM



Annual General Meeting: In the foreground, WorkSafe WA Commissioner Brian Bradley and John Lemon, TCC.

## MARCSTA link through TRACMIN with Burrna Yurral Aboriginal Contractors

Quintin Tucker runs BYAC which provides environmental services at Murrin Murrin, Hampton, Orelights, and Pacmin. The services include water, skip trucks, waste management, and remediation planting. All the staff are Aboriginal and all hold MARCSTA certification.



## MARCSTA accepted in Chile

Roberts Safety Training Consultancy recently put Bob Fahey through a MARCSTA induction. Bob is a former drilling superintendent now with his own consultancy, which recently took him to the Escondida mine in Chile to carry out a joint audit with Dupont. However there was a problem. Bob had to have a US MSHA induction certificate. Bob showed his MARCSTA certification and MARCSTA Induction Manual and this was accepted in Chile in place of the US requirement.



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# 60,000th INDUCTION!

*Pictured is Tygh Deans, an employee on Total Corrosion Control's contract at Alcoa, Kwinana. Tygh's induction was conducted in August by his own company.*



## RENEWAL OF MARCSTA COMPETENCY

All MARCSTA certificates issued in 2000 have clearly indicated that renewal of competency must be carried out within thirty (30) days of the expiry date shown on the laminated certificate.

So from 1 January 2001 all holders of MARCSTA certificates are urged to renew their certification within thirty (30) days of the expiry date. Early renewal, that is, re-certification prior to the expiry date, does not alter the two-year period for holders as all renewals are an automatic two-year extension of the original certification.

As in the past, limited flexibility will be allowed.

MARCSTA is concerned at the loss of knowledge being demonstrated by candidates for re-certification. The evidence is overwhelming that, unless the knowledge gained at a MARCSTA induction is used on a regular basis, it is easily lost with significant risk for the employee and other employees.

Those employers with responsibility for safety who do not ensure that employees hold current MARCSTA certification put themselves at risk of not carrying out their duty of care obligations.

MARCSTA will, in 2001, initiate an optional fast-track recognition of current competency to facilitate re-certification of competent persons. All the evidence to date suggests that unless candidates do their homework, that pathway to re-certification may be steep.

## MARCSTA REGISTERED PROVIDERS

Tony Aveling	Aveling and Associates	Malcolm McFarland	IFAP
Reuben Barber	Macmahon Contractors	Nick McIntyre (U)	Aveling and Associates
Tom Bateman	TRACMIN	Jeff Mathews	Safety Paradigms (Aust) Pty Ltd
Carl Berglin	CJB Consultants	Greg North	Mobile Skills Training
Peter Chinnery	Baseline New Era	Darren Ridley	TRACMIN
Dale Cocker (U)	Burnie TAFE	Victor Roberts	Roberts Safety Training Consultancy
David Collins	D&S Safety Training	Gary Sharpe	Baseline New Era
Geoff Day	Mandurah Safety and Training Service	Brian Smith (U)	OSHTRAM
Peter Dowding (U)	JR Engineering Services Pty Ltd	Peer Stareczek	Normandy Bronzewing Operations
Joe Duyvestyn	TRACMIN	Rennie Sterle	Kelport Pty Ltd
Helen Fleming	Strudwick HR	Wayne Sullivan	IFAP
Linda Forsyth	Westrac Equipment	Stephen Taylor	Stephen G. Taylor Consultancy
Ashley Gilbert	Ausdrill Ltd	Peter Tynan (U)	Tassmia Safety Training Services
Ross Graham	NS Komatsu	Dave Watkins	Safety Skills Training
Ray Hargreaves	Aveling and Associates	Chris Wilson	Aveling and Associates
John Joyce	Hampton Transport		
Joe Knight-Smith	ITN Central West TAFE		
John Lemon	Total Corrosion Control		
Guy Le Noir	Switched Onto Safety		
Bert Lundie	Baseline New Era		
Joe Maglizza	CSR Readymix		
Sharyn McCulloch	NOSA Ltd Queensland		

U denotes underground trainer as well. This list is current at the time of going to press but for further information contact Anna Verteramo at the Secretariat on Phone 08-9355 1400 or Fax 08-9355 1499.



## Who's who?

### CHIEF EXECUTIVE OFFICER

Pat Gilroy

### CHAIRPERSON

Terry Condipodero  
JR Engineering

### VICE CHAIRPERSON

Joe Maglizza  
CSR Readymix

### SECTORAL LIAISON

Terry Condipodero  
*General Fabrication &  
General Contracting*

John Lemon  
*Southwest, Harbours &  
Kwinana Strip*

Warren Claydon  
*Labour Hire*

Des Shaw  
*Earthmoving & Civil*

### GENERAL & UNDERGROUND MANUAL AND FACILITATORS' GUIDE REVIEW, PROVIDER REGISTRATION PANEL CHAIR

Joe Maglizza

### CRITERIA & RECOMMENDATIONS FOR REGISTRATION

Ross Graham

### ACCREDITATION

Irene Ioannakis

### MARCSTA MONITOR EDITOR

Geoff Taylor

# Editorial

As Bill Sirois of Circadian Technologies reminded us at Minesafe 2000, many mining and other businesses run 24 hours per day 7 days per week. While this has business advantages, there may be significant hidden costs and downsides. In the transport sector, and this certainly impacts on parts of the mining industry, fatigue has just been the subject of report by the House of Representatives. (See *New publications* page 7).

The House identified the core of the problem as "lack of restorative sleep".

So without attention to company management and lifestyle issues, shiftwork and extended shifts will lead to excessive fatigue. Fatigue has been shown to impair employee performance in the same way as if the employee had a blood alcohol level over the limit. Fatigue is a recipe for error and so increased operating risk.

The attitude of employees to a company can suffer if the demands of work impact strongly on social or family life. A lot of time can be wasted if less than optimal work schedules, overtime and shiftwork practices lead to reduced quality or productivity, injuries, time in court or in workers compensation reviews.

Fatigue has long been recognised as a major social and occupational health and safety issue. (See *News and views* page 8 for a historic accident involving fatigue).

Additionally though, there are clear statistics which show a much greater risk of a vehicle accident in those drivers heading home after work, so it is not just an occupational health and safety issue, but also a public safety issue.

However fatigue and its effects, can be managed. Recent knowledge and some new techniques can be applied to greatly reduce the effects of stress and fatigue in mining and other industries.

In the coming year MARCSTA plans to be at the forefront of initiatives to better manage fatigue in the mining and resource industries.



Geoff Taylor

## MARCSTA Members

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Ausdrill Ltd  
Australian Raised Drilling  
Barmingo Mining Contractors  
BGC Contracting  
Brambles Ltd  
Brandrill Ltd  
Charles Hull Contracting  
Cook's Construction Ltd  
CSR Readymix  
JR Engineering Services Pty Ltd  
Macmahon Contractors  
Monadelphous Group Ltd  
NS Komatsu  
Roche Bros

### Skilled Engineering

Thiess Contractors  
Total Corrosion Control  
Westrac

### ASSOCIATE MEMBERS

Driver Training and Education  
Centre

This list is current at the time of going to press but for further information contact the Secretariat on 08-9355 1400 or Fax 08-9355 1499



## **Brandrill Ltd**

Brandrill Ltd is made up of two operating divisions - Brandrill Contracting and Rockbreaking Solutions. Development and commercialisation of the in-hole penetrating cone fracture (PCF) rock-breaking cartridge, especially at Impala and AngloGold in South Africa, has been the highlight of the past year.

PCF is a non-explosive, very efficient aid to continuous mining. It offers improved safety, increased head grade and much greater productivity. Mine design, ventilation, safety, shift cycles and renewed economic viability are part of PCF's potential.

PCF breaks hard rock and concrete by burning propellant to generate gas in the bottom of a short drill hole. The pulse of gas expands microfractures in the rock at the base of the hole, so developing a cone pattern which dislodges fractured rock from the face.

In the civil excavation market, PCF "keyhole surgery" is ideal in sensitive locations. It was used to reduce wall height and install rock anchors at WA's Canning Dam, a key Perth water supply. PCF is rated UN Class 1.4 (suitable for carriage on commercial flights).

Brandrill Contracting has surface drill and blast contracts in four states, and an underground contract at Bronzewing. With Torrex as joint venturer it has South African operations with Impala and ASSMANG.

Rockbreaking Solutions offers two hang-up relief systems, Drawpoint Impactor and QuikDraw relief, and PCF RockStik for oversize breakage. The US market is served through its subsidiary, RockTeck USA. Rockbreaking Consulting Services provide state of the art advice on rock-breaking and mining technology. Impala Platinum's Maroelabult project is one such assignment.

PCF for Australia and Asia is manufactured in Baldivis, WA. In the USA and South Africa manufacture is outsourced.

Brandrill's believes the key to ongoing success is a relentless commitment to better and cheaper rock-breaking.



*Jeff Branson, Managing Director Brandrill Ltd (left) and Ed Tota, General Manager Rockbreaking Solutions (right)*

## **More from Minesafe**

### **Virtual reality**

Damien Schofield from the University of Nottingham has linked up here with Central TAFE and the DME to provide virtual reality simulation for mining which will run on an ordinary PC. Already in use for recreating road accident scenarios to use in UK courts, the system makes it easy to visually and audibly simulate the effects of errors.

The user can call up information on the people involved, on the equipment in use, and training software can be built in to assess the user's learning.

A mine truck simulator with virtual reality on screen used in Botswana was also explained by Dr Andrew Squelch from South Africa.

In another application, the CSIRO's Dr Cliff Mallett demonstrated the virtual mine, with four dimensional (4-D) visualisation. For instance various pieces of information about things which cannot be seen with the eye, such as geological faults, can be built in to the screen image of the mine. In addition seismic events at various locations in the mine strata occurring over a period of time can be shown on screen at once, hence the 4-D tag.

### **Downsizing, outsourcing, organisational restructuring and OHS**

Professor Michael Quinlan from the University of NSW identified ten key elements in contractor management which should interest both contractors and principals. It might seem obvious but he emphasised the need to look at the risk factors before developing the remedies for them. He also noted that it is no good asking contractors to adhere to the rules if you don't find out why they don't. From MARCSTA's viewpoint it is interesting that he reinforced the need for mandatory induction.

## **International Society of Mine Safety Professionals**

Readers were advised in the August *Monitor* of MARCSTA's intention to establish a chapter of the International Society of Mine Safety Professionals (ISMSP) in Australia.

Those who attended Minesafe International 2000 in September would have heard and perhaps met Idaho based Ben Sheppard, Executive Director of the organisation, who spoke about the activities of ISMSP in the United States and Canada, where it enjoys considerable status with both industry and government. The principal purpose of ISMSP is to promote the development of safety professionals throughout the international mining community.

MARCSTA has now received advice that the Society's Board of Directors have given the go-ahead to establish a chapter in Australia and this process will be formalised early in 2001.

Membership will be open to all individuals in good standing in the categories of Professional and Associate. Following the establishment of the Association in Australia a certification process will be drawn up as speedily as possible.

Readers can register their interest by contacting the MARCSTA office.

## **NEWLY LICENSED PROVIDERS**

Geoff Day, Mandurah Safety and Training Service

Stephen Taylor, Stephen G. Taylor Consultancy

# From the Desk of the State Mining Engineer...



Jim Torlach

## SELF REGULATION AND THE GENERAL DUTY OF CARE OBLIGATIONS

From time to time uncertainty has been expressed by persons in positions of management and supervisory responsibility in the industry over what does the regulatory authority (generally the inspector) expect of them under a regime moving to self regulation, with the very broad general duty of care obligations as the fundamental basis of the Act. In persons voicing these concerns, there appears to be an implied preference for the old prescriptive system, "where you knew what you had to do", because the regulations specified it.

Clarification of "self regulation" is evidently a first step. The term came into general use from the Robens Report (UK) Safety at Work upon which much of the current occupational safety and health legislation is now based.

It does not mean that no regulation is applied. In its simplest terms it refers to a state achieved by an enterprise, or an industry sector, in which the safety performance is sufficiently far above the regulatory standards and norms that little attention to that enterprise or group is needed from the regulatory authority and its inspectors.

The Act lays down the primary obligation in the form of open ended duty of care provisions, which apply to individual employees, including those who hold statutory or corporate management and supervisory positions, employers, and all other parties involved; (manufacturers, suppliers, designers, erectors, self employed persons etc).

Almost without exception, employers and principal employers, who carry the major load of the obligations will be companies (or bodies corporate) rather than a natural person.

Consequently the will and direction of the Company has to be given effect to by the appointment of persons to positions of management and supervisory responsibility. Persons in those positions (up to the CEO) therefore carry both their own personal duty of care and a broader responsibility on behalf of the corporation.

The Act provides, in Section 44, that that responsibility is defined, recorded and accepted by each person appointed to assist the Registered Manager in carrying out his or her duties.

Although the duty of care obligations (for all parties involved) are open ended, they are not in the form of a strict liability. The obligations for example to provide a safe place of work, safe system of work etc, are qualified by the term "as far as reasonably practicable".

This term is defined in the Act in such a way that it is effectively a requirement to carry out the hazard identification and risk management process.

This means that although risk management is not explicitly stated in the Act, it is the primary function which underpins the general duty of care.

Moreover, the obligation to carry out the risk management process is explicitly stated throughout the regulations, which support the Act as subordinate legislation.

The Mines Safety and Inspection Regulations provide a comprehensive framework of minimum obligations which also form an effective framework of guidance on safe working practice.

They are generally outcome or performance based, rather than highly prescriptive.

To provide further assistance in identifying hazards and assessing risks, and in managing those risks as required by the Act and Regulations, Guidelines and Codes of Practice are developed by the Department and endorsed by the Mines Occupational Safety

and Health Advisory Board (MOSHAB).

An enterprise which is operating in a self-regulating mode, will avail itself of all of the necessary knowledge and resource material from a wide range of sources to ensure that, coupled with the development of the necessary capacity and competence in its personnel, and with the correct motivation, it is able to meet or exceed its obligations under the legislation.

It is therefore not a question of "what does the inspector require of us?"

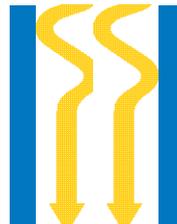
The role of the inspector is not to act as a *de facto* manager of safety on mines.

The question is rather, do I fully understand what the law requires of my mining company, and myself in meeting the legislated obligation to provide a safe and healthy workplace. This is the basis of what Robens had to say.

Safety in industry will be achieved by the efforts of the bodies (employers) which create the risks (by setting up an operation), and the people who work with them (managers, supervisors, and operators).

The inspector's role is to monitor, advise, inform, and direct and enforce the requirements where necessary. In brief it is to seek to ensure compliance by industry with the legislated requirements. This includes clearly demonstrating that the general duty of care is addressed through the integration of safety into all aspects of mine management.

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## **CARL BERGLIN - CJB CONSULTANTS**



Carl Berglin was Director of Mines in the Northern Territory from 1990-95, and has run his own business, CJB Consulting, now based in Wollongong NSW, since. For ten years prior to 1990 he was Planning and Development Manager Manganese for BHP, after a spell in BHP's Groote Eylandt subsidiary as manager.

Carl holds a bachelor's degree in metallurgy and an M.Sc in Mineral Process Design from the University of London.

He was President of the Northern Territory Chamber of Mines in the late 1970's, and has held a number of appointments in professional associations such as the Institute of Quarrying and AusIMM in the 1980's and '90s.

In addition to his role as a MARCSTA provider, he also provides extractive industries training through Box Hill and Illawarra TAFEs. Due diligence investigations, preparation of mine plans, proposals for small mine developments, tenement advice and government liaison also form part of his current practice.

Carl works in association with TRACMIN and was photographed at their booth at Minesafe International in Perth.

### **How Does the MARCSTA General Induction and its Training Providers Measure Up with Inductees?**

As part of the ongoing quality process a comprehensive analysis of inductees evaluation of the General Induction and its providers was carried out for the quarter ended September 2000.

From a provider point of view, "strongly agree" responses to a series of questions about their performance as a percentage of total responses averaged out at 73% with most providers clustered around that mean. Other than "strongly agree" responses were analysed to establish whether there were any aspects of the induction which could be improved on. Although there were no stand out problems it was evident that the level of interaction with inductees was important and the expected standard for educational aids and illustrations very high.

Overall the Management Committee was impressed with the positive feedback from inductees on the program and on the providers, which justifies MARCSTA's attainment of quality endorsement and of the standards set for licensing of providers.

### **UNDERGROUND LOCATION MONITORING**

The new Location and Monitoring for Personal Safety (LAMPS) project at CSIRO Exploration and Mining is now into its second year of development. Three types of components are under development: personal transponders, network beacons and control/monitoring. Personal transponders will be worn by staff and routinely transmit vital signs data together with a unique identification number, and will receive short messages such as emergency instructions. A network of stand-alone, wireless beacons will provide staff location information and bi-directional communication through to a control/monitoring facility.

A personal transponder reports vital signs data to nearby beacons. In emergencies, the control and monitoring subsystem serves to communicate escape route information for indication by the individual transponders.

Although the development of LAMPS is motivated by underground coal mine safety, it equally has personnel/equipment location monitoring applications in metal and open-cut mines. The transponders perform the same function as other active radio frequency identification systems. They communicate unique identification numbers to a communications network. The advantage of LAMPS is that the network is completely wireless, which particularly suits dynamic mine environments.

### **INCREASED PENALTIES FOR BREACH OF DUTY OF CARE PROPOSED IN VICTORIA AND QUEENSLAND**

Proposals for new workplace legislation in Victoria will, if passed, see significantly increased penalties (from \$250,000 to either \$600,000 or \$750,000 for corporations and from \$50,000 to \$120,000 or \$150,000 for individuals) and imprisonment for 12 months plus the introduction of the statutory offence of industrial manslaughter. Penalties for industrial manslaughter will carry maximum fines of \$5 million for death and \$2 million for negligently causing injury.

Similar provisions are being considered in Queensland.

A key objective of the proposals is to promote the ongoing education and training of employers and employees in workplace safety.

The penalties are considered to reflect community expectations of workplace safety and health.

# news and views...news and views...news

## FATIGUE AND SAFETY

From *The Bulletin* of 100 years ago: The master of a Port Jackson ferry had his certificate suspended after colliding with the collier *Brunner*. He had been working 17 hours when it occurred. In the NSW Parliament it was said that one ferry company worked its men 100 hours per week, another often 104 and never less than 65, and another 78. In Newcastle the weekly hours on ferries ranged from 81 to 110 hours, while on some steam tugs men sometimes worked 129 hours per week, with bus drivers, railway guards and signalmen not far behind.

## DR KARL AND MURPHY'S LAW

At Minesafe, Dr Karl Kruszelnicki, who brings science to the public, spoke about the original Dr. Murphy, who was

in charge of technical backup in the fifties during expensive US Air Force experiments into the effects of rapid deceleration on pilots. When zero results were obtained from monitoring leads, it was discovered the connecting plugs had two identical pins, which could be connected a right way and a wrong way. It was then that he enunciated Murphy's Law - if there are two ways of doing something, the one which leads to catastrophe will occur. Dr Karl showed that it even worked on Venus - a Russian Venera explorer craft landed, flicked off a lens cap as planned and the lens cap landed right where a probe was supposed to enter the planet's surface and send back data.

## New Publications

Henry Walker Eltin: *Ground Control Program*. Procedures, CD, Field Manual and Video.

House of Representatives. *Beyond the Midnight Oil. Managing Fatigue in Transport*.

MOSHAB: *Draft Guideline for Fatigue Management for the Western Australian Mining Industry*.

WestOne Video. *OHS Fundamentals*. 24 min.

WorkSafe WA: *Guidance Note. Alcohol and Other Drugs at the Workplace*.

## MARCSTA Monitor

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## Conferences

*TRAM (Training Resources Applied to Mining)  
(Minerals and Energy)*

Fremantle 27-30 May, 2001. Contact: Donna Biddick,  
phone 08 8379 0444, fax 08 8379 4634, Email education@amf.com.au

## MEMBERSHIP AND ASSOCIATE MEMBERSHIP

Are you a company with employees on mine or other sites which require a MARCSTA induction? Consider MARCSTA membership. Do you provide services on site to MARCSTA members? Consider associate membership of MARCSTA. For full details of fees and benefits contact Anna on 9355 1400.

## Advertising

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