

Queensland Mining Industry Health and Safety Conference



Principal Sponsor 2022



AngloAmerican



*“Together we Collaborate,
Innovate and Educate”*

Handbook

Handbook Proudly
Sponsored by
KOMATSU

THE STAR
GOLD COAST

**Sunday 21 August
to Wednesday 24
August 2022**

SPONSORSHIP

The Queensland Mining Industry Health and Safety Conference Committee wishes to sincerely thank those businesses and organisations listed below who have so far committed their financial support of the Conference through sponsoring and or exhibiting.

Principal Sponsor 2022



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Showa
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TUTIS VReddo
Waterjel Aust Pty Ltd

HEALTH HUB

CQ Rescue Health Services
Mates in Mining
My health for life
Quitline Queensland

GUEST DISPLAY

Queensland Mines Rescue Service
Heart of Australia - Corporate Health Initiative

Dear mine workers and those supporting our industry,

On behalf of the Queensland Mining Industry Health and Safety Conference Committee, it is my pleasure to welcome delegates, sponsors and exhibitors to our 2022 Conference.

The theme of this year's conference – Together we Collaborate, Innovate and Educate – is more than appropriate as we gather for the first time since 2019.

In the new normal created by the pandemic, it is important that we make the most of opportunities to collaborate and educate when events like QMIHSC are able to proceed.

While the pandemic has been at the forefront of every health and safety practitioner's thoughts since early 2020, we have been jolted by five fatal incidents since we last convened as well as the gas explosion on 6 May 2020 that left five coal mine workers seriously injured.

It is a reminder to us all that while we worked diligently to put in place measures enabling our industry to continue to operate through the pandemic, we should never lose sight of the fact that Health and Safety is a personal value, not something to be prioritised, when those priorities changing day to day. As an industry we have the clear vision of Zero Serious Harm, with the clear objective of ensuring we protect lives and livelihoods.

Our 2022 program aims to help maintain this focus.

The pandemic has also taught us to innovate. We are pleased to be able to share the Conference online with those unable to attend in person through our Virtual Conferencing facility.

All delegates can stay in touch via our pages on: **LinkedIn** <https://www.linkedin.com/company/qmihconference/>
Facebook <https://www.qmihconference.org.au/>
website www.qldminingsafety.org.au

No matter how you choose to join the Conference, we would like to thank you for your ongoing support. We also acknowledge Anglo American, who have continued in the Principal Sponsor's role across these challenging times.

I am confident that the program will continue to meet your expectations and help ensure that we remain focussed on improving all aspects of health and safety.

Our Keynote Presentations in the plenary sessions will provide some insight and inspiration, with the concurrent sessions offering multiple forums in which delegates will be able to learn and share.

We encourage you to join the networking functions each evening, take the time to visit the Exhibition Area during the conference breaks, and relax at The Rescue Station in the Cherry Bar. These offline discussions generate some of the most powerful reflections and learnings that people take away from the conference.

Please give some generous support to our nominated beneficiary, Heart of Australia, through our live and silent auctions.

It is wonderful to be able to welcome everyone to QMIHSC 2022.



Peter Newman

Chief Inspector of Coal Mines, Resources Safety and Health Queensland
Chair, Queensland Mining Industry Health and Safety Conference 2022

Conference Committee

The Conference continues to be organised by representatives from the three groups that represent the mining industry in Queensland, namely the Mining Companies, through the Queensland Resources Council, the Government (Resources Health and Safety Queensland, Simtars) and the Unions - Mining and Energy Union Queensland and the Australian Workers' Union.

Each year the Program is formulated by Committee Members who share their experiences and contacts to ensure the Conference is relevant and looking to the future.

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Conference Venue - The Star Gold Coast



WELCOME TO THE STAR GOLD COAST

The Star Gold Coast is in the heart of Broadbeach at 1 Casino Drive, Broadbeach Island, Broadbeach 4218.

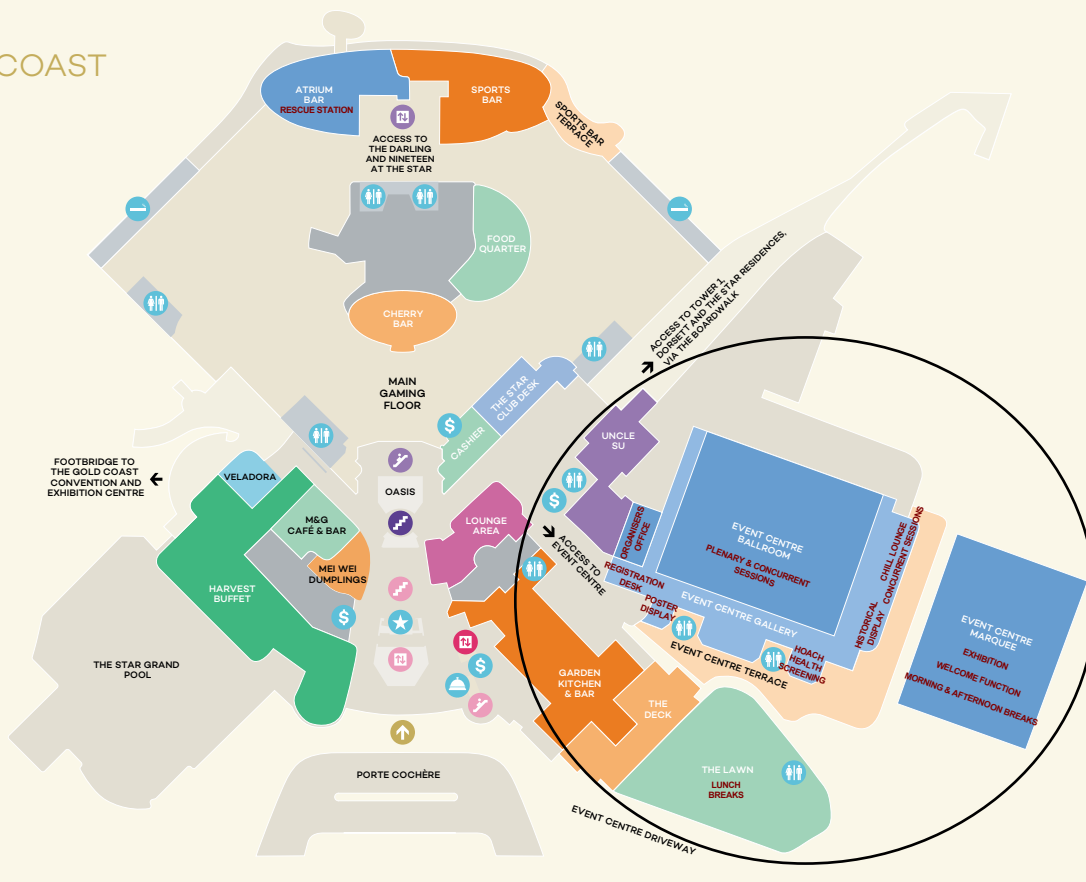
All the Business Sessions, Trade Exhibition and Evening Functions will be held within this venue. Special accommodation rates have been negotiated with The Star, where you are only a lift ride away from all the action.

YOUR GUIDE TO THE STAR GOLD COAST

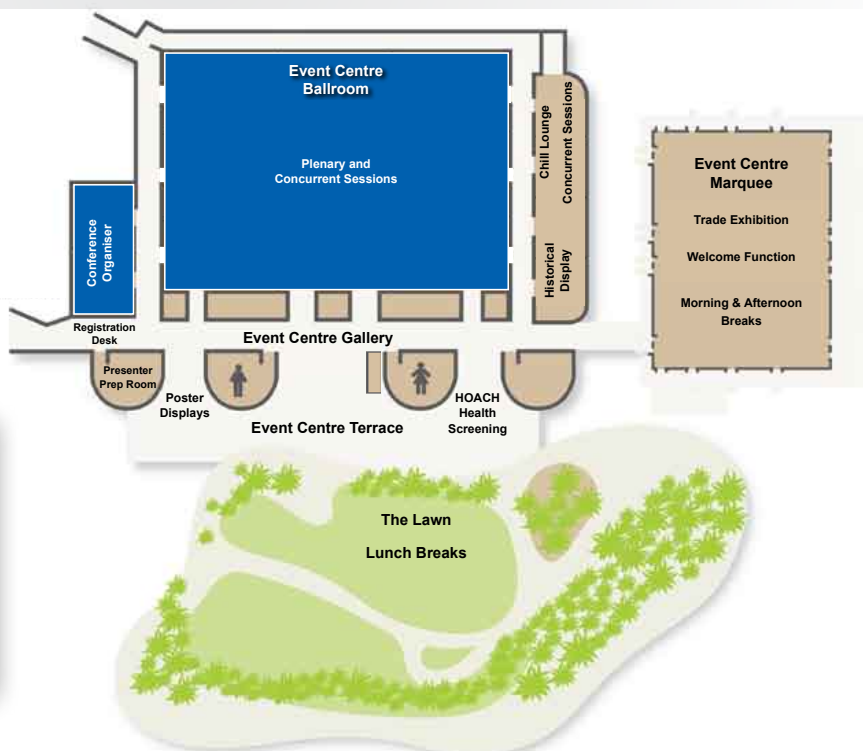
LEVEL 3

GRAND FOYER, CASINO, DINING & BARS

- MAIN ENTRANCE FROM DRIVEWAY
- HOTEL LIFTS
- CAR PARK LIFTS
- LIFTS TO THE DARLING & NINETEEN AT THE STAR
- ESCALATORS TO OASIS, PRIVATE GAMING ROOM
- STAIRS TO LEVEL 4, LOBBY LEVEL
- ESCALATORS TO LEVEL 4, LOBBY LEVEL
- STAIRS TO THE THEATRE
- TOILETS
- CONCIERGE
- THE STAR CLUB DESK
- ATM
- SMOKING AREAS



QUEENSLAND MINING INDUSTRY HEALTH & SAFETY CONFERENCE CONFERENCE FLOOR PLAN



Conference Program



This program has been developed to offer you the opportunity to meet like-minded industry professionals; to listen to topical and high-quality presentations on a range of topics of immediate interest and relevance, and time to network with industry colleagues – old and new.

★ SUNDAY 21 AUGUST

10.00am - 6.30pm REGISTRATION – Event Centre Gallery

12.30pm - 1.30pm LUNCH – Event Centre Lawn

1.30pm - 4.45pm **PLENARY SESSIONS – Event Centre Ballroom**

Introduction by Master of Ceremonies

Russell White, Master of Ceremonies, Managing Director, Driver Safety Australia



CONFERENCE WELCOME

Peter Newman, Chief Inspector of Coal Mines, Resources Safety and Health Queensland

CONFERENCE OPENING

The Honourable Scott Stewart MP, Minister for Resources

2.15pm - 3.00pm **KEYNOTE PRESENTATION – Proudly Sponsored by Evolution Mining**
Why Safety Matters

Dallas Adams, Director, DC Adams Group Pty Ltd



3.00pm - 3.45pm **AFTERNOON BREAK AND TRADE DISPLAYS – Event Centre Marquee**
Proudly Sponsored by Cirlock



3.45pm - 4.45pm **PLENARY SESSION – Event Centre Ballroom**

3.45pm - 4.45pm **KEYNOTE PRESENTATION – Proudly Sponsored by Evolution Mining**
Future Crisis – Adapting to Stay Left of Boom

Grant Chisnall, CEO and Founder, Left of Boom



5.00pm - 6.00pm **THE RESCUE STATION – Cherry Bar**

6.00pm - 10.00pm **WELCOME FUNCTION AND TRADE DISPLAYS – Event Centre Marquee**
Proudly Sponsored by Peabody Australia



10.00pm **THE RESCUE STATION – Cherry Bar**



★ MONDAY 22 AUGUST

7.30am - 6.00pm	REGISTRATION – Event Centre Gallery	
8.00am - 5.10pm	PLENARY SESSIONS – Event Centre Ballroom	
8.00am - 8.05am	Daily Introduction by Master of Ceremonies Russell White, Managing Director, Driver Safety Australia	
8.05am - 8.10am	Welcome to Country	
8.10am - 8.15am	Welcome by Principal Sponsor – Anglo American Nick Barlow, Interim Chief Executive Officer, Anglo American Steelmaking Coal	
8.15am - 8.45am	Presentation of the Queensland Mining Industry Health and Safety Conference Legends Award	
8.45am - 10.15am	KEYNOTE PRESENTATIONS	
8.45am - 9.30am	Decision Making in the Dark – Proudly Sponsored by Anglo American Steelmaking Coal Dr Richard Harris SC OAM	
9.30am - 10.15am	Where to Now for the Queensland Mining Industry? Dr Sean Brady, Managing Director, Brady Heywood Pty Ltd	
10.15am - 10.45am	MORNING BREAK AND TRADE DISPLAYS – Event Centre Marquee <i>Proudly Sponsored by Cirlock</i>	
10.45am - 1.00pm	PLENARY SESSIONS – Event Centre Ballroom	
10.45am - 11.30am	Industry Sharing with Industry Facilitator: Kylie Ah Wong, Director - Health, Safety & Training, Glencore Coal Assets Australia	
11.30am - 12.15pm	Challenges and Risk – Our Journey, Te Kāhui Whakamana Rua Tekau Mā Iwa, Pike River Recovery Agency Dinghy Pattinson, Chief Operating Officer, Pike River Recovery Agency	
12.15pm - 1.00pm	Managing and Leading in Difficult Times Christine Nixon APM, Former Victorian Police Commissioner	
1.00pm - 1.45pm	LUNCH AND TRADE DISPLAYS – Event Centre Marquee <i>Proudly Sponsored by BHP</i>	
1.45pm - 3.00pm	PLENARY SESSIONS – Event Centre Ballroom	
1.45pm - 3.00pm	KEYNOTE PRESENTATIONS – Proudly Sponsored by Thiess	
1.45pm - 2.30pm	Creating a High Reliability Organisation Emeritus Professor Andrew Hopkins AO, Australian National University	
2.30pm - 3.00pm	The Role of Compliance Action on Industry Sharing Harold Downes, Partner, Workplace Relations, Employment and Safety. Mills Oakley	
3.00pm - 3.30pm	AFTERNOON BREAK AND TRADE DISPLAYS – Event Centre Marquee <i>Proudly Sponsored by Metarock</i>	

3.30pm - 5.15pm

PLENARY SESSIONS – Event Centre Ballroom

3.30pm - 4.30pm

INNOVATION AWARD PRESENTATIONS – Proudly Sponsored by Glencore
Presentations by the five finalists selected from the first round of judging

GLENCORE

Workshop Wheel Chock

Luke Wilkie, Maintenance Manager, Anglo American Dawson Mine

Parted Mooring Line Snapback Protection Barrier

Daniel Grech, Port Production Manager, Crispian Mallise, Engineering Projects Superintendent and Shaun Phelan, Project Lead, Mechanical, BHP Mitsubishi Alliance (BMA)

The Gracey Spray

Karl Barnsdale, Production Manager, Fitzroy Coal Management

Magnetic Base Hydraulic Cylinder Adaptor

Scott Davis, Tyre Supervisor, Sojitz Blue Pty Ltd and Joe Guinea, Principal Designer, JJ & D Innovations

Illuminated Guidance System for Day and Night

Ian Dennis, Director, CDMI Australia Pty Ltd

4.30pm - 4.45pm

PRESENTATION FROM 2019 INNOVATION AWARD WINNER

Synthetic Light Weight Shackles

Josh Leppard, Managing Director, Soft Rigging Solutions

4.45pm - 5.10pm

HEALTH PROGRAM AWARD PRESENTATIONS –

Proudly Sponsored by 4cRisk Occupational Health Services



Presentations by the two finalists selected from the first round of judging

Kestrel Lifestyle Challenge 2022

Renee Acton, Manager – Health, Safety and Training, Kestrel Coal Resources

Strength in Numbers – Mental Health and Wellbeing

Geoff Brown, Occupational Health Advisor, Redpath Australia

5.15pm - 6.30pm

THE RESCUE STATION – Cherry Bar

7.00pm - 11.00pm

INFORMAL DINNER AND APPEAL AUCTION in aid of Heart of Australia
Event Centre Ballroom – *Proudly Sponsored by uvex Safety ANZ*

uvex

11.00pm

THE RESCUE STATION – Cherry Bar



TUESDAY 23 AUGUST

7.30am - 6.00pm

REGISTRATION – Event Centre Gallery

8.30am - 10.15am

PLENARY SESSIONS – Event Centre Ballroom

8.30am - 8.45am

Daily Introduction by Master of Ceremonies

Russell White, Managing Director, Driver Safety Australia



8.45am - 10.15am

KEYNOTE PRESENTATIONS – Proudly Sponsored by I-MED Radiology Network



8.45am - 9.30am

Regulation to Education, Lessons Learnt and Future Direction of the Regulator

Peter Newman, Chief Inspector of Coal Mines, Resources Safety and Health Queensland and Hermann Fasching, Chief Inspector of Mines, Mineral Mines and Quarries, Resources Safety and Health Queensland

9.30am - 10.15am

Climbing the Culture Ladder and Not Falling Off

Prof Patrick Hudson, Delft University of Technology and Hudson Global Consulting

10.15am - 10.45am

MORNING BREAK AND TRADE DISPLAYS – Event Centre Marquee

Proudly Sponsored by Cirlock



Conference Program



★ TUESDAY 23 AUGUST

10.45am - 12.15pm CONCURRENT SESSIONS – Event Centre Ballroom and Restaurant

Southport Room	Gold Coast Room	Surfers Paradise Room	Coolangatta Rooms 3 & 4
INNOVATION THROUGH RESEARCH ACARP PROJECT UPDATES	PREVENTION IS BETTER THAN CURE	LESSONS LEARNT – SURFACE MINING	EXHIBITOR INNOVATIONS
Proudly Sponsored by ACARP	Proudly Sponsored by Board of Professional Engineers Queensland	Proudly Sponsored by 4PS Software	Proudly Sponsored by SmartTech
<i>Chair: Ian Neill, Executive Director, Australian Coal Research Limited</i>	<i>Chair: Matt Way, Operations Manager, Undamine Industries</i>	<i>Chair: Cres Bulger, Regional Inspector of Mines, Resources Safety and Health Queensland</i>	<i>Chair: Paul Chant, Director, OHEC, Resources Safety and Health Queensland, Simtars</i>
10.50 – 11.15am Particle Chemistry and the Lung Response to Coal Dust Prof Graeme Zosky, Deputy Director, Menzies Institute for Medical Research, University of Tasmania	10.50 – 11.15am The Psychology of Safety in the Mining Industry Anton Guinea, Director, The Guinea Group of Companies Pty Ltd	10.50 – 11.15am Prevention of Misfires Dr Snezana Bajic, Deputy Chief Inspector Explosives and Haydn Isaac, Principal Inspector of Explosives, North Region, Resources Safety and Health Queensland	10.50 – 12.15pm Innovation in Uniform Solutions Brendan Platt, National Strategic Account Manager, Mega Mining How to Improve Safety and Efficiency of Haul Roads and Water Trucks Eric Tomicek, Sales Manager, Australian Diversified Engineering
11.20 – 11.45am Using Computer Vision AI Software as a Safety Assistant in the Tyre Bay Nathan Cables, Global Head Mining and Industrial, EYECUE by Fingermark (USA)	11.20 – 11.45am The Safety Performance Innovation Everyone Missed – Educating to Minimise Inattention Cristian Sylvestre, Managing Director, HabitSafe	11.20 – 11.45am The Value of Empirical Analysis and Lessons Learnt for Managing Highwall Geotechnical Hazards Gurshaan Virk, Geotechnical Engineer, BHP Mitsubishi Alliance	Industry Collaboration in Design Andrew Dickinson, Senior Product Designer, Blundstone Australia All Things Safety Mick Storch, Managing Director, 4PS Software
11.50 – 12.15pm Health Exposure Management State of the Art Technology Initiatives in the Australian Coal Mining Industry Dr Bharath Belle, Principal Ventilation Engineer, Anglo American Steelmaking Coal	11.50 – 12.15pm From Reacting to Learning: The Next Step in Organisational Effectiveness Andy Shone, Chief Executive Officer, Southpac International	11.50 – 12.15pm Mining Plant Structural Decay: Reducing Safety Risks Anthony Logan, Senior Inspector of Mines, Resources Safety and Health Queensland	The Importance of Prescription Safety Glasses in the Workplace Andy Warrington, Business Development Manager – Prescription Eyewear, Bollé Safety What Does the Proposed Lower Gas Exposure Limits and Compliance with the Standard AS/NZS 2290.3:2018 for Gas Detection Mean for You? Kalpesh Trivedi, Dräger Product Manager Gas Detection, Draeger Australia Pty Ltd Building Safer and More Productive Haul Roads that Cost Less to Maintain Vaughan Gray, Regional Manager - East, Dust A Side Australia Goaf Atmosphere Management Using Coal Foam Dr Basil Beamish, Managing Director, B3 Mining Services Pty Ltd

12.15pm - 1.15pm LUNCH AND TRADE DISPLAYS – Event Centre Lawn and Marquee

Proudly Sponsored by Pegasus, an Avetta Company



1.00pm - 1.15pm INNOVATION AND HEALTH PROGRAM POSTER DISPLAYS - Event Centre Gallery
The authors of posters will be on hand to discuss their submissions.

★ TUESDAY 23 AUGUST

1.15pm - 2.45pm

CONCURRENT SESSIONS – Event Centre Ballroom and Restaurant

Southport Room

FATIGUE MANAGEMENT IN THE QUEENSLAND INDUSTRY COLLABORATION AND INNOVATION

Proudly Sponsored by **Yancoal**

Chair: Kate du Preez, Commissioner for Resources Safety and Health

The fatigue session will present new practical initiatives implemented and advancements made to manage the key hazard more effectively.

1.20 – 1.45pm

Chains of Responsibility: Fatigue Management in the 21st Century

John Tate,
Barrister, Crown Law

1.50 – 2.15pm

Operator Awareness System Implementation at Glencore

Neil Pollard,
Operational Technology Manager,
Glencore Coal Assets Australia

2.20 – 2.45pm

Fatigue Monitor Initiative at Jellinbah

Peter McLaughlin,
Safety and Health Field Officer /
SSHR, Jellinbah Mining Pty Ltd

Gold Coast Room

RISK MANAGEMENT

Proudly Sponsored by **TUTIS VReddo**

Chair: Marcia Friend, HST Risk Manager, Glencore Coal Assets Australia

1.20 – 1.45pm

Practical Due Diligence in Mining Safety

Deanna McMaster,
Partner and
Rhian O'Sullivan,
Special Counsel, MinterEllison

1.50 – 2.15pm

Risk Management in the 21st Century

Shaun Dobson,
Deputy Chief Inspector of Coal Mines, Resources Safety and Health Queensland

2.20 – 2.45pm

Why Being 95% Error-Free is Safer than 99.9%

Dr Ben Seligmann,
Research Fellow – Risk Management, Sustainable Minerals Institute, University of Queensland

Surfers Paradise Room

EDUCATE TO IMPROVE

Proudly Sponsored by **Dust-A-Side Australia**

Chair: Micala Johnson, Health, Safety & Sustainability Manager, BUMA Australia

1.20 – 1.45pm

Mitigating a Future ERZC/OCE Shortage

John Lennon,
Business Development Manager,
Lennon Training

1.50 – 2.15pm

Can Machine Learning Transform How We Drive Better Safety Outcomes?

Dr Sean Brady,
Managing Director and
Jodi Goodall,
Head of Organisational Reliability,
Brady Heywood Pty Ltd

2.20 – 2.45pm

Respect at Work: Bystander Response and Prevention

Dr Jacinta Buchbach,
Head Respect at Work, Leadership Development, In Safe Hands. Educators in Safety: Respect at Work

Coolangatta Rooms 3 & 4

QUEENSLAND BoE PRACTICING CERTIFICATE SCHEME

Chair: Stephen Watts, Industry Safety and Health Representative, Mining and Energy Union Queensland

1.20 – 2.45pm

The Board of Examiners Introduction of the Queensland Practicing Certificate Scheme

Peter Newman, Chair of the Board of Examiners and Chief Inspector of Coal Mines will introduce the Board of Examiners Members and outline the Board's activities, recent achievements and strategic direction.

Helena Langton,
Secretary of the Board of Examiners will present on the Queensland Practicing Scheme which has commenced in 2022.

This will include an overview of the scheme framework, the approved types of activities under the scheme, how participants will record their activities, timelines for introduction and commencement. What we learnt from other schemes.

Questions

2.45pm - 3.15pm

AFTERNOON BREAK AND TRADE DISPLAYS – Event Centre Marquee

Proudly Sponsored by **Metarock**



★ TUESDAY 23 AUGUST

3.15pm - 5.15pm CONCURRENT SESSIONS – Event Centre Ballroom

Southport Room

BEST PRACTICE FATIGUE MANAGEMENT AND COLLABORATION

Proudly Sponsored by **Yancoal**

Chair: Kate du Preez, Commissioner for Resources Safety and Health

3.20 – 3.45pm

Fatigue Management in the Australian Mining Industry 2022-2032

Prof Drew Dawson,

Director Research Development / ECR, CQ University

3.50 – 4.15pm

Fatigue Management in Queensland Mining Industry

Prof Tim Horberry,

Professor of Human Factors, Minerals Industry Safety and Health Centre and

Dr Kirsten Way,

Senior Lecturer and Program Manager, Centre for Business and Organisational Psychology, The University of Queensland

4.20 – 4.45pm

Current Fatigue Management in the Queensland Industry

Prof Naomi Rogers,

Specialist Fatigue Consultant, Naomi Rogers Fatigue Consulting

4.50 – 5.15pm

Panel Session: Key Takeaways - Potential Barriers and Opportunities

Prof Drew Dawson, John Tate and Neil Pollard,

Gold Coast and Surfers Paradise Rooms

COLLABORATION IMPROVING PERFORMANCE

Proudly Sponsored by **Soft Rigging Solutions**

Chair: Jordan Calverd, Manager of Integrated Planning, Ernest Henry Operations

3.20 – 3.45pm

Research-Industry Collaboration to Lead Innovation in Resources Industry Learning and Training

Dr Stephanie MacMahon,

Lecturer, Program Director SLRC Learning Lab, School of Education, University of Queensland and

Rodo De Boer,

Chief Executive Officer, Resources Training Council

3.50 – 4.15pm

How Leaders Can Collaborate for Effective Behaviour Change - A Brain Science Innovation

Cristian Sylvestre,

Managing Director, HabitSafe

4.20 – 4.45pm

Performance Factors for the Professional Mine Worker Part 1

Bo Hanson,

Director,

Nathan Sharpe,

Director,

Laura Geitz and **Grant Polwarth**,

Director, Talisman People Pty Ltd

4.50 – 5.15pm

Performance Factors for the Professional Mine Worker Part 2

Bo Hanson,

Director,

Nathan Sharpe,

Director,

Laura Geitz and **Grant Polwarth**,

Director, Talisman People Pty Ltd

4.45pm - 7.00pm

STUDENT FORUM - Coolangatta Room

5.00pm - 6.30pm

EXHIBITION 'Happy Hour' among Trade Displays in Event Centre Marquee

Proudly Sponsored by Komatsu

KOMATSU 

FREE EVENING

Delegates to make their own dining arrangements

The Star Gold Coast offers a dazzling array of dining options for you to discover and enjoy.

Enjoy the ultimate buffet experience at Harvest Buffet, fresh seasonal dining at Garden Kitchen & Bar or traditional Italian dishes at Cucina Vivo. Bookings are required to secure your table – via StarGCDining@star.com.au

Walk in options are also available for casual dining at Mei Wei Dumplings and Food Quarter.

Simply present your conference name badge to receive **10%** discount at these outlets (valid for up to 9 guests).

8.00pm till late

THE RESCUE STATION – Cherry Bar with entertainment by soloist, Lee Griffin

★ WEDNESDAY 24 AUGUST

7.30am - 6.00pm REGISTRATION – Event Centre Gallery

8.30am - 10.15am *PLENARY SESSIONS – Event Centre Ballroom*

8.30am - 8.45am **Daily Introduction by Master of Ceremonies**
Russell White, Managing Director, Driver Safety Australia

8.45am - 10.15am **KEYNOTE PRESENTATIONS** – *Proudly Sponsored by Blackwoods*

8.45am - 9.30am **The Report of the Queensland Coal Mining Board of Inquiry**
Andrew Clough, Retired Mining Professional

9.30am - 10.15am **Just Another Day**
Theo Venter, Author and Speaker

10.15am - 10.45am **MORNING BREAK AND TRADE DISPLAYS – Event Centre Marquee**
Proudly Sponsored by Cirlock

10.45am - 12.15pm **CONCURRENT SESSIONS – Event Centre Ballroom**

TECHSERVE
MINING & ENERGY

Blackwoods

CIRLOCK 30

Southport Room

EDUCATE THROUGH INVESTIGATIONS

Proudly Sponsored by Fire Response

Chair: Marc Kirsten, Head of Safety & Health,
Anglo American Steelmaking Coal

10.50 – 11.15am

**Fire-Resistant Anti-Static (FRAS)
Investigations – Lessons Learned**

Neville Atkinson,
Senior Inspector of Mines (Electrical), Resources
Safety and Health Queensland

11.20 – 11.45am

**3D Laser Scanning for Incident
Investigation at Mine Sites**

Dr Gareth Kennedy,
Director – Mine Safety Technology Research
Centre, Resources Safety and Health Queensland,
Simtars

11.50 – 12.15pm

Obtaining Value from Risk Assessment

Mark Alston,
Director, Investigations Differently

Gold Coast Room

HIGH RELIABILITY ORGANISATION INNOVATION

Proudly Sponsored by KINNECT

Chair: John Anger, Director Health Safety
Environment and Closed Mines, Peabody Australia

10.50 – 11.15am

**Leadership for High-Reliability
Organisations**

Prof Alex Haslam,
Professor of Social and Organisational Psychology,
University of Queensland

11.20 – 11.45am

**Anticipating Major Accidents: Detecting
the Warning Signs**

Jodi Goodall,
Head of Organisational Reliability,
Brady Heywood Pty Ltd

11.50 – 12.15pm

**Can HRO Principles be Applied in
Mining?**

Peter Wilkinson,
Associate Principal, Noetic Group

Surfers Paradise Room

WORKPLACE CULTURE AND REPRISAL

Proudly Sponsored by Anglo American

Chair: Sarah Makepeace, Culture and SLP
Manager, Anglo American Steelmaking Coal

10.50 – 11.15am

**ISO 45003: Managing Psychosocial
Hazards in the Workplace. What This
Means for Your Business**

Naomi Armitage,
Director/Psychologist, Humanology Group

11.20 – 11.45am

Creating Mentally Healthy Workplaces

Dr Bushra Afzal,
Workplace Engagement Manager, Black Dog
Institute in partnership with Safety Mate

11.50 – 12.15pm

**Setting the Foundation for a Speak Up
Culture: Psychological Safety in Action**

Bobbie Foot,
Head Health, Safety, Environment, BHP Mitsubishi
Alliance and
Naomi Armitage,
Director/Psychologist, Humanology Group

12.15pm - 1.15pm **LUNCH AND TRADE DISPLAYS – Event Centre Lawn and Marquee**

★ WEDNESDAY 24 AUGUST

1.15pm - 2.45pm CONCURRENT SESSIONS – Event Centre Ballroom

Southport Room

LEARNING FROM INVESTIGATIONS

Proudly Sponsored by **Coal Services**

Chair: Dr Gareth Kennedy, Director – Mine Safety Technology Research Centre, Resources Safety and Health Queensland, Simtars

1.20 – 1.45pm

Post-Incident Learnings from a Major Spontaneous Combustion Event

Laurie Crisp,

Mines Inspector, Resources Safety and Health Queensland

1.50 – 2.15pm

Use of Analytical Tools During Investigations

Philippa Dodshon,

Postgraduate Research Fellow, Minerals Industry Safety and Health Centre

2.20 – 2.45pm

Management of Critical Controls - Where Can We Improve?

Christian Young,

Founder, Managing Director, Impress Solutions

Gold Coast Room

TECHNOLOGICAL SAFETY

Proudly Sponsored by **Gastech**

Chair: Kellie Wallis, GCAA Manager Systems and Compliance, Glencore Coal Assets Australia

1.20 – 1.45pm

The Capacity to Guide, Enable and Execute Work

Ivica Ninic,

Director, Forge Works

1.50 – 2.15pm

Using Technology as an Elimination Control Measure

Kathryn Job,

Senior Field Geologist, Plotlogic Pty Ltd

2.20 – 2.45pm

The Spirit of Cooperation

Dr Snezana Bajic,

Deputy Chief Inspector Explosives, Resources Safety and Health Queensland, **Herman Ng**,

Senior Safety Advisor (Hazardous Chemicals), Workplace Health and Safety Queensland and **Dr Damien Reid**,

Manager, Scientific Shift Crews, Research and Scientific Branch, Queensland Fire and Emergency Services

Surfers Paradise Room

MANAGING EXPOSURE

Proudly Sponsored by **ATOM Safety**

Chair: Fiona Holman, Health & Injury Manager, Glencore Coal Assets Australia

1.20 – 1.45pm

RS20 Dust Management Plan at Meandu

Rebecca Long,

Mechanical Engineer, BUMA Australia - Meandu Mine and

Scott Anderson,

SSHR and Fitter

1.50 – 2.15pm

Black Lung and the Radiology Revolution

Dr Catherine Jones,

Radiologist, I-MED Radiology Network, Wesley Dust Centre, Annalise. ai

2.20 – 2.45pm

ISO Mining Standards to Protect Worker Health in Operator Enclosures (cabins) from Dust and Gases

Liam Wilson,

ISO Committee Member TC-82 Mining, WG 9, ISO Committee TC-82 – Mining, WG 9

2.45pm - 3.15pm

AFTERNOON BREAK AND TRADE DISPLAYS – Event Centre Marquee

Proudly Sponsored by Metarock



★ WEDNESDAY 24 AUGUST

3.15pm - 4.45pm CONCURRENT SESSIONS – Event Centre Ballroom

Southport Room

CARING FOR THE WORKER

Proudly Sponsored by **Glencore**

Chair: **Craig Powell**, Safety Manager, Glencore Coal Assets Australia

3.20 – 3.45pm

Workplace Health and Productivity – It Pays to Care

Assoc Prof John Schneider,
Occupational Physician, BeWorkFit Mackay

3.50 – 4.15pm

The Enduring Mental Health and Wellbeing Impact of COVID-19 on the Mining Workforce – a MATES in Mining Perspective

Suzanne Desailly,
General Manager, MATES in Mining & Energy

4.20 – 4.45pm

World Class or Bare Pass: How do Queensland's Mining Laws Protect Against Workplace Sexual Harassment?

Aaron Anderson,
Partner and
Takara Raymond,
Senior Associate, Herbert Smith Freehills

Gold Coast Room

LEADERSHIP LEVERAGING DATA

Proudly Sponsored by **Coal Foam**

Chair: **Shane Apps**, Senior Manager - Health, Safety and Training, Peabody Australia

3.20 – 3.45pm

The Safety and Leadership Correlation
Anton Guinea,
Director, The Guinea Group of Companies Pty Ltd

3.50 – 4.15pm

Leveraging Data to Predict Injury and Work Smarter

Zac Lowth,
General Manager Operations, Staunch Technology

4.20 – 4.45pm

The Role of Traffic Signs in Mining Road Safety

Damir Vagaja,
Principal Traffic Safety Consultant,
RTSM Consulting

Surfers Paradise Room

HEALTH AND SAFETY EXPOSURES

Proudly Sponsored by **Blackwoods**

Chair: **Julie Ruttley**, Senior Manager Safety, Peabody Australia

3.20 – 3.45pm

Ethylene Contamination from Green Timber Supports

Sean Muller,
Principal Scientist - MST, Resources Safety and Health Queensland, Simtars

3.50 – 4.15pm

Welding Fume Exposure in Queensland Coal Mines. Understanding the Risk

Eliza Gill,
Principal Occupational Hygienist,
Resources Safety and Health Queensland

4.20 – 4.45pm

Pulmonary Protection Programs - Prevention is Preferable to Palliation: A 9 Point Process

Assoc Prof John Schneider,
Occupational Physician, BeWorkFit Mackay

5.00pm - 6.30pm THE RESCUE STATION – Cherry Bar

7.45pm - 12 midnight CONFERENCE DINNER - INNOVATION and HEALTH PROGRAM AWARDS PRESENTATIONS – Event Centre Ballroom

Proudly Sponsored by Anglo American Steelmaking Coal



7.15pm - 7.45pm PRE-DINNER DRINKS – Event Centre Gallery and Terrace

7.45pm - 12 midnight CONFERENCE DINNER

12 midnight THE RESCUE STATION – Cherry Bar



The presenters, topics, times and sponsors are correct at the time of publishing and, in the event of unforeseen circumstances, the Conference Committee reserves the right to alter or delete items from the program.

Master of Ceremonies

Proudly Sponsored by Techserve Mining & Energy

TECHSERVE
MINING & ENERGY



Russell White

Russell's experience in the road safety field is unique. His career spans more than 29 years and encompasses expertise across a broad range of road safety matters. He is widely regarded as one of Australia's leading road safety advocates and media commentators, with regular appearances on programs such as Sunrise, The Today Show and The Project.

The driving force behind his commitment to reducing road trauma is based around three key factors: Advocacy, Research and Education.

Russell is the Managing Director of Driver Safety Australia. In addition, he is also the Founder and CEO of the Australian Road Safety Foundation. The Foundation operates national community-based road safety campaigns - 'Fatality Free Friday' and 'Rural Road Safety Month'.

His vision, innovation and long-term experience makes him a "one of a kind" in the road safety industry.

Keynote Presenters



Dallas Adams - Session Proudly Sponsored by Evolution Mining



Dallas is Director of DC Adams Group - Why Safety Matters. He presents his life experiences of a Mining and Tunnelling family. A consultant and advisor of the importance of safety, safety awareness, and maintaining a safety culture. A qualified Trainer and Assessor, Electrical Trade, Operator and Mentor.

Dallas founded DC Adams Group - Why Safety Matters after losing his father to a workplace accident in 2017 on a major tunnelling project in Sydney and wanting to talk about his brother's mining accident in 2004.

He talks about the consequences a workplace accident can have on your family and how important it is to create a safe environment for workers.

Dallas describes both accidents in detail and what he believes happened and how both accidents have impacted his life and the life of his family. The stages of grief and the importance of getting help.

Dallas has spent 26 years working in the mining and underground construction industry as an operator and as an electrician. His passion for safety awareness has given him a positive outlook moving forward and his ability to share his experience as a learning tool for others has benefitted many people over the time presenting "Why Safety Matters". "Our future is important and we need to make it safe".



Sean Brady - Session Proudly Sponsored by BUMA



Sean is forensic engineer and the managing director of Brady Heywood.

In 2020 Sean completed the Brady Review, an investigation into the causes of fatalities in the Queensland mining and quarrying industry for Resources Safety and Health Queensland. This review analysed 20 years of incident and fatality information, was data driven, and culminated in 11 recommendations for both industry and the regulator on how to lower the fatality and incident rate. Sean is currently engaged as the lead investigator on a major power station incident in Queensland.

He also speaks, podcasts, and writes about failure, human behaviour, data analytics and engineering disasters.



Grant Chisnall - Session Proudly Sponsored by Evolution Mining



Grant is a Crisis Advisor, Podcaster and Professional Speaker who has a passion for leadership, communication and decision-making. He has supported some of the world's leading organisations through crisis events ranging from cyber-attacks to coronavirus; activism to air crashes; and from Natural Disasters to workplace fatalities.

His Podcast Crisis Talks tells the extraordinary stories of people who have led through crises and their stories of leadership and resilience in the face of adversity. Grant's aim is to help leaders prepare for the worst-case scenarios and respond proactively and with confidence to any incidents that threaten their people, operations or reputation.



Andrew Clough - Session Proudly Sponsored by Blackwoods

Blackwoods

Andrew has a career spanning more than 40 years within the underground mining industry. He has held senior roles within both the coal mining industry and the hard rock mining industry including Mine Manager, General Mine Manager, Chief Inspector of Coal Mines and Vice President Safety, Health and Environment.

Andrew has a First-Class Honours degree in Mining Engineering, a Masters in Mining Geomechanics and an MBA. He is one of the only persons in Queensland to hold both a Queensland Metalliferous Mine Managers Certificate and a Queensland Coal Mine Managers Certificate.

Andrew was a board member on the Queensland Coal Mining Board of Inquiry into the serious accident at the Grosvenor mine.



Hermann Fasching - Session Proudly Sponsored by I-MED Radiology Network



Hermann is the Chief Inspector of Mines for Mineral Mines and Quarries with Resources Safety & Health Queensland. In this role, he provides leadership and management to the staff of the Metalliferous Mines and Quarries Inspectorate.

Hermann has over 35 years of experience in the mining industry. Prior to joining the Mines Inspectorate in 1998, he worked in a number of operational, technical and management roles in both surface and underground mines.

Hermann is a Fellow of the Institute of Quarrying Australia and a Certified Practicing Quarry Manager.



DR Richard Harris SC OAM - Session Proudly Sponsored by Anglo American Steelmaking Coal



Dr Richard "Harry" Harris is an Adelaide based anaesthetist who has worked in diving, aeromedical and remote area medicine. He has been diving for forty years. Having explored water filled caves and deep wrecks for the last 20 years, he was asked to assist with the rescue of 12 boys and their coach from the flooded Tham Luang cave in northern Thailand in July 2018. He was closely involved with the extraction of the boys from over 2.5km underground using an unconventional and unprecedented general anaesthetic technique.

He subsequently received the Star of Courage, Australia's second highest civilian award for bravery, and the medal of the Order of Australia for his role. Harry was the joint 2019 Australian of the Year with his dive partner Craig Challen.

Harry's talk about the rescue illuminates the desperate nature of the operation, the importance of close teamwork and the courage shown around the difficult decisions that were made by the team.



Andrew Hopkins AO - Session Proudly Sponsored by Thiess Pty Ltd

THIESS

Andrew is Emeritus Professor of Sociology at the Australian National University in Canberra.

He has written numerous books about the human and organisational causes of major accidents, including one on the 1994 Moura coal mine disaster in Queensland. He is author of the book - Learning from High Reliability Organisations. More than 100,000 copies of his books have been sold.

He was recently engaged in the development of an international standard for the management of tailings facilities. He is an Honorary Fellow of the Institution of Chemical Engineers in recognition of his "outstanding contributions to process safety and to the analysis of process safety related incidents".

He is an Officer of the Order of Australia (AO) in recognition of his "distinguished service to industrial safety and accident analysis".



Prof Patrick Hudson - Session Proudly Sponsored by I-MED Radiology Network



Patrick is one of the world's leading authorities on the human factor in the management of safety. He was the Project Leader of Shell International's Research program, that led to the Swiss Cheese model. He was also one of the four-man team that developed Shell's approach to safety management systems after the Piper Alpha disaster.

He then led Shell Group's Hearts and Minds program on the development of safety culture in the Oil and Gas industry. In aviation he has worked across flight operations, maintenance and engineering with both Boeing and Airbus as well as many airlines. Patrick was made an honorary fellow of the Australian Institute for Health and Safety. One of only three since the establishment of the AIHS Foundation.



Christine Nixon APM - Session Proudly Sponsored by Thiess Pty Ltd

THIESS

Christine was the 19th Chief Commissioner of Victoria Police leading 14,000 staff, operating across more than 500 locations, and overseeing an annual budget of \$1.7 billion. She joined Victoria Police in April 2001, after serving with the New South Wales Police from 1972 and in 1994 became the first Female Assistant Commissioner in 1994. She led the Victorian Bushfire Recovery and Reconstruction Agency after to 2009 Black Saturday Bushfires.

Christine is a Fellow of ANZSOG, The Australian Institute of Police Management, The Australian Institute of Management and The Institute of Public Administration Australia.

Currently Christine is the Chair of the Board of the Royal Australian College of General Practitioners and Deputy Chair of the Board of Castlemaine State Festival. She was a Council Member and Deputy Chancellor of Monash University from 2009-2020, Chair of Monash College Pty Ltd 2011-2020 and Chair of Good Shepherd Microfinance 2011-2019.

Christine has a long history of supporting women, children, and vulnerable communities.

Christine teaches and is a sort after speaker on corruption, resilience, risk and crisis management and leadership. Co-author with Jo Chandler "Fair Cop", MUP 2011 Co-author with Amanda Sinclair "Women Leading" MUP 2017.



Dinghy Pattinson - Session Proudly Sponsored by BUMA

BUMA
Australia

Dinghy has over four decades of underground mining experience in New Zealand, consisting of 37 years in coal and 5 years in metalliferous. He was appointed Chief Operating Officer of the Pike River Recovery Agency in early 2018.

In this role, Dinghy oversees the planning and operational elements of the Pike River re-entry work and has responsibility for ensuring activities at the mine comply with statutory health and safety requirements.

His numerous mining qualifications include Site Senior Executive and First Class Mine Managers certificates in coal and metalliferous, and a Post Graduate Diploma in Coal Mine Strata Control from the University of New South Wales.

In addition to his strong mining background, for the past 37 years, Dinghy has been actively involved with the NZ Mines Rescue Service in the roles of Brigadesman, Station Manager, and Board Member.



Peter Newman - Session Proudly Sponsored by I-MED Radiology Network

I-MED Radiology
Network

Peter has a career spanning 40 years in the industry where he demonstrated that Health and Safety is a Core Value. Involved in the planning of the inaugural concept of the Safety Conference in Yeppoon with Mine Managers and Coal Inspectorate. He was also a member of the Mines Rescue Brigade at Blackwater for many years, including being a member of the recovery team following the explosion at Moura No.4 Underground Mine.

From underground miner to undermanager, open cut and underground engineer, supervisor and manager, and 10 years as Mine Manager in Queensland and New South Wales, he has worked for a number of mining companies and a major contracting house as Chief Operating Officer Mining Services, responsible for their Underground, Tyre management, Blasting business and HSE portfolio before joining Resources Safety and Health Queensland in 2019 as the Chief Inspector of Coal Mines.



Theo Venter - Session Proudly Sponsored by Blackwoods

Blackwoods

Theo resides in Perth, Australia, and is a full-time motivational speaker. His passion for delivering his talk across the globe to as many people as he possibly can stems from his own near-fatal accident on 13 February 2006 – a day he and many others who have shared the experience will have vividly etched in their minds forever.

Over the past 10 years of delivering this powerful message to hundreds of thousands of people in 7 countries, Theo has had the opportunity to influence and inspire hundreds of organisations and its board members, management, supervisors and thousands of workers facing health and safety challenges on a daily basis.

Registration opening times - Event Centre Gallery

Sunday 21 August	10.00am – 6.30pm
Monday 22 August	7.30am – 6.00pm
Tuesday 23 August	7.30am – 6.00pm
Wednesday 24 August	7.30am – 6.00pm

CPD Units – Queensland Practising Certificate

Attendees can claim the content of the Queensland Mining Industry Health and Safety Conference to meet their Continuing Professional Development (CPD) units for their Queensland Practising Certificate.

Minimum claim is 1 hour for attendance and up to a maximum of 6 hours for the full Conference.

Attendees presenting papers at the Conference can claim up to 12 hours for the Conference.

Refer to the RSHQ website for further details.

Dress Code - for your guidance

Conference Sessions each day - smart casual

Welcome Function – Sunday evening - smart casual

Happy Hour – Tuesday evening - smart casual

Informal Dinner – Monday evening - dressy casual

Conference Dinner – Wednesday evening - lounge suits or dressy shirt and trousers for men and cocktail attire for ladies

Name Badge

All Delegates will receive a name badge when they register at Conference. This badge will allow entry to all Conference Sessions, Trade Exhibition and Social Functions. It is imperative they be worn at all times.

Your name badge is also required if you wish to take up The Star's 10% discount offer on food and beverages from selected outlets.

Proudly Sponsored by Nautitech Mining Systems



Conference Proceedings

Video Recording of Business Sessions

The recordings of all the Business Sessions will offer you a video of the presenter, synchronised to the PowerPoint presentation, all in one convenient window. You will be able to view individual presentations from the Conference website following the Conference – free of charge, except for those who have requested they be not made available.

The address by the Principal Sponsor and the presentations to the Award Winners at the Conference Dinner will also be recorded.

Innovation and Health Program Submissions and Concurrent Session Papers

All Innovation and Health Program Award submissions and written papers supplied by presenters from the Concurrent Sessions, will be published on the Conference website.

Conference Proceedings Proudly Sponsored by Mining and Energy Union Queensland



Wi-Fi Service

The Conference is offering a personalised Wi-Fi service (10mb up/down) throughout the Events Centre, including the Marquee. **The SSID name is – QMIHSC22**

Student Host Program

Each year invitations are extended to Queensland Universities to nominate students who are studying courses that are relevant to the mining industry. The purpose of the Program is to give students some insight into the health and safety sector and the opportunity to interact with Delegates.

This year 8 students were offered complimentary conference registration, accommodation and travel.

It is pleasing to learn that in recent times, a number of students attending this program have been offered employment in the Mining Industry; having made contact with senior leaders in the Industry.

Proudly Sponsored by Safety Equipment Australia Pty Ltd



The Star - Tuesday Dining Options

The Star Gold Coast offers a dazzling array of dining options for you to discover and enjoy.

Enjoy the ultimate buffet experience at Harvest Buffet, fresh seasonal dining at Garden Kitchen & Bar or traditional Italian dishes at Cucina Vivo. Bookings are required to secure your table – via StarGCDining@star.com.au

Walk in options are also available for casual dining at Mei Wei Dumplings and Food Quarter.

Simply present your conference name badge to receive 10% discount at these outlets (valid for up to 9 guests).

Free Health Screening - Surfers Paradise Gallery

Heart of Australia Corporate Health Initiative (HOACHI) is offering delegates the opportunity to experience their onsite health screening program first-hand. This is a completely free preventative health screening, taking just 15 minutes. You'll walk away with a comprehensive snapshot of your health as well as personalised recommendations and support tools.

Proudly Sponsored by Heart of Australia Health Corporate Initiative



Morning Exercise Activities - Paula Stafford Park

Get moving with Staunch Technology! 6am – 6:30am each morning at Paula Stafford Park, Broadbeach, Staunch will be running a dynamic warm up, beach walk or jog and then stretches to finish. Located straight across from the Broadbeach mall, keep an eye out for the Staunch flag, with hats given away each morning to first arrivals.

Don't forget your trainers!

Proudly Sponsored by Staunch Technology



Espresso Coffee Carts

For your enjoyment and convenience, Coffee Carts will be in the Event Centre Gallery and the Event Centre Marquee at advertised times for the purchase of a range of coffees.

Proudly Sponsored by Kognent **Kognent.**

Chill Lounge

Looking for a quiet space? This lounge will be set up in Coolangatta Rooms 3 and 4 during the day for the use of Delegates for informal meetings and for your leisure.

Conference Backpack

Upon registration at Conference, Delegates will receive a Conference Backpack containing information relevant to the Conference.

Proudly Sponsored by Simtars **Simtars** 

With a view to minimizing paper usage, a majority of Sponsors and Exhibitors have taken up the option to include their promotional material as a pdf file on the USB contained in a Special Gift Pack, which also includes a pen.

Social Media

SPREADING THE WORD THROUGH SOCIAL MEDIA

We invite you to use our Social Media contacts.

LinkedIn link: <https://www.linkedin.com/company/qmihconference/>

Facebook link: <https://www.qmihconference.org.au/>

Website: www.qldminingsafety.org.au

Mines Rescue Station

After the Business Sessions and Functions relax with your colleagues at the Mines Rescue Station located in the Cherry Bar in the Casino. Show your name badge and receive the **10%** discount offered by The Star Gold Coast to all Conference Delegates.

On Tuesday night, the Conference Committee has engaged soloist, **Lee Griffin** to entertain you from 8.00pm.

Photography

The Conference Committee has engaged the services of a Professional Photographer for the purpose of retaining a record of the Conference program and for promotional purposes. Images will be posted on the 'Images Page' on the Conference website and may be used in publications and websites that are accessible by the general public.

These images will also be available to be ordered by delegates, free of charge, with the compliments of the Conference Committee and Mark Duffus Photography.

If you have any questions on being photographed, please advise Mark Duffus at the time of the photo being taken.

First Aid Service

A First Aid Service will be provided by The Star Gold Coast for the duration of the Conference.

Taxation

Where appropriate, Delegates are advised to contact their Taxation Adviser on what records should be kept for tax deductible expenditure and GST purposes. GST is included in all prices and can be claimed as a Tax Credit, if you are registered for GST.

THE REGISTRATION FORM COMPLIES WITH THE AUSTRALIAN TAX OFFICES'S REQUIREMENTS FOR A TAX INVOICE.

Travel Insurance

It is highly recommended that travel insurance be taken out – as this can protect you from loss of funds relating to travel/accommodation and registration fees – where no refund is possible.



Responsibility: The Conference Committee for the Queensland Mining Industry Health and Safety Conference 2022 and Acclaim Special Events and Meeting Management accept no liability or responsibility for death, or illness of, or injury to, or for loss of or damage to any property belonging to, or financial loss by, any person attending the Conference, any person accompanying such person or any third parties, whatever the cause, nor do they accept liability or responsibility, whether it be financial or otherwise, for any operators in association with the Conference. Signature on the Registration Form and receipt of confirmation issued by the Conference Organiser shall be deemed as consent to the above conditions.

INNOVATION AWARDS

The aim of this Award is to recognise creative and practical solutions to safety and occupational health problems and to promote their application across the Australian Resources Industry.

The Five Finalists selected prior to the Conference, will present their Innovations during Monday afternoon's Session.

The Winners will be announced at the Conference Dinner on Wednesday evening.

There are three Award Categories:

- Winner – as judged by the Industry Judging Panel
- People's Choice – as judged by the Conference Delegates
- Highly Commended – combined vote count of the Judging Panel and the Conference Delegates

Award Prize

In the past uvex Safety ANZ were excited to offer the QMIHS Conference Innovation Award winner an opportunity to attend the global A+A Safety Conference in Dusseldorf Germany.

With international travel grounded at the present time, the uvex team are proud to support our local tourism industry by offering the 2022 QMIHS Conference Innovation Award winner a \$3,000.00 Flight Centre voucher and their choice of uvex sports or safety gear valued at \$500.00 AUD (sports gear will exclude uvex bicycle helmets).

This Award Prize is Proudly Sponsored by uvex Safety ANZ

uvex

HEALTH PROGRAM AWARDS

The aim of this Award is to recognise creative and practical solutions to personal and occupational health problems and to promote their application across the Resources Industry.

Award Prize

The Winning organisation will be announced at the Conference Dinner and will receive \$3,000.00 towards the cost of attending a 'Health' related Conference of their choice and as approved by the Conference Committee. They will also receive a Perpetual Trophy, a Queensland Mining Industry Health Program Award Trophy and a Framed Certificate.

This Award Prize is Proudly Sponsored by 4cRisk Occupational Health



Our stimulating Business Program will be complimented by engaging fun networking functions on Sunday, Monday Tuesday and Wednesday evenings.

THE STAR
GOLD COAST

The Star Discount Offer

Conference Delegates are entitled to a 10% discount at all Food and Beverage Outlets (excludes Nineteen at The Star on weekends and Kiyomi) upon presentation of the conference lanyard/name badge. This offer is valid for the conference dates and for bookings of up to 9 guests.

★ SUNDAY 21 August

6.00pm - 10.00pm **WELCOME FUNCTION - Event Centre Marquee**
Proudly Sponsored by Peabody Australia

Peabody

To get the Conference off to a great start and set the tone for the whole event, we invite you to join us for the Welcome Function to be held among the Display Booths. Arrange to meet with your colleagues and friends for what is planned will be a great ice breaker.

As Delegates move amongst the Displays, dinner and beverages will be served.

A ticket to the Welcome Function is included in your registration fee if you are a full Registered Delegate.

If you wish to bring your Partner or a Guest to this Function, tickets may be purchased by completing Section B on the Registration Form or through the Registration Desk at the Conference.

Partner and Guest Tickets \$100.00 per person

★ MONDAY 22 August

7.00pm - 11.00pm **THE INFORMAL DINNER - Event Centre Ballroom**
Proudly Sponsored by uvex Safety ANZ

uvex

Join our host, uvex Safety ANZ to enjoy networking with industry colleagues; tasty food; range of beverages; music by Montana Duo and an acoustic tap dance performance by 'Those Tap Guys'.

During the evening we will continue the practice of running Live and Silent Auctions and Raffle to raise money for this year's beneficiary – Heart of Australia.

A ticket to the Informal Dinner is included in your registration fee if you are a full Registered Delegate.

If you wish to bring your Partner or a Guest to this Function, tickets may be purchased by completing Section B on the Registration Form or through the Registration Desk at the Conference.

Partner and Guest Tickets \$130.00 per person



Live and Silent Auctions

Raising Funds for Heart of Australia



Heart of Australia (HOA) is on a mission to deliver quality, specialist medical services to Australians living in rural and regional communities. HOA embraces an innovative approach to front-line service delivery, bringing medical specialists and state-of-the-art equipment to communities that need them on a fleet of custom-designed mobile medical clinics.

These mobile clinics, lovingly referred to as the “Heart Trucks”, travel from town to town on fixed routes throughout rural and regional Queensland. Specialist services currently being delivered include cardiology, gynaecology, neurology and endocrinology. Since HOA commenced operations in 2014, they have seen over 11,000 patients in the community and helped save over 500 lives, with many of those patients living and working in mining communities.

A separate program, Heart of Australia Corporate Health Initiative (HOACHI), was launched in 2018 and provides mobile health screening, intervention and education programs to organisations in rural and regional Queensland. Following the launch of HOA's latest mobile medical clinic HEART5 in 2022 (which includes an X-Ray and battery-powered CT), HOACHI now also delivers respiratory health surveillance assessments for coal mine, mineral mine and quarry operators.

★ TUESDAY 23 August

5.00pm - 6.30pm

HAPPY HOUR WITH EXHIBITORS - Event Centre Marquee

Proudly Sponsored by Komatsu



After the Happy Hour, Delegates are free to make their own dining arrangements.

Remember to take your name badge to receive the 10% discount on food and beverages from selected outlets at The Star.

★ WEDNESDAY 24 August

7.15pm - 12 midnight

THE CONFERENCE DINNER – Event Centre Ballroom

Incorporating presentations to the Innovation and Health Program Award Winners.

Proudly Sponsored by our Principal Sponsor, Anglo American Steelmaking Coal



This Dinner is the highlight of the Conference. After three and a half days of intense conferencing you can relax and again join your colleagues to continue networking and enjoying each other's company while consuming a specially prepared three course meal, with fine beverages.

Throughout the night, you will be entertained by the 'No Accidents', a local 7 piece band.

A ticket to the Conference Dinner is included in your registration fee if you are a full registered Delegate.

If you wish to bring your Partner or a Guest to this Dinner, tickets may be purchased by completing Section B on the Registration Form or through the Registration Desk at the Conference.

Partner and Guest Tickets \$175.00 per person



Trade Exhibition - Event Centre Marquee

Proudly Sponsored by uvex Safety ANZ

uvex

Here's the ideal opportunity to meet 51 exhibitors in the one place and be exposed to new innovative products and services across the health and safety sector of the mining industry.

The Exhibition will be open for the duration of the Conference, with special times being set aside prior to the start of Business Session, the Welcome Function on Sunday evening, a 'Happy Hour' on Tuesday evening, during all Morning and Afternoon Breaks, and at Lunchtimes on Monday, Tuesday and Wednesday.

Espresso Coffee Carts will be operating in the Marquee at popular times for the purchase of a range of coffees.

The successful 'Happy Hour' will again be introduced at the last Conference will again be held among the displays in the Event Centre Marquee on Tuesday from 5.00pm to 6.30pm. Complimentary food and beverages will be served during this period.

TRADE EXHIBITION – MAIN OPENING TIMES

Sunday 21 August	Afternoon Break	3.00pm – 3.45pm
	Welcome Function	6.00pm – 10.00pm
Monday 22 August	Morning Break	10.15am – 10.45am
	Lunch Break	12.45pm – 1.30pm
	Afternoon Break	3.00pm – 3.30pm
Tuesday 23 August	Morning Break	10.15am – 10.45am
	Lunch Break	12.15pm – 1.15pm
	Afternoon Break	2.45pm – 3.15pm
	Happy Hour	5.00pm – 6.30pm
Wednesday 24 August	Morning Break	10.15am – 10.45am
	Lunch Break	12.15pm – 1.15pm
	Afternoon Break	2.45pm – 3.15pm

Health Hub - Event Centre Marquee (Booth 43)

Good health is essential to enjoying life!!

So, you think you are healthy! if so, why not take a few moments to double check to see if that is so. It's very easy. All you need do is take the time to visit the Health Hub and speak to the Health Professionals who will be in attendance during the Conference. This is a great opportunity to gain a few tips to ensure you continue to be in peak physical condition.

The following organisations will be represented in the Health Hub:

*CQ Rescue Health Services
MATES in Mining
My health for life*



Health Hub Proudly Sponsored by South32

Mine Disaster Virtual Simulations - Coolangatta Rooms 1 and 2

With the use of modern technology and information from past mine accidents in Queensland, Mine Safety Institute of Australia has created virtual simulations so that lessons can be learned by current and future generations.

You are invited to view and experience these simulations.

Mining Historical Displays and Videos - Coolangatta Rooms 1 and 2

Members of the Ipswich Historical Society have again welcomed the opportunity to showcase a larger collection of items of historical interest to the mining industry.

A selection of videos of historical mining incidents and milestones, assembled by the Conference Committee, will be shown continually in the same room.

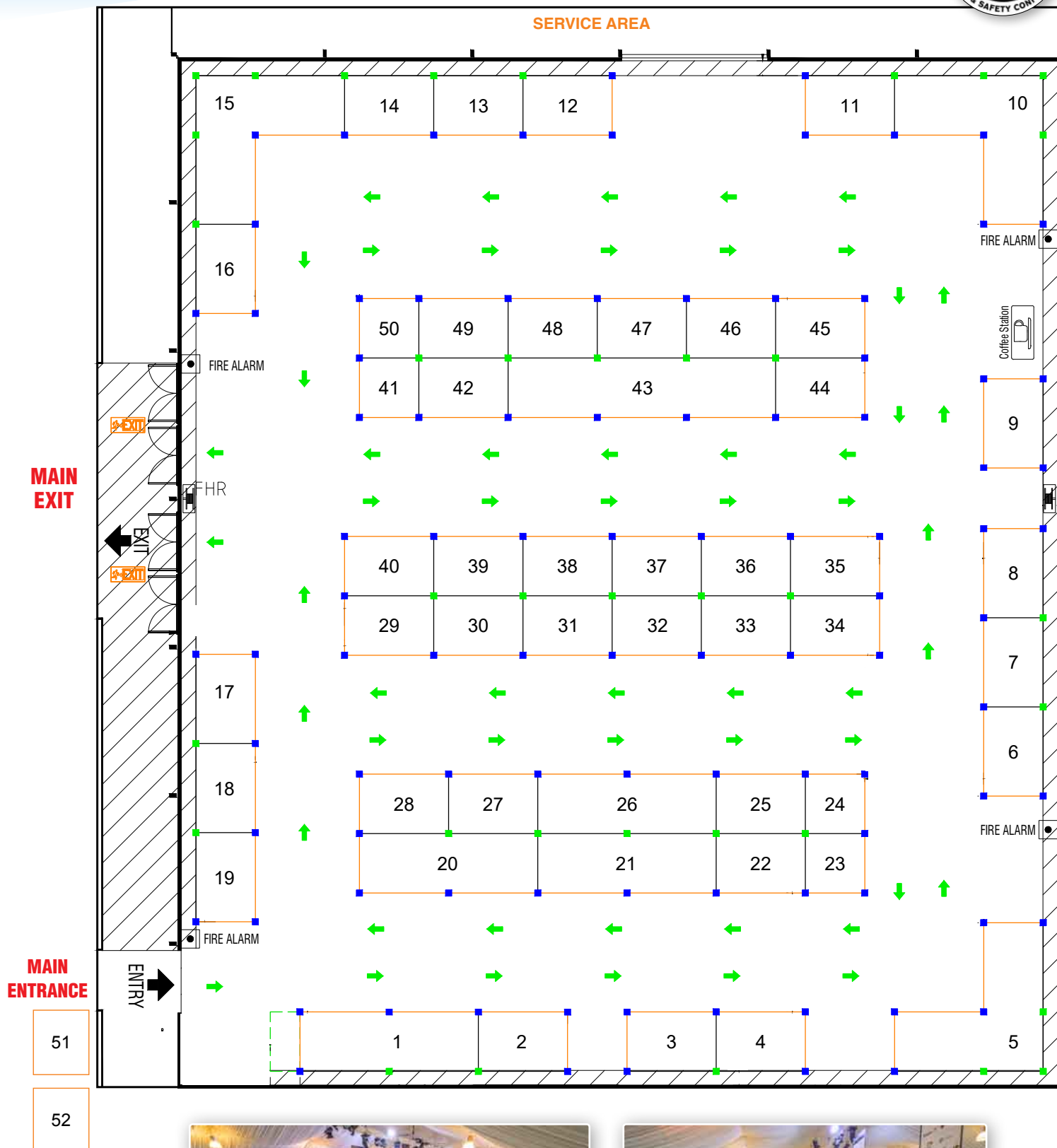
Booth Numbers and Exhibitor list



Booth	Exhibitor	Booth	Exhibitor
3	4cRisk Occupational Health	32	Heat Trap Solutions Pty Ltd
17	4PS Software	50	I-MED Radiology Network
41	ACL Industrial Technology	24	Joint Action Solutions
38	Ansell	12	Kenelec Scientific
35	ATOM Safety	39	KINNECT
21	Australian Diversified Engineering	30	Lear Siegler Australasia Pty Ltd
44	Blackwoods	43	Mates in Mining
42	BLUNDSTONE	25	Mayo Hardware
22	Board of Professional Engineers of Queensland	47	Medical Rescue Group
48	Bollé Safety	4	Mechanix Wear
27	Breathalyser Sales & Service Pty Ltd	43	My health for life
26	BreatheSafe	8	Nautitech Mining Systems
36	BUMA	46	RED OHMS Group
10	Bunzl Safety and Lifting	13	Pathtech Pty Ltd
34	Cirlock P/L	9	Pinssar Continuous DPM monitor
52	Coal Foam	51	Queensland Mines Rescue Service
45	Connec Operations Pty Ltd	43	Quitline Queensland
43	CQ Rescue Health Services	19	Resources Safety & Health Queensland
7	CQ University	40	SAFETY EQUIPMENT AUSTRALIA
49	CRC SmartWasher	31	Safety Mate
2	Draeger Australia	14	SHOWA
18	Dust-A-Side Australia	20	Simtars
11	Fire Response	37	Soft Rigging Solutions
5	FRSA - Fire Rescue Safety Australia	29	Steel Blue
6	Gastech	16	TUTIS VReddo
28	GCG Health Safety and Hygiene	1	uvex Safety ANZ
15	Glencore	23	Waterjel Aust Pty Ltd
33	Hammersley Products Australia	**	Heart of Australia Corporate Health Initiative

** Surfers Paradise Gallery

Booth Floor Plan - Event Centre Marquee



Booth 1

uvex safety ANZ



uvex: one brand – one mission

We protect people. At work and at play. On the production line and on the ski slope. While welding or while riding. uvex is one brand with one mission: protecting people.

Since 1926 we have kept workplace hazards to a minimum with our high-performance PPE. uvex continues to develop, produce, and sell workplace PPE with stringent demands placed on quality, functionality, and innovation.

Work directly with our uvex experts to recommend and implement high performance site PPE solutions. We offer product trials from head to toe.

Contact: Michael Tamone, Regional Manager QLD & PNG
M: 0488 240 116 **E:** mtamone@uvex.com.au

Booth 2

Draeger Australia



Founded in Germany, in 1889, Dräger is an international leader in medical and safety technology. "Technology for Life" is the guiding philosophy of the company. Dräger products protect, support, and save lives.

Our technical solutions are all components of an integrated safety concept dedicated to the improvement of mine safety – this begins with respiratory protection and gas detectors for everyday workplace safety and extends to self-contained self-rescuers and refuge shelters for emergency situations.

Contact: Jenna Duffield, Territory Manager - QLD
M: 0409 895 695 **E:** jenna.duffield@draeger.com

Booth 3

4cRisk Occupational Health



Founded in 2006 from our head office in Brisbane, 4cRisk has grown to become an industry leading Specialist Occupational Health Company, servicing clients across the country. Under the guidance of our Occupational Physicians Dr Nicholas Burke and Dr Kalesh Seevarain, 4cRisk are experts in delivering workplace medical services and specialist advisory assistance to a range of regional/remote, offshore and high-risk industries.

Contact: Meisha Kershaw, Operations Manager
M: 0428 727 396 **E:** mkershaw@4crisk.com.au

Booth 4

Mechanix Wear



Trust is earned and when it comes to your tools it's all about trust. That's why hardworking hands trust Mechanix Wear. Our commitment to hand protection has earned the trust of skilled trade professionals and service members around the world. It's our commitment to anatomical design, industry leading material technology and rigorous testing standards.

A commitment to looking beyond conventional ideas with the drive to innovate the most advanced gloves for working hands.

Contact: David Hill, Eastern Region Manager
M: 0403 353 062 **E:** dhill@mechanix.com

Booth 5

Fire Rescue Safety Australia



Fire Rescue Safety Australia Pty Limited (FRSA) are the Asia Pacific market leaders in the supply and service of specialist emergency response equipment.

We offer our services via a dedicated and professional team of people located in all major capital cities around Australia and in New Zealand via our sister company Fire Rescue Safety New Zealand Limited (FRSNZ).

FRSA is part of the Bunzl Australasia Limited Group of companies who are seeking to grow a strong Asia Pacific presence in the Emergency Services sector. We are expanding our operations further to cater for our customer's needs across the region.

Our holistic "Single Source" capability provides our customers with the opportunity to streamline their procurement channels, reduce risk and maintain their assets all through a company that is passionate about your compliance requirements.

FRSA is proud to represent numerous manufacturers who lead the world in their respective fields. Companies such as Holmatro, Task Force Tips (TFT), Avon Protection (Argus), Nardi Compressori, Euramco Safety (Ramfan), to name just a few.

FRSA is a Quality Endorsed Company certified by DNV-GL and is strategically positioned to tailor support to Government Emergency Services and Defence.

Contact: Daniel Selby, Regional Manager Queensland and Export
M: 0437 707 511 **E:** Daniel.selby@frsa.com.au

Booth 6

Gastech



Gastech has been involved in gas detection in the workplace since our inception in 1978. We have offered safety solutions to resource companies, defence departments, and infrastructure services since day one.

Our emphasis has always been to ensure that we have sufficient spares and service capability to ensure any gas detection system was maintained in service and accurately calibrated, ensuring worker safety was never compromised. The purchasers of Gastech products trust themselves and their personnel to our equipment, depend on us for training, and count on us for excellence in service and customer support. Quality and reliability not only describe our products that we offer but also our emphasis on customer support and service.

Contact: Peter Lowe, National Sales Manager
M: 0488 058 060 **E:** Peter.lowe@gastech.com

Booth 7

CQ University



Whether you're interested in building your skills or want to become a specialist, CQUniversity can help you make the next move in your safety science career. Choose to study online or on campus at one of our many locations and benefit from courses designed to prepare you with up-to-date, real-world knowledge and skills.

Chat to us today about study options and how we can help you take the next step in your career.

Contact: Aldo Raineri, Head of Courses – Safety Sciences
M: 0420 378 716 **E:** a.raineri@cqu.edu.au

Booth 8

Nautitech Mining Systems



Nautitech® is an Original Technology Manufacturer (OTM) of smart electronic solutions for underground mining. We harness technology to keep miners safe - by adapting existing technology to comply with international mining standards.

Our equipment delivers Communications and Visibility, supports Automation, and provides a platform for Asset and Condition Monitoring of underground equipment.

Meet the field engineering team and visit our display including the new Hawkeye 7" Smart Display, CUBEx Intrinsically Safe lights, Spitfire® UG Comms, Methane Master, and thermal cameras.

Contact: Bruce Reilly, Nautitech QLD State Manager
M: 0400 268 755 **E:** sales@nautitech.com.au

Booth 9

Pinssar Continuous DPM monitor



Pinssar is a Queensland company which has developed the world's only continuous diesel particulate matter (DPM) monitoring system for harsh mining environments. This innovative solution has been adopted by major mining companies across 6 continents.

Pinssar's practical solution enables data-based decision making to support and verify your mitigating DPM controls. Aside from creating a healthier workplace, the Pinssar system can be used to make your operation more environmentally sustainable in the pursuit of your carbon neutral goal.

Protect every breath.

Contact: Daniel Rose, Business Development
Manager – Australasia
M: 0499 937 575 **E:** drose@pinssar.com.au

Booth 10

Bunzl Safety and Lifting



Bunzl Safety and Lifting supply a vast range of materials handling, workwear, footwear, PPE and height safety equipment to the mining and industrial sectors, ensuring workplaces have access to the latest safety products.

The business also offers technical and operational support services, specific to mine operators, to complete the safety mix.

With safety as the priority, they can apply their resources and consolidate products into their extensive warehousing infrastructure, to offer an efficient 'fit for purpose' safety solution.

Contact: Simon Nott, National Business Development
Manager
M: 0417 176 043 **E:** simon.nott@bunzlsafety.com.au

Booth 11

Fire Response

Fire Response

Fire Response is a leading supplier of high performance fire fighting products for the mining industry and wider fire brigade markets across Australia.

Products on display will be:

- Severe-Duty Water Cannon with foam capabilities – for watercarts
- Newtonian & Non Newtonian fluorine free foam's – let us demystify F3 foam's
- Fire Fighting Handline Nozzles
- Foam proportioners
- Zone rated torches
- FLIR Thermal Imaging Cameras

Stop by our display so we can outline how these products will save your business time and money.

Contact: Nick Foran, Managing Director

M: 0409 720 790 **E:** firemail@fireresponse.com.au

Booth 12

Kenelec Scientific



Looking to improve workplace safety? Kenelec Scientific is one of Australia and New Zealand's leading suppliers of latest generation technologies for OHS monitoring. Our extensive experience makes us a one-stop shop for sales, rental, service and calibration. We provide a range of monitoring solutions for detecting and limiting worker exposure to coal dust, silica dust, diesel particulates and other airborne pollutants, including the latest models of respirator fit testers, air quality samplers and personal exposure monitors for better worker protection.

Contact: Nic Samtoy, Sales Engineer

M: 0439 879 211 **E:** nic.samtoy@kenelec.com.au

Booth 13

Pathtech



Pathtech are an Australian owned company with more than 37 years' experience in supplying workplaces, government departments, scientific and forensic communities with high quality products, including drug and alcohol testing devices. We pride ourselves with working with the business to help meet customer's needs.

Pathtech are Australia's largest supplier of saliva detection devices. The DrugWipe is used by Police jurisdiction for roadside drug testing nationally. The Pathtech drug detection product ranges are designed and manufactured in strict compliance with the highest clinical standards.

Contact: Lisa Took, Business Development Manager

M: 0413 157 112 **E:** lisa.took@pathtech.com.au

Booth 14

SHOWA



SHOWA is a 100% integrated, privately and family-owned Japanese glove manufacturer established in the early 1950's. We own 58 patents and employ more than 6,000 people through our global network. Being self-reliant in all we do, we own and operate 6 global production facilities and specialise in the design and manufacture a large range of hand protection solutions. Our EBT Biodegradable Gloves can help you achieve your sustainability targets without any compromise in protection and performance. Showa.... "Always Innovating – Never Imitating"!

Contact: Christopher Henry, National Sales Manager

M: 0419 890 014 **E:** Chenry@showagroup.com

Booth 15

Glencore

GLENCORE

Glencore is one of the world's largest global diversified natural resource companies and a major producer and marketer of more than 60 commodities. We've operated in Australia for more than 20 years, with significant interests in a range of commodities across all mainland States and the Northern Territory.

We are a major Australian employer, with more than 17,500 people working across 25 mines and metals processing assets, including copper and lead smelters and refineries in Queensland.

In 2021, Glencore contributed about \$13.8 billion to regional, State and national economies, including more than \$2 billion in taxes and royalties.

Please visit our displays:

- A virtual display of the control room at our Oaky Creek underground operation, showing how Australia's first fully automated longwall operates.
- A demonstration of our Operator Awareness Monitoring system (GuardVant), which uses real-time monitoring and analysis to help ensure the safety of our operators by detecting eye closure, distraction or other symptoms of inattention.

Contact: Kylie Ah Wong, Director,
Health, Safety & Training

M: 0427 622 005 **E:** kylie.ahwong@glencore.com.au

Booth 16

Tutis VReddo



TUTIS VReddo creates safe and productive workplaces. Cloud + VR workforce training and compliance software that ensures safe service delivery, with actionable people insights across skillsets, competencies, training interventions and authorisation / access control. Delivering an inducted, assessed, competent, authorised and ready to work workforce.

Contact: Chris Wright, Chief Executive Officer
M: 0418 759 182 **E:** chris.wright@tutis.com.au

Booth 17

4PS Software



4PS Software takes you from error prone spreadsheets, into a real time cloud based software that manages people, plant, procedures and processes.

Automated notifications, equipment registers, training matrix and maintenance management. Australian developed software.

4P Mobile for digital Inspections, Incident Reporting, Timesheets, Change Management, Risk Assessment, Training, Meetings, Observations, Permits and more...

When using both 4PS Software and 4P Mobile you will be able to do real time reporting of faults, issues, services in all but real time from the field.

Contact: Mick Storch, Managing Director
M: 07 4944 1272 **E:** 4ps@thebulliongroup.com.au

Booth 18

Dust-A-Side Australia



With a purpose to reduce dust emissions, operating costs and improve mine productivity, Dust-A-Side (DAS) is Australia's specialist in dust control and haul road and management to the mining and resources sector. First established in 1973, DAS today services over 70 mines across four continents and has accumulated more than 550 years of combined project experience.

DAS offers flexible support services for establishing and maintaining haul roads and light vehicle access roads, as well as: design: fabrication: commissioning and maintenance of mechanical dust suppression systems in fixed plant environments for bulk materials handling and processing applications. DAS also supplies and integrates a wide range of dust suppressant products, binders, surfactants and cannons within its offer to provide a truly unique and tailored service for its clients.

Contact: Vaughan Gray, Regional Manager - East
M: 0419 471 868 **E:** Vaughan.gray@dustaside.com.au

Booth 19

Resources Safety and Health Queensland



Resources Safety and Health Queensland is a risk-based, data driven regulator with a focus on the safety and health of workers in the state's mines, quarries, explosives and petroleum and gas industries.

Our vision is zero serious harm and for a resources sector free from fatality, serious injury and occupational disease. We work to achieve this through regulation, education and assisting industry to meet its obligations to protect and promote the safety and health of workers.

Contact: Peter Newman, Chief Inspector of Coal Mines
M: 0436 659 137 **E:** peter.newman@rshq.qld.gov.au

Booth 20

Simtars



Simtars provides a suite of services to support, educate, and assist industry in meeting its obligations to protect and promote the safety and health of persons from risks associated with mining, quarrying, explosives and petroleum and gas.

Simtars provides these services to industry on a commercial basis with the goals of enhancing the knowledge, skills and capabilities required to strengthen safety and health outcomes in Queensland's resources sector and to respond capably and efficiently should emergencies or disasters unfold.

Contact: Robyn Lihou, Information Resources Officer
M: 0414 426 832 **E:** robyn.lihou@simtars.com.au

Booth 21

ADE - Mine Haul Road Safety



ADE specialise in water trucks and haul road operations and has been supplying water truck spray systems to the QLD mining industry for over a decade. ADE Spray waters roads at a metered rate, automatically lowers spray rates when driving on ramps and can be integrated with third party fleet management systems. In addition, we have developed a free iPhone app to measure haul road friction and can provide site training on how and why sites should measure friction.

Contact: Eric Tomicek, Global Sales Manager
M: 0408 865 430 **E:** eric@ade.net.au

Booth 22



Board of Professional Engineers of Queensland (BPEQ)

The Board of Professional Engineers of Queensland (BPEQ) is Queensland's engineering regulator. BPEQ administers the Professional Engineers Act (PE Act) and the Registered Professional Engineer of Queensland (RPEQ) system.

Under the PE Act, professional engineers from all industries are required to be registered in an area of engineering – e.g. aeronautical, civil, electrical, mechanical, mining and structural – before they are permitted to practise engineering.

BPEQ registers over 18,000 Queensland, interstate and overseas engineers. BPEQ is also charged with investigating and prosecuting unsatisfactory professional conduct and breaches of the PE Act.

Contact: Nathaniel Tunney, Communications and Engagement Manager

E: Nathaniel.tunney@bpeq.qld.gov.au

Contact: Teresa Montgomery, Events and Customer Insight Coordinator

E: teresa.montgomery@bpeq.qld.gov.au

Booth 23

Waterjel Aust Pty Ltd



First Responder Burn Treatment – Water-Jel

When a burn occurs, seconds count!

Burn injuries need to be cooled immediately to stop tissue damage and further trauma.

The Water-Jel First Responder Burn Dressings and Blankets provide that easy access, fast, one-step relief for emergency first aid when you need it most.

Used by thousands of organisations globally, Water-Jel burn dressings and blankets deliver all the benefits of cool, clean running water. They utilise a non-woven carrier, pre-saturated with cooling clear gel – together they conform to the burn injury site as they cool and soothe the pain.

3D Safety are the sole distributor for WaterJel Burn Dressings and Blankets in Australia. Visit www.3ds.com.au/waterjel.

Contact: Tony Conacher, Director

T: 0421 381 788 E: tconacher@3dsafety.com.au

Booth 24

Joint Action Solutions



Joint Action Group are world leaders in MSD risk assessment technology. Using wearable sensors and a database of work-based injuries, we have developed a Consequential Risk Scoring application to allow businesses to reduce the risk of injury to workers, thereby cutting costs, improving lives and meeting compliance obligations. At our booth we will be demonstrating our sensors and showing the app in action.

Contact: Cheryl Hatton, Project Manager

M: 0455 408 078 E: cheryl@jointaction.solutions

Booth 25

Mayo Hardware



Come feel the benefits of ATG® Gloves' Comfort, Performance and HandCare™ technologies, or discuss site security and isolation best practice and efficiencies during shutdowns, maintenance or repair.

Focused on innovation and quality, ATG® designs, develops and manufactures gloves that enhance the performance of the most sophisticated work tool, the hand.

Implementing an effective isolation system does not have to be daunting and time consuming. The SafeSite Program by Mayo Hardware is designed to deliver industry complete lockout/tagout solutions and superior Master Lock Product with ease and efficiency.

Contact: Kim McKenna, State Manager – Queensland

M: 0417 699 448 E: kmckenna@mayohardware.com.au

Booth 26



Breathe Safe Air Purification Systems

HEPA engineering controls for hazardous airborne substances or mine dust exposure which has a high chance of causing heart and lung disease over time; we must:

- Educate workers about airborne respirable mine dust hazards.
- Isolate workers in pressurized dust-sealed cabins and enclosures.
- Include HEPA filtration for fresh air inlet and HEPA filtration for recirculation air intake.
- Breathe Safe is constantly developing new products to control and isolate workers from hazardous airborne substances; see what's new at our stand.

Contact: Javier Riveros, Sales & Operations Manager

M: 0438 665 366 E: javier@breathe-safe.com

Booth 27



Breathalyser Sales & Service Pty Ltd

Australia's oldest supplier of drug and alcohol testing devices offers the most advanced, efficient, accurate and reliable drug and alcohol testing products on the market. All products comply with the relevant Australian Standards ensuring supreme product accuracy. Our products are used by all levels of government and the private sector, including: local councils, roads authorities and associations, law enforcement, corrective services, public health, public and private utilities, the mining, transport and shipping industries, pubs and clubs, sporting associations and the personal market.

Contact: Ben Ridley, Queensland State Manager
M: 0429 782 586 **E:** ben.ridley@breathalyser.com.au

Booth 28



GCG Health, Safety and Hygiene

GCG is the largest provider of Occupational Hygiene services to the Queensland mining sector. Our national team of 90 includes Safety and Occupational Hygiene professionals who work with clients to create and maintain safe and healthy working environments. Australian-owned and operated, we have been innovating for more than 15 years. We invite you to visit our booth and learn how GCG has been advancing worker health and safety through developing applied technology solutions.

Contact: Simon Crane, Business Development Manager
M: 0402 557 828 **E:** simon.crane@gcg.net.au

Booth 29



Steel Blue

Since 1995, we've been putting the same amount of care, dedication and craft into our work as the tradespeople who wear our boots. Our work boots are constructed from premium materials so that you can perform at your best. Our Trisole® Comfort Technology soling system is a foundation for your whole body. Every pair of our men's and women's work boots includes a 30-Day 100% Comfort Guarantee and our boots are endorsed by the Australian Physiotherapy Association (APA). True skill requires great equipment.

Contact: George Browne, Queensland Territory Manager
M: 0409 496 144 **E:** george.browne@steelblue.com

Booth 30

Lear Siegler Australasia Pty Ltd

Lear Siegler Australasia Pty. Ltd. (LSA) is an Australian owned company with over 45 years of experience in environmental technology and process control.

We are an engineering-based company that has worked closely over the years with both channel supplier partners and industry leaders to develop fully integrated turnkey solutions in the Air Quality, Stack emissions, Mercury monitoring and Oil in Water monitoring to name just a few. Furthermore, we specialise in underground monitoring and open cut with our real-time dust monitor, reducing exposure to black lung disease. We are the exclusive supplier of the PDM-3700 Personal Dust Monitor!

Contact: Nicholas Phaendonos, Director
M: 0428 258 429 **E:** nicholas@lear-siegler.com.au

Booth 31

Safety Mate



Safety Mate is a proud Australian company delivering market-leading hand and eye protection solutions. We partner with the world's best safety manufacturers to provide innovative, high performance safety products to the mining industry.

We believe that when it comes to safety, only the best is good enough. There is no compromise on safety and performance.

By combining experienced and expert field advice with some of the world's best safety brands, Safety Mate will deliver when it comes to your hand and eye protection needs.

Contact: Guy Ranger, Territory Manager – QLD/PNG
M: 0427 185 250 **E:** guyr@safetymate.com.au

Booth 32



Heat Trap Solutions Pty Ltd

We support the mining industry with chilled water technologies that improve the productivity, safety and comfort of workers in hot environments.

Our Safety Shower Continuous Recirculation Technology (SSCR) makes the supply of potable water to eyewash safety showers safe to use at all times and eliminates water losses from antiscald valves.

Our Flo-Thru eyewash safety showers are fully flushed and self-draining.

Our chillers and water-cooled vests allow Boilermaker-welders and others to work full time without the need for breaks.

Contact: Ashley Challenor, Managing Director
M: 0402 838 321 **E:** ashley.challenor@heat-trap.com.au

Booth 33



Hammersley Products Australia

The Hammersley range of chemicals has been specifically designed to provide specialty products for individual requirements. Workplace health & safety and our environment have been prime considerations in the development of this range. Hammersley is continually expanding its technologies to increase the efficiency of our products to make our workplace and environment safer.

Contact: Jono Eather, National Sales Manager
M: 0477 293 700 **E:** jonoeather@hammersley.com.au

Booth 34



Cirlock Pty Ltd

Australia's original manufacturer of lockout / tagout equipment, CIRLOCK, have a full range of lockout equipment available for all energy sources, including signage and labelling.

Since its foundation in 1992 in Mount Isa by Erik Larsen, CIRLOCK has expanded its core business of Lockout / Tagout Equipment to include Safety Signs and Labels.

CIRLOCK is proudly distributing its products Australia wide as well as exporting to Europe, Denmark, Asia, NZ and Mongolia.

The majority of CIRLOCK's products are made in Australia and are available through Electrical and other Wholesalers Australia wide, CIRLOCK's on-line shop or direct from Cirlock.

Contact: Nicole Fietz, Sales Manager
M: 0499 294 669 **E:** nicole@cirlock.com.au

Booth 35



ATOM Safety

We know you take safety seriously when you're responsible for getting workers home safely to their loved ones. We are a team of professionals dedicated to remaining at the forefront of all the latest safety standards, technologies, innovations, and products available in the market. As your partner, we're here to give you advice and help you present agreed solutions to your business. You're in Safe Hands with ATOM Safety.

Contact: Luke Moriarty, ATOM Safety Specialist
M: 0438 819 272 **E:** Luke.Moriarty@atomsafety.com.au

Booth 36



BUMA Australia Pty Ltd

Our vision is to be a leading mining service provider contributing to future energy solutions. With extensive experience in the mining industry, BUMA Australia provides clients with reliable delivery of contracted services.

BUMA Australia offers the full scope of mine services and can tailor the offering to meet client requirements. This includes:

- Short, medium & long-term scheduling & planning
- All mine operations & statutory management
- Greenfields development & start-up
- Maintenance & management of large-scale mobile plant
- Mine site rehabilitation works
- Civil works

Contact: Micala Johnson, Health, Safety & Sustainability Manager Health, Safety and Training
M: 0423 048 766 **E:** Micala.Johnson@buma.com.au

Booth 37



Soft Rigging Solutions

Soft Rigging Solutions is dedicated to bringing multi award winning, patented & innovative rigging solutions to the world. Redefining rigging by making the use of dangerous heavy steel d-shackles and slings in mining redundant. Its products not only increase productivity but improve safety and enable inclusion. On display will be ultra-lightweight recovery Shackles and the new patented Safety-up Device/Tray Retention System.

Contact: Josh Leppard, Managing Director
M: 0439 950 397 **E:** josh@softtriggingsolutions.com

Booth 38



Ansell

Ansell is an Australian company that has been providing safety solutions for over 125 years. Manufacturing premium protective products, Ansell is renowned for its high level of quality and services. As a world leading manufacturer in safety, Ansell focusses on protecting the most valuable asset of any company — its people.

Contact: Gary Craig, Territory Sales Manager
M: 0492 808 149 **E:** gary.craig@ansell.com

Booth 39

KINNECT



Helping people since 1996, KINNECT is a leading independent, privately-owned and national Occupational Health Company.

With services ranging from hire to retire and everything in between, our unique value proposition is our understanding and appreciation of health risk and partnering with clients to develop tailored and sustainable solutions.

Visit our stand at QMIHS and we'll make a \$10 donation to our 25th anniversary charity partner, Ngak Min Health, supporting indigenous families in the Cape York Peninsular with primary healthcare.

Contact: Clark Hopley, Chief Customer Officer
M: 0407 611 037 **E:** clark@kinnect.com.au

Booth 40

Safety Equipment Australia



PISO 9001 accredited, Safety Equipment Australia (SEA) specialises in the field of respiratory protection supplying the Australian market with premium respiratory protection for over 30 years and providing technical support and training to end users across all industries.

Importer/wholesaler for Sundström respiratory products and exclusive Australian Agent for Interspiro SCBA, Alphatech Trellech reusables suits and RescueTech Solo Rescue® Decon Washer.

Its Sydney head office consists of sales, in-house design, engineering, technical service, test laboratory facilities, manufacturing and warehouse with a local QLD sales representative.

Contact: Graham Powe, General Manager
M: 0419 530 709 **E:** gpowe@sea.com.au

Booth 41

ACL Industrial Technology



ACL Industrial Technology is a leading independent industrial supply company. We are on a mission to eliminate supply chain frustration – delivering certainty through increasing productivity and reducing waste with the fast, easy, and hassle-free supply of machinery, welding, safety, abrasives, and industrial products.

With deep roots in regional Queensland, we have many niche safety products for the mining industry including the world's most advanced respirators from GVS & RPB Safety and innovative tool tethering solutions from Gripps.

Contact: Alex Werchon, National Business Development Manager
M: 0492 808 149 **E:** alex.werchon@aclconnect.com.au

Booth 42

Blundstone Australia Pty Ltd



Blundstone is a privately owned Australian company headquartered in Hobart, Tasmania, providing work and safety footwear for nearly every industry and environment, from construction to mining to logistics.

Continual innovation has led to an all-new design-driven range of composite toe cap safety boots, RotoFlex. Developed using the latest biomechanical technology for optimum stability and flexibility, the RotoFlex range takes work boots to new heights and cements Blundstone's place as a market leader for safety footwear.

Contact: Sam Gosling, Australian Business Development Specialist
M: 0473 558 463 **E:** sgosling@blundstone.com

Booth 43

CQ Rescue Health Services



MCQ Rescue Health Services is a leading provider of Drug and Alcohol Testing throughout Mackay and Bowen Basin. All proceeds from this service are used to help fund the region's rescue helicopter, RACQ CQ Rescue. Since 1996, CQ Rescue has provided rapid response aeromedical care whenever, wherever there has been a call for help across this region.

Contact: Samantha O'Neill, Business Manager
M: 0448 067 009 **E:** Samantha.oneill@cqrhealth.com

Booth 43

MATES in Mining



A profile of your organisation - MATES in Mining is an evidence-based suicide awareness and prevention program for the mining and resources industry. MATES in Mining delivers an integrated program of workforce capacity building and support, utilising training as a tool to raise awareness about suicide and mental health in the mining industry. MATES in Mining works from the fundamental principle that increasing the capacity of workers to recognise suicidal behaviour, and prevent and respond to suicide within their workplaces, is essential to reducing the rate of suicide.

Contact: Suzanne Desailly, General Manager
M: 0409 506 020 **E:** sdesailly@mates.org.au

Booth 43

My health for life



My health for life is a program funded by the Queensland Government and run by an Alliance of organisations. We can come to your workplace to deliver free health checks and a six-session healthy lifestyle program. Participants learn about how their health is tracking in terms of chronic disease risk, find out if the My health for life program is right for them, and learn about other services available.

Contact: Janet Clarke, Workplace Project Officer
M: 0431 285 456 **E:** jclarke@strokefoundation.org.au

Booth 43

Quitline Queensland



Quitline (13 7848) is a free, confidential evidence-based telephone counselling service where you can receive expert advice and assistance from genuine people to help you quit smoking. Our telephone counsellors can chat about products to help you quit, work with you to develop a quit plan, and answer your questions about smoking, quitting and everything in-between. In Queensland, the service is available 7 days a week. You can also request a call-back online via quithq.initiatives.qld.gov.au

Contact: Hannah Brumm, Health Promotion Officer
M: 07 3022 0330
E: 13QUIT-HealthPromotion@health.qld.gov.au

Booth 44

Blackwoods



Over the past 140 years, Blackwoods has grown from being a small marine supply business on the banks of Sydney Harbour, to where we are today - Australia's largest provider of industrial and safety supplies.

With unrivalled expertise and the ability to bring together the best of the best, we have earned our place as Australia's first choice for industrial and safety products and services including personal protective equipment, welding and gas, power tools, hand tools, workwear and much more.

Contact: Simon Foster, Technical Specialist, Safety
M: 0418 259 239 **E:** simon.foster@blackwoods.com.au

Booth 45



Connec Operations Pty Ltd

Connec is a Brisbane-based technology company that has re-imagined ex-certified connector systems using current day materials science and manufacturing processes and combined this with an internal single-mode fibre-optic connector solution so as to facilitate a composite medium voltage electrical power and high bandwidth data communications system. The company is an ISO9001 accredited connector system OEM with both its restrained and bolted systems products now in full production use.

Contact: Russell Frith, Chief Executive Officer
M: 0409 056 514 **E:** russell@connec.com.au

Booth 46

RED OHMS Group



RED OHMS Group is a proud Australian owned and managed business, with a reputation for providing technical excellence, service quality and commercial value across all our service areas. We are a health, safety, training, hazardous material, and environmental consultancy, with a goal of ensuring that, where possible, people go home in better health than they arrived at work.

RED OHMS Group has a national footprint comprising of the following specialist service delivery areas.

- Hygiene
- Environment
- Training
- Hazmat

Contact: Paul Gerber, Regional Manager / Principal Consultant QLD/NT
M: 0405 702 075 **E:** paul.gerber@redohmsgroup.com.au

Booth 47

Medical Rescue Group



Medical Rescue is leading supplier of remote medical services and deployable health solutions to the resource, construction and defence sectors. Supplying Doctors, Paramedics & Nurses along with occupational health services, remote medical clinics and emergency response vehicles we have a well demonstrated capability of risk mitigation and integrations with HSE teams. Our 500+ clinicians are well supported by our 24/7 operations teams based at our Gold Coast headquarters. Come by booth 47 for a chat with one of our executive team.

Contact: Dr Glenn McKay, Managing Director
M: 0414 625 494 **E:** glenn.mckay@medialrescue.com.au

Booth 48

Bollé Safety



Bollé Safety, the global brand for eye protection since 1888. The company designs and manufactures glasses and goggles for industrial compliance. Since the introduction of the exclusive PLATINUM® double-sided anti-scratch and anti-fog lens coating, Bollé Safety has been at the forefront of industrial eye protection, becoming synonymous with quality, comfort and style. With a wide range of innovative, comfortable, and protective safety and prescription eyewear, the company is trusted with the protection of over 20 million workers' vision in 100 countries.

Contact: Brett Rovelli, Territory Manager – North Queensland

M: 0487 221 308 **E:** brett.rovelli@bolle-safety.com

Booth 49

CRC SmartWasher®



The most effective Parts Washer solution for your company.

Achieve class-leading safety and sustainability without compromising on performance. The SmartWasher® system is the proven modern solution for your workshop that eliminates the need to handle or dispose of hazardous waste while achieving highly effective cleaning performance through bioremediating technology.

The Self-Cleaning solution allows you to significantly reduce wastage output, increase workplace safety, and meet sustainability goals while lowering costs with no reduction in current cleaning effectiveness. Be Smart, Be Safe, Be Sustainable.

Contact: David Bailey, Trans-Tasman BDM Lead

M: 0417 797 861 **E:** david.bailey@crcind.com

Booth 50

I-MED Radiology Network



Black Lung (Pneumoconiosis) Screening & Diagnosis - Depend on the I-MED Radiology Network

We are committed to providing the highest quality imaging and care; supporting our referrers and customers with exceptional service and innovation to deliver the best health outcomes for patients.

- Highest number of NIOSH-certified 'B-Reader' Radiologists in Australia for reporting all dust-related chest x-ray examinations to ILO standards.
- 240 + clinics provides a truly national footprint with easy patient access, trusted expert opinion, a dedicated national contracts team and fast turnaround time.

Contact: Adam Michael, National Contracts Business Development Manager

M: 0404 330 262 **E:** adam.michael@i-med.com.au

Booth 51



Queensland Mines Rescue Service (QMRS)

QMRS is the Accredited Corporation for the Queensland coal industry providing training, equipment and resources to assist underground coal mines achieve a mines rescue and a mine Inertisation capability.

In addition, QMRS provides ERT training to surface operations and mine emergency management training to all mines on a fee for service basis.

Our display will highlight underground, surface and mine emergency management training activities available through QMRS.

Contact: P: (07) 4958 2244 **E:** enquiry@qmrs.com.au

Booth 52

Coal Foam



Coal Foam GOAF FOAM is designed specifically for use in the goaf in underground coal mines during mining operations. It is in continuous use underground as a tool for the management of gas in the goaf during longwall mining operations.

Coal Foam EXT-ECO is designed specifically for use in underground coal mines during the inertisation process, underground heating events and fires. It has been continuously used as the primary response foam during many active underground inertisation events.

Contact: Jonathon Silbert, Director

M: 0418 940 112 **E:** jsilbert@coalfoam.com

Coolangatta Gallery



Heart of Australia Corporate Health Initiative

Heart of Australia Corporate Health Initiative (HOACHI) embodies the most innovative approach to employee health service delivery across regional Queensland via a fleet of custom-designed mobile medical clinics. HOACHI provides mobile respiratory screening (including X-ray & CT) for mine and quarry workers, as well as a range of prevention / early-intervention health screening and education programs. These programs have been widely adopted across the resources sector and consistently deliver improved health outcomes at both the individual and organisational level.

Contact: Andrew Baillie, Program Lead

M: 0421 837 292 **E:** andrew@hoachi.com.au

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The Gracey Spray Fitzroy Australia Resources Carborough Downs Coal Mine	Pg 40
Magnetic Base Hydraulic Cylinder Adaptor Sojitz Blue - Gregory Mine	Pg 41
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The Innovation Submissions published in this Handbook are the Short Descriptions. The complete version of the Submissions will be listed in the 'Past Conferences' page on the Conference website.



Winner 2019
Synthetic Light Weight Shackles
BMA - Saraji Mine



Winner 2018
Grasstree Development Team
Dust Suppression
Anglo American - Grasstree Mine



Winner 2017
SAFE STOP (Anti Door Jam Unit)
Redpath Australia Pty Limited

Workshop Wheel Chock

Anglo American Dawson Mine

The Problem

Everyone who has worked in mining for longer periods of time can remember hearing a story about an incident where someone has driven over a wheel chock in a workshop resulting in the chock being ejected at force. In August 2021 Dawson Mine had just such an event in the main workshop where a rear dump drove over a wheel chock. This resulted in the 14kg wheel chock being ejected at force sideways into the adjacent bay, impacting set of metal stairs, bending the frame, and then driving the steps into position 3 of the rear dump in the adjacent workshop bay. There were people working in the vicinity of position 3 tyre on the adjacent rear dump during the event.

Wheel chocks currently available in industry are designed to hold a loaded truck on a 10 percent slope, usually on earthen material. These chocks are not designed for workshop environments where they are placed on hard surfaces that can be wet or have hydrocarbon or detergent residue that can reduce friction.

Despite numerous similar events in the industry across the world, controls put in place to date are limited to administrative behavioural controls of 'check more vigilantly'

The Solution

The Dawson Maintenance team did not accept reliance on administrative behavioural controls to prevent reoccurrence of the wheel chock ejection event. Instead, they developed a concept on site at Dawson Mine with input from the workforce, then engaged with the OEM to collaborate on finding an engineering solution.

Benefits/Effects

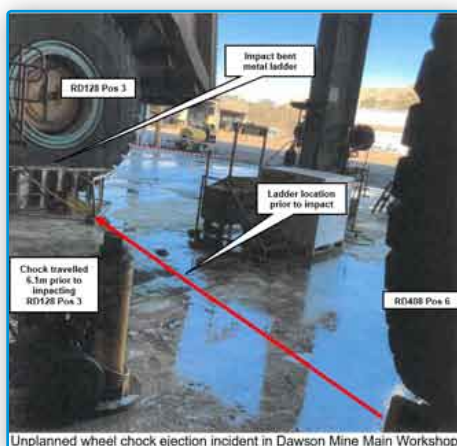
The team developed a workshop chock that was effective at stopping equipment rolling on a flat workshop surface, it had a flatter trapezoidal profile to prevent wheel chock ejection even if inadvertently driven over, was designed to ensure ease of placement in the centre of the tyre without putting the person in line of fire of the tyre rolling and had improved ergonomic design to prevent manual handling injuries.

Transferability

The workshop chock is transferrable to be used in any industrial setting worldwide where large rubber tyred equipment is required to be made fundamentally stable by chocking on hard surfaces such as a concrete workshop floor. The unique design of the chock is an engineering solution to prevent the unwanted fatality risk of wheel chock ejection when a wheel chock is inadvertently driven over.

Innovation

Wheel chocks have existed for a long time in industry with the legacy risk of rapid ejection if driven over with rubber tyred equipment. The outcome of this project is a World first chock design to engineer out wheel chock ejection risk yet still remove the risk of unplanned rolling movement or large rubber tyred equipment on hard surfaces. Cost of the workshop chock is \$1500 retail price as opposed to the standard industry No.6LW wheel chock at \$600, however the design of the workshop chock is not prone to damage when driven over, which is the common end of life for standard industry wheel chocks. As such, the workshop chock will last significantly longer and would be a less expensive investment over time.



Parted Mooring Line Snapback Protection Barrier

BHP Mitsubishi Alliance (BMA) – Hay Point Coal Terminal

What weighs 20kg/m and travels at over 1200km/hr in an uncontrolled condition?

Answer: A parted mooring line from a vessel.

In 2020 Hay Point Coal Terminal experienced an event where through vessel movement and excessive loading of a mooring line, a mooring line parted resulting in a violent snapback of the mooring line, striking a roadway handrail.

This event, the damage to the structure, and the realisation of the potential catastrophic outcome of such a snapback of a parted mooring line highlighted the need for the implementation of additional controls on site – an innovative solution to the problem was needed....

The parted mooring line contains incredibly high amounts of stored energy, and when these lines fail, and are travelling at greater than the speed of sound, these events have the potential for increased risks including fatalities. The risk of mooring lines parting on board visiting bulk carriers was identified as an area of risk exposure at Hay Point and globally.

In conjunction with a testing facility, and an international manufacturer and supplier of safety fences, the BMA Hay Point team has undertaken many world firsts and has developed and installed a snapback barrier to mitigate the risk of a parted mooring line.

A system has now been developed that will change the world's ports.

A barrier now exists to reduce the risk of a parted mooring line to those who work on a berth. Not only are we making BMA's Hay Point Coal Terminal safer, we are changing the safety for all port operators globally.

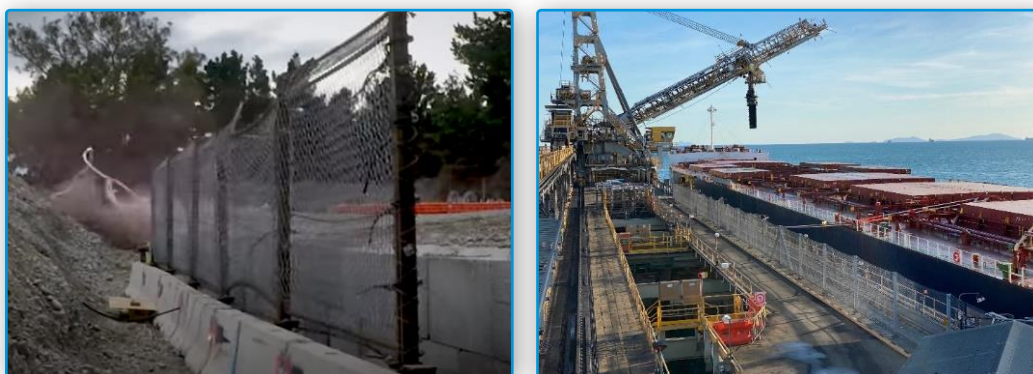


Figure 1 - Testing the final design and the Final Design installed to Berth 1

The Gracey Spray

Fitzroy Australia Resources Pty Ltd - Carborough Downs Coal Mine

The Problem

The steel/steel contact between components during the bolt tightening process, reached a sufficient temperature to directly ignite the rib methane accumulation or ignite the bolt thread hydrocarbon as the transitional fuel source to the rib methane accumulation.

The Solution

The Rod Gracey (Development Fitter) initially developed a rib bolter concept to implementation stage, to deliver a targeted water spray closer to bolt-mesh interface area on a retractable drill rib rig.

Benefits

The primary benefit of the Gracey Spray is to control heating during the bolting process to remove the ignition source to prevent a frictional ignition event.

- Eliminates the use of a wet dolly system.
- Cost effective control (overall install cost \$650.00 per drill rig).
- Allowed for the re-introduction of steel mesh.
- Pushes localised gas accumulation away from bolting area.
- Less water used during the bolting process.



Figure 1 Working Gracey spray with dolly

Transferability

- Capacity for use in other bolting tasks, such as the CM roof bolter, Multi-Bolter, QDS, Air Track and Rapid Face Bolt units.
- Able to use the fully automated spray system on any piece of plant with a similar issue.
- This is low cost to set up and doesn't require major modifications or a significant maintenance regime. .

Innovation

The Gracey Spray is a first to the coal mining industry. It is fully automated, transferable to other equipment and low cost. It is a purpose-built engineering solution that has been designed and implemented at the coal face to prevent frictional ignition events and it deserves to be shared across industry.

Cost of initial implementation

- Ball valve (\$15.25)
- Hydraulic supply hose (\$52.54)
- Hydraulic fittings (\$45.60)
- Spray (\$30.00)
- labour (\$500)



Figure 2 Operator position during operation

Magnetic Base Hydraulic Cylinder Adaptor

Sojitz Blue – Gregory Mine

The Problem

A poorly retained hydraulic cylinder utilised to break the inner tyre bead on mobile equipment has rapidly ejected causing injury to a tyre fitter as part of a routine tyre change.

The current setup and use require the fitter to hold the cylinder by hand until hydraulically it stays in place. This is unsafe and relies on judgement and body position to stop injury.

The Solution

After the incident the Sojitz team held a brainstorming session focused on a simple, practical solution that would eliminate the risk at a low cost during tough economic times.

From this session came an idea to use a custom adaptor on the cylinder base that would use rare earth magnets to clip to the structure of the machine to hold the cylinder in place. By using switchable magnets, it was thought that removal and installation would be easier and safer.

The tyre specialist Dave Trenberth and his tyre fitting team worked with JJ & D Innovations (Joe Guinea) to turn the concept into a design using 3D Design and printing. A prototype was quickly delivered to the operation. Preliminary testing made a few minor changes before a final prototype was ready for use. A key secondary safety feature was the addition of a safety lanyard just in case the unit move or fell during pressing.

Implementation

Implementation was very simple as the adaptor is permanently mounted to the cylinder. Ownership has been strong with the tyre fitters involved in the process from the beginning. By making it easier than the old method, uptake is assured.

Transferability and Cost

With the first unit costing approximately \$500, using this adaptor on this task and the concept on numerous other hydraulic pressing applications, this concept could be widely used to reduce the risk of injury to trades people across the industry.

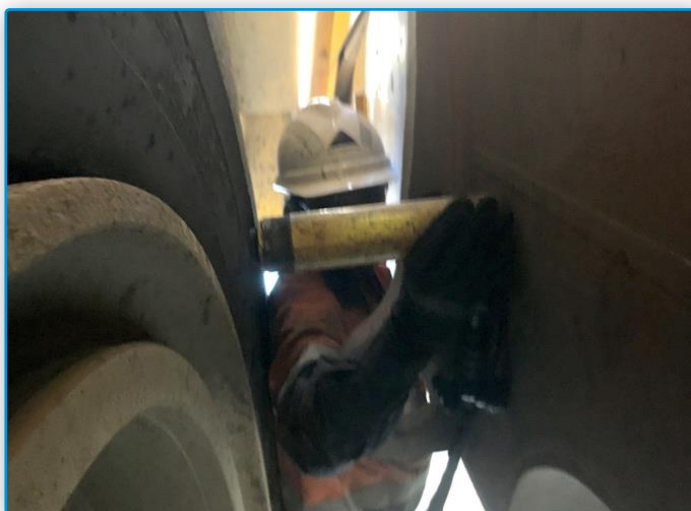


Photo 1- Manual high-risk method of installation/Retention



Photo 2 – Cylinder in place with new adaptor & lanyard

Illuminated Guidance System for Day and Night

CDMI Australia Pty Ltd

(NOTE: This initiative was ready for submission for the 2020 HSE Conference which was cancelled due to COVID. It has since been commercialized to allow supply to Daunia Mine and another CQ Coal Mine where it is used in the Blast Crew. Approval was sought and granted to submit this innovation to the 2021 conference).

The Problem

In 2013, following an incident on a CQ Coal Mine where poor visibility resulted in a vehicle breaching a bund, lack of visibility in all areas of a mine at nighttime was identified as a significant safety issue for coal mine workers. With few options available for Coal Mine Operators to address this problem, Ian Dennis (a coal mine worker) set about trying to find a solution.

Ian's research discovered that very little emphasis has been put into improving delineation and night time operations by the mining sector. The current delineation has been the norm for many years, with the last significant change being when reflective tape was placed on mobile equipment back in 2006. The most common statement heard from operators is that they cannot see where they are going at night.

When driving vehicles and equipment and trying to navigate around the mine at night, it is hard for operators of light vehicles, medium vehicles and the heavy vehicle to see critical road variations such as bends and turning points.

The current road delineator (similar to guide posts that are used on public roads) has red and silver reflectors to identify the sides of, and any changes in, the roadway. However they are reliant on the headlights of the approaching vehicle to illuminate the reflectors so the operator can see them. Dusty conditions, rain, mud splattered reflectors or muddy headlights all combine to make seeing these delineators difficult, especially at night time. Accordingly, all operators need to make a judgment call to pick their line of travel when commuting along these mine roads and entering bends and intersections. This condition has led to operators accidentally contacting center and side road bunds and missing intersections.

Another identified area where visibility of delineators is a problem is where digger units are operating below drill and blast patterns or other benches and, due to poor visibility of the currently used small battery operated flashing lights, the operator inadvertently over digs into those areas, causing potential safety issues.

Finally, the reflective signage for other hazards on site - bodies of water; in-pit sumps; OCE controlled areas - which also rely on the vehicles headlights to illuminate them, are subject to the same limitations mentioned above for the guide posts, which can make them hard to see also.



Fig 1. Illuminated Guidance System- Standard



Fig 2. Illuminated Guidance System- Current



Fig3. Illuminated Guidance System- Road Crossing



INDEX - Health Program Finalists

Kestrel Healthy Lifestyle Challenge

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Kestrel Coal Resources

Strength in Numbers - Mental Health and Wellbeing

Pg 45

Redpath Australia

Kestrel Healthy Lifestyle Challenge

Kestrel Coal Resources

The Problem

The mining working environment can be physically demanding, especially for those working 12 hour shifts underground.

A lot of our team are either busy at work, or on the go at home, and find it difficult to dedicate time to exercise and consciously eating well.

We found a lot of the workers were not preparing wholesome meals for their shift and rely on “quick and easy” options, which do not always provide sustainable energy sources for a 12-hour shift. After seven days of physical work, it is also difficult for a lot of workers to see the benefit of recreational exercise, which would provide them with more energy in the long run.

We know that a healthy lifestyle and balanced eating behaviours are important to prevent chronic illnesses, such as cardiovascular disease and diabetes.

We wanted to support the Kestrel team to be the best versions of themselves, while at work – and at home. From here – the Kestrel Healthy Lifestyle Challenge was formed. Ultimately, we know that a high performing workforce is driven by happy, healthy people.

The Solution

Kestrel’s Healthy Lifestyle Challenge.

Intent of program:

- Inspire our employees to kick-start their lifestyle change
- Foster better health awareness amongst our workforce
- Reduce injuries and recovery time

Program outline:

- 90-day challenge
- Individual 90-days starts from participants first Body Composition Analysis scan, conducted on site
- \$100 entry fee (100% of entry fee goes to prizes)
- Participants receive three free Body Composition Analysis scans on site
- Weekly Health and Nutrition updates

Program categories:

Category 1 % change in Body Fat Mass (BFM) MALE

Category 2 % change in Body Fat Mass (BFM) FEMALE

Strength in Numbers - Mental Health and Wellbeing

Redpath Australia

The rate of suicide and mental health disorders within the mining resources industry is 80% higher than the general working population. Mental Health has become a more commonly spoken about topic however we were still faced with a lot of people struggling with illness or taking their own lives. The latest statistics tell us that eight Australians take their own lives each day, 75% are male, and 93% sought no help before acting on suicidal thoughts.

The Strength in Numbers mission was to create awareness and provide education around mental health and suicide. Building on these foundations of mental health awareness, Redpath looked to also increase awareness of personal wellbeing and self-care strategies to improve overall health.

The response of the initiative was overwhelming due to the personal value this provided to our employees. The training and education employees received throughout the program will stay with them forever. Redpath employees can now intervene and assist with critical mental health issues in our workforce in real time. This in turn provides great value to Redpath, with our employees feeling more supported, they feel safer in the work place.

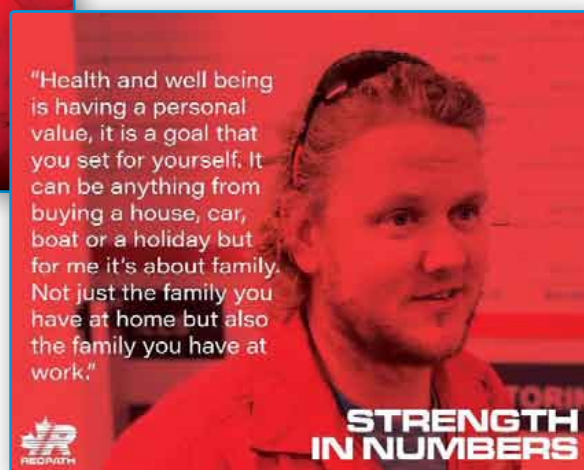
The learnings from the program also provides a societal value to the mining industry. The education received can be passed on to family and friends. The knowledge can be spread further into mining industry if an employee was to change jobs, or it could be passed onto their local community. By having the basic steps in place to have hard conversations, employees have reported feeling more confident and equipped, which meant it was more likely they would have a tough conversation with a mate if they notice something isn't right, or connect them to someone who could help.

The Strength in Numbers Mental Health and Wellbeing program could easily be implemented throughout the resources industry. It all starts with a simple conversation and some quality education to develop mental health support and safety networks on site.

The cost to run the program is approximately \$150,000 for 12 months.



Strength in Numbers Campaign poster



Self-Care example

INDEX - Other Innovation Submission Entries

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Autonomous Shearer <i>Anglo American</i>	Pg 48
Longwall Pressure Measuring System <i>Anglo American</i>	Pg 49
Applications of Thermal Photography <i>Collinsville Open Cut, Glencore</i>	Pg 50
Longwall Scenario Training <i>Anglo American</i>	Pg 51
Temporary Rim Protection Device <i>Rim-Lock & Quicklock</i>	Pg 52
GCOM Portal - Delivering the Right Message at the Right Time <i>Glencore Coal Assets Australia</i>	Pg 53

Auxiliary Fan Crossover

Fitzroy Australia Resources Pty Ltd - Carborough Downs Coal Mine

The Problem

Development operations install longwall conveyor structure on advance to prevent the re-work of conveyor structure prior to longwall operations. The wider belt structure decreases room between the structure and the auxiliary fan leaving a tight means of secondary egress in the event of an emergency.

Previous solutions.

- Drive a fan niche (20m x .5m widened section in belt road) leaving;
- Belt crossover installation at boot end.
- Build 1050mm belt structure past auxiliary fan section.

The Solution

The auxiliary fan bolt on crossovers are affectionately known on site as “Ringo’s Runway” named after the electrician with the original idea. A bolt on platform and handrail system.

Benefits

1. Safe & accessible secondary egress.
2. Reduce manual handling (1 CMW can fold up/ down platforms fixed to the auxiliary fan).
3. Platforms fold up within confines of fan if not required.
4. Modular parts for ease of install, repair or replacement.
5. Improve pillar cycle time (removal of fan niche) and belt move time.
6. Engineering control to reduce manual handling risk to CMW’s (not rebuilding structure).
7. Use same platforms and handrails already on site (continuous miner).
8. Removal of fan niche mining.
9. Removal separate belt crossover from infrastructure.
10. Remove need to build ~10 bays of 1050mm belt structure past auxiliary fan.

Transferability

The auxiliary fan crossover can be used in any operation as a safe and secure means of secondary egress. The modular platform concept and simple engineering design can be adapted to any auxiliary fan frame. The attachment design to the auxiliary fan can be adjusted to suit any height conveyor structure.

Innovation

The simplicity of this concept has been discussed with many workers onsite Modular sections so easier to manage and weight reduction.

- Using materials already on site (miner platforms and handrails)
- New design hinges to reduce weight and lock in platforms for safety, also folds up within the footprint of the aux fan to minimise damage
- Changes to steps for access and increased stability

Costs

A set of auxiliary fan crossovers cost approx. \$20k and some materials were already Costs saving from fan niche mining and design, Labour costs and decrease exposure to manual handling from belt install.



Autonomous Shearer

Anglo American

The Problem

Longwall mining exposes persons to hazards including dust, gas and moving machinery.

A key objective of Anglo American's innovation-led approach to sustainable mining, Future SmartMining™ is to remove people from potentially hazardous situations through autonomous operation. Remote operations are actively supported by coal mineworkers within a purpose-built Remote Operations Center (ROC).

The Solution

1. Shearer Control Accuracy, Anglo American have co developed with both leading OEM providers Komatsu and Eickhoff to provide the industry with best in class autonomous capable systems
2. Auto Duck, Auto Duck (2021) developed the Auto duck feature with Komatsu, Marco and Eickhoff. Auto duck enables the shearer to identify areas on the longwall face that may be double advanced due to challenging strata or where the face is not fully pushed. Auto duck removes the requirement to move to the dirty air side of the shearer to manage these situations
3. Auto Gate Road entry (AGRE), AGRE (2021) was developed to remove the requirement for an operator to "teach" the shearer the roadway height. Previous operation an operator would teach the shearer the roadway cut height manually, this would expose that person to hazards.
4. Anglo American Seam Steering, Seam Steering (SS) System (2021) enables autonomous and remote longwall horizon control and was developed to remove persons from the Longwall Face, includes both a camera identification system, software and machine learning application

Benefits / effects

The industry first initiatives listed above are showing significant benefits to our three underground mines including reduced exposure of persons to hazards, increased consistency and performance.

Transferability and Cost

The work has been successfully implemented, at Anglo American's Moranbah North Mine, which has now become Australia's most capable remote operated underground metallurgical coal mine. It also provided the blueprint for subsequent implementation at Grosvenor and Aquila mines.

Transferability and Cost

We have implemented a range of innovative industry first systems including:

- Shearer steering systems
- Implementation of integrated camera system
- Enhanced logic solutions Auto duck and auto gate road entry
- Use of lidar point cloud for accurate gate road entry heights
 - Development of point cloud analytic to extract required data for shearer use
- Chainage encoder for accurate MG face position
- Development for intuitive user application for remote operators to make informed decisions on operational performance of gate road entry
- Seam steering application development
 - Machine learning to automatically identify band position

Approximate Cost

Process integration for effective implementation Approximate Cost.

The estimated cost of all initiatives excluding face hardware is approximately \$500 000



Longwall Pressure Monitoring System

Anglo American

The Problem

Events caused by activity in the longwall goaf, operational face and outbye areas in particular methane ignitions require detection and monitoring equipment to respond in a timeframe that mitigates all risk of exposure of people.

The Solution

Anglo American Metcoal Longwall Pressure Monitoring System solution was part of the latest technology deployed to support safe and consistent operations, including the ability to:

- Reduce exposure of persons to underground ignition hazards
- Reliably detect static and dynamic over pressure events in longwall operations
- Disconnect potential ignition sources within 150ms after the detection of an event
- Develop a solution suitable to be integrated into existing longwall operational equipment

Benefits / effects

The system achieved the ability to sense absolute and differential pressure across the length of the longwall face enabling a successful approach to monitor environmental events. This system is alerting us to abnormal events in the longwall operational area enabling a reduction in hazard exposure to coal mine workers on the longwall face.



Figure 1 – Simtars testing facility



Figure 2 – Validation of pressure monitoring system

Innovation

The Longwall Pressure Monitoring System was developed utilising a simplistic approach to re-task already available hardware to achieve the functional scope. The system included “absolute” pressure sensors to detect large pressure events, and “differential” pressure sensors to detect much smaller events to allow an earlier detection and trip for an abnormal or evolving pressure event.

Applications of Thermal Photography

Collinsville Open Cut, Glencore

Thermal photography is the process of capturing imagery representing temperature variances in the image rather than colour like a traditional image sensor.

Collinsville has multiple thermally energetic locations across the operation. Thermal photography has assisted in assessing coal stockpile shapes which are less susceptible to self-heating allowing improved stockpile management.

Additionally, we have used the technology in applications such as hot or reactive holes. Early research conducted was to drill holes at various depths. Spontaneous combusting coal was collected measuring 300°C and above. Hand shovel loads of coal were then put down the hole at known temperatures and readings were taken from dipping sensors and comparing to results from the drone thermal camera.

Using information collected during this process of controlled environment and expected values, our drone has been sent to other sites to assist incidents where heating and explosives were involved, including two other GCAA sites and one other non GCAA site. In each case the sites had been able to use the information collected safely at a distance to determine the thermal stability of the hole and plan a return to normal operations.



Longwall Scenario Training

Anglo American

The Problem

As the industry transitions to remote operations and operators are removed from the face, we remove reliance of human instincts and replace them with digital data. Due to the level of automation, there is a risk that operator skills will degrade and cause inability to act when required for override or manual control.

When face conditions deteriorate, there is a potential need to manage operational exceptions through the use of a handheld remote. Operators will be required to utilise skills that may not have been practiced for a significant period of time which may cause extended delays during face recovery.

The Solution

We have launched a scenario training application that operators can use to maintain and improve their current skillset. The system uses the Marco roof support simulator and the Eickhoff shearer simulator. Both the roof supports and shearer react exactly like they would underground. They both use the same interfaces that operators would have available. The Virtual Reality (VR) configuration completes the simulation creating a life like environment. Scenarios can be loaded into the application to challenge the operators, so when faced with the same conditions underground, they can safely and confidently control the machinery and operate correctly to return to good conditions.

Benefits/Effects

Scenario training has been implemented at three underground longwall mines. At two of the mines, the workforce trialling the new system were largely inexperienced. When starting production at these mines the operators were able to outperform the start-up plan.

All operators reported that due to the training they undertook, they were more confident and had a deeper understanding of longwall operations.

Transferability

The scenario training is currently deployed across all of our underground metallurgical coal operations, Aquila, Moranbah North and Grosvenor mine sites.

It is a fully transportable training system that can be utilised at any underground longwall site.

Innovation

This type of scenario training is not new. It is becoming more common with training systems within a variety of industries. Where this system differs to others, is the use of the OEM simulators, this allows the correct operation of all components. In addition to this, it adds the functionality to test software updates to prove safe operation before installing software in the underground machinery.

Costs

The system is cost effective:

- Marco simulator - \$1000
- Eickhoff shearer simulator - \$93,000



Temporary Rim Protection Device

Rim-Lock Innovations and Quick Bolt

Tyre fitting on large earthmoving equipment carries numerous risks, one of the most prominent being the potential for a tyre and rim assembly to fall from the equipment it is being fitted to before any wheel nuts can be fitted to secure against this happening.

Fitting of the wheel nuts itself carries inherent risk as it requires someone to place themselves between the assembly and the equipment being used to fit it.

The Rim-Lock device aims to eliminate this risk entirely. The unit is mounted to the nave plate of the rim and tyre assembly by means of a recessed neodymium magnet in its face, whilst the rim and tyre is still on the ground; from here the rim assembly is fitted as normal with the retainer engaging the studs as they pass through the rim.

The current iteration of this unit was bench tested at loads of 5, 10 and 15t for one minute intervals and showed no impact on its function after removal.

This design is able to be scaled or modified to suit a variety of different stud sizes and threads and so will have applications in both surface and underground mining environments and civil construction and earthmoving



Early site fit test.



Unit installed with Wheel assembly.

GCOM Portal - Delivering the Right Message at the Right Time

Glencore Coal Assets Australia

The Problem

In 2020 we asked our workforce three open questions in a voluntary survey:

1. What do we do well?
2. What don't we do well?
3. What should we do to improve in these areas?

From the 87 surveys completed we received 52 comments stating that our site communications needed improvement. We then did a deep dive and interviewed an additional 63 team members with a specific focus on our current communication practices. There were many layers within the comments that were returned, each layer required a different solution. However, we did identify a trend of inconsistent message delivery and our inability to track messages. Given that most of these messages are critical to the health and safety of our employees we contacted several other sites for suggestions on how to improve and found that they too were in a similar situation.

The Solution

To achieve a transferable solution, we engaged stakeholders from multiple Glencore sites across QLD and NSW. Many hours were spent gathering requirements from each site, agreeing on priorities, and developing with a minimum viable product prior to a trial on two separate sites. As a result, the GCOM Portal is now a user-friendly tool that assist's our supervisor to deliver a consistent message, manage the timing of a message so that it is both relevant and does not get forgotten and track who has and has not received an important or critical message.

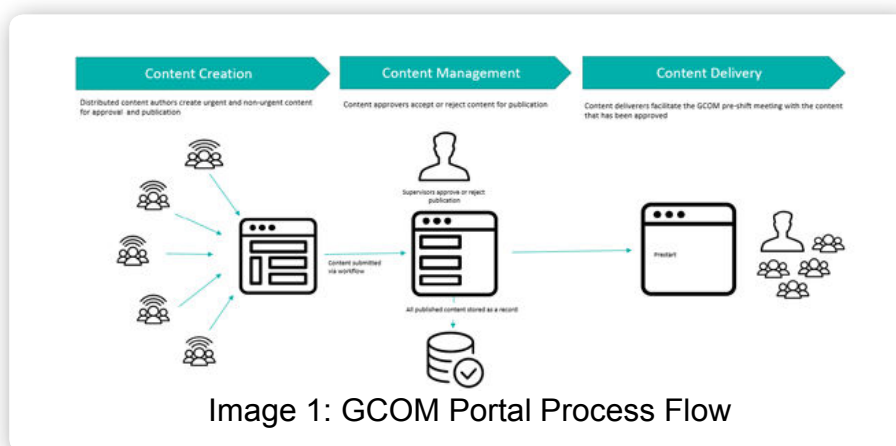
Benefits / effects

By using a standard PowerPoint platform, the GCOM portal has enabled all persons at our two trial sites to submit a message and the supervisors from each department to personalise their pre-shift meetings by either including these messages in their presentation, delivering it by a different means or delaying the delivery until it is most relevant.

The GCOM portal has opened our eyes to how many people have previously missed safety related messages and enabled our Health and Safety team to communicate key messages directly with our workforce.

By uploading a link to a video highlighting current activities and operational changes on the first shift back of every roster our team members are engaged and informed before entering their work areas.

With a few clicks a content creator can identify which teams have presented their message and which ones have not. This feature allows for a targeted approach to supervisor education on effective communication.



Concurrent Session Presentations



The following presentations were selected by the Conference Committee from the Call for Presenter Abstracts earlier in the year.

Entry is open to everyone associated with resources and related industries, including companies and site (minerals, coal, quarries, exploration, oil and energy) operators, contractors, consultants, lawyers, suppliers and regulators.

The presentations are listed in the order they appear in the program.



● **Presentation 10.50 – 11.15am**

Particle Chemistry and the Lung Response to Coal Dust

Presenter: Graeme Zosky

Authors: Graeme Zosky and Basil Beamish

Organisations: University of Tasmania and B3 Mining Services

The recent identification of an increasing number of cases of coal workers' pneumoconiosis (CWP) around the world has led to a growing interest in the effect of the physico-chemical properties of coal dusts on CWP risk. The aim of this study was to assess whether coal chemistry influences the lung cell response. Coal samples from Australian mines were crushed and analysed for their chemical constituents and bioreactivity. Three cell types that are known to be involved in CWP (epithelial cells, macrophages and fibroblasts) were exposed to the coal particles and assessed for a range of responses including cell toxicity, inflammation and scar formation. We found no evidence of an association between the pyrite content of the coal and any of the cell outcomes that we measured.

We did find evidence of an increase in IL-8 production by epithelial cells with increasing bioavailable iron ($p = 0.01$), however, this was not linked to the pyrite content of the coal ($p = 0.75$). In subsequent analyses we identified potassium oxide (K₂O) as a key driver of particle cytotoxicity. Our data suggest that particle chemistry is likely to have a significant impact on CWP risk following inhalation of coal dust.

● **Presentation 11.20 – 11.45am**

Using Computer Vision AI Software as a Safety Assistant in the Tyre Bay

Presenter: Nathan Cables

Author: Nathan Cables

Organisations: EYECUE by Fingermark

Changing large vehicle tyres continues to be a hazardous activity in the mining industry.

EYECUE has adapted computer vision AI/ML software technology to 'learn' procedures for changing tyres in maintenance bays. Workers are alerted when non-procedural work takes place as a reminder for them to follow safe work practices.

There are many wider applications of this technology, not only in the maintenance bay, but across other work areas.

We will demonstrate and discuss the underlying technology building blocks and system capabilities, so attendees can understand how it may be applied in their working environments.



● **Presentation 11.50 – 12.15pm**

Health Exposure Management-State of the Art Technology Initiatives in the Australian Coal Mining Industry

Presenter: Bharath Belle

Author: Bharath Belle

Organisation: Anglo American

The re-emergence of 'Black Lung' or Coal Workers Pneumoconiosis (CWP), Silicosis after reporting being absent for over decades had cast doubts on the rigor placed in the medical diagnosis and personal dust sampling and exposure assessment data and associated processes. This had further led to amendment of regulations for reduced dust exposure limits. The Australian coal mining industry continuously recognise and supports the objective of managing the exposure to coal, silica and diesel particulate matter (DPM) to protect the health and safety of workers from dust related mine lung diseases. In this context, the Australian Coal Industry's Research Program (ACARP) has been the forefront of the industry dust research over the years, in a sustained effort to manage and control mine dust using a scientific evidence-based approach. It is to be noted that in Australia, the personal exposure limits for respirable coal dust has changed from 3.0 mg/m³ in Qld and 2.5 mg/m³ in NSW to 1.5 mg/m³ and silica dust from 0.1 mg/m³ to 0.05 mg/m³. It is noted that these health-based standards have been developed utilising overseas technical references from 'trusted and untrusted' sources.

This paper highlights various industry dust monitoring and engineering control initiatives to provide a greater understanding using science-based evidence for health exposure management through various Australian universities and research institutes such as CSIRO, SIMTARS, Qld Wesley Dust Centre. The technology projects were broadly classified into following key components, viz., exposure monitoring, exposure control and assessment and medical surveillance and diagnosis studies. This ACARP coordinated dust and related research program with values → \$10 million aims to provide a point of reference for the various research projects, provide technical reference point through independent evaluations and validation of monitoring, exposure assessment and critical control systems. It is the opinion of the author that any introduction or amendments to regulations should be based on Australian specific rigorous science.

***The opinions and conclusions expressed herein are those of the author and not necessarily those of any organisation. Also, mention of any company name or product does not constitute endorsement by the author.*



Presentation 10.50 – 11.15am

The Psychology of Safety in the Mining Industry

Presenter: Anton Guinea

Author: Anton Guinea

Organisation: The Guinea Group of Companies Pty Ltd

In an article in the Canadian Mining Journal in 2021, Susan Eick describes psychological safety as 'The Missing Imperative' in mining. Eick unpacked the elements of psychological safety, and why a focus on the not just physical safety, but also the psychological factors of safety, will save lives.

Eick proposes that a focus on psychological safety will not only save lives, but it will also reduce the up to \$400 million price tag in the Australian mining industry that is spent addressing mental health issues. The hidden cost of a lack of psychological safety.

Leaders need to be taught the skills required to create psychologically safe teams. It is a learnt skill. The psychology of safety is not about working safely. It is about feel safe. Feeling like you can speak up. Feeling like you can report incidents. Feeling like you won't be rejected, ridiculed, or resented, for having an opinion or an idea.

Organisational psychologists have known forever that thoughts and feelings drive behaviour. From a psychology perspective, the mining industry will only reduce emotional and physical hurt and harm when psychological safety becomes an imperative. Not just a buzz word.

Presentation 11.20 – 11.45am

The Safety Performance Innovation Everyone Missed – Educating to Minimise Inattention

Presenter: Cristian Sylvestre

Author: Cristian Sylvestre

Organisations: HabitSafe

As we continue to eliminate hazards, improve the system, and make safety more conscious by having more conversations, the injury rate in mining is stagnating or even worse.

This is even though we now apply these approaches better than we have ever done before.

No doubt these approaches have served us well, but they do little to alleviate the modern-day problem of "inattention". Industry studies have identified inattention as a significant causal factor in 95% of workplace incidents.

These findings are also supported by brain science, which has unravelled four main causes of every-day inattention, the main one being people doing things in Autopilot.

Brain science shows how inattention comes about and what we can do about it.

Educating people on what causes inattention and how it can be minimised is a no-blame no-fault approach that works. It engages people in an innovative way that enables them to work out how common inattention is and what they can do to detect it and guard against it.

The result is a stronger safety culture and improved safety performance.

In addition, when inattention is minimised people feel more "in control" and this leads to a substantial improvement of their psychological safety.



● **Presentation 11.50 – 12.15pm**

From Reacting to Learning: The Next Step in Organisational Effectiveness

Presenter: **Andy Shone**

Author: **Andy Shone**

Organisation: **Southpac International**

What gets measured gets done, or so we believe! Today many organisations are driven by KPI's and dashboards. The result of this often means that we focus on efficiency, getting stuff done quickly, as opposed to being thorough or effective. This mindset appears to be increasingly driving the familiar routine:

- Deadlines are imposed for close out of identified issues.
- Dashboards and reports drive action.
- Quick fixes ensue.
- Problems recur.

Organisations need to move towards approaches that are more focused on learning and understanding. Approaches that accept the inherent complexity of the modern workplace, and in turn take systemic action to improve performance rather than falling back on simple explanations and familiar fixes.

Human and Organisational Performance (HOP) is an approach or philosophy that focuses on building an understanding of how organisations and people work together with the aim of enhancing performance. Looking at performance holistically includes all potential outcomes including safety, quality, productivity and efficiency.

The learning team method is focused on taking the time to truly understand, with the aid of frontline personnel, how work is happening and the best way to make it better.



● Presentation 10.50 – 11.15am

Prevention of Misfires

Presenters: Snezana Bajic and Haydn Isaac

Authors: Shane Cooper, Haydn Isaac and Snezana Bajic

Organisation: Resources Safety and Health Queensland

Misfires in blasting activities can be difficult to detect, identify and especially rectify. This makes misfires the greatest potential safety hazard leading to an unplanned detonation of undetected explosives.

RSHQ established an industry project to develop a best practice guide (BPG) for the prevention of misfires in Queensland. The aim of the project is to enable the Resources Industry to understand the prevention methodologies for misfires and minimise the likelihood of an unplanned detonation of explosives resulting from a misfire. Representatives from RSHQ, the industry, safety groups, unions, education and training made direct and indirect contributions to this project.

The purpose of this guideline is to inform the resources industry of:

- the factors that may lead to an explosives misfire, throughout the entire blasting process,
- appropriate controls to be implemented at each stage of the process, to prevent misfires,
- the obligations and responsibilities of critical personnel throughout the blasting process from planning, to design and execution.

This paper presents:

- the collected data on misfires in QLD which contributed to the design of the BPG;
- the key prevention controls; and
- a framework for future misfire investigations, to enable better data understanding for future improvements to the guide.

● Presentation 11.20 – 11.45am

The Value of Empirical Analysis and Lessons Learnt for Managing Highwall Geotechnical Hazards

Presenter: Lily Nairn

Authors: Lily Nairn and Fernando Della Pasqua

Organisation: BHP Mitsubishi Alliance

Due to the inherent geological and structural uncertainty of rock slopes, geotechnical engineers must ensure that pit designs are supported by appropriate operational controls.

Controls for an unstable or hazardous open cut coal highwall can include a bunded standoff based on prediction of runout distance of the potential failure. Accurate prediction of standoffs is critical for safety and downstream impacts with respect to the mine plan.

In 2021, the BHP Geotechnical Team reviewed their internal geotechnical hazard reporting database (HazRT) which has captured over fifty highwall failures across eight Bowen Basin sites dating back to 2009. Geotechnical parameters were collected to develop empirical relationships to assist in predicting highwall failure runout distances. The work is based on the coal industry specific Slope Stability Assessment Methodology (SSAM) tool.

This investigation provides improvement and measured verification of the empirical calculations based on several new case studies.

The reiterative process of embedding pit reconciliation into the operation and sharing these with safety stakeholders remains a pertinent job for the geotechnical engineer. The empirical process can help capture lessons learnt from past failure events and inform the decision making process when establishing new hazard controls.



● **Presentation 11.50 – 12.15pm**

Mining Plant Structural Decay: Reducing Safety Risks

Presenter: Anthony Logan

Authors: Anthony Logan and Pat Hurley

Organisation: Resources Safety and Health Queensland

Mining plant and equipment structures are exposed to many factors which lead to structural decay including corrosion, fatigue and impact damage. Within Queensland, many mine facilities may have exceeded initial design life expectancy, have been modified to increase productivity and upgraded to meet current safety standards.

Structural maintenance inspection and remediation plans of some form are generally used by coal mines. However, structural failures with the potential to cause serious injury or fatalities continue to be reported to the Mines Inspectorate.

This paper presents several recently reported incidents related to structural decay. Based on reviews of mine structural integrity management plans suggested improvements and innovations are presented. Implementation of the suggestions should reduce the likelihood of structural decay incidents.



● **Presentation 1.20 – 1.45pm**

Chains of Responsibility: Fatigue Management in the 21st Century

Presenter: John Tate

Author: John Tate

Organisation: Crown Law

Hard work, long hours and shift work are the norms of the mining industry. The inconvenient truth is that human biology reflects the human condition – there is a design envelope that constrains possibility, probability and performance. Fatigue continues to be a significant safety and health issue in the Queensland mining industry – at a time when the community increasingly requires effective management of risk.

In recent years, the question of legal liability for fatigue related accidents has gained prominence. Fatigue related HPIs and fatalities cannot be ignored. There have been coronial inquests and, more recently, a personal injuries case where legal liability was sheeted home to an employer for a motor vehicle accident, where the injured worker was driving home after completing four consecutive 12 hour night shifts.

This presentation on the 'Chains of Responsibility: Fatigue Management in the 21st Century' is aimed at promoting industry reflection on the moral and legal obligations of managing fatigue, as well as elements of the legal regime relevant to the continuing journey the industry faces in managing this evident risk

● **Presentation 1.50 – 2.15pm**

Operator Awareness System Implementation

Presenter: Neil Pollard

Author: Neil Pollard

Organisation: Glencore Coal Assets Australia

Mobile equipment operator fatigue and distraction is a major vehicle interaction hazard in the mining industry.

Following an extensive trial period conducted in 2016, Glencore Coal Assets Australia have implemented a camera-based technology that detects eye closure in mobile equipment operators.

The presentation will demonstrate the importance of how managing the people change aspect of implementing technology in mining is critical to its success and how the technology was embedded through data analysis, including implementing supporting processes and procedures that 'closed the loop' to take full advantage of the technology.



● **Presentation 2.20 – 2.45pm**

Fatigue Management at Jellinbah Mine

Presenter: Peter McLaughlin

Author: Peter McLaughlin

Organisation: Jellinbah Mining Pty Ltd

The fatigue monitor is a low-cost fatigue management strategy, where a skilled coal mine worker drives to each circuit and requests to swap out haul truck operators that may need a fatigue break during the hours of midnight to 5am. This role is to promote fatigue awareness to all coal mine workers and at the same time keep production rolling



● Presentation 1.20 – 1.45pm

Practical Due Diligence in Mining Safety

Presenters: Deanna McMaster and Rhian O'Sullivan

Authors: Deanna McMaster and Rhian O'Sullivan

Organisation: MinterEllison

The shifting legal landscape in mining health and safety has added greater complexity to an already challenging regulatory regime. Relatively recent changes to the resources safety legislation include the introduction of the offence of industrial manslaughter and the establishment of a new safety regulatory body for the industry. Since the introduction of these changes, there has been a renewed focus on enforcement activity in the sector.

These developments have coincided with multiple inquiries into the management of safety matters and organisational culture, both within the resources sector and more broadly, and a focus on the obligation on officers to exercise due diligence in this context. Recent and anticipated legislative amendments regarding the management of mental health and sexual harassment as workplace health and safety risks means this is another area which officers must be across.

Against this backdrop, organisations must be able to demonstrate a strong safety culture led from the top down where workers feel empowered to raise safety concerns. Safety regulators are increasingly directing enforcement action (including notices and prosecutions) to the leadership level of organisations.

This session will discuss the current regulatory climate and expected changes and provide guidance around good safety governance using practical examples.

● Presentation 1.50 – 2.15pm

Risk Management: Risk Management in the 21st Century

Presenter: Shaun Dobson

Author: Shaun Dobson

Organisation: Resources Safety and Health Queensland

Nearly 23 years have passed since the introduction of risk based processes legislation into the Queensland Coal Mining legislation. The evolution of risk management practices has seen many different models and concepts being applied, by various bodies and organisations, with the intent of improving the application of risk management. However, serious accidents, high potential incidents and their subsequent investigations continue to identify those failures from not ensuring that a level of risk that is within acceptable limits and as low as reasonably achievable continues to be evident.

These failures are evident in all aspects of risk management practices within all steps in these processes. For clarity this is not about the final risk ranking of a step or activity, it is the use of appropriate relevant information to adequately identify the impacts from the hazards and potential hazards that present themselves in these activities.

This paper is intended to provide evidence and information on common failures identified with the application of risk management practices from industry examples, and to provide guidance with the aim of improving the practical application in risk assessment activities.



● **Presentation 2.20 – 2.45pm**

Why Being 95% Error-Free is Safer than 99.9%

Presenter: Ben Seligmann

Authors: Ben Seligmann and Susan Johnston

Organisation: Sustainable Minerals Institute, University of Queensland

Safety Maturity Journey Models (SMJMs) are a key safety improvement tool used in Queensland mining. However, the report Review of All Fatal Accidents in Queensland Mines and Quarries from 2000 to 2019, recommended the adoption of High Reliability Organisation (HRO) principles, given the presence of recent fatalities. Does this mean journey models need redevelopment, reimagining, or rejection?

Through comparing HRO theory with SMJMs, we found that SMJMs overlap with HRO principles, but HROs have seen beyond the 'end' of the SMJM vision of complete order to a better way of operating. And their safety record speaks for itself. Journey models do not need to be rejected, but reimagined, with regards to their position on:

1. What safety is and how to create it;
2. An organisation's ability to predict the occurrence and impacts of unexpected events, and;
3. An organisation's tolerance of paradox in organisation structure, function and sense of a shared social identity.

This analysis is not without a context, and it may be that redefining the relationship between the mining industry, the regulator and society more broadly is the most significant contributor to improving safety in Queensland mining.

● **Presentation 1.20 – 1.45pm**

Mitigating a Future ERZC/OCE Shortage

Presenter: John Lennon

Author: John Lennon

Organisation: Lennon Training

The role of the front-line Statutory Official, aka the Deputy or OCE, has evolved from the miner that organised their crew to today's Deputy or OCE with monitoring apparatus that has an additional role as risk controller in their inspection area.

The assessment processes for these roles have also evolved.

In the 70's, the Statutory Official (ERZC/OCE) were required to pass an oral examination by the Inspector of Mines. There were no written exams. It was in the 80's that there was a written exam consisting of four two-hour papers set by the mining department of the Ipswich TAFE, followed by the oral exam.

Now it's 2022, the Statutory Official of today, besides being a skilled miner, must also be a skilled technician, passing a Certificate IV in Mining, a law exam and a four-hour oral exam on mining methods, procedures, and controls.

With industry expanding, the ever-increasing attrition rate of ageing Statutory Officials continuing, the potential to wreak havoc on expansion plans real, mining companies will need to re-think how they create this precious commodity.

How do we meet the demand for these skills?

This paper will discuss how RTO's, Mines and the Inspectorate can meet this challenge.

● **Presentation 1.50 – 2.15pm**

Can Machine Learning Transform How We Drive Better Safety Outcomes?

Presenters: Sean Brady and Jodi Goodall

Authors: Sean Brady and Jodi Goodall

Organisation: Brady Heywood Pty Ltd

If you use Google Maps, then it is machine learning that finds the most efficient route to your destination. If you have a credit card, your bank uses machine learning to detect fraudulent activities on your account.

So, what is machine learning?

Machine learning is a branch of artificial intelligence that can detect patterns in large datasets, typically too complex for the human eye to identify. Knowledge of these patterns provides decision-makers real insight into what drives better business outcomes.

With specific respect to the mining industry, this presentation examines if machine learning can identify meaningful relationships between safety outcomes and existing business data, such as, preventative maintenance, leadership time in field, absenteeism, critical control activity, and reporting culture.

It avoids giving a jargon filled introduction to machine learning, and instead focusses on how the practical application of machine learning can assist in the identification of the lead indicators for serious incidents, as well as an assessment of how effective current safety indicators are in practice.



● **Presentation 2.20 – 2.45pm**

Respect at Work: Bystander Response and Prevention

Presenter: Jacinta Buchbach

Author: Jacinta Buchbach

Organisation: In Safe Hands Educators in Safety: Respect at Work

Sexual harassment and bullying are pervasive in Australian workplaces. Targets, and their allies, can potentially suffer harm. The public discourse around the Respect at Work Report, Federal legislative changes and an Inquiry into sexual harassment in mining highlights the urgency in preventing and responding to unlawful workplace behaviours. Bystander Intervention has been identified as one practical way to 'show up' and respond to unlawful behaviours. In mining, the Bystander concept can be extended to aid in the prevention of unlawful behaviours and mitigate harm which is underpinned by assurances of psychological safety and restorative engagement principles.

This paper takes a deep dive into Bystander Intervention, situates the concept within the Respect at Work Prevention and Response Framework and reconciles with Federal legislative amendments. Through examination of the reactive ways in which bystanders can interrupt unlawful behaviours and taking a sharp focus on why bystanders choose to do nothing – potentially exposing them to legal risk – highlights a gap in which companies can leverage Bystander beyond a response tool, and further inform preventative measures to mitigate harm.



● **Presentation 3.20 – 3.45pm**

Fatigue Risk Management in the Australian Mining Industry 2022-2032

Presenter: Drew Dawson

Author: Drew Dawson

Organisation: CQ University

Until recently, fatigue management was primarily a compliance activity. Working time arrangements agreed to in an industrial process, were generally monitored and audited and sometimes reported upward through corporate governance mechanisms. Critically, fatigue management was rarely approached from a WHS perspective and lacked legally and scientifically defensible methodologies to measure, manage and mitigate risk effectively.

In recent years that approach has evolved toward a highly bureaucratic hybrid approach that still retains the working time arrangement as the central tenet of safety assurance. This has been subsequently supplemented with more flexible risk-based policies and procedures to cover high risk activities such as planned and unplanned overtime and extended commuting.

In the next decade, changes to WHS legislation are likely to extend the risk based framework and to require more formal risk assessment and mitigation methodologies that are evidence-based and to move away from compliance-based rosters as the primary control toward a shared responsibility framework in which employers are specifically tasked with ensuring that employees are provided 'an adequate opportunity to sleep, rest and recover in order to return fit-for-duty.' Similarly, employees will increasingly be accountable for using their time away from work to sleep, rest and recover and, where this has not been possible, to notify their employer within a just culture framework'

This presentation will provide a policy and governance architecture within which such changes can be embraced and encourage employees to 'work safely when fatigued'

● **Presentation 3.50 – 4.15pm**

Fatigue Management and Mental Health in Queensland Mining

Presenters: Tim Horberry and Kirsten Way

Authors: Tim Horberry, Kirsten Way, Philippa Dodshon, Andrew Hill, David Cliff, Jill Harris, Joanna Lee, Nigel Lim and Brett Garland

Organisation: University of Queensland

This ongoing project is being conducted in 3 parts.

First, establishing a fatigue management baseline. This includes: (a) a targeted review of current information about fatigue management from regulatory, industry, and academic sources; (b) analysis of incident data to better understand fatigue as a hazard in Australian mining; and (c) a gap analysis to assess the likely effectiveness of existing fatigue management processes at a selection of mine sites.

Second, a literature review to identify any established relationships between worker fatigue and mental health in the mining industry. This review will also consider the broader safety implications of fatigue and the efficacy of fatigue control measures in the industry.

Third, a final report outlining the findings and their potential impacts on the Queensland mining industry.

Key Learnings. It is anticipated that five learnings will be obtained from the work:

1. To identify the extent to which fatigue represents a hazard in the Queensland mining environment.
2. To identify the links between worker fatigue and mental health, and safety outcomes.
3. To identify what constitutes good practice in fatigue management in mining.
4. To establish the current state of fatigue management practices in Queensland mining.
5. To recommend improvement opportunities for Queensland mining.



● **Presentation 4.20 – 4.45pm**

Current Fatigue Management in the Queensland Industry

Presenter: Prof Naomi Rogers

Author: Prof Naomi Rogers

Organisation: Naomi Rogers Fatigue Consulting

Fatigue continues to be a significant issue in the Queensland mining industry. Mine sites continue to report fatigue-related HPI's and fatigue-related motor vehicle accidents are occurring on our roads.

There has been a maturity in parts of the industry to move from a model of monitoring and reacting to fatigue-related events, to managing fatigue in a proactive way. One Queensland mine site has recently undertaken a journey to evolve their fatigue management processes, by redesigning how fatigue is looked at and managed on site.

Working with the Safety and Health Team at Batchfire Callide we have implemented a new model of fatigue management involving evaluation and updating of all fatigue management procedures; development of an integrated education program for all coal mine workers, and their families; and provision of easy to use tools to assist with the management of fatigue onsite, and investigation of the role fatigue may play in incidents, to allow for the development of any additional, targeted controls that may be needed in the future.

Working collaboratively with coal mine workers on different stages of this project has also furthered the promotion of a site-wide culture of increased safety and health awareness around fatigue and the importance of fatigue management.



● Presentation 3.20 – 3.45pm

Research-Industry Collaboration to Lead Innovation in Resources Industry Learning and Training

Presenters: Stephanie MacMahon and Rodo De Boer

Authors: Stephanie MacMahon and Rodo De Boer

Organisation: University of Queensland and Resources Training Council

The Science of Learning – a multidisciplinary field that brings together researchers from neuroscience, education and psychology – is making important contributions to our understanding of how people learn, the factors that affect learning, and the implications for teaching and training.

With learning and training at the heart of industry health and safety, the principles underpinning the science of learning could play an important role in building an evidence base for and contribute to the quality, relevance, design, and accessibility of learning and training programs.

Understanding the science of learning is one thing – applying it successfully into the diverse, complex contexts across the industry is another. This session will outline a unique collaboration between The University of Queensland Science of Learning Research Centre's Learning Lab and the Resources Training Council who brings several its members as industry partners. Together, this inter-disciplinary and interprofessional group is establishing a shared understanding of the learning and training needs of the industry and the principles of the science of learning with the aim to explore and implement innovative evidence-based solutions that can be effectively actioned, scaled and sustained across the industry.

● Presentation 3.50 – 4.15pm

How Leaders Can Collaborate for Effective Behaviour Change – A Brain Science Innovation

Presenter: Cristian Sylvestre

Author: Cristian Sylvestre

Organisation: HabitSafe

Leaders invest heavily to educate people to use systems, conduct training to increase knowledge and improve safety interactions to bring safety front-of-mind.

Yet incidents still happen, even serious ones.

So, what are we missing?

What innovation are these leaders failing to recognise?

Brain science shows the subconscious dominates and directs most of our daily activities. Studies estimate up to 95% of what we do. It is clear the majority of our daily actions occur subconsciously. Most of what we do is done in what is commonly referred to as Autopilot, especially when doing something familiar. Unfortunately, for the last 40 years leadership has only tried to influence what determines only 5% of what we do, the conscious mind.

But when leaders collaborate with the workforce from a “whole-of-brain” perspective by using the latest brain science, new and innovative ways to improve safety performance present themselves.

This paper explores the three most important traits a leader is required to have to influence the part of the brain that directs 95% of what people do and subsequently, improves safety outcomes significantly.



● Presentation 4.20 – 4.45pm

Performance Factors for the Professional Mine Worker Part 1

Presenters: Bo Hanson, Nathan Sharpe, Laura Geitz and Grant Polwarth

Authors: Bo Hanson, Nathan Sharpe, Laura Geitz and Grant Polwarth

Organisation: Talisman People Pty Ltd

The highlight of a sportspersons career is being part of a team in which they belong, share deep psychological connections and ultimately success. Four-time Olympic rower and three-time medallist Bo Hanson, former Australian Rugby Captain Nathan Sharpe and World Cup winning, Commonwealth Games Gold Medallist Laura Geitz know this firsthand from their athletic and professional careers.

Mining relies upon teamwork, effective communication, understanding the game plan and relationships to drive safe outcomes. Our team members strive for safe and productive results and need high levels of mental, emotional, and physical toughness to work challenging rosters and conditions. The parallels between the mining industry and high-performance sport are striking.

Professional sport has evolved to know the most important factors driving high performance are self-awareness and the coach/athlete relationship – analogous to frontline leaders in mining. As an industry, we have made significant advancements and investment in technology, equipment, systems, and risk management – and appropriately so. But have we, like sport, missed a vital component to winning more often?

We will interactively explore the often-overlooked performance factors and their roles in safety, drawing parallels to sport, athletes, and coaches, while presenting real mining and sporting case studies. We aim to provide strategies and insights to sustainably inspire and engage the people and industry we love. High-performance and safety cannot be mutually exclusive.

● Presentation 4.50 – 5.15pm

Performance Factors for the Professional Mine Worker Part 2

Presenters: Bo Hanson, Nathan Sharpe, Laura Geitz and Grant Polwarth

Authors: Bo Hanson, Nathan Sharpe, Laura Geitz and Grant Polwarth

Organisation: Talisman People Pty Ltd

● Presentation 10.50 – 11.15am

Fire-Resistant and Anti-Static (FRAS) Investigations – Lessons Learned

Presenter: Neville Atkinson

Author: Neville Atkinson

Organisation: Resources Safety and Health Queensland

The use of fire-resistant anti-static (FRAS) materials and equipment in underground coal mines is varied and widespread in this industry. Recent investigations and testing have identified learnings for industry about the use of these products.

This presentation will provide information identifying the following:

- Legislative requirements for the use of FRAS.
- Testing of anti-static materials and equipment. The fundamentals of the testing process and the procedures followed for this testing.
- Testing results that have identified issues with current installations.
- Testing results that highlight the importance of earth bonding and the possible catastrophic impact that may result from poor installation standards.

● Presentation 11.20 – 11.45am

3D Laser Scanning for Incident Investigation at Mine Sites

Presenter: Gareth Kennedy

Authors: Gareth Kennedy, André De Kock and Laurie Crisp

Organisation: Resources Safety and Health Queensland

Mining incident investigation, testing and analysis has been an important part of Simtars' core purpose over the past 30 years. Major events that Simtars have provided post-incident assistance include the Moura No 2 mine disaster in 1994, and the Pike River mine disaster in 2010. Simtars have continued to provide technical assistance supporting the Queensland Mines Inspectorate and direct to industry, during various high-potential incidents (HPIs) and events. In many instances, key learnings from such events have led to further research being conducted by Simtars.

Simtars invested in 3D laser scanning and visualisation tools, primarily used in support of incident investigation. The main advantage of these 3D imaging tools is in the ability to rapidly capture an incident scene and create a 'digital twin' as a permanent record. This allows for future investigation, research and learnings to be conducted through an environment that can be virtually re-visited at any time.

At a recent major spontaneous combustion event at a Queensland mine, the 3D point cloud laser scanner was deployed to various locations underground and on surface, and was an integral tool used to gather information.

This paper will present details of the 3D laser scanning technology, challenges that were overcome in enabling the usability in underground coal mines, and examples of imagery captured at some recent events. Finally, the paper will discuss and provide examples of additional, and potential future, benefits of 3D laser imagery including computer-based engineering tools utilised by Simtars for more detailed analysis.

● **Presentation 11.50 – 12.15pm**

Obtaining Value from Risk Assessments

Presenter: Mark Alston

Author: Mark Alston

Organisation: Investigations Differently

In many organisations, risk assessments have become a 'cut and paste' exercise with little or no innovation discovered. This continued focus on satisfying administrative requirements, rather than discovering uncertainty, has led to generic risk assessments with little actual reduction of risk.

Intensive consultation with the workforce allows an organisation to understand how the work or task is normally undertaken, revealing the credible risks. It is only then that we can implement controls, resulting in operational risk reduction.

We will discuss that, by using simple brainstorming techniques, we can:

- Learn how understanding the context of the work will reveal what we know and do not know.
- Develop specific and credible risk scenarios.
- Identify specific controls that allow people to fail safely.



● Presentation 10.50 – 11.15am

Leadership for High-Reliability Organisations

Presenter: Alex Haslam

Authors: Alex Haslam, Jolanda Jetten, Blake McMillan, and Susan Johnston

Organisation: University of Queensland

Effective leadership is central to High-Reliability Organisations (HROs). Traditionally this is understood in terms of the personal qualities of leaders that set them apart from others — as superior, special, different. In contrast to this view, *The New Psychology of Leadership* (Haslam, Reicher & Platow, 2012) argues that effective leadership of HROs is grounded in leaders' capacity to embody and advance a sense of social identity (a sense of 'us-ness') that they share with others — a process referred to as *identity leadership*.

This shared identity is the platform for forms of *collective mindfulness* in which leaders and followers are joined together and perceive themselves to be joined together — around shared endeavour oriented to high-reliability activities and goals. In order for this to succeed, leaders need to represent and champion the group and they also need to create and embed a sense of shared identity. Bringing together over 30 years of empirical research, this talk will provide evidence of these processes in action and spell out implications for HRO practice that centre on evidence-based tools and interventions that translate the new psychology of leadership into practice.

● Presentation 11.20 – 11.45am

Anticipating Major Accidents: Detecting the Warning Signs

Presenter: Jodi Goodall

Author: Jodi Goodall

Organisation: Brady Heywood Pty Ltd

After a major accident, investigations typically highlight a myriad of causal factors that led to the event. With the benefit of hindsight, it's often easy to question how so many warning signs of the system drifting towards failure went unnoticed.

The question for business leaders becomes: how do we better detect these warning signs and act upon them before the system fails?

High Reliability Organisations (HROs) detect these warning signs by encouraging 'chronic unease'.

This presentation shows how this concept of 'chronic unease' can be implemented as a set of practices, tools and methods in the mining industry, in order to promote organisational learning and higher reliability.



● **Presentation 11.50 – 12.15pm**

Can HRO Principles be Applied in Mining?

Presenter: Peter Wilkinson

Author: Peter Wilkinson

Organisation: Noetic Group

The Brady review of fatal accidents in the Queensland mining industry, commissioned by Resources Safety and Health, made a number of recommendations, including that the industry should adopt the principles of High Reliability Organisational (HRO) theory to reduce the rate of Serious Accidents and fatalities, (Recommendation 6). The Queensland Resources Council (QRC) endorsed all the recommendations of the Review and with support from the Commissioner of Resources Safety and Health, contracted the Noetic Group to review how HRO principles can be implemented in the mining industry.

This presentation will provide a short introduction to HRO theory, and the terminology associated with HRO concepts. However, the majority of the presentation will focus on the outcomes of the site visits to 8 mining companies in Queensland. These included coal mining (underground and open cut) and metalliferous mines. In particular, the presentation will provide specific and practical improvements that can be made to improve the industry's safety performance based on the learning from the site visits, including a "roadmap" for practical implementation of HRO ideas.



● **Presentation 10.50 – 11.15am**

ISO 45003: Managing Psychosocial Hazards in the Workplace. What This Means for Your Business

Presenter: Naomi Armitage

Author: Naomi Armitage

Organisation: Humanology Group

Organisations have been investing in managing psychosocial hazards in the workplace for over a decade, but despite this investment little to no progress has been made. In fact, the cost of Psychological Injury is increasing, with a 50% increase in the past 2 years. What is going wrong?

To date most investments to address psychosocial hazards have been aimed at improving employee wellbeing and mental health through a variety of individual interventions such as EAP, resilience training etc. These interventions whilst necessary do not address the psychosocial hazards in the workplace. Many of these interventions are akin to a workplace identifying employees are suffering hearing loss, providing them with ear protection without exploring the source and cause of the hearing damage. Such interventions also rely on the individual acting and being responsible for managing the hazard. A more systemic approach to managing psychosocial hazards is the key to reducing psychological injury.

The presenter will provide an overview of the ISO 45003 standard and current industry psychosocial risk factors contributing to psychological injury. Controls to mitigate key areas of risk in industry will be outlined to provide the audience with a clear understanding of how to begin identifying and tackling psychosocial hazards in the workplace.

● **Presentation 11.20 – 11.45am**

Creating Mentally Healthy Workplaces

Presenter: Bushra Afzal

Authors: Bushra Afzal and David Rossetto

Organisation: Black Dog Institute

1 in 5 of us will experience symptoms of mental illness in any given year. In Australia that's around 5 million people and roughly 60% of these people won't seek help. Mental illness has become the leading cause of long-term sickness absence and costs Australian businesses \$12 billion per year. Depression, anxiety and stress-related disorders are the most common mental health conditions seen in the workplace. Although these conditions are treatable and often preventable, they can also cause prolonged sickness absence, and impact on the well-being and occupational functioning of those affected (Harvey et al., 2014).

A mentally healthy workforce is the foundation to a successful business. Business leaders play a key role in driving policies, strategies, and behaviours that promote positive mental health and wellbeing, with benefits extending across the whole business from an individual to organisational level.

Black Dog Institute is a world-renowned medical research institute, translating research into programs, resources, services, and digital tools to create a mentally healthier world for everyone.

This presentation will discuss key strategies for a creating mentally healthy workplace, highlighting the Black Dog Institute's leading evidence-based programs and free resources available to build skills and provide support to your workplace.



● **Presentation 11.50 – 12.15pm**

Setting the Foundation for a Speak Up Culture: Psychological Safety in Action

Presenters: Bobbie Foot and Naomi Armitage

Authors: Bobbie Foot and Naomi Armitage

Organisation: BHP Mitsubishi Alliance and Humanology Group

Eighteen (18) months ago BMA embarked on a program to create Psychologically Safe teams in their operations. Whilst creating a “safe to speak up culture” had been a goal for some years, the findings of the Brady report and the unprecedented challenges presented by COVID19 accelerated this work.

Bringing together BMA’s goal of an environment where everyone feels included and safe to speak up, and Humanology Group’s evidence based approach, we implemented a Psychological Safety program for teams. This identified critical behaviours and actionable team routines to drive cultural change from the top down, team by team, with over 200 leaders.

Key elements of the program and approach include:

- Measurement of teams’ psychological safety to establish baseline data
- Identification of ‘at risk’ teams and teams with high Psychological Safety
- Education on psychological safety concepts
- Development of team Psychological Safety contracts and routines
- Individual and team leadership coaching
- Integration of Psychological Safety principles into existing safety systems such as ICAM’s, Risk Assessments and field leadership
- Leveraging Psychological Safety principles to accelerate other business strategic programs such as mental health and wellbeing, business improvement and technology

A range of measures to embed Psychological Safety into BMA’s safety cultural framework is ongoing.

In this presentation we provide a case study on BMA’s Psychological Safety program and its ability to improve the effectiveness of existing safety practices and strategic programs.

● Presentation 1.20 – 1.45pm

Post-Incident Learnings from a Major Spontaneous Combustion Event

Presenter: Laurie Crisp

Authors: Laurie Crisp, Gareth Kennedy and Sean Muller

Organisation: Resources Safety and Health Queensland

A Queensland underground coal mine experienced a spontaneous combustion and fire event. This led to an evacuation, emergency sealing, inertisation and temporary closure of the operation. No worker was physically injured in the event.

Several months following the event, a section of the mine was re-opened. This enabled a study on the physical effects of the event. The Queensland Mines Inspectorate invited Simtars to assist in gathering information and undertake work to gain a better understanding of the incident.

Mine gas data, 3D laser scan images, photographs and video imagery were used to evaluate the underground conditions. In addition, samples of tube bundle and smoke residue were retrieved from the site and a laboratory analysis was conducted on the samples. The information gathered and results analysed has provided further insights into a major spontaneous combustion event. In addition, these findings could be used to the benefit of underground operations in the future.

This paper will present the main findings and share important information that has been learned so far.

● Presentation 1.50 – 2.15pm

Use of Analytical Tools During Investigations

Presenter: Philippa Dodshon

Author: Philippa Dodshon

Organisation: Minerals Industry Safety and Health Centre

Conducting effective incident investigations forms a critical part of the actions taken by organisations to enhance the safety of their employees and promote ongoing learning. Comprehensive evidence collection and application of effective analysis tools is integral to developing recommendations that will reduce the likelihood of repeat incidents. Although there is guidance around how to identify and effectively collect evidence, there is limited direction around the identification and application of appropriate analytical tools. Whilst there is a number of commercial analytical tools available to investigators there is also a range of readily accessible analytical methods that can form an effective part of an investigators tool kit. Choosing which tools to use however can be a daunting task.

This presentation will explore a number of publicly available analytical tools that investigators can use to examine an incident. It will provide guidance on how to select and apply the most appropriate tool or tools, how to interpret their results, explore what they can or cannot tell us, and consider their strengths and limitations. This exploration will be done by applying several analytical tools to an underground incident to see how they can be practically applied.



● Presentation 2.20 – 2.45pm

Management of Critical Controls – Where can We Improve?

Presenter: Christian Young

Author: Christian Young

Organisation: Impress Solutions

The accurate identification and effective management of Critical Controls is an essential component of any Critical Risk Management program.

The Brady Report (Dec 2019) and Queensland Coal Mining Board of Inquiry Report (Part 1 – Nov 2020) both called out Critical Controls as a specific area of improvement for Industry.

The international Council of Mining & Metals first published an industry endorsed framework for Critical Controls Management in 2015. This begs the question, if Critical Controls are not new to industry, why are these programs not successful, or implemented more widely? Not only will a deficient CC program increase an Operation's risk profile, but it also leads to wasted effort on assurance activities that are not essential to the CRM process.

This presentation will expand on the ICCM framework focusing on key areas for improvement, and more importantly, share practical strategies that would enable a step change in Critical Control management programs. It will also assist those businesses that are considering or just commencing their Critical Risk Management journey.

Specific areas for discussion include;

- Layers of Protection Analysis,
- Performance Standards,
- Management System Integration,
- Critical Control validation tests, and
- Strategies to support rationalisation of Critical Controls.



● Presentation 1.20 – 1.45pm

The Capacity to Guide, Enable and Execute Work

Presenter: Ivica Ninic

Authors: David Provan and Ivica Ninic

Organisation: Forge Works

Safety is an emergent property of work and we can create safety by focussing on work. Assessing safety compliance tells us as much about the safety of our operations as do historical injury rates about where our next fatality might occur. What has been missing is the ability to understand an organisation's approach to managing work...until now.

The Brady Report's recommendations include some that represent a significant shift from current management approaches. Most notably, the report recommends adoption of the principles of High Reliability Organisation (HRO) theory.

HRO theory is the genesis of 'new view' safety theories (e.g., Resilience Engineering, Safety II, Safety Differently, Human & Organisational Performance and Guided Adaptability), which present evidence-based approaches to creating the safety of work. In 2020, Forge Works designed and validated a comprehensive work management diagnostic that combines all of these theories as well as building on 30 years of safety leadership, safety culture and safety climate diagnostic tools.

In this presentation you will see case studies of several organisations who have used the **Forge Works Map™** to create successful outcomes by growing their capacity to:

- guide work towards a common purpose,
- enable work to ensure mastery, and
- execute work through entrusted autonomy.

● Presentation 1.50 – 2.15pm

Using Technology as an Elimination Control Measure

Presenter: Kathryn Job

Authors: Kathryn Job and Marina Auad

Organisation: Plotlogic Pty Ltd

Minimising the risk to personnel at the frontline of mining often requires removal of people from hazardous conditions including at the active mine face, highwalls, underground drives, or near stockpiles. The removal of people from active areas of the mine can come at the expense of geological mapping and modelling. As such, the mining industry is finding innovative tools for geologists and surveyors to work safely at distance from hazardous conditions while still providing sufficiently accurate information to feed into modelling and scheduling workflows.

Hyperspectral imaging provides means to map mineralogy, geological structures, deleterious materials and categorise ore and waste materials at distance from the area of interest. The same technology provides a potential to support automation of mining equipment by providing real-time material properties further assisting the mining industry into automation and remote working.



● **Presentation 2.20 – 2.45pm**

The Spirit of Cooperation

Presenters: Snezana Bajic, Herman Ng and Damien Reid

Authors: Snezana Bajic, Herman Ng and Damien Reid

Organisation: Resources Safety and Health Queensland, Workplace Health and Safety Queensland and Queensland Fire and Emergency Services

The mining industry and associated services are globally exposed industries subjected to major economic and social trends. Changes in global financial situation and global perception on mining activities have indirect impact on resourcing, productivity, and investments in safety systems. These emerging trends present both challenges and opportunities for the industry and the Queensland Government.

Government agencies aim to provide practical advice to the industry to overcome challenges, and the majority are making use of this information. In some cases, a single agency may not have the natural enforcement tools required to provide effective expert advice and assessment. This is when instruments which exist under the same umbrella, however in isolation, should join forces to promote improved safety and health outcomes, with the vision of Zero Serious Harm.

This paper will present a case study where the government agencies, RSHQ Explosives Inspectorate, Office of Industrial relations and Queensland Fire and Emergency Services joined efforts to address a complex system which presented health and safety risk within the industry. It will present the evolution of the system failure, risks taken and strategies which contributed to this failure. The focus will be on industry shared learnings and Government resource cooperation for the purpose of protecting and promoting safety and health of persons working in mining and associated industries.

● Presentation 1.20 – 1.45pm

RS20 Dust Management Plan at Meandu

Presenters: Scott Anderson and Rebecca Long

Authors: Rebecca Long, Scott Anderson and Jules Shanahan

Organisation: BUMA Australia

Meandu followed a process of utilising compressed air systems to blow out excess dust prior to commencing regular and unplanned maintenance.

Meandu SLT in consultation with CMW's on the front line have developed and / or introduced:

- Dust Management Plan
- Breath Space Cabin Pressurisation
- Scheduled monitoring of exposure levels through "Real Time" monitors for tasks that are recognised as high risk when it comes to dust exposure

Komatsu 830 electrical cabinet blow out was identified as one of the highest dust exposure tasks on site when assessed by real time dust monitoring. The Komatsu 830 fleet required this "blow out" procedure to be conducted at 500-hour intervals, which leaves our CMW's exposed to Respirable Dust, Respirable Crystalline Silica, Inhalable Dust.

Meandu implemented a BreatheSafe Cabin Pressurisation System for all Komatsu 830 rear dump electrical cabinets. The BreatheSafe system is a HEPA variable speed pressurisation system and has exceeded expectations reducing the requirement to conduct electrical cabinet blowouts significantly. The trial truck has not required to be blown out since being installed on November 24th, 2020.

Key Improvements:

- Reduction in exposure to Respirable Dust, Respirable Crystalline Silica, Inhalable Dust
- Reduction in downtime whilst cleaning electrical cabinets
- Electrical component life extended

● Presentation 1.50 – 2.15pm

Black Lung and the Radiology Revolution

Presenter: Catherine Jones

Author: Catherine Jones

Organisation: I-MED Radiology Network, Wesley Dust Centre, Annalise.ai

Black Lung and other mine dust disease are well documented in medical literature and the Queensland coal mine industry. Huge strides in screening programs and disease surveillance have occurred in recent years; screening now incorporates a chest x-ray reported by expert radiologists to the ILO standard.

However, there are recent advancements in the field of medical imaging; Artificial Intelligence (AI) products to comprehensively identify pathology on chest x-rays are now used in clinical practice to assist radiologists. AI tools now exist to highlight urgent findings, expediting the diagnostic process and improving productivity in screening programs. AI offers the possibility of increasing the sensitivity of detecting early disease on the chest x-rays and to guide recommendation for further imaging or physician review.

Furthermore, Computed Tomography (CT) radiation dose reduction technology has improved drastically over the last five years. It is now a viable alternative for screening of high-risk workers; these scans highlight features of disease with greater sensitivity than chest x-rays.

This presentation reviews the current evidence-based radiology screening program and outlines the future of radiology-based screening of coal mine workers.



● **Presentation 2.20 – 2.45pm**

ISO Mining Standards to Protect Worker Health in Operator Enclosures (cabins) from Dust and Gases

Presenter: [Liam Wilson](#)

Author: [Liam Wilson](#)

Organisation: [ISO Committee TC-82 – Mining, WG 9](#)

ISO 23875:2021 Mining — Air quality control systems for operator enclosures — Performance requirements and test methods (mobile equipment) was published in February 2021. It has since been implemented across a number of mining and quarrying operations globally and in Australia to protect worker exposure from harmful dust.

This presentation provides an overview of the Standards performance requirements and test methods, a current proposed amendment to further improve the outcomes driven standard and the development of the next ISO Standard to control potential gas exposure in operator enclosures.

Presentation 3.20 – 3.45pm

Workforce Health and Productivity - It Pays to Care

Presenter: John Schneider

Author: John Schneider

Organisation: BeWorkFit Mackay

A significant drain on productivity can be attributed to health factors including presenteeism (on the job with a medical condition), or absenteeism. Work related illness and injury are the most likely amenable to workplace intervention.

Current occupational health policies and practices are failing. Despite vast amounts of money spent on work-related health problems outcomes for compensable conditions are worse than for similar non-work-related conditions. The considerable resources of workers compensation systems are not being put to their best use for employees, employers, and the community.

Health professionals alone cannot promote best practice rehabilitation and return to work unless it is based on clinical and research-based evidence and a working knowledge of ergonomics (ie the workplace as well as the worker).

Co-operation and communication are the most useful tools possessed by the workplace.

Issues addressed in the presentation:

- Insurance issues
 - Acceptance of the Biopsychosocial model
 - Quality Control: Evidence based and supported recommendations
- Training of health care professionals and compensation claim managers
- Clinical management based on the psychosocial model promoting return to work, including co-ordinated management of the worker AND the workplace
- Patient engagement promoting understanding and self-management of condition
- Employee and employer responsibilities to prevent recurring illness and injury

Presentation 3.50 – 4.15pm

The Enduring Mental Health and Wellbeing Impact of COVID-19 on the Mining Workforce – a MATES in Mining Perspective

Presenter: Suzanne Desailly

Author: Suzanne Desailly

Organisation: MATES in Mining & Energy

The COVID-19 pandemic has changed the way we live, work and communicate and will have significant, far reaching and long-term impacts on the mental health and wellbeing of many Australians.

For the mining industry, the disruptions brought about by COVID-19 came at a time when Australia is placing greater reliance than ever on its mining and resources sector to sustain the country's economy and standard of living.

Faced with not only with the health consequences of the virus itself, the mining workforce has also had to deal with a myriad of other related issues and work practice changes. These changes have led to the corrosion of many of the protective factors which help make workers more resilient and can reduce suicidal behaviour, placing greater pressure on their mental health and wellbeing, and increasing their risk of suicide.

MATES in Mining, an evidence-based suicide awareness and prevention program for the mining industry, explores these issues based on our direct contact with workers through our training and support services.



● **Presentation 4.20 – 4.45pm**

World Class or Bare Pass: How do Queensland's Mining Laws Protect Against Workplace Sexual Harassment?

Presenters: Aaron Anderson and Takara Raymond

Authors: Aaron Anderson and Takara Raymond

Organisation: Herbert Smith Freehills

Queensland's mining laws have been described as the "strongest suite of mine health and safety laws in the world." But for matters outside the realm of "physical" hazards and harm, are our laws and regulators really keeping up?

Recent parliamentary inquiries have highlighted the prevalence of workplace sexual harassment and the adverse impacts to safety and health that can arise from work environments where harassment is perpetrated. What is clear is that the management of risks arising from sexual harassment is a serious safety issue. What is less clear is how the current laws operate to protect the safety and health of persons with respect to incidents of sexual harassment, and how safety regulators will monitor and enforce compliance in this area.

This session will consider:

- the findings of the recent inquiries into workplace sexual harassment;
- how the current safety laws apply to workplace sexual harassment and what is required in terms of management of risks and notification of incidents to the regulator; and
- how these obligations must be balanced with other factors such as privacy and whistleblower obligations.

We will also discuss how proposed reforms in this area may alter the dynamic of the current regulatory environment going forward.



● **Presentation 3.20 – 3.45pm**

The Safety and Leadership Correlation

Presenter: Anton Guinea

Author: Anton Guinea

Organisation: The Guinea Group of Companies Pty Ltd

We know that there is a correlation between organisational safety performance and leadership. Correlation does not equal causation, so what is it that good leaders do, to create safe spaces, where their team members are psychologically or physically harmed. Yes, they create a vision, and take people on a journey. But at a deeper level, what is happening for the leader who leads safely and who leads safety?

Those leaders understand that safety performance is influenced by safety climate, not just safety culture. They understand that psychological safety is as important, and is a mediator of, physical safety. They understand that leadership is about handling pressure, and they handle the stress and duress of leadership in a way that focuses on emotional, behavioural, and situational control. They have found a way to create conscious control, in themselves, and their team members. They (consciously and subconsciously) use the skills of retrospection, introspection, and extrospection.

And studies have not only correlated the link between safety and leadership, but they have also correlated the link between safety performance and operational performance. This paper will upskill leaders to lead safely, to lead consciously, and to lead under pressure. With conscious control.

● **Presentation 3.50 – 4.15pm**

Leveraging Data to Predict Injury and Work Smarter

Presenter: Zac Lowth

Author: Zac Lowth

Organisation: Staunch Technology

The cost and burden of workplace injury is on the rise in Queensland. Statutory and common law claim costs have risen to levels never seen before in our state and in mining. Is your organisation stuck reactively managing injuries, or are you using predictive insights to inform proactive intervention?

This presentation will demonstrate the value of capturing and then leveraging job task and worker functional analysis data to move from a reactive model of managing injuries to a proactive model of injury prevention that is fuelled by predictive insights, allowing you to work smarter.

Case examples from across the Bowen Basin will highlight which data points mining organisations should seek to capture across reactive, proactive and predictive parameters and how to leverage this data to understand future injury risk across a worker's life cycle. This will include how emerging technologies such as wearable tech and motion capture can be applied to deliver value to both employers and workers.

We will conclude with how 20 years of industry data has been tapped into for lifetime value across Queensland coal mining, leading to significant decreases in Workers' Compensation claims and injury related costs whilst improving worker health and organisational culture.



● **Presentation 4.20 – 4.45pm**

The Role of Traffic Signs in Mining Road Safety

Presenter: Damir Vagaja

Author: Damir Vagaja

Organisation: RTSM Consulting

Traffic signs are an important element of safe and efficient management of heavy and light vehicle traffic on mining roads.

The installation and management of traffic signs on public roads is the domain of qualified and trained experts employed by road authorities. This ensures compliance with relevant standards and recognised practices.

However, in a mining environment, the management of traffic signs has historically been left to mining personnel with little knowledge or experience in this area. There has been insufficient, if any, guidance provided on the correct application of traffic signs for the safe management of mining traffic.

Despite the emergence of technological advancements, the importance of applying the entire suite of traffic management tools, even as basic as traffic signs, is emphasised by ongoing vehicle related accidents on mining operations.

This paper synthesises traffic engineering theory, recognised standards for public road application and experience from managing traffic on numerous Australian mines to provide a deeper theoretical and practical understanding of the importance and the requirements for traffic signs to improve safety on mining and resource processing operations.



● Presentation 3.20 – 3.45pm

Ethylene Contamination from Green Timber Supports

Presenter: Sean Muller

Authors: Sean Muller, Lachlan Bartrop and Snezana Bajic

Organisation: Resources Safety and Health Queensland

Ethylene is a key spontaneous combustion indicator monitored in underground coal mine atmospheres. Ethylene is significant as it is not typically detected by a gas chromatograph until the coal has reached approximately 100 degrees Celsius. The detection of ethylene is therefore considered confirmation of a coal heating and is commonly used as a trigger for coal mine worker evacuation in spontaneous combustion Trigger Action Response Plans (TARPs).

On some occasions trace amounts of ethylene have been detected in routine gas samples in the absence of elevated carbon monoxide and hydrogen. The absence of carbon monoxide and hydrogen when ethylene is detected is uncharacteristic of a spontaneous combustion event, therefore it is suspected that the ethylene had originated from contamination by another source. Westthorpe and Phillips (2017) found that trace amounts of ethylene was detected when Australian native hardwoods were chipped and placed in gas bags containing air.

This paper presents the outcomes from ACARP Project C29024 – Ethylene from timber supports. The project investigates the potential, timeframes, and circumstances for timber to produce ethylene in an underground environment. The project outcomes will allow the management of timber supports to avoid ethylene contamination underground and increase confidence in mine gas analysis systems.

● Presentation 3.50 – 4.15pm

Welding Fume Exposure in Queensland Coal Mines - Understanding the Risk

Presenter: Eliza Gill

Authors: Eliza Gill, Danielle Codd and Anne Nissen

Organisation: Resources Safety and Health Queensland

Welding plays a significant role in the fabrication and maintenance of plant and equipment used throughout the mining industry and involves coal mine workers (CMW), both those performing welding tasks and those exposed as a bystander. Welding fume exposure should be considered and included within the mine's health risk assessment, with monitoring conducted for all CMW (including contractors) to determine exposure to hazards under the Coal Mining Safety and Health Regulation (CMSHR) 2017 to understand current risks associated.

In 2017, sufficient evidence was compiled by the International Agency for Research (IARC) to classify welding fume as a Group 1 human carcinogen. This reclassification resulted in a heightened focus on exposure risks to CMW.

The process of the welding can generate fumes, mists, dust, vapours and gases, with the amounts and types dependent on a number of factors.

In 2020 and 2021 Queensland Mines Inspectorate requested that historical exposure data (2009-2021) from all Queensland coal mines be voluntarily submitted to Resource Safety Health Queensland (RSHQ) in order to perform a large-scale analysis to assess and understand the industry exposure profile.

This paper details the findings from the industry analysis, sampling methodologies, impacts of revised exposure standards and recommendations for industry.



● **Presentation 4.20 – 4.45pm**

Pulmonary Protection Programs - Prevention is Preferable to Palliation: a 9 Point Process

Presenter: John Schneider

Author: John Schneider

Organisation: BeWorkFit Mackay

Occupational Lung Disease is becoming increasingly important as more associations with work related exposure are being identified, but Australian data sources are yet to reflect this increasing importance. Work-related COPD is likely to become more widely recognised in Australia as smoking rates decline.¹

Recent international estimates have shown that approximately 14 per cent of COPD cases are probably associated with work-related exposures.² In the 2017–18 ABS National Health Survey, the prevalence of COPD in Australians aged 45 and over was 4.8%, or an estimated 464,000 people. Ill health can include anxiety and depression with abnormal imaging studies and normal respiratory function, to death from lung cancer.

Hearing Conservation programs have been well accepted for decades internationally as a format and foundation of preventative and control measures within workplace health and safety management systems.

This presentation will present comprehensive management processes useful in protection of respiratory function, based on experiences associated with implementation of hearing conservation measures. Implementation will provide a process to manage health risks associated with workplace exposures to respiratory hazards.

References:

1. Blanc, P.D., et al., *The Occupational Burden of Nonmalignant Respiratory Diseases. Official American Thoracic Society and European Respiratory Society Statement. Am J Respir Crit Care Med*, 2019. 199(11): 1312-1334.
2. Alif SM, et al., *Occupational Lung Diseases in Australia. 2020. Safe Work Australia*

QUEENSLAND MINING INDUSTRY HEALTH AND SAFETY

CONFERENCE COMMITTEE

The Committee responsible for organising the Conference comprises representatives from the Queensland Resources Council, Resources Safety and Health Queensland, Simtars, the Mining & Energy Union Queensland and the Australian Workers' Union.



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