

ASSET MAINTENANCE IN RESOURCES

7-9 November 2011, Rydges Perth

WA's Only
Resources Focused
Maintenance Event

Optimising Uptime for Fixed and Mobile Assets – 12 Case Studies



Stephen Muller,
*Principal Advisor -
Defect Elimination,*
BHP BILLITON
IRON ORE



John Beattie,
*Executive General
Manager Zero
Harm & Insurance,*
DOWNER NZ



Ben Ludik,
*Head of Contracts
and Supply Chain,*
GOLD FIELDS



Michael McKay,
*Fixed Plant (OHP)
Manager,*
HWE MINING



Andres Yep,
*Specialist
Reliability
Engineer,*
RIO TINTO



Mark Quinn,
*Director,
THE RED BUTTON
GROUP
& Former Manager
Asset Management,
RIO TINTO COAL
AUSTRALIA*



Mark Ho,
*Engineer,
UNIVERSITY
OF WESTERN
AUSTRALIA
(UWA)*

Ashley Williams, *Owner, AMPTS
& Short Term Maintenance Planner, ARGYLE DIAMONDS*

Gary Bacon, *Safety Officer, ARGYLE DIAMONDS*

Michael Drew, *Managing Director, ARMS RELIABILITY*

Sandy Dunn, *Director, ASSETIVITY*

Michael Wassif, *Reliability Superintendent, Rotating Equipment, CALTEX*

Peter Mitchell, *Maintenance Manager, CONQUEST MINING*

Andrew Nott, *Maintenance Services Superintendent,
ENERGY RESOURCES OF AUSTRALIA (ERA)*

Carter McNabb, *Founding Partner, GRA*

Michael Kosef, *Shutdown Scheduler / Planner, NEWCREST MINING*

Rod O'Connor, *Maintenance Manager, ONESTEEL*

Hayden Sing, *Maintenance Superintendent, Sunrise Dam,
ANGLOGOLD ASHANTI*

Sean Stayner, *Managing Director,
SYNERGISTIC MANUFACTURING SYSTEMS*

Senior Representative, MINERALS AND METALS GROUP (MMG)

Conference highlights

- Improving asset life cycle management
- Deploying sustainable cost reduction plans
- Shifting to preventive and predictive maintenance culture and successfully deploying change
- Ensuring sustainable supply of equipment and components through strategic sourcing
- Accurately forecasting your demand for maintenance
- Managing successful shutdowns and turnarounds
- Strengthening people management and mitigating the impact of skill shortages
- Evaluating effectiveness of Lean and Six Sigma
- Achieving Zero Harm in asset maintenance

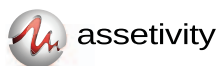
Pre-conference workshops: Monday 7 November 2011

- Shifting to a preventive and predictive maintenance culture and successfully deploying change
- Building up reliability in your organisation
- Mastering asset life cycle management and implementing sustainable cost reduction plans
- Accurately forecasting your demand for Maintenance, Repair & Operations/Overhaul (MRO) spares, to maximise uptime performance

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PRE CONFERENCE WORKSHOPS: MONDAY 7 NOVEMBER 2011

8.00 Registration

WORKSHOP A: 8.15 - 10.15

Shifting to preventive and predictive maintenance culture and successfully deploying change

Part I – Initiating a culture change project

- Examining the huge cost of a reactive maintenance culture
- Incorporating a modern Reliability Centred Maintenance (RCM) approach to address safety and reliability issues
- Justifying the benefits of employing culture change

Part II – Successfully deploying culture change

- Tackling resistance to change
- Developing core leadership competencies to deploy culture change
- Shifting to a maintenance culture
- Driving culture change from maintenance departments, throughout the whole organisation
- Engaging your stakeholders and gaining their buy-in on change projects



Sean Stayner, *Managing Director*,

SYNERGISTIC MANUFACTURING SYSTEMS

Sean works predominantly with companies in mining, and manufacturing industries. His works to change companies from reactive and chaos fatigued cultures to a proactive model that promotes efficiency from the implementation of best practices.

10.15 Morning tea

WORKSHOP B: 10.40 - 12.40

Building up reliability in your organisation

- Adopting advanced Reliability Centred Maintenance (RCM) and Root Cause Analysis (RCA)
- Performing system availability analysis and producing performance predictions by using Reliability Block Diagrams (RBD)
- Accurately predicting downtime, the number of interruptions and the Mean Time Between Failures (MTBF)
- Embedding a reliability culture and tackling the resistance to change
- Mitigating the impact of skill shortages and reducing machine downtime



Michael Drew, *Managing Director*,



Michael is now the sole distributor of Isograph RAMS software in Australia and Isograph's acknowledged expert in the application of Reliability Improvement methods in process industry.

12.40 Lunch

“Well maintained equipment lasts 30-40% longer than poorly maintained equipment.”

WORKSHOP C: 1.20 - 3.20

Mastering asset life cycle management and implementing sustainable cost reduction plans

Part I – Exploring the benefits of the whole of life approach

- Understanding the overall life-cycle of your asset
- Improving your asset management decisions through whole of life forecasting
- Using whole of life modelling, and examining how it will impact maintenance and costs
- Determining the true value of your asset, to plan and maintain your asset's life-cycle
- Assessing the benefits and costs of replacing vs. repairing

Part II – Examining the strategies for whole-of-Life asset management

- Building and executing cost reduction plans
- Improving your decision on asset selection and replacement, from a total cost of ownership (TCO) perspective
- Collecting real time data from ERP/CMMS tools, to facilitate your decision on asset life-cycle
- Encouraging the engagement from key stakeholders on Whole of Life approach



Mark Quinn, *Director*, **THE RED BUTTON GROUP**

& Former Manager Asset Management

RIO TINTO COAL AUSTRALIA

Mark was also a member of the Rio Tinto Global Asset Management Advisory Group that contributes to the strategic direction of Rio Tinto's asset management efforts, and was a senior management educator on the Rio Tinto Asset Management Professional Development programme. During his career he has also worked for BHP, Shell and Komatsu.

3.20 Afternoon tea

WORKSHOP D: 3.40 – 5.40

Accurately forecasting your demand for Maintenance, Repair & Operations/Overhaul (MRO) spares to maximise uptime performance

Part I – Improving accuracy in MRO demand planning

- Segmenting inventory and assign appropriate management techniques
- Applying forecasting techniques and strategies for different inventory types, such as repairables/rotables & consumables
- Evaluating best practice demand planning processes
- Understanding system and data requirements for demand planning implementation

Part II – Optimising MRO inventories

- Understanding the fundamental levers for optimising service levels, inventory costs and inventory levels
- Learning how to calculate inventory related costs, optimal replenishment cycles and statistical safety stocks
- Reviewing related key performance indicators (KPIs)
- Designing a Maintenance & Operations Planning (M&OP) Process for your organisation
- Discussing implementation considerations and approaches
- Conducting an opportunities assessment for your organisation



Carter McNabb, *Founding Partner*, **GRA**

For the last 20 years, Carter has helped Maintenance, Repair & Overhaul (MRO) organisations in North America, Asia and Australia deliver rapid and sustained inventory reductions, service level improvements and supply chain cost reductions through the practical application of advanced forecasting, inventory and supply chain optimisation processes, techniques and systems.

5.40 Close of Workshops

ASSET MAINTENANCE IN RESOURCES

7-9 November 2011, Rydges Perth

CONFERENCE DAY ONE: 8 NOVEMBER 2011

8.30 Registration

9.00 Opening Address from the Chair

Mark Quinn, Director,
THE RED BUTTON GROUP
& Former Manager Asset Management,
RIO TINTO COAL AUSTRALIA

OPTIMISING ASSET AVAILABILITY

9.10 CASE STUDY

Ensuring sustainable supply of equipment and components through strategic sourcing

- Assessing inventory management and the impact on asset availability
- Examining the reliability and turnaround optimisation of components
- Streamlining procurement processes
- Improving supply chain contribution to equipment performance
- Ensuring effective supply and maintenance contract management

Ben Ludik, Head of Contracts and Supply Chain, **GOLD FIELDS**

9.55 CASE STUDY

Applying Reliability Centred Maintenance (RCM) to achieve high plant availability and reduce cost

- Shifting to an RCM culture and facilitating successful change management
- Using strategic frameworks to create effective maintenance programs
- Evaluating RCM project results
- Avoiding the pitfalls of RCM implementation
- Minimising safety and reliability, whilst lowering maintenance cost

Michael Drew, Managing Director,



10.40 Morning tea

COMPUTERISED SYSTEM MAINTENANCE SYSTEMS (CMMS) & ENTERPRISE ASSET MANAGEMENT (EAM)

11.10 CASE STUDY

Optimising CMMS/EAM for more effective maintenance management and decision support

- Assessing your current systems and the quality of data
- Choosing the system which is most suited to your operations
- Exploring how to successfully use CMMS/EAM systems
- Upgrading your current system to increase accuracy in forecasting your maintenance demand, and formulating cost-effective maintenance strategies

Ashley Williams, Owner, **AMPTS**
& Short Term Maintenance Planner, **ARGYLE DIAMONDS**

MAINTENANCE FUNCTION PERFORMANCE IMPROVEMENT

11.55 EXPERT INSIGHT

Evaluating effectiveness of Lean and Six Sigma

- Understanding best methodologies for improving operational reliability
- Employing the optimum combination of continuous improvement tools
- Avoiding and eliminating failures – engineering tools vs continuous improvement tools
- Implementing holistic solutions to create a high reliability organisation

Sandy Dunn, Director,



assetivity

12.40 Lunch

1.40 CASE STUDY

Reducing asset downtime through Preventive Maintenance Optimisation (PMO)

- Identifying and eliminating overlaps and gaps in your maintenance process
 - Analysing the problems with traditional preventive maintenance program
 - Examining and utilising maintenance tools
 - Enhancing safety and environmental performance through PMO
- Senior Representative, **MINERALS AND METALS GROUP (MMG)**

CONTINUOUS IMPROVEMENT IN MAINTENANCE PROCESS

2.25 CASE STUDY

Streamlining your operations by effective maintenance planning and scheduling

- Analysing what leads to poor maintenance planning and scheduling
- Auditing your maintenance process and prioritising maintenance activities
- Identifying system failures and ranking the risk using Failure Mode and Effects Analysis (FMEA)
- Addressing the limitations of CMMS and how to overcome them
- Understanding equipment lifecycles and applying effective Condition Monitoring techniques

3.10 Afternoon tea

3.40 PANEL DISCUSSION

Facilitating cooperation and communication between maintenance and operations

- Improving cooperation between maintenance and production
- Justifying the importance of increased communication to prevent major accidents and hazards
- Reviewing the challenges to achieve effective cooperation and communication

Moderator:

Stephen Muller, Principal Advisor - Defect Elimination
BHP BILLITON IRON ORE

Panellists:

John Beattie, Executive General Manager Zero Harm & Insurance,
DOWNER

Hayden Sing, Maintenance Superintendent, Sunrise Dam,
ANGLOGOLD ASHANTI AUSTRALIA

Peter Mitchell, Maintenance Manager, **CONQUEST MINING**

John Beattie, Executive General Manager Zero Harm & Insurance,
DOWNER NZ

PERFORMANCE DATA MANAGEMENT

4.25 CASE STUDY

Using accurate performance data to improve overall plant and equipment performance

- Examining how poor performance data on your decision making process
- Evaluating your current data management techniques
- Increasing reliability in performance data collection and analysis through SAP system
- Strengthening governance and driving change management

Rod O'Connor, Maintenance Manager, **ONESTEEL**

5:10 Closing remarks from the Chairperson

5:15 Networking drinks



CONFERENCE DAY TWO: WEDNESDAY 9 NOVEMBER 2011

9.00 Welcome Coffee

9.00 Opening Address from the Chair
Stephen Muller, *Principal Advisor - Defect Elimination,*
BHP BILLITON IRON ORE

ACHIEVING HIGHER PRODUCTIVITY & EFFICIENCY

9.10 CASE STUDY

Gaining insight into the most up to date maintenance tools and procedures

- Minimising human errors and tackling skill shortages through innovative tools and procedures
 - Reliability Centred Maintenance (RCM)
 - Total Productive Maintenance (TPM)
 - Overall Equipment Effectiveness (OEE)
- Formulating effective maintainability principles
- Improving the maintenance procedure to eliminate accidents and hazards

Andrew Nott, *Maintenance Services Superintendent,*
ENERGY RESOURCES OF AUSTRALIA (ERA)

9.55 EXPERT ADVICE

Achieving optimal asset effectiveness through reliability engineering excellence

- Evaluating asset integrity and reliability within your organisation
- Understanding reliability engineering and Weibull analysis
- Investigating various reliability tools
- Performing effective Reliability Availability and Maintainability (RAM) assessments
- Building and implementing a reliability engineering program

Mark Ho, *Engineer,* **UNIVERSITY OF WESTERN AUSTRALIA (UWA)**

10.40 Morning tea

11.10 CASE STUDY

Preventing unexpected breakdowns through equipment inspection and preventive maintenance

- Achieving effective preventative maintenance, through risk based assessment and inspection
- Examining the key criteria of equipment inspection, and ensuring the accuracy of data collection
- Effectively developing and deploying inspection plans
- Exploring various Non Destructive Testing (NDT) standards
- Employing innovative corrosion inspection management methodologies

Michael Wassif, *Reliability Superintendent Rotating Equipment,*
CALTEX

PEOPLE, PERFORMANCE AND SAFETY

11.55 CASE STUDY

Auditing human factors for maintenance excellence

- Analysing the impact of human factors on your maintenance activities
- Promoting process training across departments improving your safety culture
- Ensuring compliance among both employees and contractors
- Performing root cause analysis to improve your current systems and reduce the chance of human error

Gary Bacon, *Safety Officer,* **ARGYLE DIAMONDS**

12.40 Lunch

1.40 CASE STUDY

Leveraging good people strategies as the foundation of your success

- Examining "soft skills" in a maintenance environment
- Using engagement as a controllable lever to drive performance
- Optimising visibility and leadership to influence culture in a maintenance environment
- Engaging both permanent and contract workforces in the current skills environment

Michael McKay, *Fixed Plant (OHP) Manager,* **HWE MINING**

2.25 CASE STUDY

Achieving Zero Harm in asset maintenance

- Using Lean processes for safety and environmental management
- Applying functional safety principles to critical safety systems
- Leadership skills - maximising use of Positive Performance indicators
- Risk mitigation thinking, behaviour and culture

John Beattie, *Executive General Manager Zero Harm & Insurance,*
DOWNER NZ

3.10 Afternoon tea

SHUTDOWNS & TURNAROUNDS

3.30 CASE STUDY

Managing successful shutdowns & turnarounds to improve site competitiveness and production

- Shortening and tightening the shutdown process
- Increasing governance and gaining better control of the shutdown phases
- Incorporating preventive maintenance methodologies, to eliminate the costly unplanned outages
- Analysing common mistakes in shutdowns and turnarounds
- Achieving overall cost reduction and increased plant availability by minimising shutdown periods

Andres Yep, *Specialist Reliability Engineer,* **RIO TINTO**

4.15 CASE STUDY

Examining the strategies for effective shutdown and turnaround planning

- Streamlining your shutdown process through effective end-to-end planning
- Identifying the opportunity to reduce shutdown manning
- Ensuring sufficient and efficient communication among the shutdown workforce
- Overcoming the difficulties of managing a contracted workforce

Michael Kosef, *Shutdown Scheduler/Planner,* **NEWCREST MINING**

5:00 Closing remarks from the Chairperson
and Conference close

"International studies have shown that a reacting culture will cost an extra 5-11% in energy consumption."

ASSET MAINTENANCE IN RESOURCES

7-9 November 2011, Rydges Hotel

Who should attend?

Who must attend – from Mining, Oil & Gas Companies and Contractors:

- Head of Maintenance / Maintenance Manager
- Head of Engineering / Engineering Manager
- Head of Asset Management / Asset Manager
- Head of Operations / Operations Manager
- Reliability Manager
- Asset Integrity Engineer / Reliability Engineer
- Mine Planner
- GM Mining / Mine Manager
- Maintenance Planner / Maintenance Scheduler
- Plant manager

Resources companies are striving to increase productivity at the lowest cost possible. Maintenance is one of the largest cost areas in mining, oil and gas operations. There is a great fear of compromising reliability if slashing maintenance spend. However, it has been proved that a 15% plus reduction in maintenance costs can be achieved whilst maintaining or even improving equipment availability.

The timely **Asset Maintenance in Resources** conference is tailored made for resources companies to gain practical strategies and methodologies on increasing asset availability, eliminating unexpected breakdowns, tackling skill shortages, enhancing safety and minimising costs.

Why you should attend:

MITIGATE the impact of maintenance skill shortages

DRIVE continuous improvement of maintenance process

MINIMISE accidents and unexpected equipment breakdowns

MAXIMISE uptime for both fixed and mobile assets at the lowest cost possible

About Resourceful Events



Resourceful Events researches and develops a suite of industry summits providing key strategic and operational insight for the mining, oil, gas, and related communities.

As the Australian conference division of Aspermont Limited – publisher of Australia's leading print and internet publications for the mining, oil & gas, and related sectors – we have strong market reach to the resources industry, resources sector service providers, and the resources investment sector. Aspermont runs Resourceful Events in partnership with Hong Kong based firm Beacon Events. The companies have jointly produced the highly successful Mines and Money series of events in Asia.

We look forward to welcoming you to our events soon.

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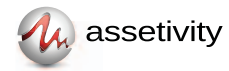
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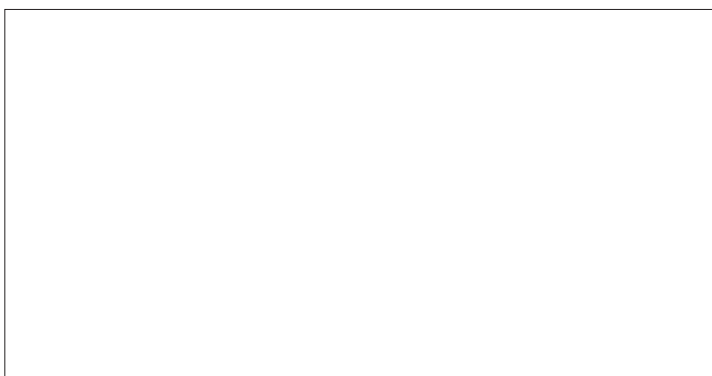
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Optimising performance & maximising uptime for fixed & mobile assets

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