

ISSN: 2652-4007

March - April



■ EXECUTIVE APPOINTMENTS

- 11 Oceania
- 12 Africa/EMEA
- 13 Europe
- 14 North America

MINING EXECUTIVE REVIEWS

- 18 Cover Page: Hard-wiring safe behaviour: Gareth Huckle - DIRECTOR of Partners in Performance Africa.
- 24 Canadian Based Centerra Gold Inc.
- 26 Mining Digital Leadership
- 28 Nornickel's Sustainable Development Report: Reducing Emissions And Setting New Goals
- 31 Mining Executive Throwback: Janet Zaph Briggs

MINING BUSINESS REVIEWS

34 Mining Investment

New Future For Barrick's Veladero Mine Following A Review Of Its Strategy And Business Plan.

Exoskeletons in mining

Russian Giant Nickel Miner, Nornickel To Manufacture Exoskeletons To Reduce Occupational Injuries.

- 39 **Mergers and Acquisitions: Orica Acquires**Orica Consolidates Its South American Footprint By
 Acquiring Leading Peruvian Based, Exsa.
- 41 Mergers and Acquisitions: Unleashed West Africa's largest gold mining company to be formed as Endeavour Mining Corporation combines with SEMAFO.





GLOBAL MINING REVIEW

46 ASIA PACIFIC

Freeport Mcmoran Repositions Itself For Grasberg Cash Flow Generation From 2021 As Underground Ramp Up Remains On Track.

49 AFRICA/EMEA

Implats, Sibanye-stillwater And Basf Combine Forces To Launch A New Tri-metal Catalyst.

51 EUROPE

Anglo american plc secures future of The multi-billion pound uk woodsmith Polyhalite project.

55 OCEANIA

Lithium Australia Granted Patent For Revolutionary Lithium Extraction Technology.

57 NORTH AMERICA

Canada Rare Earth Ltd Embarks On Aggressive Development Of Its Tailings Recycling Business.

61 **SOUTH AMERICA**

Codelco On Sanitation Of Towns Near Its Operations Using Drone Technology.



Hard-wiring safe behaviour

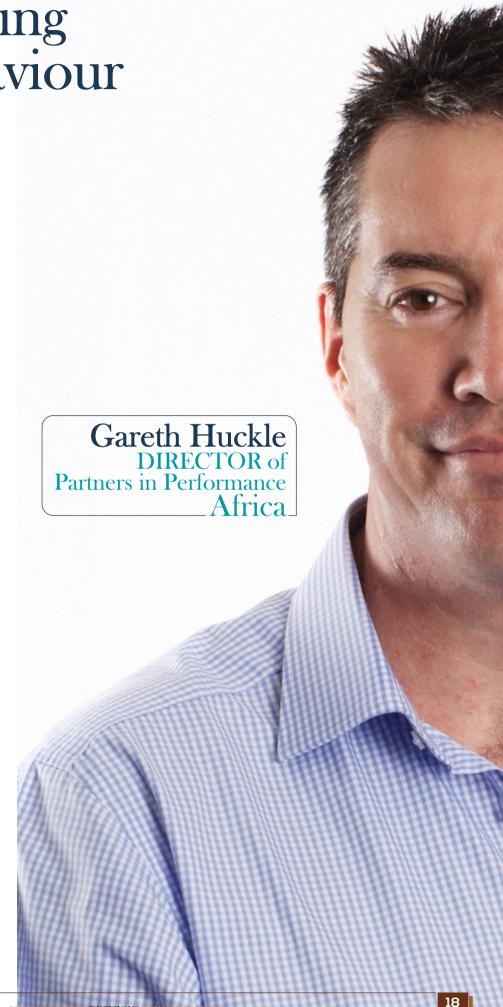
combination of worsening safety performance and various other factors is prompting local mining companies to re-assess their approach to safety and, in particular, to safety auditing. The range of challenges facing the industry include increasingly stringent application of safety legislation; shareholder pressure; broader stakeholder concern, as well as simple economic impact.

Although many mining operations routinely conduct safety audits, these often fail in their most basic purpose. That is to provide a holistic picture of what needs to be addressed, in order to promote safer behaviour. Partners in Performance, a leading global consulting firm specialised in operational improvement, proactively addresses this issue through its innovative and unique 'Safety Wiring' approach.

The team at Partners in Performance work alongside their clients to enhance throughput, lower costs and optimise capital projects - increasing both operational efficiency and effectiveness. The firm has been engaged in Africa for nearly 20 years with a "boots on the ground" presence. There is now a team of around 70 permanent people across the African region and is continuing to grow.

Gareth Huckle, Director of the Africa Region at Partners in Performance, explains, "More and more of our clients are telling us that their operations 'look good on paper' i.e. they are performing well in various safety audits, but this is not translating into better safety performance 'on the ground'.

This is often because traditional safety audits are heavily biased in their design towards compliance, typically with standards such as OHSAS 18001. While necessary, this alone is insufficient to provide insight into the full range of factors that drive safe behaviour in mines. A more comprehensive and holistic approach to safety management is required."





The role of safety leaders

s part of its focus on operational improvement, Partners in Performance often assists its clients with specifically improving safety performance. To this end, the firm recently conducted research for a client to answer the question, 'What sets safety leaders in industry apart?' The qualitative research involved a review of over 75 businesses to identify global safety leaders, and then more detailed research on about half of them. This was followed by more in-depth analysis, involving multiple interviews as well as a comprehensive literature review.

Huckle shared, "From the research we discovered there are seven common characteristics which really set safety leaders apart from the rest of the pack:

- 1.Genuine care and commitment to safety, demonstrated by leaders at all levels
- ${\bf 2.} Operation al\ excellence\ throughout\ the\ organisation$
- 3. Safety Key Performance Indicators (KPIs) and practical targets set at a granular level
- **4.**Clear individual accountability in place to drive safety
- 5. Behavioural aspects towards safety is embedded
- **6**.Leveraging of safety information and in-house expertise
- 7. Continuous improvement cycle to further eliminate risks

We saw a very high correlation between Lost Time Injury Frequency Rate (LTIFR) and the total score on these seven dimensions. If you genuinely want to improve your safety performance you have to perform well on all of them."

Safety Wiring

perform well on these seven dimensions does not in itself change behaviour. Even if progress is made, as with many improvement efforts, there is no guarantee it will be sustained. This is where 'Safety Wiring' comes in and where Partners in Performance can assist mines with something most have been struggling with for many years. How to drive safer behaviour and to do in a way to ensure it is embedded and maintained ongoing.

Huckle states, "From over 20 years of helping our mining clients improve performance at their operations, we have developed the concept of 'Wiring' to both enable and sustain that improvement. Essentially, to 'wire it in' so the new or different way of operating becomes the norm and new standard.

We have applied 'Wiring' to the area of safety performance in the same way we would to other operational improvement challenges, such as increasing production or reducing cost. While Wiring in general addresses the organisational factors that drive desired behaviour, Safety Wiring specifically addresses the organisational factors that promote safe behaviour."

Our Safety Wiring Pyramid provides a structured, systematic way for our clients to not only assess their performance against the seven common characteristics of safety leaders, but also identify any opportunities to drive safer behaviour."



Caring felt leadership at all levels

Leaders are seen genuinely care for safety, and proactively demonstrate best practice behaviours.

A **continuous improvement process and capability** exists to set stretch targets, further eliminate risks and improve safety performance.

Safety performance is measured, reviewed and acted upon at all levels of the organisation. Individuals **held to account.**

Clear individual accountabilities are in place to drive safety. Individuals have the required capabilities and are motivated to behave safely.

Essential safety processes and procedures are in place. Critical tasks are clearly defined and adhered to. Critical safety information is collected and disseminated.

Safety KPIs and performance targets are set at a granular level. KPIs and targets focus more on leading measures than lagging indicators

Like a real pyramid, the 'Safety Wiring Pyramid' is built from the bottom up. Unless the layer below is strong and solid, the next layer up cannot be effective.

Safety strategy: the first and fundamental consideration. What are the 'precious few' things (often referred to as critical or fatal risks) that have to be managed well to drive safe behaviour and what are the related metrics of safety performance?

Safety disciplines: for these identified 'precious few', what processes and systems should be in place to ensure high performance? Do people know what they have to do to perform safely?

Accountability and motivation: having established the safety strategy and assessed the relevant safety disciplines, we then look at the drivers of individual behaviour and also what may be motivating undesired behaviour.

Sustaining disciplines: next we assess how well performance against the safety strategy is tracked and reviewed. What happens when underperformance is identified, and how are individuals held to account.

Continuous improvement: with the four lower layers of the pyramid in place, we are able to look at what processes and capabilities the organisation has in place to continuously improve its safety performance.

Visible safety leadership: finally we review the reinforcing actions and observable safety behaviour of leaders at all levels in the organisation. From the CEO or General Manager down to frontline supervisors, and the impact of their behaviour on all levels of the pyramid.

Huckle adds, "Our Safety Wiring Pyramid is a comprehensive approach to driving safe behaviour in organisations. The question of compliance, often the single focus of many so-called safety audits, is only part of Safety Wiring (within the safety disciplines layer), and one element of many that need to be considered to determine an organisation's safety health and facilitate safer behaviour."





Partners in Performance is helping its clients to assess better their safety health through conducting 'Safety Wiring' audits, through applying the Safety Wiring Pyramid to consider the full range of elements that influence safety behaviour across all areas of an operation. In one such case, an African gold miner was experiencing a deteriorating trend in its safety performance.

They recognised that a different approach to auditing and evaluating their safety practices was required; one which acknowledged that understanding compliance and adherence to standards was necessary, but not on its own sufficient to explain what was driving safety behaviour and, ultimately, safety outcomes.

Partners in Performance was engaged to conduct a series of 'Safety Wiring' audits at the company's operations. This identified a number of priority areas the miner needed to work on in order to address performance.

"What we helped them understand," said Huckle "was although they were very effective in some areas, their Safety Strategy was essentially reactive. It was focused on the reporting of lagging indicators such as LTIFR, and not on leading indicators, the things that actually drive safety outcomes and which can be actively managed. As a consequence, there was a weakness at the most fundamental level in the Wiring Pyramid."

Rectifying this was not simply a case of identifying a set of lagging indicators that could be proactively managed, although this was clearly necessary. It required the new, proactive Safety Strategy to be wired in by addressing the other layers of the Safety Wiring Pyramid.

"Simply identifying a set of fatal risks and associated leading indicators won't change safety behaviour. Our client understood that to be effective the revised Safety Strategy had to be incorporated in the Safety Disciplines, Alignment and Motivation, and Sustaining Disciplines layers of the Safety Wiring Pyramid too," said Huckle.





A fresh approach to consulting

ounded in Australia in 1996 by Skipp Williamson, who had a strong belief there was something missing from the traditional consulting model. Skipp's goal was to create a consulting firm that focused on an organisation's inherent capability, accountability and performance culture to deliver real and ongoing tangible impact.

Since then the firm has grown to over 600 people and now has a global footprint that spans Africa, Australasia, Europe, Russia, North and South America. In addition to the Mining and Resources industry, they now work with organisations in a broad range of sectors including: Industrial Manufacturing; Oil & Gas; Utilities; Telecommunications, Financial Services; Hospitality and Leisure.

With a driving mission to be THE leading global, premium level operational improvement firm, Partners in Performance is focused on bringing operational ideas to life and making them happen. From her experience Skipp states, "most ideas fail not because they are bad ideas, but because they don't have the support of others who are essential for them to succeed.So, we try to take people with us when motivating something new and make it their idea not our own."

Partners in Performance's brand line is 'Unleashing potential. Lasting impact'. This cuts to the core of what the firm is all about – getting the best out of a client's capabilities and ensuring that an increased level of performance continues into the long-term. It is not just about delivering an immediate result but lasting impact across an organisation that will drive future growth and success.

Although there are numerous consulting companies in Africa, Huckle points out that Partners in Performance is the only one that places such a high priority on implementation and bottom-line results. "We don't deliver theory or just recommendations to our clients, we deliver tangible results and lasting impact. Often our fees are contingent on our success in doing so."

In the South African mining industry, where there remains a significant opportunity to improve safety performance, this emphasis on delivering results, and tools such as the 'Safety Wiring Pyramid' used to deliver them, is an encouraging development. Huckle concludes, "We are really excited by the growing opportunity to assist our South African mining clients to improve their safety performance.

We're passionate about safety and about performance improvement; so being able to combine them to drive safer behaviour in South Africa's mines is a natural and very gratifying place for us to be."

