MOSH Learning Hub

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The Chamber of Mines established the Mining Industry Occupational Safely and Health (MOSH) Learning Hub in 2009, to encourage mining companies to learn from the pockets of excellence that exist in the industry. The MOSH adoption process involves identifying, documenting, demonstrating and facilitating widespread adoption of leading practices that have the greatest potential to address the major risks in health and safety areas such as falls of ground, transport and machinery, dust and noise. MOSH arose from the MHSC's tripartite approach towards health and safety and MOSH's role continues to be supported by mining companies, government and labour.

The Learning Hub Secretariat, as provided by the Chamber of Mines, plays a strategic facilitation role in leading the change to zero harm, including the provision of operational support to the adoption teams through monitoring and evaluation and through behavioural change processes. The secretariat evaluates the effectiveness of MOSH events and initiatives to gauge participants' satisfaction levels. The use of the MOSH portal continued to be monitored by plotting the analytics, including the number of registered users and visitors to the various web pages.

Organisations that invest in an internal change-management capability, set themselves apart from their counterparts in many respects. They are more agile and adaptable in the face of constant change in the business environment. Against this backdrop, the CEO Zero Harm Task Team was requested to consider bolstering mining companies' change management capability and leadership competencies. To this end, the CEO Zero Harm Task Team has resolved to continue to share the work each company is doing with regard to the appointment of behaviourists. Engagements with key role players commenced with preliminary discussions around the mining industry leader of tomorrow within the context of Mining Leadership Vision 2030. In addition, significant effort went into the alignment of MOSH methodology with other contemporary theories which, in some cases, were already embedded into management of change processes at company level. The Learning Hub facilitated some sessions at member companies to create awareness around the capacity required in this domain.

FALLS OF GROUND

The adoption team helped participating mines improve their reporting processes by monitoring and evaluating the portfolios of evidence and providing the mines with coaching during the Community of Practice for Adoption (CPA) meetings and peer review site visits. The number of employees benefiting from FOG-related leading practice (nets with bolts and trigger action response programme (TARP)) has improved from 56,987 to 76,187 which is a 33% improvement.

In the third quarter of 2016, the Learning Hub team agreed on a short-term strategy to help arrest increasing FOG-related fatalities. Extra support was given to mines that were struggling with FOG and human resources challenges, especially as it relates to lack of capacity to conduct and participate in peer review activities.

The strategy was to identify the mines most affected and, with their management, help put certain measures in place. One of the measures was to revitalise the application of Entry Examination and Making Safe (EEMS) and the TARP. The experiences and challenges were

2016 AREAS OF FOCUS continued

shared with other participating mines, involving 56 and 46 mines respectively. FOG-related fatalities stabilised at 33% toward the end of 2016 compared to 29% in 2015. Though it is recognised that there are various industry initiatives including MOSH, it has been established that if properly adopted, EEMS, TARP and Nets with Bolts would have contributed even more positively to the reduction of FOG-related fatalities by at least 48%, 56%, and 59%, respectively.

The following table depicts adoption progress of leading practices that were promoted to the industry previously and whose adoption is being monitored on a continuous basis:

Adoption tracker for FOG leading practices

Leading practice	Number of participating mines	Crews trained	MOSH adoption rate	Employees directly affected	Remarks
Entry examination and making safe	74	6,900	100%	67,080	Revitalisation programme started October 2016 and continued in 2017.
Nets with bolts (stoping areas)	46	2,848	100%	76,187	Employees benefiting increased from 56,987 to 76,187 – a 25% improvement, in part due to improved reporting from participating mines.
TARP	51	797	84%	57,978	Participating mines increased from 49 to 51. Number of people benefiting increased from 42,850 to 57,978 - a 26% improvement, in part due to improved reporting by participating mines.

TRANSPORT AND MACHINERY

The focus of the adoption team continued to be placed on supporting the industry in improving safety performance in transport and machinery.

PROXIMITY DETECTION SYSTEMS (PDS) LEADING PRACTICE

Substantial progress has been made in the implementation of this leading practice in the underground coal sector, as the use of trackless mobile machinery has gradually increased. Progress with the underground hard-rock rail-bound equipment (RBE) solution was steady albeit relatively slow, except for two of the larger mining groups in the platinum sector which are still lagging behind. Despite a number of attempts by the MOSH transport and machinery team to motivate the beacon functionality for RBE and despite some support from the CEO Zero Harm Task Team most companies, with the exception of Anglo American Platinum, have not embraced the beacon technology. The team will continue to work with the adoption sponsor to increase the uptake of this technology in 2017. Evidence of poor adoption started to show and in some cases companies had to re-launch some of the RBE functionalities.

The table below shows PDS progress per sector:

Adoption tracker for transport and machinery leading practices

Leading practice	Number of participating mines	Number of installations	MOSH adoption rate	Percentage installation of PDS	Remarks
Coal electrical machines	16 operations (4 mining houses)	127 sections	<20%	89% (2014:46%)	
Hard-rock track-bound equipment	72 operations (7 mining houses)	672 levels & 3015 locos	<24%	51.1% (2015: 44%) (2014: 37%)	
Hard-rock trackless mobile machines	27 operations (9 mining houses)	3478 machines	0%	92.8% (2015: 76%) (2014: 83%)	The sector implemented the practice before it was identified as a leading practice.

DUST

In total, 53 Chamber members' operations are adopting the Continuous Real-time Monitoring of Airborne Pollutants Engineering Controls leading practice. This provides assurance of the sustained integrity of appropriate engineering controls tailored to mitigate airborne pollutants. These include gold mines (35), coal mines (15), diamond mines (1), iron ore mines (1) and a platinum processing plant (1). The coal mines include 14 underground fiery mines and one opencast mine. The lead adopter mine reports from AngloGold Ashanti's Moab Khotsong and Exxaro's Grootgeluk mines provided good insight on the 'make or break issues' for the success of adoption. The Leading Practice Adoption Guide has been updated accordingly.

The COPA programme continued, with greater sharing of the understanding and challenges on the adoption process, and with the on-mine pilot of the instruments prior to rolling out.

The underground Colliery MOSH Dust Working Group focused on airborne dust monitoring with a Real-time Dust Monitor on-board a continuous miner with the aim of preventing explosions. The envisaged spin-off benefit is reduced dust exposures to same-zone workers. As there was no continuous real-time monitoring of airborne dust engineering control monitors with Explosion Proof Certification (EXia), the group involved the Occupational Equipment Manufacturers from the outset. The on-mine piloting of these instruments started in November 2016.

Substantial progress has been made in the implementation of proximity detection systems in the underground coal sector.

NOISE

The MOSH noise team continued to facilitate the Industry-wide Buy and Maintain Quiet Initiative (IBMQI). This is a noise-source elimination initiative for managing noise hazards at the machine design phase, using the collective demand from the industry to motivate Original Equipment Manufacturers (OEMs) and suppliers to focus more on noise reduction as part of their product development. The initiative acknowledges that individual mining companies have established Buy Quiet Policies albeit with limited success. Some of the key achievements of this programme in 2016 include:

- Implementation of the Measurement and Standards Sub-working Group's published Guidance Note for *Noise Measurement of Equipment to ensure compliance with MHSC milestones;* testing and subsequent implementation of the Procurement Working Group's *developed requirements to identify, review and select equipment that comply with specific noise emission requirements (Critical Noise Screening Tool)*.
- Research Consolidation Report with the specific objective of *reviewing previous and current research direction, and assess current technology*. The outcomes of the report were to inform the IBMQI steering committee about ways of engaging with OEMs and inform industry about possible research direction.
- The Noise Team has continuously assisted mines that are still interested in adopting the leading practice on *Hearing Protection Devices – Training, Awareness and Selection Tool (HPD-TAS)*.