

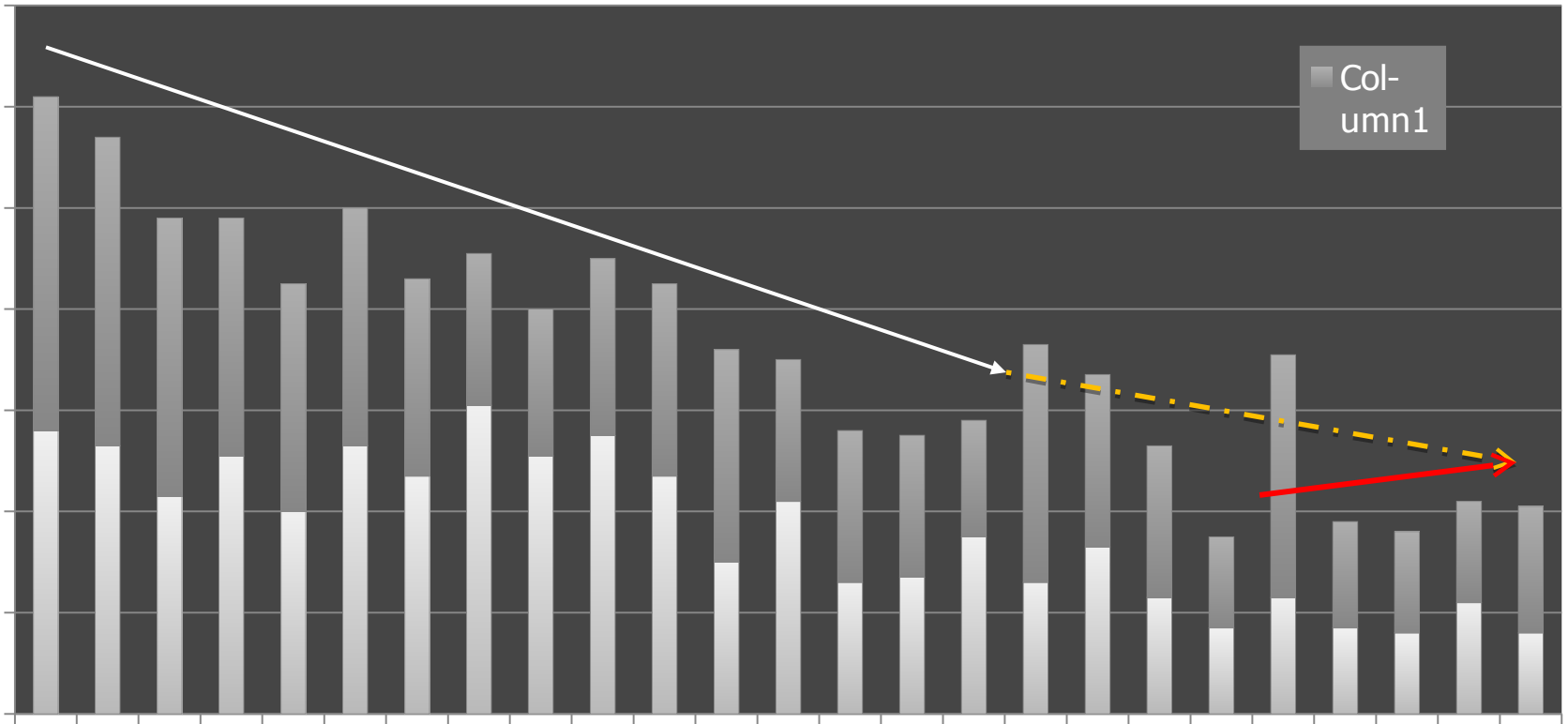
Building a Safety Culture Focused on Fatality Prevention



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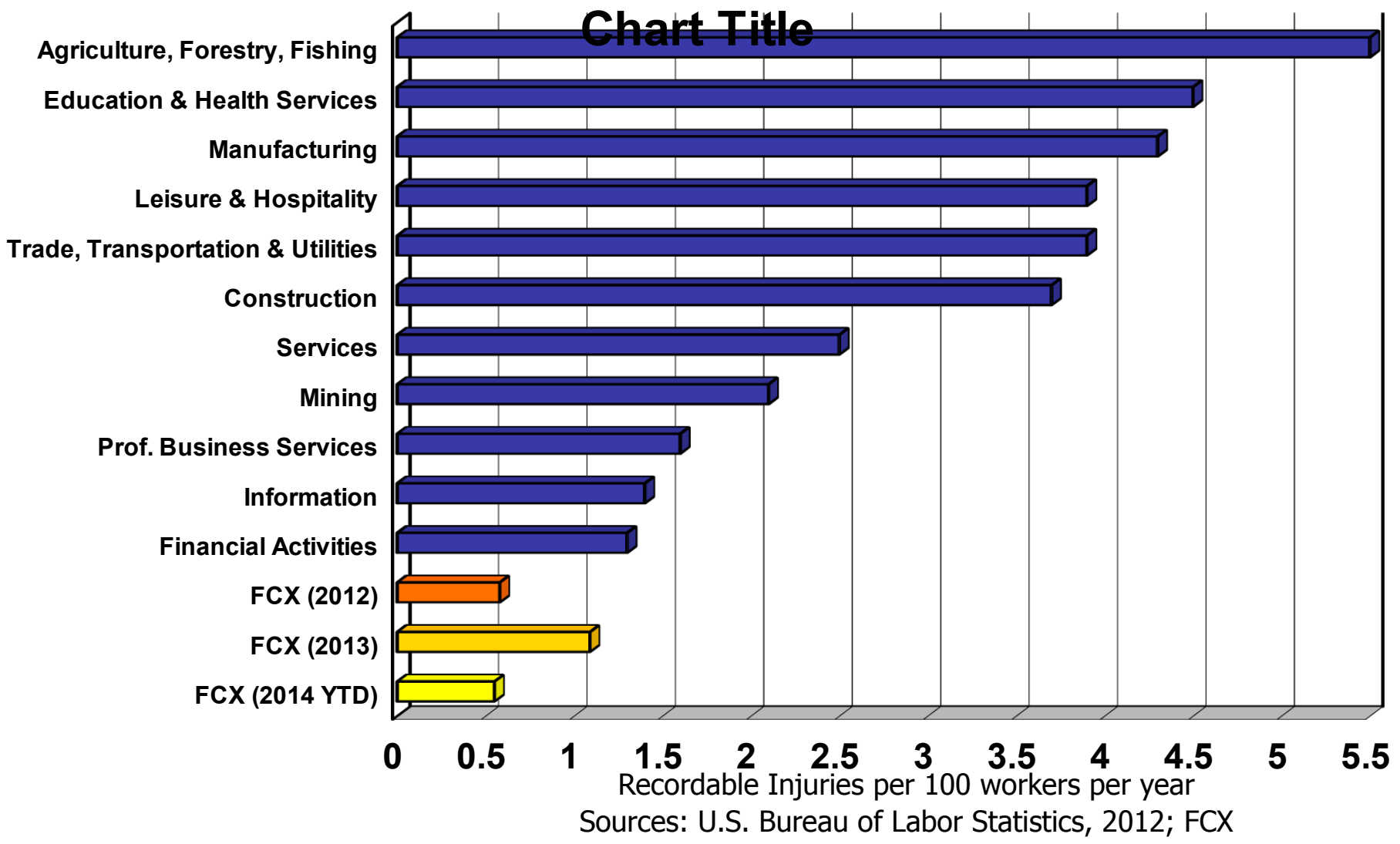
U.S. Mining Fatalities 1990 – 2014

Total fatalities 1990 through 2014 = 1775



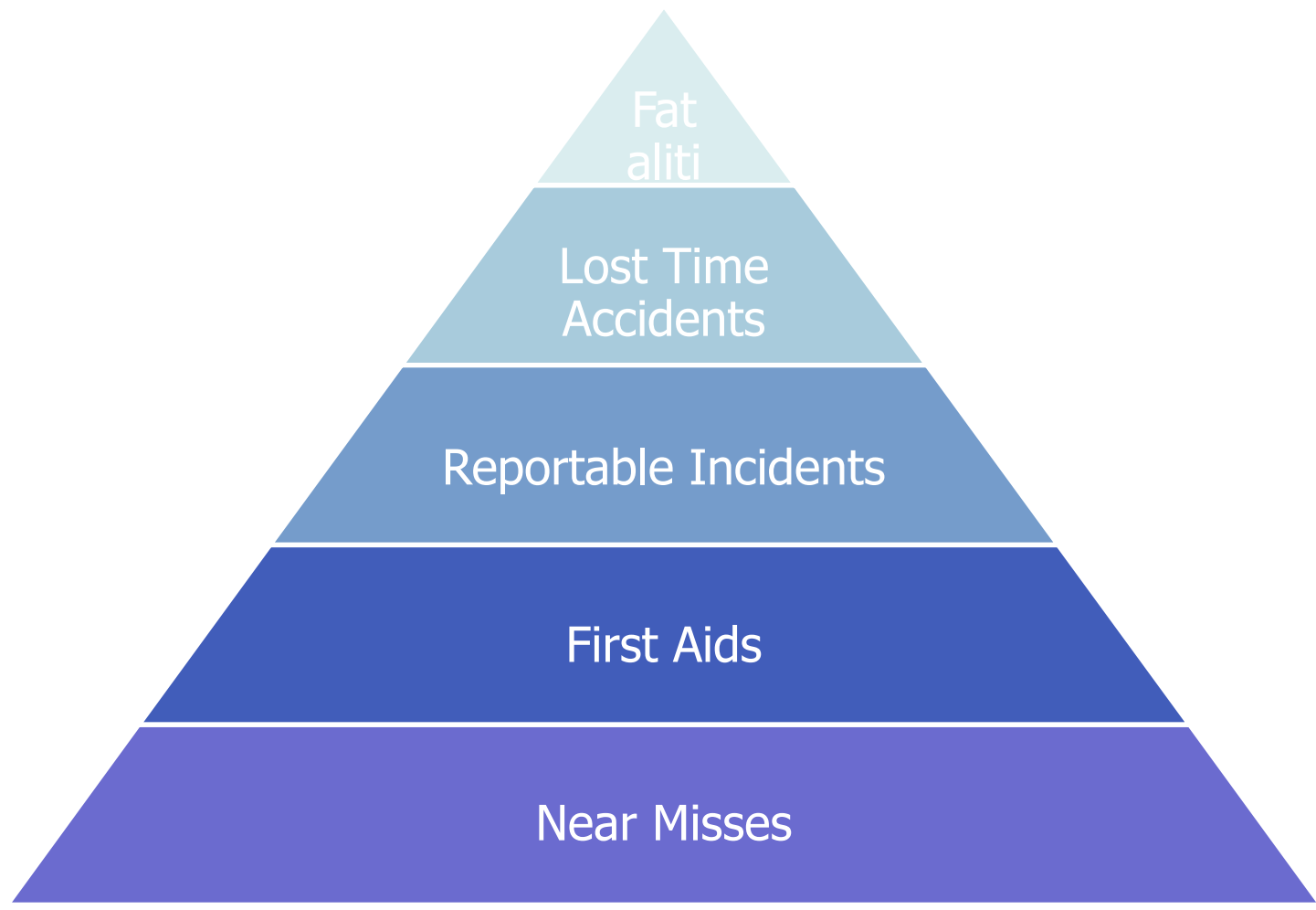
Performance Relative to 2012 Industry Averages in USA

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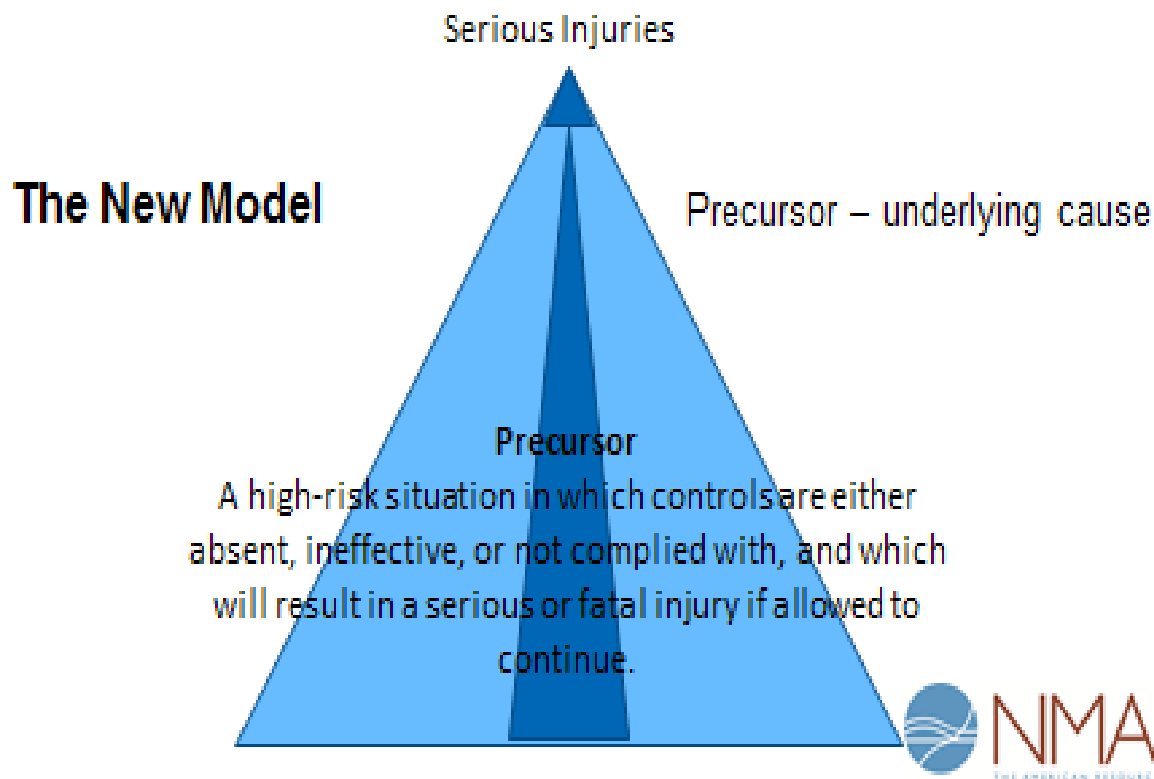
Heinrich's Pyramid



The New Model for Serious Incidents

Serious Injuries & Fatalities (SIF's)

All minor injuries are not the same in their potential for serious injury or fatality. Some low-severity injuries come from exposures that act as precursor to SIF's



Outline

- Potentially Fatal Event Alerts
- Global Significant Risks
- FP Training
 - Leaders
 - Employees
- Leader Tool Kit
- Critical Control Improvements
- Tracking Leading Indicators
- Risks Management Database



Potentially Fatal Events



Potentially Fatal Event Alerts

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POTENTIAL FATAL EVENT ADVISORY

This Advisory is a NOTIFICATION of an event/condition, or potential which may have resulted in a fatality at a Freeport-McMoRan location. The information below is intended to be utilized for proactive preventative purposes.

OPERATION:	Tenke Fungurume Mining	IMS ID:	56578
ISSUED BY:	Melva Camino, Health and Safety Superintendent	Personnel related:	X
INCIDENT DATE:	February, 21, 2015	Equipment-related:	X
TIME:	17:25 hours	Property/Process-related:	
CONTACT INFORMATION FOR ADDITIONAL DETAILS:	Melva_Camino@FMI.com	Health-related:	
		Other:	
BRIEF DESCRIPTION/DETAILS OF	A contractor bus carrying 32 TFM employees and contractors from Lubumbashi to the mine site struck the trailer of a tractor trailer travelling in the opposite direction that had encroached into the in the bus' lane on the National Road. Both the bus and tractor trailer attempted to avoid a collision but the bus struck the trailer. The bus driver lost		



Global Significant Risks Management

Global Significant Risks

Confined Space, Working at Height, Lockout Tagout
Tryout, Handling HDPE Pipe, Shovel Moves, etc.

- Team of subject matter experts
- Develop policy
- Reviewed with gap analysis at sites
- Implement as policy
- Develop standardized training and certify trainers



Fatality Prevention Training



Fatality Prevention Branding

- Two-day leader training
- One-day employee training
 - Posters
 - Stickers
 - Critical control booklets
- Guidance on how to manage fatal risks
- Training is active learning
 - Little talking
 - Heavily centered on activities



Fatality Prevention Branding

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Fatality Prevention Training Now

Prevent the Event – Learn How

The on-site training reinforces the knowledge, skills and attitudes needed for Safe Production.

Ask your supervisor for details



“ This training highlights the fact that the power to prevent fatalities is in the words we speak and the actions we take as leaders. By making many small changes in our approach, we can work as a team to prevent fatal events and eliminate workplace hazards.

— John Swagzdis, Senior Supervisor
Decorative Instrumentation, Sierra Operations

FatalityPrevention

Fm FREEPORT-McMoRAN



Leader Tool Kit



Tool Kit

- Auditing and other field tools
- Recognition ideas for employee participation
- Hard hat sticker and poster use on-going
- Sharing site best practices

Fatal Hazards – "Gators"

1. Working with **Chemical Hazards (H2S/Chlorine)**
2. Working in a **Confined Space**
3. Working with or near **Explosives**
4. Working at **Heights**
5. Working near **Open holes**
6. Performing **Hot Work**
7. Working with **HDPE & Pipe Handling**
8. Operation of **Mobile Equipment**
9. Working near **Slopes (Failure)**
10. Working with or near **Energy**
11. Working around **Suspended Loads**
12. Performing **Trenching & Excavating**
13. Working with or near **Electricity**



Use in the Field

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FREEPORT-McMoRAN

Sierra Fatality Prevention



GATOR: OPERATION OF MOBILE EQUIPMENT

CRITICAL CONTROLS

- Qualified/Competent Person
- Pre-Use Equipment/Work Area Inspection
- Seat Belts
- Communication With Surrounding Area Personnel
- Haulage Equipment Perimeter LOTOTO While Unoccupied or Being Repaired
- Spotter While Operating In Close Proximity To Other Equipment or Objects In Congested Areas Or Those With Limited Visibility
- Substantial Berms That Are Mid-Axle Height

VERIFICATION QUESTIONS

- Fit For Duty & Well Rested To Work Safety?
- Qualified To Operate The Specific Piece Of Equipment?
- Completed Pre-Use Inspection? Tagged Out or Taken For Repairs If Deemed Inoperable?
- Using The Seat Belt Properly?
- Defensive Driving Being Utilize To Prevent Collision?
- Communicating With Those Who Could Be In My Blind Spots?
- Carefully Assess: Would A Stop/Go/Move Assure The Task Is Accomplished Safely?
- Parking Brake Set & Properly Checked When Parked?
- Haulage Equipment Properly Locked Out While Unoccupied or being repaired?
- Screen Mid-Axle Height To Largest Equipment Operating In The Area?



DESCRIPTION

The size, inertia, weight and power of mobile machinery used in surface mining present significant hazards to people and equipment in their area of operation.

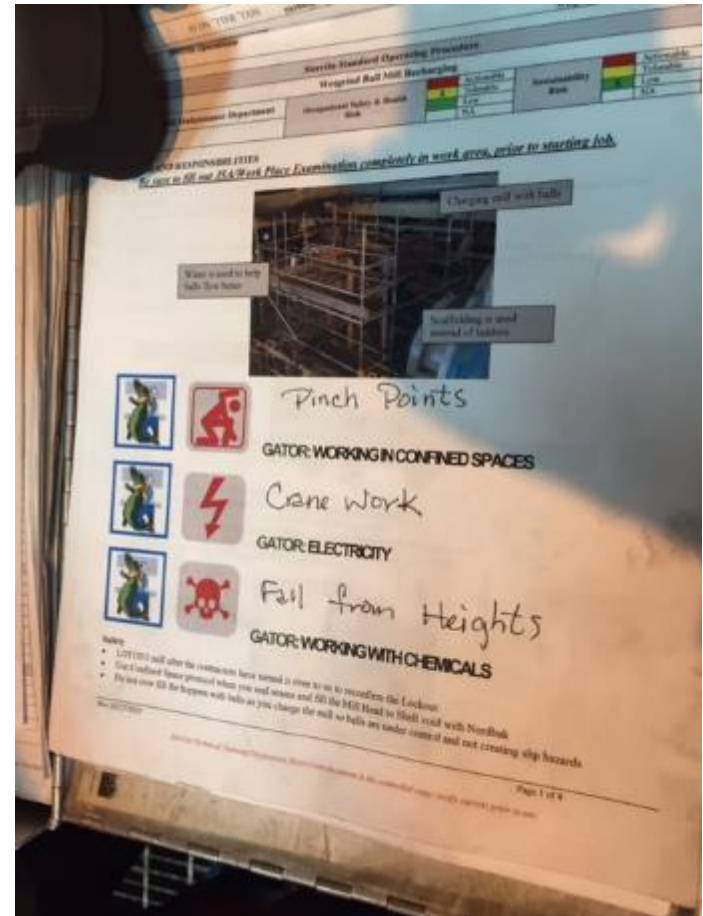
Hazards are created due to the operator's restricted view of the surroundings and the extensive range of vision shadows or blind spots in which people and objects can be hidden from sight. All mobile equipment have blind spots. People most commonly at risk are supervisors, spotters, service, and grade control personnel.

Light service vehicles and their occupants parked near large items of mobile equipment can be seriously damaged or crushed when the larger machine is moved.

STORY

Blind Spots: A haulage truck driver had been dispatched to the No. 44 shovel. However, it was not operating at the time, so he was reassigned to the No. 43 shovel. He had parked near other trucks that were in line at the No. 43 shovel and waited to be loaded. An electrician, Al Wade, approached the No. 43 shovel area at the same time the driver received instructions by the dispatcher to return to No. 44 shovel. As Wade crossed the load out area and was about to pass the haulage truck, the driver pulled out and turned right, running over the truck the mine electrician was driving, killing him.

Unfortunately, it took a fatality to initiate further requirements such as radio contact, permission for haul trucks to make right hand turns and buggy whip requirements while in the mine area.



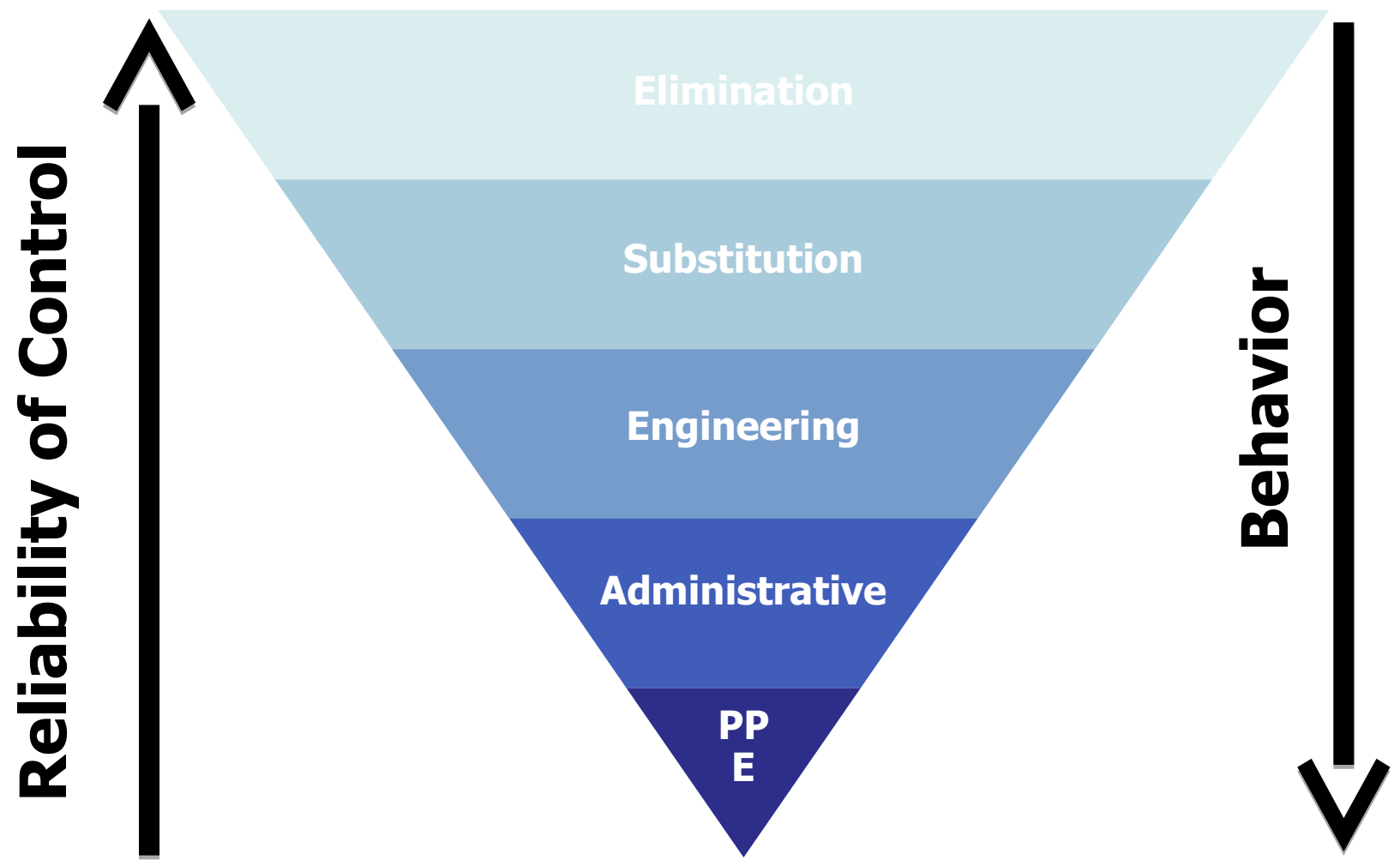


Critical Control Improvements



Hierarchy of Controls

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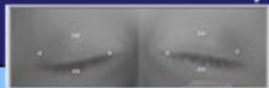


DSS Process of Events

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Wireless Communications

Microsleep



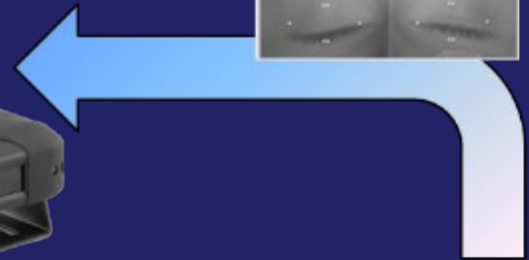
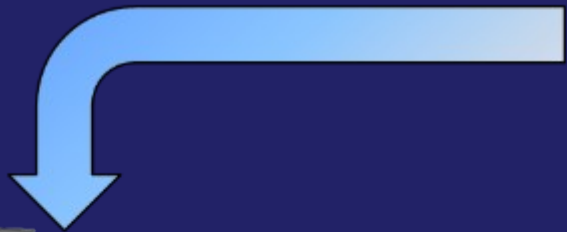
DSS

Microsleep
Event
Display



Intervention

Dispatcher/Supervisor

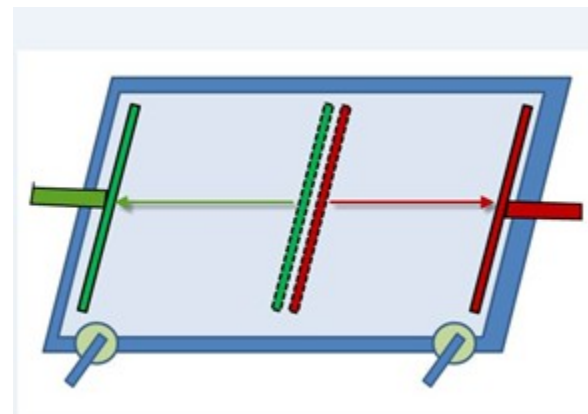
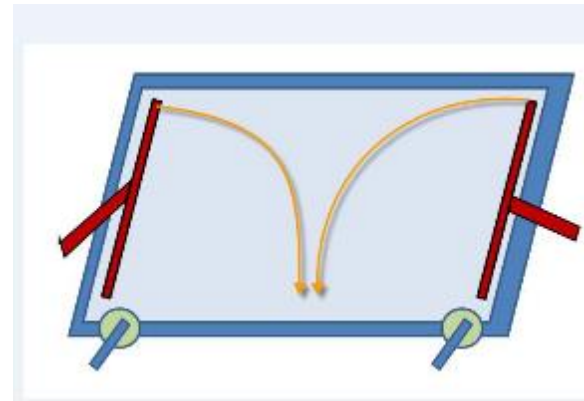


Separation from Heavy Equipment

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Moly Plant



Remote Racking and Switching

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Mine Maintenance

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Critical Control Improvement

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Critical Control Improvement

This Advisory is a NOTIFICATION of a critical control upgrade at one or more FCX locations. The purpose is to share the information so that others with similar risks can utilize the information to improve the reliability of critical controls where applicable. In some cases the control may not be directly applied but may generate an idea for other to pursue a similar control and thereby reduce risk.



OPERATION:	Morenci	AREA:	Crusher Maintenance
ISSUED BY:	Bill Sircy, Manager		
IMPLEMENTATION DATE:	3/31/2015		
CONTACT INFORMATION (for additional details)	William_Sircy@fmi.com		
LINK TO DESIGNS, DRAWINGS AND OTHER RELEVANT INFORMATION:	See pictures		
DESCRIPTION/DETAILS OF THE UPGRADE:	Utilization of a robot		
GLOBAL SIGNIFICANT RISK (if applicable):	Working at Heights (Fall Protection)		
OTHER SIGNIFICANT RISK (risks specific to site or task not categorized as global)	Open hole		
ORIGINAL CONTROL CATEGORY:	Personal Protective Equipment		
UPGRADED CONTROL CATEGORY:	Engineering Control		





Leading Metrics and Tracking Progress

2015 Leading Metrics

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Leading Indicator Worksheet Rev2 - Excel

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW

Clipboard Font Alignment Number Styles Cells Editing WebEx

A15

MONTH	JANUARY			FEBRUARY			MARCH			APRIL		
Metric	Target	Actual	% of Target	Target	Actual	% of Target	Target	Actual	% of Target	Target	Actual	% of Target
Fatality Prevention Audits	5	6	120%	15	12	80%	10	6	60%	7	1	
Critical Control Implementation	100%	97%	97%	100%	94%	94%	100%	91%	91%	100%	63%	
# of Critical Control Upgrades	2			1			3			3		
Strategic Plan Execution												
First Quarter	75%											
Second Quarter	84%											
Third Quarter	94%											
Fourth Quarter	100%											

Dashboard | CHARTS | Strategic Plan | Jan Fatality Prevention Audits | Feb Fatality Prevention Audits | Mar Fatality Prevention A ...

READY | 125%

7:47 PM 4/23/2015



Risk Management Dashboard

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Dashboard

Site: Org: Division: Department:

Open Action Items **Open Audits**

Risk Profile Today **Risk Profile Today 6 Months Ago**

Total Tasks
443

Total Tasks
331

Features

- Pre-task critical control checklist
- Audits for critical control verification
- Reporting and tracking of leading metrics
- Audit frequency guidance based on reliability of controls
- Risk profile of Division/Site/Business Unit
- Action item tracking and reminders

Conclusion

- Serious incidents usually happen with known risk
 - How do we ensure employees know the risks and controls to mitigate the risks?
 - How do we ensure that the controls are in use and effective?
- How do we get employees involved in the process?
- Focusing on the significant risks and the controls of those risks will prevent fatalities



Questions?