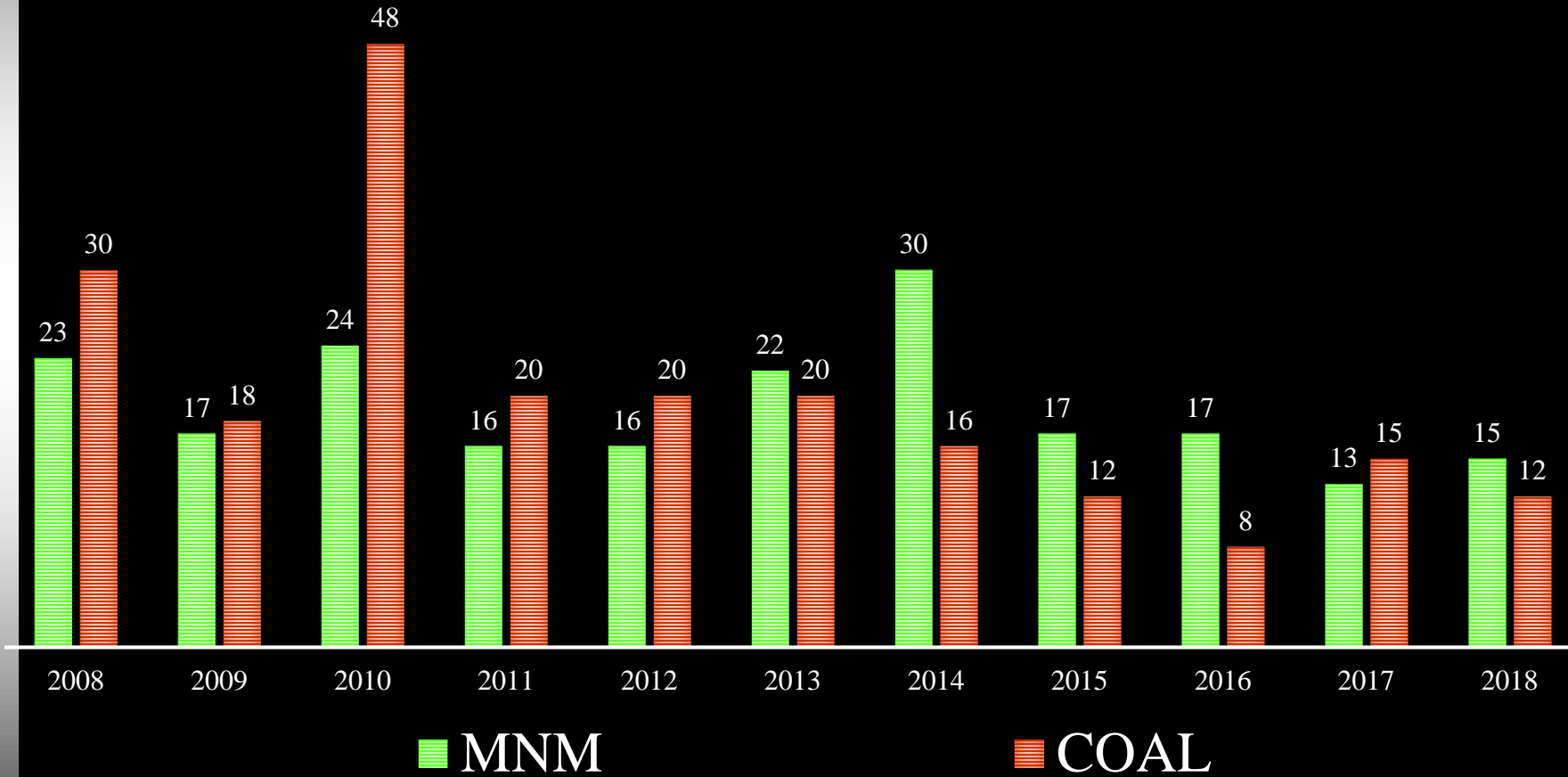
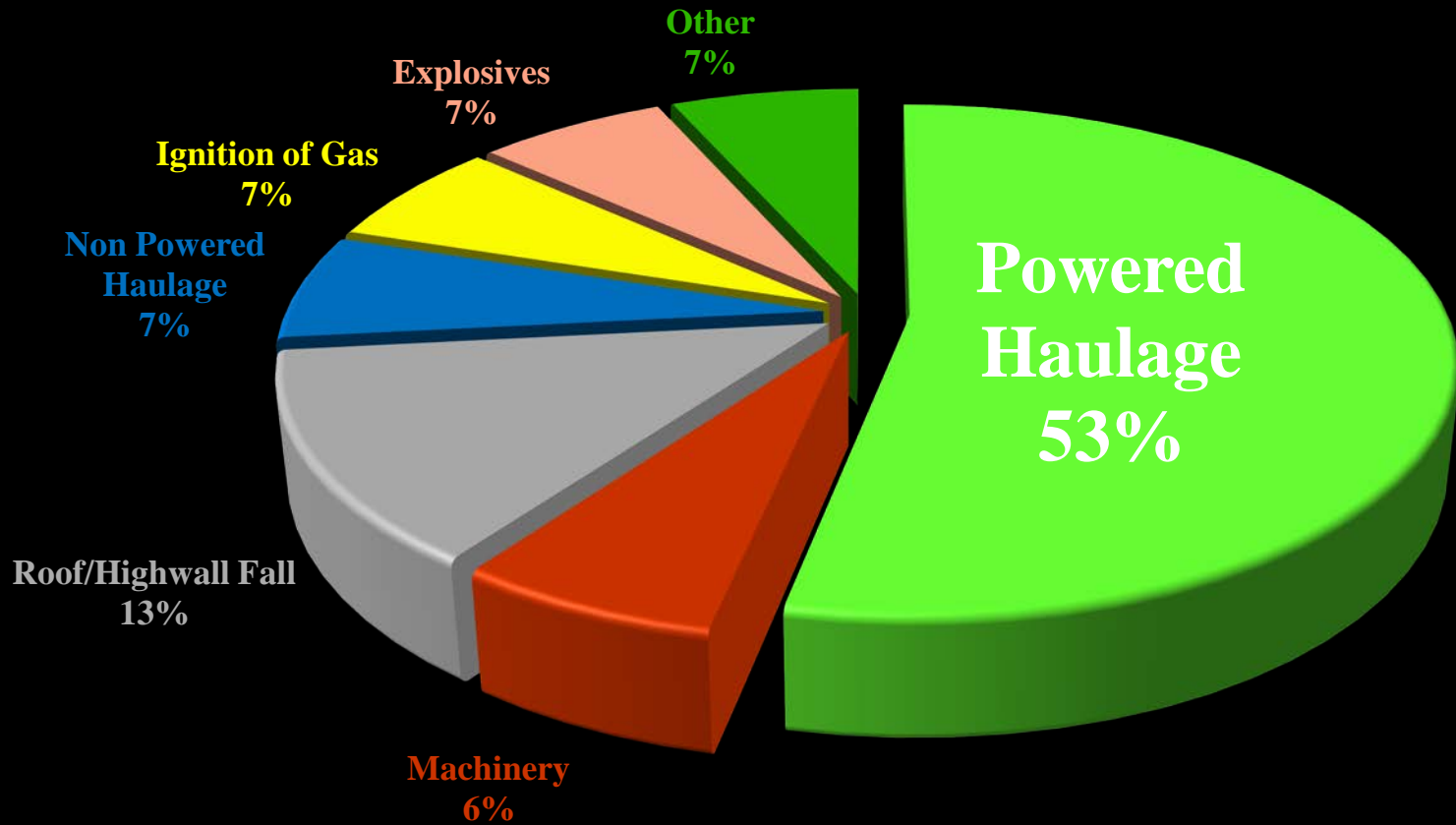


MNM Fatalities - 2018

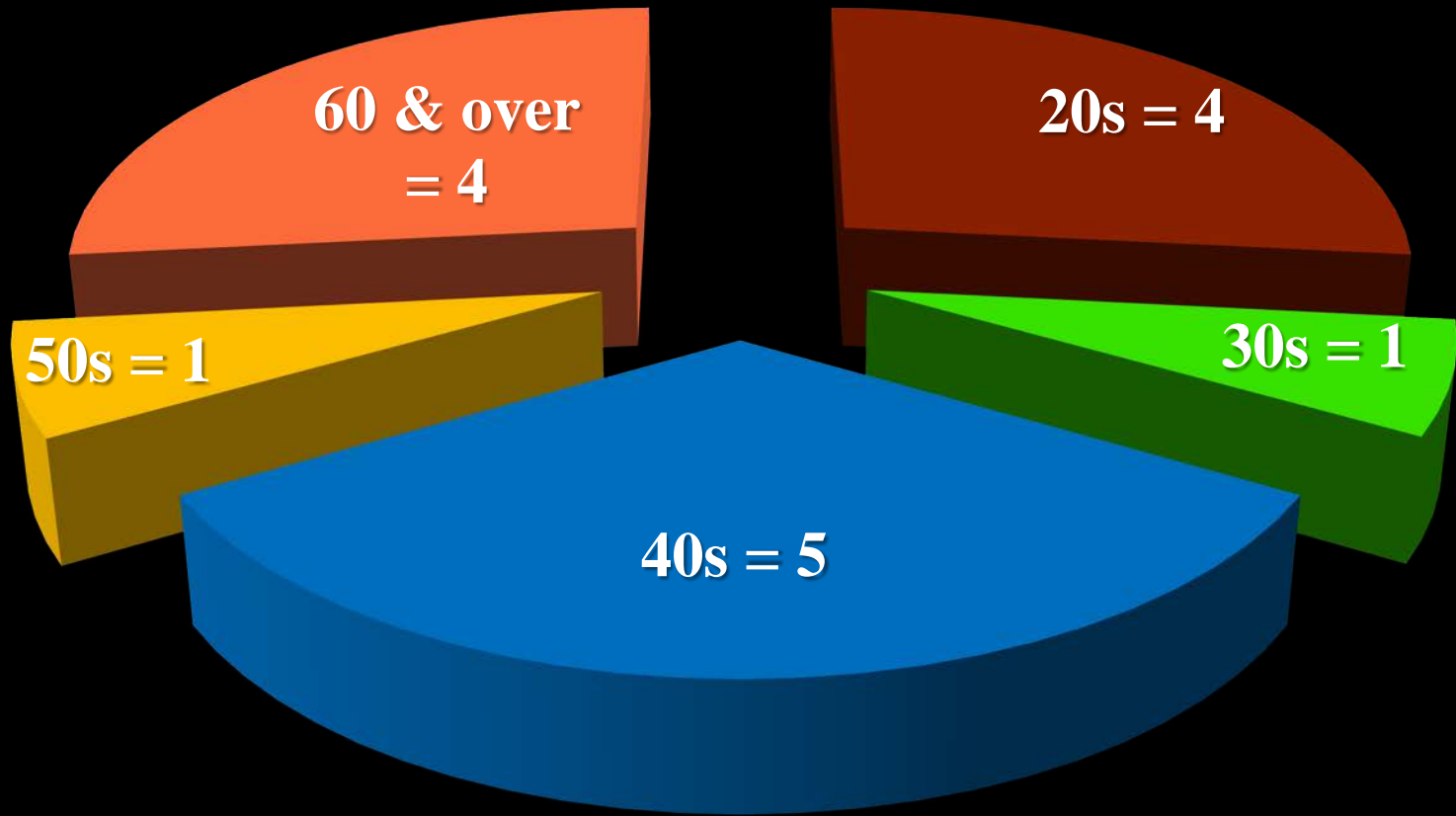
MNM vs COAL



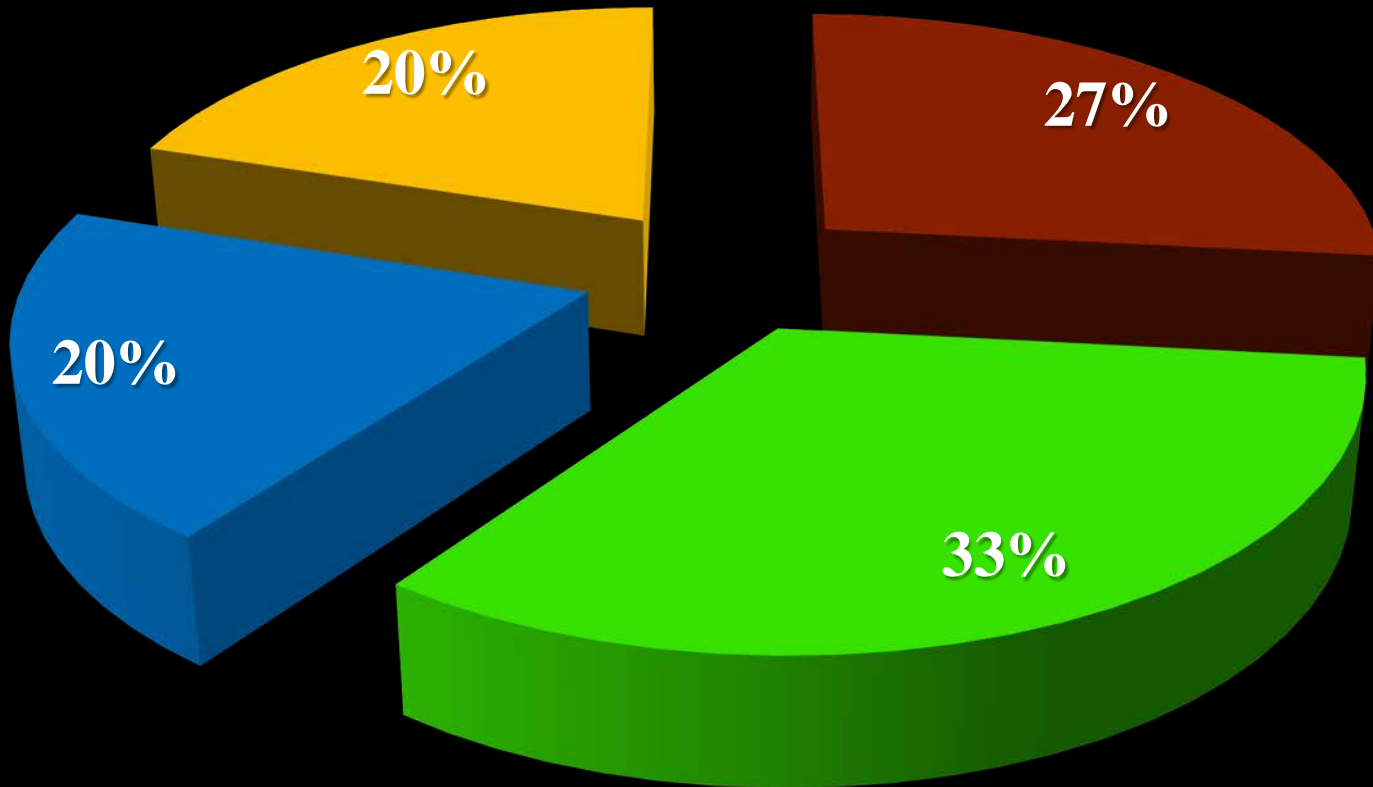
Accident Type



VICTIM'S AGE

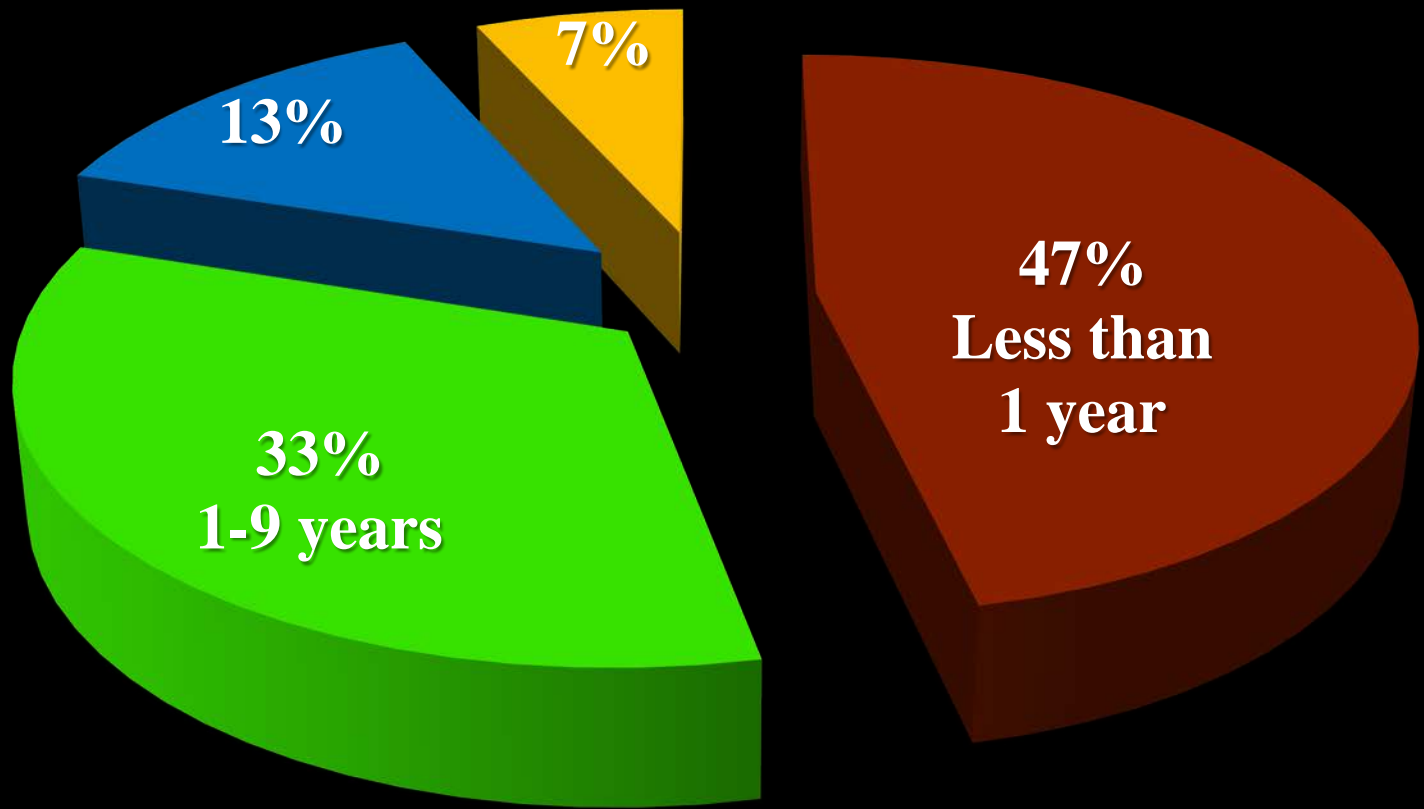


VICTIM'S MINING EXPERIENCE

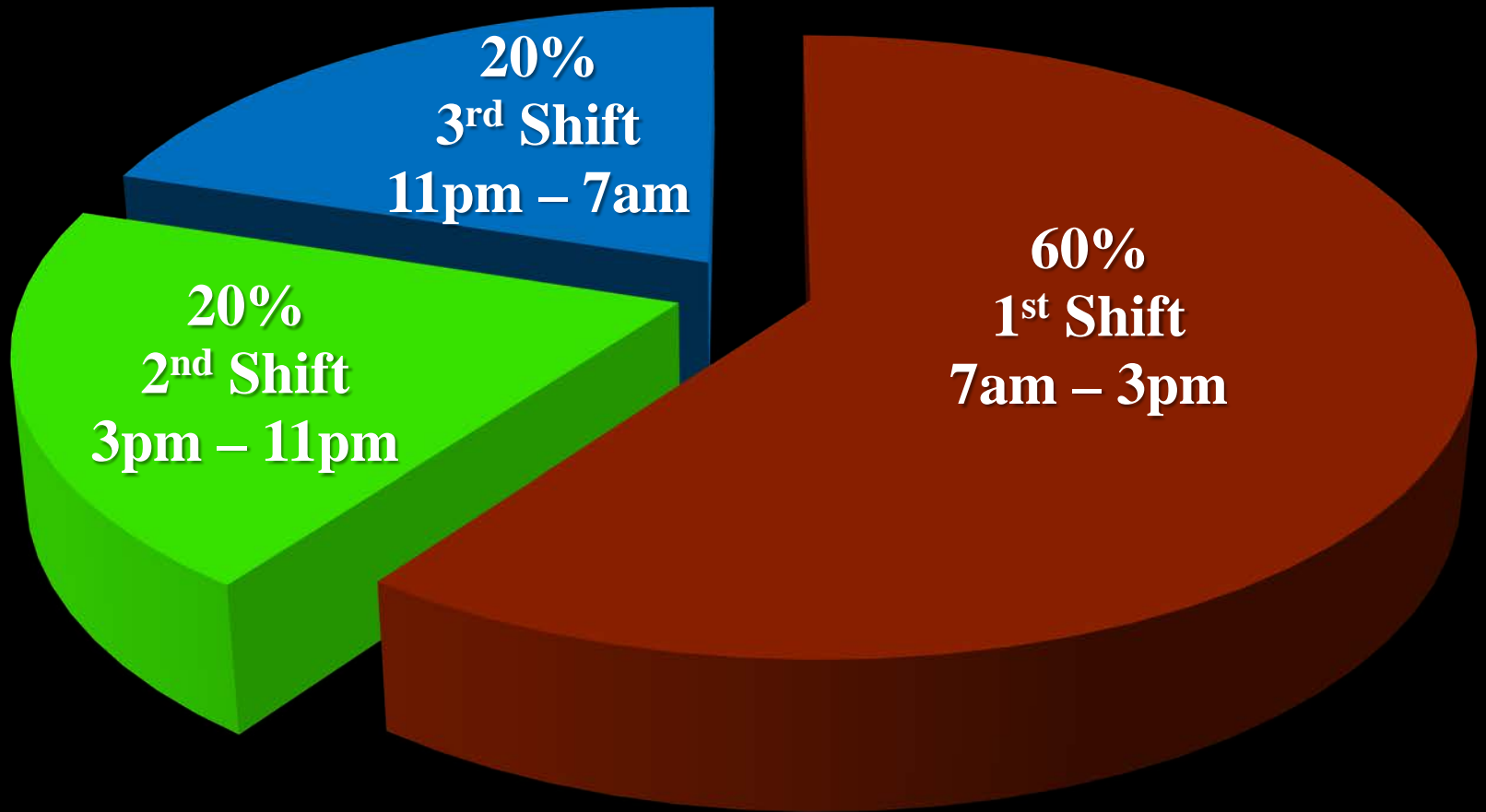


■ Less than 1 year ■ 1-9 years ■ 10-19 years ■ 20+ Years

VICTIM'S MINE SITE EXPERIENCE



SHIFT FATAL OCCURRED



MNM Fatal #1 – Iowa

- Thursday, January 25, 2018
- Surface – Sand and Gravel
- Powered Haulage
- Equipment Operator
- 38 Years Old
- 4 Years Mining Experience

MNM Fatal #1 – Iowa

- While hauling from the pit to the stockpile, the truck traveled through a berm and into an ice-covered pond.
- The victim was found drowned in cab of truck.

MNM Fatal #1 – Iowa



MNM Fatal #1 – Best Practices

- Do not operate heavy equipment when fatigued. The effects of fatigue include tiredness, reduced energy, and physical or mental exhaustion.
- Maintain control and stay alert when operating mobile equipment. Monitor persons routinely to determine safe work procedures are followed.

MNM Fatal #1 – Best Practices

- Conduct pre-operational checks and correct safety defects in a timely manner prior to operating equipment.
- Maintain braking and steering systems in good repair and adjustment.
- Operate at speeds consistent with the conditions of roadways, tracks, grades, clearance, visibility, curves, and traffic.

MNM Fatal #2 – Utah

- Tuesday, March 14, 2018
- Surface – Sand and Gravel
- Machinery
- Crusher Mechanic
- 56 Years Old
- 15 Years Mining Experience

MNM Fatal #2 – Utah

- The victim was installing a discharge chute assembly on a vibrating screen deck.
- It hung up while being lowered.
- The victim was attempting to free the assembly with a 30-inch pry bar.
- The suspended chute shifted and struck him in the head.

MNM Fatal #2 – Utah



MNM Fatal #2 – Best Practices

- Stay clear of suspended loads.
- Do not place yourself in a position that will expose you to hazards while performing repair or maintenance tasks.
- Position yourself only in areas where you will not be exposed to hazards resulting from a sudden release of energy.

MNM Fatal #2 – Best Practices

- Establish and enforce safe work procedures.
- Identify and remove hazards before beginning repair or maintenance tasks.
- Follow the equipment manufacturer's procedures for the work being performed to ensure that all hazards have been addressed.

MNM Fatal #3 – Texas

- Thursday, April 12, 2018
- Surface (Dredging) – Sand and Gravel
- Powered Haulage
- Customer Truck Driver
- 60 Years Old
- 20 Years Experience

MNM Fatal #3 – Texas

- The victim was attempting to scan into the operator's check-in system.
- He fell from and was run over by his truck.
- He was found underneath the belly dump of the semi-trailer.
- The truck was still in gear.

MNM Fatal #3 – Texas



MNM Fatal #3 – Best Practices

- Implement check-in system technology that can be scanned remotely from inside the vehicle.
- Set park brake and place vehicle in the park position prior to leaving cab.
- Ensure workers who operate equipment are adequately informed, instructed, trained, and supervised.

MNM Fatal #4 – Alabama

- Wednesday, May 9, 2018
- Surface – Lime
- Ignition or Explosion of Gas
- Kiln Technician
- 27 Years Old
- 32 Weeks Experience

MNM Fatal #4 – Alabama

- The victim was burned while lighting a gas-fired kiln.
- There was a blow back when igniting the kiln causing the miner to receive burn injuries to his head and chest.
- The miner succumbed to his injuries on May 28, 2018.

MNM Fatal #4 – Alabama



MNM Fatal #4 – Best Practices

- Remove flammable and combustible materials from areas prior to cutting, welding, or other hot work. A qualified person should monitor nearby areas where heavy vapors could migrate and accumulate.
- Ventilation systems should be properly designed, installed, and maintained.

MNM Fatal #4 – Best Practices

- Install fixed monitoring systems with alarms in areas with potential for flammable and other hazardous atmospheres.
- Calibrate and maintain them regularly.
- The systems should have redundant controls and system readouts located inside and outside of hazardous areas.

MNM Fatal #5 – Texas

- Wednesday, June 13, 2018
- Surface – Sand and Gravel
- Powered Haulage
- Truck Driver
- 65 Years Old
- 4 Years Experience

MNM Fatal #5 – Texas

- The victim traveled over a berm and into an impoundment of water.
- Divers recovered the victim in 20 feet of water.

MNM Fatal #5 – Texas



MNM Fatal #5 – Best Practices

- Maintain control and stay alert when operating mobile equipment.
- Conduct adequate pre-operational checks and correct any defects affecting safety in a timely manner prior to operating mobile equipment.
- Maintain braking and steering systems in good repair and adjustment.

MNM Fatal #5 – Best Practices

- Operate mobile equipment at speeds consistent with the conditions of roadways, tracks, grades, clearance, visibility, curves, and traffic.
- Ensure that berms are adequate for the vehicles present on site, including but not limited to height, material, and built on firm ground.

MNM Fatal #6 – Texas

- Saturday, June 23, 2018
- Surface – Sand and Gravel
- Non - Powered Haulage
- Electrician
- 46 Years Old
- 10 Weeks Experience

MNM Fatal #6 – Texas

- The victim was trying to stop runaway railcars.
- The victim ran to the front of a set of moving railcars and jumped on in order to set the hand brake.
- He then attempted to jump clear and was fatally injured when he was run over by the moving railcars.

MNM Fatal #6 – Texas



MNM Fatal #6 – Best Practices

- Apply a mechanical hand brake to ensure a railcar does not move when it is stopped for loading, unloading, or storage. Use wheel chocks or derail devices for added protection against accidental movement.
- Never attempt to mount, crossover, cross under, or dismount a railcar while it is moving.

MNM Fatal #6 – Best Practices

- Train personnel in the safe procedures of working with railcars.
- Establish and enforce safe work procedures and ensure all personnel involved communicate clearly with each other.

MNM Fatal #7 – North Dakota

- Saturday, June 23, 2018
- Surface – Sand and Gravel
- Powered Haulage
- Foreman
- 62 Years Old
- 40 Years Experience

MNM Fatal #7 – North Dakota

- The victim was dismantling a portable crusher.
- The front-end loader was placing a 20-foot-long steel tube onto the screen feed conveyor.
- The loader operator lowered the bucket and crushed the victim against the conveyor structure.

MNM Fatal #7 – North Dakota



MNM Fatal #7 – Best Practices

- Equipment operators must ensure personnel are not near the machine when in operation.
- Use cranes with appropriate rigging and tag lines to position components.
- When working near equipment, make eye contact with the equipment operator and directly communicate your intended movements.

MNM Fatal #7 – Best Practices

- Wear a reflective vest or clothing.
- Ensure all persons are trained to recognize workplace hazards - specifically, the limited visibility and blind areas inherent to operation of large equipment.
- Prior to starting task, train miners on proper maintenance procedures and discuss steps that will be taken to safely perform the job.

MNM Fatal #8 – Tennessee

- Wednesday, August 8, 2018
- Surface
- Deemed Non-Chargeable

MNM Fatal #9 – Pennsylvania

- Wednesday, August 22, 2018
- Surface – Traprock
- Powered Haulage
- Groundman
- 29 Years Old
- 1 Year Experience

MNM Fatal #9 – Pennsylvania

- The victim was injured while cleaning a snub pulley.
- He was working from an aerial lift located under the belt conveyor when he became entangled in the conveyor pulley.

MNM Fatal #9 – Pennsylvania



MNM Fatal #9 – Best Practices

- Ensure persons assigned to clean conveyor belts have received adequate training and verify that safe work practices are followed.
- Stay clear of moving equipment and do not reach into any part of a moving conveyor.
- Avoid wearing loose-fitting clothing when working around moving conveyor belt components.

MNM Fatal #9 – Best Practices

- Verify that all incoming power connectors are open by a circuit breaker, the conveyor is stopped and secured from movement before working on belt conveyors.
- Provide and maintain safe access to elevated areas where routine maintenance is performed.

MNM Fatal #10 – New York

- Tuesday, October 2, 2018
- UG – Lead-Zinc Ore
- Exploding Vessels under Pressure
- Contractor: Foreman
- 40 Years Old
- 20 Years Experience

MNM Fatal #10 – New York

- The victim was attempting to clean out a previously blasted drill hole with a high-pressure air hose.
- A sudden release of pressure from inside the hole forced material to be ejected from the hole and struck him.
- The victim died of his injuries.

MNM Fatal #10 – New York



MNM Fatal #10 – Best Practices

- Never position yourself directly over or in front of the collar of a borehole when cleaning it out.
- Assess the suitability of blasting methods when blasts do not perform as intended.
- Use water to clean out the bottom of boreholes used for blasting.
- Ensure miners are adequately task trained.

MNM Fatal #11 – Virginia

- Thursday, October 11, 2018
- Surface – Granite
- Falling / Sliding Material
- Laborer
- 26 Years Old
- 3 Years Experience

MNM Fatal #11 – Virginia

- The victim was standing on top of a freshly cut block of granite.
- Water was applied to the bladders between the rock and highwall to move the rock.
- The block slid at the bottom causing him to lose his balance and fall between the block and the highwall.

MNM Fatal # 11 – Virginia



MNM Fatal #11 – Best Practices

- Install fall protection systems that allow safe movement to perform work.
- Conduct examinations of working places to identify loose ground or unstable conditions before work begins and as changing conditions warrant.
- Ensure the person conducting the exam has the training and experience to recognize potential hazards.

MNM Fatal #12 – Montana

- Friday, November 19, 2018
- Surface – Dimension Stone
- Powered Haulage
- Quarry Manager
- 63 Years Old
- 17 Years Experience

MNM Fatal # 12 – Montana

- The victim lost control of the haul truck while driving.
- He was going down a steep grade and traveled through a berm and over a short drop-off.
- He was not wearing a seat belt.

MNM Fatal # 12 – Montana



MNM Fatal # 12 – Montana

- Always wear a seat belt when operating mobile equipment.
- Maintain control and stay alert when operating mobile equipment.
- Conduct adequate pre-operational checks and correct any defects affecting safety in a timely manner prior to operating mobile equipment.

MNM Fatal #12 – Best Practices

- Operate equipment at speeds consistent with the conditions of roadways, tracks, grades, clearance, visibility, curves, and traffic.
- Ensure berms are adequate for the vehicles present on site.
- Berms should be constructed of appropriate materials, be of adequate height, and be built on firm ground.

MNM Fatal # 13 – New Mexico

- Thursday, October 25, 2018
- Surface – Copper Mine
- Other Accident
- Contractor: Laborer
- 29 Years Old
- 9 Weeks Experience

MNM Fatal # 13 – New Mexico

- The victim's truck veered off the haul road and climbed an embankment which caused the truck to overturn.
- He was not wearing a seat belt.

MNM Fatal # 13 – New Mexico



MNM Fatal #13 – Best Practices

- Always wear your seat belt when operating mobile equipment.
- Drive at speeds consistent with the conditions of roadways, tracks, grades, clearance, visibility, curves, and traffic.
- Maintain control and stay alert when operating mobile equipment, especially vehicles with high centers of gravity.

MNM Fatal # 14 – Nevada

- Thursday, October 25, 2018
- UG – Gold Mine
- Fall of Roof / Back
- Powderman
- 42 Years Old
- 13 Years Experience

MNM Fatal # 14 – Nevada

- The victim was loading explosives in the face when the back fell.
- The back was comprised of cemented backfill and weighed about 150 tons.

MNM Fatal # 14 – Nevada



MNM Fatal #14 – Best Practices

- When ground conditions create a hazard to persons, install additional ground support before other work is permitted in the affected area.
- Implement a robust quality control program to ensure cemented rock fill is mixed and placed properly, especially when it constitutes the main method of ground support.

MNM Fatal #14 – Best Practices

- Examine and test ground conditions where work will be performed and as warranted during the shift. Be alert for changing conditions after activities that could cause roof disturbance.
- Task train all persons to recognize all potentially hazardous conditions and ensure they understand safe job procedures for elimination of the hazards.

MNM Fatal # 15 – Michigan

- Saturday, November 3, 2018
- Surface – Limestone Mine
- Powered Haulage
- Shift Supervisor
- 44 Years Old
- 3 Years Experience

MNM Fatal # 15 – Michigan

- The victim's pick-up truck was ran over by a CAT 785B Haul Truck.

MNM Fatal # 15 – Michigan



MNM Fatal #15 – Best Practices

- Communicate and verify with all equipment operators your planned movements and location upon entering a work area.
- Train all persons to recognize hazards.
- Train operators on the limited visibility and blind spot areas that are inherent to the operation of large equipment.

MNM Fatal #15 – Best Practices

- Do not drive or park smaller vehicles in equipment's potential path of movement.
- Use flags or strobe lights on the cabs of vehicles to make haulage truck operators aware of your location.
- Install and maintain collision avoidance or warning technologies on mobile equipment.

MNM Fatal # 16 – Nevada

- Sunday, November 11, 2018
- UG – Gold Mine
- Powered Haulage
- Underground Technician / Mucker Operator
- 45 Years Old
- 8 Years Experience

MNM Fatal # 16 – Nevada

- The victim was ran over by the Load-Haul-Dump machine he had been operating.

MNM Fatal # 16 – Nevada



MNM Fatal #16 – Best Practices

- Set the parking brakes to block LHDs against motion. Turn the tires toward the rib and lower the bucket to the floor. Use wheel chocks.
- Before beginning a task, discuss the work procedures, identify all possible hazards, and ensure steps are taken to safely perform the task.

MNM Fatal #16 – Best Practices

- Ensure all braking systems function properly when the engine is operating and when it is shut off.
- Do not depend on hydraulic systems to hold equipment in a stationary position.
- Conduct adequate pre-operational examinations on all self-propelled equipment and promptly correct any defects affecting safety.

Summary

- Examine each working place for conditions that may affect the safety or health of miners.
- Examine the working place at least once a shift and before miners begin work in that area.
- If you see a hazardous condition, fix it or report it so it can be fixed.
- Do not position yourself in a hazardous position.
- Follow and enforce all safety rules and procedures.

SLAM the Risks

- **Stop** – Take a few minutes to think about the task you are about to perform.
- **Look** – Identify hazards that will be encountered while performing the task.
- **Analyze** – Determine what safety procedures are needed; where is the safe place to stand.
- **Manage** – Take action to protect yourself and others from the hazards.

Thank You