

Mid-Year Summary of 2012 Fatal Accidents at Metal/Nonmetal Mines and Preventative Recommendations

Nine miners in the metal and nonmetal the mining industry were killed as a result of accidents from January 1 to June 30, 2012.

Four persons are dead as a result of **Powered Haulage** accidents. Two miners were killed in a **Fall of Face/Rib/Highwall** accidents. One miner died in a **Machinery** accident. One miner lost his life due to a **Falling Material** accident and another miner was killed in a **Fall of Person** accident. One (11%) of the fatalities was a customer truck driver.

When the investigations are completed, a detailed investigation report on each fatality can be found on the MSHA website at <http://www.msha.gov/fatals/fab.htm> .

Here are brief summaries of these accidents:

Four persons were killed in Powered Haulage accidents.

A 69 year-old mobile equipment operator with 48 years of experience was killed at a cement operation. The victim was cleaning a tailpiece with a skid steer loader. He backed the loader in a drainage ditch, traveled in reverse about 150 feet, and went into a 5½-foot deep water hole.

A 37 year-old haul truck driver with approximately 2½ years of experience was killed at an underground crushed stone operation. The victim was operating a loaded articulated haul truck down a slope when the truck lost control and struck a rib. The tractor of the truck (cab) overturned. The victim was found outside of the cab and had been run over by the truck.

A 51-year old shift operator with 13 years of experience was killed at a cement operation. The victim, who was walking from the lunchroom toward the locker area, was struck by a front end loader near the plant's crane bay building.

A 49-year old customer truck driver with no mining experience was killed at a surface stone mine. He was driving a loaded dump truck, traveling down a grade, when the truck lost its brakes and lost control. The victim jumped out and the truck ran over him. A passenger in the truck also jumped out and was treated at a hospital and released.

Two miners were killed in Fall of Face/Rib/Highwall accidents.

A 54 year-old mine owner with approximately 25 years of experience was killed at an underground gemstone mine. He was working alone cleaning fine ore with a shovel and loading it in the bucket of a front-end loader when rock fell from the top left rib about 20 feet high.

A 40 year-old mine owner with 8 years of experience was killed at a shale operation. The victim was operating an excavator with a rock breaker attachment. He was breaking and mining material from a near vertical wall when the face fell onto the cab of the excavator, crushing him.

One miner was killed in a Falling Material accident.

A 49 year-old excavator operator with approximately 8½ years of experience was injured at a sand and gravel operation. The victim was removing bolts from a counterweight on the back of an excavator when the counterweight fell and struck him. He was hospitalized and died on April 12, 2012, as a result of his injuries.

One miner was killed in a Machinery accident.

A 36 year-old foreman with about 9½ years of experience was killed at a sand and gravel operation. He was operating an excavator on a dike separating two ponds when the ground beneath the excavator tracks failed, tipping the excavator into one of the ponds.

One miner was killed in a Fall of Person accident.

A 46 year-old plant mechanic with 7 years of experience was injured at a crushed stone operation when he fell 16 feet from an elevated walkway of a conveyor to the ground below. The victim and a coworker had been bolting a pulley in position. The coworker was positioned on a walkway on the other side of the belt. The victim was hospitalized and died as a result of his injuries.

Best Practices

While some of the specific circumstances of these accidents remain under investigation, here are best practices that we can identify at this time to prevent accidents like these in the future:

Powered Haulage Accidents

These deaths can be prevented by following these Best Practices:

- Ensure that mobile equipment operators are adequately task trained and demonstrate proficiency in all phases of mobile equipment operation before performing work.
- Maintain equipment braking systems in good repair and adjustment.
- Conduct adequate pre-operational checks to ensure the service brakes will stop and hold the mobile equipment prior to operating.
- Know the truck's capabilities, operating ranges, load-limits and safety features.
- Operators of self-propelled mobile equipment shall maintain control of the equipment while it is in motion.
- Operating speeds shall be consistent with conditions of roadways, tracks, grades, clearance, visibility, curves, and traffic.

- Slow down or shift to a lower gear when necessary. Post areas where lower speeds are warranted.
- Always wear a seat belt when operating self-propelled mobile equipment.
- Do not attempt to exit or jump from moving mobile equipment.
- Provide adequate site specific hazard training to all customer truck drivers.

Fall of Face/Rib/Highwall Accidents

These deaths can be prevented by following these Best Practices:

- Examine work areas and identify and control all hazards before starting any work.
- Establish safe work procedures and train all persons to recognize and understand these procedures.
- Always examine, sound, and test for loose ground in areas before starting to work, after blasting, and as ground conditions warrant.
- Test for loose material frequently during work activities and where necessary, scale loose material safely.
- Install ground support in roof and ribs where conditions warrant.
- Do not perform work alone in any area where hazardous conditions exist that would endanger your safety.
- Operate excavators with the cab and tracks perpendicular to, and away from, the highwall.
- Bench or slope the material to maintain stability and to safely accommodate the type of equipment used. Do not undercut material on the face of a slope, bank, or highwall.
- Examine highwalls, slopes, and banks from as many perspectives as possible (bottom, sides, and top/crest) while maintaining the safety of the examiner(s). Look for signs of cracking, bulging, sliding, toppling or other signs of instability. Record the type and location of hazardous conditions.
- Use auxiliary lighting during non-daylight hours to conduct highwall examinations and to illuminate active work areas.
- Perform supplemental examinations of highwalls, banks, benches, and sloping terrain in the working area.
- Immediately remove all personnel exposed to hazardous ground conditions and promptly correct the unsafe conditions. When the conditions can not be corrected, barricade and post signs to prevent entry.
- Remove loose or overhanging material from the face. Correct hazardous conditions by working from a safe location.

Falling Material Accidents

These deaths can be prevented by following these Best Practices:

- Before working on or near equipment, establish safe work procedures consistent with the design of the machine. Train all persons to recognize and understand these procedures.
- Follow the equipment manufacturer's procedures for the work being performed to ensure that all hazards are addressed.

- Provide adequate task training to persons assigned to perform the work. Utilize assistance from the manufacturer when the equipment incorporates new technology and features.
- Install blocking materials before removing mounting bolts from machinery components which can fall during disassembly.

Machinery Accidents

These deaths can be prevented by following these Best Practices:

- Examine work areas to identify all hazards and remediate before starting any work.
- Evaluate the stability of the ground (slopes and berms) prior to operating equipment near any drop off or edge.
- Always be attentive to changes in ground conditions and visibility when operating machinery.
- Perform the work at a safe distance away from the edge of a pond or where the stability of the ground may be unknown.
- If a potential hazard is present, use long reach equipment to limit exposure and maintain a safe distance away.
- Consider areas that have experienced previous slope failures to be unstable, and do not approach until the area is evaluated for stability.
- Wear flotation devices where there is a danger of falling into water.
- Be alert to changes in ground conditions such as cracking, bulging, sloughing, undercutting, and erosion.

Fall of Person Accidents

These deaths can be prevented by following these Best Practices:

- Establish and discuss safe work procedures. Before starting any work, identify and control all hazards.
- Train all persons to recognize and understand safe job procedures, including the proper use of fall protection.
- Always use fall protection when working where a fall hazard exists.
- Install railings or cables when persons are required to work or travel near the edge of a structure.

Violations of the priority standards identified as **Rules to Live By** continue to play key roles in mine fatalities. While not all of the fatality investigations have been completed and enforcement action taken, **Rules to Live By** standards continue to surface in a majority of those fatalities. MSHA's inspectors continue to watch for these issues discuss the root causes of these fatalities and the ways to prevent recurrences with miners and supervisors.

The importance and value of effective **Safety and Health Management Programs** is paramount to sending miners home safely at the end of their shifts. A thorough, systematic review of all tasks and equipment to identify hazards is the foundation of a well-designed safety and health management program. Many root causes of fatal

accidents show that management policies, procedures, and controls were inadequate and failed to ensure that persons were protected from hazards that could have been identified, eliminated, or controlled. Operators and contractors need to implement effective safety and health management programs and periodically review, evaluate, and update them. If an accident or near miss does occur, find out why and act to prevent a recurrence. If changes to equipment, materials or work processes introduce new risks into the mine environment, address them immediately.

Conducting **Workplace Examinations** every shift can prevent deaths when safety and health hazards are **found and fixed**. Miners are protected when workplace examinations are performed, problems are identified, and hazards are eliminated.

Training

Through June, 2012, 2 of the 9 (22%) miners killed had less than three years of mining experience. Providing effective and appropriate training to miners is a key element in ensuring their safety and health. Mine operators and Part 46 and Part 48 trainers need to train miners and mine supervisors to take appropriate measures to eliminate the conditions that lead to deaths and injuries.

Action must be taken to prevent additional deaths.

Printable posters addressing the common causes of these accidents can be found on the Alerts/Hazards section of MSHA's website, www.msha.gov. Fatalgrams describing each fatality and Best Practices to prevent a recurrence can also be found on the agency's website.

All miners deserve a safe and healthy workplace and the right to go home safely at the end of every shift, every day.