

Summary of 2011 Fatal Accidents through June 30 at Coal Mines with Preventative Recommendations

Eight miners in the coal mining industry were killed as a result of mining accidents from January 1 to June 30, 2011.

Three miners were killed as a result of **Machinery** accidents. Two miners are dead as a result of **Fall of Rib** accidents, and two miners were killed in **Powered Haulage** accidents. The last fatality occurred in a **Fall of Person accident**. Three (38%) of the fatalities were **contractors**.

Here is a brief summary of these accidents:

Three miners were killed in Machinery accidents

On Friday, February 11, 2011, a 55 year old miner with 30 years of mining experience was killed when the fuel and grease service truck he was operating collided head on with a scraper. The two pieces of equipment were traveling in opposite directions. The impact resulted in a fire that engulfed the fuel truck.

On Friday, March 25, 2011, a 54-year old continuous mining machine operator with 35 years of experience was killed when he was caught between the coal rib and the conveyor boom of the remote controlled continuous mining machine he was operating.

On Saturday, May 14, 2011, a 37-year old mechanic with 14 years of mining experience and 1½ years of experience as a mechanic was killed while removing a counter weight fuel tank assembly from a front-end loader. He was positioned beneath the front-end loader when he removed 14 of the 16 mounting bolts that secure the counter weight. When the victim attempted to remove the next to last bolt, the remaining two bolts failed allowing the 11,685 pound counterweight to fall on him. The counter weight had not been blocked to prevent it from falling.

Two miners were killed in Fall of Rib accidents

On June 27, 2011, a crew leader received fatal crushing injuries from a coal and rock brow. The victim was in the process of cleaning the mine floor to install timbers when the brow fell from the top of the rib. The brow measured approximately 100 inches long by 32 inches thick by 37 inches tall. The accident occurred just outby the active section.

On Wednesday, June 29, 2011, a 49-year old continuous haulage cable attendant was killed when he was struck by a section of rib. The rock was approximately 82 inches long, 36 inches wide, and 11 inches thick.

Two miners were killed in Powered Haulage accidents

On Thursday, January 27, 2011, a 19-year old underground miner with fifteen weeks of mining experience was killed when he became caught between the "V" shaped coal discharge guides adjacent to the discharge roller of the section conveyor belt. Both belt conveyors were operating at the time of the accident.

On Monday, June 6, 2011, a 71-year old contract coal truck driver was fatally injured when the loaded Mack truck he was driving overturned while descending down a 18% grade. The truck overturned on the driver's side and the operator's cab struck the berm on the outer edge of the roadway, entrapping the victim and resulting in fatal injuries.

One miner was killed in Fall of Person accident

On Thursday, June 9, 2011, a 53 year-old contract steelworker with more than 16 years of coal mine experience was killed when he fell approximately 8 feet from a steel beam. He hit a lower cross beam before he landed on a conveyor belt cover located about 32 inches below the cross beam. The victim had been engaged in cutting operations just prior to the fall, and was repositioning when he removed his lanyard tie-off safety device from the location where it was secured.

Mining Deaths from 2001 to June 30, 2011-- Best Practices

Preventable deaths continue to occur in U.S. coal mines. Between 2001 and June 30, 2011, there were 86 powered haulage fatalities; 48 miners killed working around, under, or inside machinery; 27 fatalities from rib rolls or pillar failures; and 19 miners died from slipping or falling. During the same period, 154 fatalities occurred in other categories.

Fatalities can be prevented. They are not inevitable in mining. Effective safety and health management programs save lives. Workplace examinations for hazards can identify and eliminate hazards that kill and injure miners. Effective and appropriate training will help ensure that miners recognize and understand hazards and know how to control or eliminate them.

Powered Haulage Accidents

These deaths can be prevented by following these well known best practices:

- Maintain safety devices such as brakes in proper operating condition.
- Do not overload haulage equipment.
- Properly construct and maintain berms.
- Perform adequate pre-operational checks. Record and report defects that affect safety.
- Implement necessary traffic rules and install necessary signs.
- Maintain operating speeds consistent with conditions of roadways, grades, clearance, visibility, traffic, and the type of equipment used.
- Sound alarms and horns before starting or moving equipment.
- Communicate your location to operators of mobile equipment.
- Train all employees thoroughly on the dangers of working or traveling around moving conveyor belts.
- Install proper belt cross-overs and/or cross-unders at strategic locations, when height allows.
- Be aware of locations where new miners are working or intend to travel.
- Install adequate guarding at all conveyor belt pinch point locations

Machinery Accidents

These deaths can be prevented by following these well known best practices:

- AVOID "RED ZONES"!!! Prior to tramming the continuous mining machine to a new place, ensure the machine operator is positioned outside the turning radius of the machine. <http://www.msha.gov/webcasts/coal2004/REDZONE2.pdf>
- Install MSHA approved Proximity Detection Systems on continuous mining machines.
http://www.msha.gov/Accident_Prevention/NewTechnologies/ProximityDetection/ProximitydetectionSingleSource.asp
- Inform others when driving a vehicle into a work area.
- Obey established traffic rules and signage that apply to the area.
- Follow established communication procedures.
- Maintain control of equipment at all times.
- Ensure all safety systems are maintained, including brakes and steering.
- Follow the equipment manufacturers recommended maintenance procedures when performing repairs to machinery.
- Train new mechanics in the health and safety aspects and safe work procedures related to their assigned tasks.
- Conduct a risk analysis before beginning work.
- Lock Out and Tag Out Equipment, and/or block against motion before performing maintenance.

Rib Rolls

These deaths can be prevented by following these well known best practices:

- Perform thorough pre-shift and onshift examinations.
- Know and follow the rib control provisions contained in the approved roof control plan.
- Use and properly maintain equipment that can install rib control devices
- Install supplemental rib supports when needed.
- Scale ribs only from a safe location.
- Use mining methods that will not expose persons to rib failure hazards.
- Use prudent engineering principles to properly design mines so that rib hazards are mitigated to the largest degree possible.

Fall of Person

These deaths can be prevented by following these well known best practices:

- Position ladders to ensure stability and eliminate trip hazards.
- Wear and use fall protection, maintaining 100 percent tie off, when fall hazards exist. See
http://www.msha.gov/Accident_Prevention/innovativeproducts/2009/TieOff.asp
- Ensure workers are trained and understand the proper use of restraint devices.
- Provide self retracting lanyard mechanisms when possible.
- Ensure secure footing in all work areas.
- Examine tools and personal protective equipment routinely and replace when defects or wear is evident.

- Conduct a risk assessment of the work area prior to beginning any task and identify all possible hazards. Use the SLAM; Stop, Look, Analyze, and Manage approach for work place safety.

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 number 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 mines operate every shift of every day, year in and year out, without a fatality or a lost-time injury. 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

From January 1 through June 30, 2011, 4 of the 8 (50%) miners killed had one year or less experience at the activity they were performing when they were killed. Additionally, 3 of those 8 miners (38%) had less than one year of experience at the mine. Providing effective and appropriate training to miners is a key element in ensuring their safety and health. Mine operators 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. 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> .

Non-Fatal and Near Miss Accidents

Serious non-fatal and near miss accidents continue to occur at coal mines. Any of these accidents could have resulted in death to a miner. Train all supervisors and miners to be alert for hazards and eliminate them when any are found. The following are examples of near misses:

On June 3, 2011, a non-fatal haulage accident occurred when an excavator boom was swung into the path of an oncoming rock truck. The rock truck struck the boom of the excavator and ejected the excavator operator from the equipment. The excavator operator received 21 stitches for laceration type injuries and was treated and released from a local hospital.

On June 5, 2011, cars were being hoisted out of the slope of a mine when a pin broke allowing the cars to travel back down the slope and wreck. There were no persons injured but the mine did have property damage.

On April 7, 2011, a miner was trapped between the boom of a continuous mining machine and the coal rib. The miner received a cut on his head.

On, April 7, 2011, two miners were injured when a runaway hydro-seed truck overturned while descending a roadway grade. The driver was flown to a hospital and had his spleen removed and suffered broken ribs. The passenger of the truck also was injured.

On April 7, 2011, a miner was injured at the longwall face where old shields were being removed. A piece of rock struck the miner in the head\neck area. He was transported to a hospital and was to undergo surgery for fractured C1 vertebrae in his neck.

On May 27, 2011, a belt electrician received an electrical shock as he entered an energized three phase 480 volt compartment of a Vector winch. The employee was attempting to retrieve information from a manufacture's tag when he contacted energized components. The injuries resulted in electrical burns to the right side of his head and a soft tissue injury on his right hand.

On May 24, 2011, a truck turned over on a mine haul road. The victim received a head injury and was transported to a local hospital. The victim reportedly has a broken hip, back, and leg.