

Summary of 2011 3rd Quarter Fatal Accidents at Coal Mines with Preventative Recommendations

Six miners in the coal mining industry were killed as a result of mining accidents between June 30, 2011, and September 30, 2011. Two miners were killed as a result of **Machinery** accidents. Two miners were killed in **Powered Haulage** accidents. One miner was fatally injured as a result of **Fall of Rib, Roof, Face or Back** accident. One miner was killed in an **Electrical** accident. Two of six (33%) of the fatalities were **contractors**.

Here is a brief summary of these accidents:

Two miners were killed in Machinery accidents

On Monday, August 8, a 41-year-old longwall mechanic with nine years of mining experience was killed when he was struck in the chest by a piece of metal from the top of a base lift jack mounted on a longwall shield. The jack catastrophically failed resulting in the end cap separating from the cylinder and striking the victim.

On Thursday September 1, a 29-year-old contract driller with 1 year, 3 months of experience was killed at a surface coal mine. The victim was attempting to separate a pipe connection when he was struck by a tong wrench. The rig was being used to drill a water well. The crew was working to free the drill stem that was stuck in the drill hole when the accident occurred.

One miner was killed in Fall of Rib, Roof or Back accidents

On Monday, August 15, a 46-year old miner was killed when he was struck by a portion of the mine roof that fell from an area adjacent to a longwall shield. The accident occurred during a longwall move, while the victim was installing a wooden crib in an area where a longwall face shield had been removed previously. The victim had approximately five years experience with this activity.

Two miners were killed in Powered Haulage accidents

On Monday, July 11, a 26-year-old supply motor operator, with 6 years 1 month of mining experience, was killed while transporting materials using a 15-ton diesel-powered locomotive. When the locomotive approached a low, steel, over-cast beam, the victim placed his head outside of the operator's compartment and was struck by the steel beam and the locomotive's canopy.

On Thursday, July 21, at approximately 9:05 p.m., an office worker was killed at a surface coal operation when she was struck by a pickup driven by a vendor. As part of a wellness program instituted at the mine, the victim was walking along a rural road on the permit area for the mine when the pickup struck her from behind. The vendor was accessing the mine for routine maintenance.

One miner was killed in Electrical accident

On Wednesday, July 27, a 39-year-old miner with 22 years of mining experience was electrocuted while welding to connect two pipes together. He was working in the ceiling of the filter room of a preparation plant. This area, where the welding was being conducted, was wet and the illumination was limited. The victim contacted an energized welding electrode.

Mining Deaths from 2001 to 2011*-- Best Practices

Needless deaths continue to occur in U.S. coal mines. Between 2001 and September 30, 2011, there were 88 powered haulage fatalities; 50 miners killed working around, under, or inside machinery; 28 fatalities from rib rolls or pillar failures; and 19 miners died from slipping or falling. During the same period, 155 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.

*through Sept. 30, 2011

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.

Electrical

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

- Do not touch an energized electrode with bare skin. Avoid wet working conditions. A person's perspiration can lower the body's resistance to electrical shock. Do not drape electrode wires or leads over your body. Work in a confined space only if it is well ventilated and illuminated.
- Do not use the plant structure as the work (return) conductor. Connect the work cable (return) as close to the welding area as practical to prevent welding current from traveling unknown paths and causing possible shock, spark, and fire hazards.
- Insulate yourself from work and ground by using and/or wearing dry insulating mats, covers, clothes, footwear, and gloves. Inspect welding gloves for damage prior to welding and ensure the gloves are dry.
- Use only well-maintained equipment. Frequently inspect welding wires or leads for damaged or exposed conductors. Replace or repair wires or leads immediately if damaged.
- Use voltage reduction safety devices (if available) for arc welders.

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's 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

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> .