MNM Fatal 2014-17

- Falling Material
- August 2, 2014 (Montana)
- Sand & Gravel Mine
- Foreman
- 53 years old
- 25 years of experience

Overview

The victim was killed at this operation on August 2, 2014. He was working under the raised bed of a dump truck when a weathered block of wood supporting the load suddenly failed, allowing the bed to fall and pin him. No other miners were working at the mine on the day of the accident. The victim was working alone and was not found until 10 a.m. on August 3, 2014. He was performing maintenance on the truck bed's hydraulic lift system.

The accident occurred due to management's failure to establish procedures to ensure persons could safely perform maintenance on a truck bed in a raised position. The raised truck bed was not secured to prevent accidental lowering when the victim was performing maintenance. The victim was not instructed in the safety and health aspects and safe work procedures of the task of performing maintenance on the truck's hydraulic lift system. Additionally, he was assigned to perform work alone where hazardous conditions existed that would endanger his safety and he could not communicate with others, be heard, or be seen.

Root Causes

***Root Cause*:** Management failed to establish procedures to ensure persons could safely perform maintenance on a raised truck bed. The raised truck bed was not secured to prevent accidental lowering when the victim was performing maintenance. Management failed to ensure the victim received instruction in the safe work procedures of the task of performing maintenance of the truck's hydraulic lift system.

Corrective Action: Management established procedures to ensure raised components of mobile equipment are secured to prevent accidental lowering when persons are performing maintenance. All persons received task training regarding the procedures to be used when working under raised components on mobile equipment.

The following are the company's newly established procedures:

All vehicles/equipment shall be tagged and locked out prior to performing maintenance work.

- The following is the standard lockout procedures for vehicles/equipment.
- Ensure there is sufficient space around the vehicle/equipment to perform work safely

Root Causes

- Set the parking brake and chock all of the wheels to prevent any unwanted movement of the vehicle/equipment during maintenance
- Shut down any power sources like the engine
- Remove the keys from the ignition
- Put a tag on the steering wheel and other appropriate locations, such as hydraulic controls, to prevent anyone from operating the vehicle/equipment
- Place operating equipment in such a way to prevent possible free fall of any elevated equipment
- Follow manufacturer's maintenance manual for safety precautions and recommended blocking securing procedures BEFORE initiating repairs
  - When performing maintenance on hydraulic systems, make sure that blocking systems are enabled before hydraulic pressure is released
- If provided, always use the manufacturer's provided safety device or features for securing components against motion
- Avoid steel on steel blocking if at all possible as these two surfaces together can easily slide thus reducing the effectiveness of the motion prevention

Root Causes

- design
- Avoid using long, slender members as blocking in situations where the blocking will be loaded in compression. These types of members may be prone to buckling failure
- The ground on which the blocking is to be placed must be capable of supporting the loads transferred from the equipment. To prevent the blocking from punching into the ground, larger plates or blocking may be necessary to spread the load over a wider area.
- Ensure adequate contact area with equipment components being supported to avoid crushing the blocks and to increase stability
- Never use blocks exhibiting rot, splits, twists or bows
- Observe blocking and jack stands during loading and ensure they remain solid without any tilting or sliding

Root Causes

***Root Cause*:** Management failed to establish procedures to ensure persons would not work alone when they could not communicate with others, be heard, or be seen.

Corrective Action: Management developed and implemented policies prohibiting persons from working alone at any time, including weekends.

Best Practices

- Establish and discuss safe work procedures before beginning work. Identify and control all hazards associated with the work to be performed and use methods to properly protect persons.
- Ensure that persons are trained, including task-training, to understand the hazards associated with the work being performed.
- Before working on equipment, block all raised components against hazardous motion and ensure persons are positioned in a safe location.
- Follow the safe work procedures provided by the manufacturer when performing all maintenance or repair work. If provided, always use the manufacturer's provided safety device or features for securing components against hazardous motion.
- Ensure that blocking material is competent, substantial, and adequate to support and stabilize the load. Blocking must be strong enough and secured to prevent any unintended movement.
- Never block with steel on steel or depend on hydraulics to support a load. Mechanical blocking can be achieved by installing a hinged prop leg.
- Do not assign a person to work alone in areas where hazardous conditions exist that would endanger his or her safety.