CRUSHED STONE FATALITY

• A 21 year old contract driller with one year of experience was fatally injured.
• The victim was repositioning a truck mounted drill in a sloping work area of a quarry.
• He lowered the mast to the stored position.
• He had raised the two rear leveling jacks completely and had raised the single front leveling jack about 12 inches.
• The drill rolled over a small berm and into a small depression.
INGERSOLL RAND MODEL T4W WATER WELL DRILL
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CRUSHED STONE FATALITY

- The victim was located 109 from the last hole that he had drilled and 41 feet from his drill.
- When found, the victim’s drill was running and in neutral.
- The elevation of the blast site varied from 327’ to 333’ above sea level and had grades ranging from 3% to 12%.

WHAT UNSAFE CONDITIONS WERE PRESENT?
NORMAL DRILLING PROCEDURE

- After drilling a hole, the drill operator would pull the drill steel up, lower the mast, and raise the leveling jacks from the operating controls at the rear of the drilling machine.

- The drill operator would then walk around to the operator’s compartment where the operator would release the park brake and let the machine roll to the next hole.

- The operator would position his/her head out of the door to make sure the drill location lined up with the next marked hole.
NORMAL DRILLING PROCEDURE

• The operator had to lean outside the operator’s compartment to be able to view this location and assure the machine was positioned properly.
• When in the correct position the operator would stop the machine and set the park brake.

WHAT UNSAFE PROCEDURES WERE IN PLACE?
FINDINGS

- Investigators determined the victim sat on the edge of the operator seat with the cab door open and his head out of the cab.
- When the brake was released the machine was sitting on an 8.8% grade.
- The machine lunged forward dislodging the victim from the operator compartment.
- Due to the rough terrain the victim could not stay in the cab.
- He stayed with the machine for 109’, fell out and the machine ran over him.
- The machine continued another 41’ and stopped in a spoil area 10 feet lower than the drilling area.
FINAL POSITION OF DRILL
WHAT WAS THE ROOT CAUSE OF THIS ACCIDENT?
MSHA ROOT CAUSE

• Management Failures
  o Contractor management policies, procedures, and controls were inadequate and failed to ensure that operators could safely move the drill from one hole to the next hole to be drilled.
  o Contractor management failed to properly task train drill operators in the safe operation of the rubber tired drill.
BEST PRACTICES

WHAT BEST PRACTICES COULD HAVE PREVENTED THIS FATALITY?
BEST PRACTICES

• Assure miners are properly task trained in equipment operation.
• Use seat belts at all times in mobile equipment.
• Use mirrors to position equipment.
• Stay in cab of equipment.
• Use a spotter to assist operator in positioning equipment.
• Assure brakes on mobile equipment are sufficient to hold on maximum grade worked.
• Assure terrain is compatible with equipment.
BEST PRACTICES

WAS THE VICTIM’S EXPERIENCE A FACTOR IN THE FATALITY?