2018 Fatal Comparison Chart (**based on preliminary report data, fatalgrams, & final reports**) Updated: 10/30/2018

MNM Total	**13**	**Fatal #'s**	**Coal Total**	**8**	**Fatal #'s**	**Total**
Underground	**2**	10, 14	UG	**5**	1, 3, 4, 5, 6	**7**
Surface & Sur of UG	**11**	1, 2, 3, 4, 5, 6, 7, 9, 11, 12, 13	Surface & Sur of UG	**3**	2, 7, 8	**14**
Other			Other			
Contractor	**2**	10, 13	Contractor	**1**	7	**3**
Powered Haulage	**6**	1, 3, 5, 7, 9, 12	Powered Haulage	**4**	3, 4, 5, 6	**10**
Non-Powered Haulage	**1**	6	Non-Powered Haulage	**0**		**1**
Machinery	**1**	2	Machinery	**1**	8	**2**
Roof, Rib, Highwall Fall	**2**	11, 14	Roof, Rib, Highwall Fall	**1**	1	**3**
Electrical	**0**		Electrical	**1**	2	**1**
Slip & Fall of Persons			Slip & Fall of Person			
Fall & Sliding Materials			Fall & Sliding Materials			
Ignition/Exploding Gas	**1**	4	Ignition/Explosion/Fire	**1**	7	**2**
Hoisting			Hoisting			
Inundation			Inundation			
Exploding Vessel			Exploding Vessel			
Explosive/Breaking Agent	**1**	10	Explosive/Breaking Agent	**0**		**1**
Maintenance/Repair Involved	**2**	2, 9	Maintenance/Repair Involved	**3**	1, 2, 4	**5**
Examiner, Supervisor, Owner	**2**	7, 10	Examiner, Supervisor, Owner	**0**		**2**
Other	**1**	13	Other	**0**		**1**
Age 0-19			**Age** 0–19			
Age 20-29	**4**	4, 9, 11, 13	Age 20-29	**2**	4, 6	**6**
Age 30-39	**1**	1	Age 30-39	**3**	2, 3, 8	**4**
Age 40-49	**3**	6, 10, 14	Age 40-49	**1**	5	**4**
Age 50-59	**1**	2	Age 50-59	**1**	1	**2**
Age 60+	**4**	3, 5, 7, 12	Age 60+	**1**	7	**5**
Experience			**Experience**			
Less than 1 year	**4**	4, 6, 11, 13	Less than 1 year	**1**	6	**5**
1-9 years	**3**	1, 5, 9	1-9 years	**2**	4, 7	**5**
10-19 years	**3**	2, 12, 14	10-19	**4**	1, 3, 5, 8	**7**
20+	**3**	3, 7, 10	20+	**1**	2	**4**
Mine Site Experience			**Mine Site Experience**			
Less than 1 year	**7**	1, 4, 6, 10, 11, 13, 14	Less than 1 year	**4**	2, 5, 6, 8	**11**
1-9 years	**3**	3, 5, 9	1-9 years	**4**	1, 3, 4, 7	**7**
10-19	**2**	2, 12	10-19	**0**		**2**
20+	**1**	7	20+	**0**		**1**
Job/Task Experience		***#3&6 info not reported.***	**Job/Task Experience**			
0-7 days	**1**	13	0-7 days	**1**	8	**2**
Less than 1 year	**4**	1, 4, 11, 14	Less than 1 year	**2**	2, 6	**6**
1-9 years	**3**	2, 5, 9	1-9 years	**4**	1, 3, 4,7	**7**
10-19	**1**	12	10-19	**1**	5	**2**
20+	**2**	7, 10	20+	**0**		**2**
Shift Time (occurred)			**Shift Time**			
1st Shift (7am-3pm)	**8**	2, 3, 5, 6, 10, 11, 12, 13	1st Shift (7am-3pm)	**2**	3, 8	**10**
2nd Shift (3pm-11pm)	**3**	1, 4, 14	2nd Shift (3pm-11pm)	**2**	2, 6	**5**
3rd Shift (11pm –7am)	**2**	7, 9	3rd Shift (11pm –7am)	**4**	1, 4, 5, 7	**6**
Day of the Week:			**Day of the Week:**			
Sunday			Sunday			
Monday	**0**		Monday	**1**	5	**1**
Tuesday	**4**	2, 4, 7, 10	Tuesday	**2**	1, 6	**6**
Wednesday	**2**	5, 9	Wednesday	**3**	2, 4, 8	**5**
Thursday	**5**	1, 3, 11, 13, 14	Thursday	**0**		**5**
Friday	**1**	12	Friday	**2**	3, 7	**3**
Saturday	**1**	6	Saturday	**0**		**1**

Focus on your safety goal with purpose!

2018 Fatal Comparison Chart (**based on preliminary report data, fatalgrams, & final reports**) Updated: 10/30/2018

2018 - Month	MNM	Coal	Totals	Difference	Totals	2017 - Month	MNM	Coal
January	1	0	1	-1	2	January	1	1
February	0	2	2	-1	3	February	0	3
March	1	2	3	0	3	March	2	1
April	1	0	1	+1	0	April	0	0
May	1	0	1	-1	2	May	0	2
June	2	1	3	0	3	June	1	2
July	1	0	1	-3	4	July	3	1
August	1	0	1	-1	2	August	0	2
September	0	2	2	-1	3	September	2	1
October	5	1	6	+2	4	October	3	1
November					0	November	0	0
December					2	December	**1**	1
2018 Total:	**13**	**8**	**21**	**-5**	**28**	**2017 Total:**	**13**	**15**

Product	Fatal #'s For 2018	2018 Total product	2017 Total product	2016 Total product
Alumina				0
Cement			2	2
Clay				0
Coal	1-8	**8**	**15**	**8**
Copper	13	1	1	0
Diatomaceous Earth			1	0
Dimension Stone	12	1		0
Gold Ore	14	1	2	1
Granite	11	1	1	1
Gypsum				0
Kaolin				0
Lead Ore	10	1		0
Lime	4	1		0
Limestone			2	4
Magnesite				1
Phosphate				1
Salt				0
Sand & Gravel	1, 2, 3, 5, 6, 7	6	3	**6**
Sandstone				0
Shale				0
Silver Ore				0
Stone			1	0
Titanium				1
Traprock	9	1		

State (2018)	Total	MNM	Coal	Fatal #
Alabama	**1**	1	0	M4
Indiana	**2**	0	2	C3, C7
Iowa	**1**	1	0	M1
Kentucky	**1**	0	1	C4
Montana	**1**	1	0	M12
Nevada	**1**	1	0	M14
New Mexico	**1**	1	0	M13
New York	**1**	1	0	M10
North Dakota	**1**	1	0	M7
Pennsylvania	**2**	1	1	M9, C6
Texas	**3**	3	0	M3, M5, M6
Utah	**1**	1	0	M2
Virginia	**1**	1	0	M11
West Virginia	**4**	0	4	C1, C2, C5, C8

Part 48 = 10	Part 46 = 11
All Coal = 8 MNM: UG = 2 SUR = 0	Non Metal SUR# 1, 2, 3, 4, 5, 6, 7, 9, 11, 12, 13

Focus on your Safety Goal!

Month	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	TOTAL	AVG
January	**1**	2	3	5	1	3	2	1	4	3	6	**31**	**2.82**
February	**2**	3	1	1	5	5	3	3	0	4	5	**32**	**2.91**
March	**3**	3	3	5	2	3	5	2	1	2	2	**31**	**2.82**
April	**1**	0	2	0	6	3	2	2	**33**	4	4	**57**	**5.18**
May	**1**	2	2	4	**6**	1	5	1	6	3	7	**38**	**3.45**
June	**3**	3	4	3	6	3	2	4	6	5	4	**43**	**3.91**
July	**1**	4	2	2	2	4	4	2	3	2	3	**29**	**2.64**
August	**2**	2	1	4	3	3	2	3	4	1	4	**29**	**2.64**
September	**1**	3	3	2	3	3	5	4	1	4	3	**32**	**2.91**
October	**6**	4	1	0	3	5	1	6	6	3	11	**40**	**4**
November		0	0	0	6	5	4	4	3	2	1	**25**	**2.5**
December		2	3	3	3	4	1	4	5	2	3	**30**	**3**
Total:	**21**	**28**	**25**	**29**	**46**	**42**	**36**	**36**	**72**	**35**	**53**	**417**	**3.23/mo**
									UBB				

Average over past 10 years (2008-2017) = 41 per year

Average over past 5 years (2013-2017) = 34 per year

Focus on your safety goal with purpose!

2018 - MNM Fatals

Fatal #1 – Powered Haulage Iowa

On Thursday, January 25, 2018, a 38-year-old equipment operator with 4 years mining experience was fatally injured while hauling material from the pit to a stockpile. The articulated haul truck travelled through a berm and into an ice covered pond, submerging the truck's cab. The victim was not wearing the seat belt.

Regulation Cited: None.

Root Cause: None listed in the final report. The investigators were unable to determine why the driver was unable to maintain control of the haul truck.

Best Practices:

- Do not operate heavy equipment when fatigued. The effects of fatigue include tiredness, reduced energy, and physical or mental exhaustion. These conditions become progressively worse as fatigue increases.
- Maintain control and stay alert when operating mobile equipment. Monitor persons routinely to determine safe work procedures are followed.
- Conduct adequate pre-operational checks and correct any defects affecting safety in a timely manner prior to operating mobile equipment. Maintain equipment braking and steering systems in good repair and adjustment.
- Operate mobile equipment at speeds consistent with the conditions of roadways, tracks, grades, clearance, visibility, curves, and traffic.
- Ensure that all exits on mobile equipment cabs, including alternate and emergency exits, are maintained and operable.
- Use seat belts when operating mobile equipment.

Use the following links to view additional information:		
Preliminary Report	Fatal Alert	Final Report

Fatal #2 – Machinery - SUR Utah

On Tuesday March 14, 2018, a 56-year-old maintenance worker with 15 years mining experience sustained a fatal injury to the head while installing discharge chutes on a vibrating screen deck. While the chute assembly was being lowered into place, it became hung up. While the victim and another miner were attempting to free it with 30-inch pry bars, the discharge chute assembly shifted, crushing the victim's head.

Regulation Cited: 56.16009

Root Cause:

- Management did not have policies, procedures and controls for miners removing and installing discharge chute assemblies, on vibrating screen decks. Once polices were developed all were trained on the new policies with emphasis on working under suspended loads.

Best Practices:

- Stay clear of a suspended load.
- Establish safe work procedures and identify and remove hazards before beginning repair or maintenance tasks. Follow the equipment manufacturer's procedures for the work being performed to ensure that all hazards have been addressed.
- Use welded lifting eyes that are specifically intended for lifting and adequately rated for the loads being lifted.
- Carefully inspect all rigging prior to each use.
- Train persons to recognize and control all hazards associated with performing repair or maintenance tasks.
- Position yourself only in areas where you will not be exposed to hazards resulting from a sudden release of energy.
- Attach taglines to loads that may require steadying or guidance while suspended. Stand clear of items of massive weights having the potential of becoming off-balanced while being loaded or unloaded.
- Do not place yourself in a position that will expose you to hazards while performing repair or maintenance tasks.

Use the following links to view additional information:		
Preliminary Report	Fatal Alert	Final Report

2018 - MNM Fatals

Fatal #3 – Powered Haulage - SUR Texas

On Thursday, April 12, 2018, a 60-year-old customer truck driver died when he fell from his truck and was run over by the truck's rear wheels. The victim was attempting to scan a card that identifies customer trucks entering the facility to load material. Investigators believe the victim positioned the vehicle too far away from the RFID to scan the card from inside the truck. The victim removed his seatbelt, opened the driver's side door, and leaned out of the cab with his right foot on the clutch pedal and the truck in gear. The truck moved forward, causing him to fall out.

Cited Regulation: None

Root Cause:
The accident occurred because the victim did not properly secure the truck by setting the park brake and taking the vehicle out of gear before opening the door and leaning out of the cab.

Best Practices:

- Implement check-in system technology that can be scanned remotely from inside the vehicle such as a RFID tag or indicator.
- Commercial and customer truck drivers should remain in their trucks while on mine property, unless a safe area for tarping and checking their loads has been designated.
- Operators should place their equipment in neutral and set the parking brakes before exiting the operator compartment.
- Rules establishing safe operating procedures should be posted.
- Ensure workers who operate heavy equipment are adequately informed, instructed, trained, and supervised.

Use the following links to view additional information:		
Preliminary Report	Fatal Alert	Final Report

Fatal #4 – Ignition/Explosion of Gas or Dust - SUR Alabama

On Tuesday, May 9, 2018, a 27-year-old kiln technician with 32 weeks experience received severe burn injuries while igniting natural gas to pre-heat a rotary kiln on May 9, 2018. The victim used a standard road flare attached to the end of an angle iron rod to manually light the kiln while his supervisor adjusted the gas valve. The first attempt to light the kiln failed. During the second attempt, fire blew out of the kiln access door (blowback) injuring the victim. He was transported by helicopter to an emergency burn center. He died on May 28, 2018, as a result of his injuries.

Regulation Cited: 46.7(a)

Root Causes:

- The operator's procedures for kiln lighting did not address purging after flame failure and did not specify a maximum time the secondary gas valve could remain open while attempting to light the kiln. This resulted in natural gas accumulating in the kiln chamber.
- The mine operator did not ensure the victim was properly trained in the task of lighting kilns.
- Proper PPE and clothing were not required to be used while lighting the kiln.
- The mine operator's procedures required miners to be positioned in front of an open kiln access door while lighting the kiln.

Best Practices:

- Remove flammable and combustible materials from areas prior to cutting, welding, or other hot work. A qualified person should monitor nearby areas where heavy vapors could migrate and accumulate.
- Ventilation systems should be properly designed, installed, and maintained.
- Install fixed monitoring systems with alarms in areas with potential for flammable and other hazardous atmospheres and calibrate and maintain them regularly. The systems should have redundant controls and system readouts located inside and outside of hazardous areas.
- Inerting systems should be properly designed, installed, adequately filled, and maintained.
- Do not work in areas where concentrations of vapors can be immediately fatal (Lower Explosive Limit), Immediately Dangerous to Life or Health, or where they exceed permissible exposure limits (PELs) to produce adverse health effects.

Use the following links to view additional information:		
Preliminary Report	Fatal Alert	Final Report

2018 - MNM Fatals

Fatal #5 – Powered Haulage - SUR Texas

On Wednesday, June 13, 2018, a 65-year-old truck driver with 4 years experience died after his truck traveled over a berm and into an impoundment of water. Divers recovered the victim in 20 feet of water.

Best Practices:

- Maintain control and stay alert when operating mobile equipment.
- Conduct adequate pre-operational checks and correct any defects affecting safety in a timely manner prior to operating mobile equipment. Maintain equipment braking and steering systems in good repair and adjustment.
- Operate mobile equipment at speeds consistent with the conditions of roadways, tracks, grades, clearance, visibility, curves, and traffic.
- Ensure that berms are adequate for the vehicles present on site, including but not limited to height, material, and built on firm ground.
- Consider storing personal flotation devices in equipment that is being operated near water.
- Ensure that all exits from cabs on mobile equipment, including alternate and emergency exits, are maintained and operable.
- Use seat belts when operating mobile equipment.

Use the following links to view additional information:		
Preliminary Report	Fatal Alert	Final Report

2018 - MNM Fatals

Fatal #6 – Non-Powered Haulage - SUR Texas

On Saturday, June 23, 2018, a 46-year-old electrician with 10 weeks experience was fatally injured while trying to stop runaway railcars. The miner ran to the front of a set of moving railcars and jumped on in order to set the hand brake. The miner then attempted to jump clear and was fatally injured when he was run over by the moving railcars.

Best Practices:

- Apply a mechanical hand brake to ensure a railcar does not move when it is stopped for loading, unloading, or storage. Use wheel chocks or derail devices for added protection against accidental movement.
- Never attempt to mount, crossover, cross under, or dismount a railcar while it is moving.
- Train personnel in the safe procedures of working with railcars. Establish safe work procedures and ensure all personnel involved communicate clearly with each other.

Use the following links to view additional information:		
Preliminary Report	Fatal Alert	Final Report

Accident Classification information:

NON-POWERED HAULAGE - Accidents related to motion of non-powered haulage equipment. Included are accidents involving wheelbarrows, manually pushed mine cars and trucks, etc.

Fatal #7 – Powered Haulage – SUR North Dakota

On July 31, 2018, a 62-year-old foreman with over 40 years mining experience died when he was struck by a front end loader bucket while helping to position a steel tube on a screen feed conveyor.

Regulations cited: 56.9317 and 56.16007

Root Causes:

- Management did not have policies, procedures and controls to prevent miners from working under suspended loads.
- Management did not have policies, procedures and controls to require miners use taglines to control suspended loads.

Best Practices:

- Proximity detection technology exist today which can prevent this type of injury. Consideration should be given to the use of this technology whereby an incident between the operator and other employees does not result in a fatality.
- Front-end loader operators must ensure personnel are not near the machine when in operation.
- Use cranes with appropriate rigging and tag lines to position components.
- When working near equipment, make eye contact with the equipment operator and directly communicate your intended movements.
- Wear a reflective vest or clothing while working.
- Ensure all persons are trained to recognize workplace hazards - specifically, the limited visibility and blind areas inherent to operation of large equipment.
- Prior to starting the task, train miners on proper maintenance procedures and discuss steps that will be taken to safely perform the job.

Use the following links to view additional information:		
Preliminary Report	Fatal Alert	Final Report

2018 - MNM Fatals

Fatal #8 – Non Chargeable Tennessee

MSHA has determined that it **does not have jurisdiction** on the public road where the previously posted Fatality #8 accident occurred. Accordingly, MSHA has delisted Fatality #8 as chargeable to the mining industry.

Fatal #9 – Powered Haulage – SUR Pennsylvania

On Wednesday, August 22, 2018, a 29-year-old groundman with a 1 year experience was fatally injured at a surface traprock operation while cleaning a snub pulley. The victim was working from an aerial lift located under the belt conveyor when he became entangled in the conveyor pulley.

Best Practices:

- Ensure that persons assigned to clean conveyor belts have received adequate training and verify that safe belt conveyor work practices are followed.
- Stay clear of moving equipment and do not reach into any part of a moving conveyor.
- Avoid wearing loose-fitting clothing when working around moving conveyor belt components.
- Verify that all incoming power connectors are open by a circuit breaker, the conveyor is stopped and secured from movement before working on belt conveyors.
- Provide and maintain safe access to elevated areas where routine maintenance is performed.

Use the following links to view additional information:		
Preliminary Report	Fatal Alert	Final Report

Fatal #10 – Explosive/Breaking Agents – UG New York

On Tuesday, October 2, 2018, a 40-year-old contractor foreman with 20 years experience was fatally injured when struck by stemming sand ejected from a borehole. While conducting a blasting operation in a new vertical raise, a contract foreman was attempting to clean out a previously blasted vertical borehole with high-pressure air. A sudden release of energy forced stemming sand from the bottom of the borehole, striking the miner.

Best Practices*:*

- Assess the suitability of blasting methods when blasts do not perform as intended.
- Use water to clean out the bottom of boreholes used for blasting.
- Never position yourself directly over or in front of the collar of a borehole when cleaning it out.
- Ensure miners are adequately task trained.

Use the following links to view additional information:		
Preliminary Report	Fatal Alert	Final Report

Fatal #11 – Fall of Highwall – S Virginia

On Thursday, October 11, 2018, a 26 year-old-year laborer (victim) with 48 weeks experience was fatally injured as a result of falling from on top of a previously cut block of granite. The victim was in the process of separating the cut block of granite from the highwall when the cut block suddenly slid out. The movement caused the miner, who was not wearing fall protection, to lose his balance and fall between the rock and the highwall causing fatal injuries.

Best Practices:

- Install fall protection systems that allow safe movement to perform work.
- Always conduct examinations of working places in order to identify loose ground or unstable conditions before work begins and as changing ground conditions warrant.
- Ensure that the person conducting the examination has the training and experience to recognize potential hazards.
- Discuss work procedures and identify all hazards associated with working near highwalls along with the methods to protect personnel.
- Do not place yourself in a position that will expose you to hazards while performing work tasks.

Use the following links to view additional information:		
Preliminary Report	Fatal Alert	Final Report

2018 - MNM Fatals

Fatal #12 – Powered Haulage – S — Montana

Preliminary: On Friday, October 19, 2018, a 63-year-old quarry manager was operating a 30-ton Volvo haul truck when he was fatally injured. The victim was moving the haul truck down a steep grade, around a turn, when the haul truck traveled through a berm and off a short drop-off. The victim was found several hours later by the owner of the company in the haul truck. The victim was not wearing a seat belt.

Use the following links to view additional information:		
Preliminary Report	Fatal Alert	Final Report

Fatal #13 – Other – S — New Mexico

Preliminary: On Thursday, October 25, 2018, a fatal occurred at a surface copper mine. The 28-year-old contractor with 9 weeks mining experience was traveling on the mine haul road that is used to access the stockpile. The victim was escorting an ATV on the access road when the accident occurred. The victim's vehicle traveled on to the bank of the leach pad causing the truck to overturn.

Use the following links to view additional information:		
Preliminary Report	Fatal Alert	Final Report

Fatal #14 – Fall of Roof/Back – UG — Nevada

Preliminary: On Thursday, October 25, 2018, a fatal occurred at an underground gold mine. A 42-year-old powderman with 13 years experience died when the back/roof fell while loading explosives in the face. The back, which was comprised of cemented backfill, weighed approximately 150 tons. A portion of this cemented backfill, weighing approximately 5 tons, landed on top of the miner.

Use the following links to view additional information:		
Preliminary Report	Fatal Alert	Final Report

2018 - Coal Fatals

Fatal #1 – Fall of Rib — West Virginia

On Tuesday, February 6, 2018 (3:45 am), a 52-year-old electrician with over 13 years experience was servicing a continuous-mining machine when a large portion of the rib fell and struck him.

Cited Regulation: 75.202(a)

Root Cause:

- The rib support system used at the mine was not adequate for the geologic conditions at the location of the accident. *Corrective Action*: The mine operator revised the roof control plan to require the installation of rib bolts in all entries on development.

Best Practices:

- Be aware of potential hazards when working or traveling near mine ribs, especially when geologic conditions, or an increase in mining height, could cause roof or rib hazards. Take additional safety precautions while working in these conditions.
- Correct all hazardous conditions before allowing miners to work and travel in these areas. Adequately support or scale any loose roof or rib material from a safe location. Use a bar of suitable length and design when scaling.
- Train all miners to conduct thorough examinations of the roof, face, and ribs in their work areas, including more frequent examinations when conditions change.
- Install rib bolts with adequate surface area coverage, during the mining cycle, and in a consistent pattern for the best protection against rib falls.
- Know and follow the approved roof control plan. The roof control plan only contains minimum safety requirements. Additional support may be required when roof or rib fractures, or other abnormalities are detected.

Use the following links to view additional information:		
Preliminary Report	Fatal Alert	Final Report

2018 - Coal Fatals

Fatal #2 – Electrical West Virginia

On Wednesday, February 21, 2018 (5:15 pm), a Highwall Mining Machine Operator with 21 years mining experience was electrocuted when he came in contact with an energized connection of a 7,200 VAC electrical circuit. The victim was troubleshooting the electrical system that supplies electrical power to the mining machine. He entered the transformer station on the mining machine and contacted an energized connection on the visual disconnect.

Cited Regulations: 77.501 and 77.103(g)

Root Cause:

- The mine operator did not perform test and repair work on electrical equipment and circuitry in a safe manner. The mine operator did not use proper lock out/tag out procedures.

Best Practices:

- Only qualified personnel should perform electrical work.
- Lock-Out and Tag-Out the electrical circuit yourself and NEVER rely on others to do this for you.
- Follow these steps BEFORE entering an electrical enclosure or performing electrical work: Locate the circuit breaker or load break switch away from the enclosure and open it to de-energize the incoming power cable(s) or conductors.
    - Locate the visual disconnect away from the enclosure and open it to provide visual evidence that the incoming power cable(s) or conductors have been de-energized.
    - Lock-out and tag-out the visual disconnect.
    - Ground the de-energized conductors.
- Wear properly rated and well maintained electrical gloves when troubleshooting or testing energized circuits. After the electrical problem has been found, follow the proper steps before performing electrical work.
- Use properly rated electrical meters and non-contact voltage testers to ensure electrical circuits have been de-energized.
- Install warning labels on line side terminals of circuit breakers and switches stating that the terminal lugs remain energized when the circuit breaker or switch is open.
- Electrical work must be performed by a qualified electrician or someone trained to do electrical work under the direct supervision of a qualified electrician.

Use the following links to view additional information:		
Preliminary Report	Fatal Alert	Final Report

Fatal #3 – Powered Haulage Indiana

On Friday, March 16, 2018, a 34-year-old mechanic with 16 years mining experience was fatally injured while operating diesel personnel carrier on the haulage road. The vehicle hit the right rib and rolled onto its left side. The victim became trapped between the canopy and the mine floor.

Cited Regulations: 75.1916(b) and 75.1403

Root Cause:

- The mine operator did not assure that equipment operators maintain full control of the equipment while it was in motion.
- The mine operator did not provide safety features to prevent persons in outby personnel carriers from being ejected.

Best Practices:

- Operate all mobile equipment at speeds that are consistent with the type of equipment, roadway conditions, grades, clearances, visibility, and other traffic.
- Consider installing mechanical devices that limit the top speeds of fast-moving equipment.
- Travel at safe speeds so that mobile equipment can be stopped within the limits of visibility.
- Maintain haulage roadways free from bottom irregularities, debris, and wet or muddy conditions that affect the control of the equipment.
- Maintain steering and braking components so that mobile equipment can be controlled at all times.
- Properly maintain brakes, lights, and warning devices on mobile equipment. Perform functional tests of the brakes and other safety devices during the pre-operational examination.
- Install safety devices, including seat belts, and ensure they are properly used and/or worn.
- Conduct task training for each type of personnel carrier or equipment being operated.

Use the following links to view additional information:		
Preliminary Report	Fatal Alert	Final Report

2018 - Coal Fatals

Fatal #4 – Powered Haulage Kentucky

On Wednesday, March 28, 2018, a 29-year-old belt foreman with 8 years mining experience was fatally injured while he and a co-worker were in the process of splicing an underground conveyor belt when the conveyor belt inadvertently started. The victim became entangled with the belt clamp ratchet chain when the conveyor belt moved.

Cited Regulations: 75.1725(c) and 75.512

Root Causes:

- Repair and maintenance work was performed on a conveyor belt without properly locking and tagging-out to ensure the electrical power was off while the work was being performed.
- The operator performed an improper repair of the remote cable and belt switch wires, which had been damaged during the on-shift examination. The repair caused the belt to start. The mine examiner had not been trained to repair the electrical circuit

Best Practices:

- Before splicing conveyor belts, perform the following steps:
  - Open the circuit breaker that supplies power to the conveyor belt drive.
  - Open the visual disconnect for the cable that supplies power to the conveyor belt drive.
  - Lock-out and tag-out the visual disconnect yourself and **NEVER** rely on someone to do this for you.
  - Release the tension in the conveyor belt take-up/storage unit.
  - Block the conveyor belt against motion.
- Keep the key to the lock at all times while repairs and/or maintenance are performed.
- Ensure that you are the only person who removes the lock after repairs and/or maintenance are completed.
- Ensure that no miner is in harm's way before starting the conveyor belt(s).
- Provide a visible and/or audible system, with a start-up delay, to warn persons that the conveyor belt will begin moving.
- Establish, follow, and enforce policies and procedures for performing specific tasks on conveyor belts and ensure all miners are trained.

Use the following links to view additional information:		
Preliminary Report	Fatal Alert	Final Report

Fatal #5 – Powered Haulage - UG West Virginia

On Monday, June 4, 2018, a 43-year-old shuttle car operator with 10 years mining experience was seriously injured when the personnel carrier he was riding in contacted a roof-to-floor support lying in the roadway. The support was propelled into the passenger compartment and struck him. The personnel carrier was travelling from the section to the surface when the accident occurred. The victim died as a result of the injuries sustained.

Cited Regulation: 75.1403

Root Cause:

- The mine operator did not maintain the haulage roadway free of extraneous material.

Best Practices:

- Conduct thorough examinations of roadways and remove material that may pose a hazard to equipment operators, passengers, or other miners.
- Maintain roadways free of excessive water, mud, and other conditions which have an impact on an equipment operator's ability to control mobile equipment.
- Establish, follow, and enforce safe operating procedures for mobile equipment and a maintenance schedule for roadways.
- Secure loads being hauled to prevent them from falling off haulage vehicles.
- Ensure each item being hauled reaches the intended destination.
- If items are lost during transport, immediately search for them and warn other mobile equipment operators.

Use the following links to view additional information:		
Preliminary Report	Fatal Alert	Final Report

2018 - Coal Fatals

Fatal #6 – Powered Haulage - UG Pennsylvania

On Tuesday, September 11, 2018, a mobile bridge conveyor (MBC) operator with 8 weeks mining experience was fatally injured during the mining process. The continuous mining machine (CMM) and attached MBCs had been backed out of a completed cut. While the CMM was being repositioned, it moved the attached MBCs and crushed the victim between his MBC and the coal rib.

Best Practices:

- Frequently communicate with other MBC operators before starting or tramming any component of the system. Always be in a location where other MBC operators can readily see or communicate with you.
- Install latching emergency stop switches, so MBC operators can actuate them to prevent machine movement when they leave the operator's cab or position.
- Stay out of MBC Red Zones if the CMM or any of the MBCs are energized.
- Be familiar with how the de-energizing switches on your machine operate and immediately actuate them the moment a hazard is recognized.
- Install man-in-position switches on mobile bridge conveyor systems, so all MBC operators know everyone is in a safe position before initiating machine movement.

Use the following links to view additional information:		
Preliminary Report	Fatal Alert	Final Report

2018 - Coal Fatals

Fatal #7 – Fire - SUR Indiana

On Friday, September 7, 2018, the 60-year-old contractor with 1 year experience was operating a Cat 793C haul truck to haul spoil material to the dump site. A fire started between the operator's cab and the engine compartment. The victim received 2nd and 3rd degree burns while exiting the cab and passed away days later at the hospital.

Best Practices:

- Preventing a fire is the best fire protection. Install and maintain early fire detection and alarm systems on all haulage equipment that provide an audible and visible fire warning for miners to safely evacuate the equipment.
- Thoroughly examine all haulage equipment and repair safety defects before placing equipment into service. Follow the original equipment manufacturers maintenance recommendations.
- Check for accumulations of combustible materials, cracked or blistered hoses, and uninsulated wires.
- Be alert to changes in the way the equipment sounds or to a visible plume of exhaust coming from the exhaust system.
- Conduct risk assessments on all equipment to determine safe exit locations for required escape and evacuation plans.
- Establish and keep current an Escape and Evacuation Plan for exiting equipment in the event of a fire (§ 77.1101). Train employees on contents of this plan.
- Install well designed stairs or ladders to the equipment at both ends for an alternate escape.
- Ensure fire suppression systems are properly maintained and protected from damage. Install automatic fire suppression systems and train miners on their use.

Use the following links to view additional information:		
Preliminary Report	Fatal Alert	Final Report

Fatal #8 – Machinery - SUR West Virginia

Preliminary: On Wednesday, October 17, 2018, a 33-year-old auger helper with 12 years mining experience (3-days experience at mine site and performing task) was struck by a piece of auger steel and died later from his injuries.

Use the following links to view additional information:		
Preliminary Report	Fatal Alert	Final Report

MSHA investigates all deaths on mine property; however, some deaths are unrelated to mining activity and are not counted in the statistics MSHA uses to assess the safety performance of the mining industry. These deaths are termed "non-chargeable" and include homicides, suicides, deaths due to natural causes, and deaths involving trespassers.

MSHA uses a formal Fatality Review Committee to determine whether a questionable death is chargeable. ***Three (3) combined (coal and MNM) mining accidents are pending chargeability determination.***