

2021 Fatal Comparison Chart (based on preliminary report data, fatal alerts, & final reports) Updated: 11/15/2021

MNM Total	22	Fatal Date	Coal Total	9	Fatal Date	Total 31
Underground (UG)	5	Feb22, May18, Jun9(16&17), Jul13	Underground (UG)	5	Jan22, May14, Jun2, Jun3, Nov1	10
Surface & Sur of UG	17	Jan16, Jan19, Feb8, Feb25, Mar5, Mar12, Apr19, Apr22, Jun7, Jul26, Jul28, Aug3, Sep14, Sep15, Sep21, Oct1, Oct20	Surface & Sur of UG	4	Jul21, Aug1, Aug11, Oct19	21
Found Non-Chargeable			Found Non-Chargeable			
Contractor	4	May18, Jul26, Sep15, Sep21	Contractor	1	Aug11	5
Powered Haulage	9	Jan19, Feb8, Feb22, Apr19, Apr22, Jun9(16&17), Aug3, Sep21	Powered Haulage	4	Jan22, Jun3, Aug11, Nov1	13
Machinery	4	Jan16, Mar5, May18, Oct20	Machinery	1	Jul21	5
Roof, Rib, Highwall Fall	1	Jul13	Roof, Rib, Highwall Fall	2	May14, Jun2	3
Electrical			Electrical			
Slip & Fall of Persons	2	Feb25, Jul26	Slip & Fall of Person	0		2
Fall & Sliding Materials	2	Jul28, Sep14	Fall & Sliding Materials	1	Oct19	3
Handling Materials	3	Mar12, Jun7, Oct1	Handling Materials	0		3
Inundation	0		Inundation	1	Aug1	1
Other	1	Sep15	Other	0		1
Supervisor/Foreman	4	Mar5, Jun9(16&17), Jul28	Supervisor/Foreman	2	Jun2, Jun3	6
Age			Age			
Age 20-29	4	Feb22, Feb25, Apr19, Oct1	Age 20-29	1	Jun2	5
Age 30-39	6	Jan19, Feb8, Mar12, May18, Jul26, Sep15	Age 30-39	3	Jan22, May14, Jul21	9
Age 40-49	2	Jan16, Jul28	Age 40-49	3	Jun3, Aug1, Nov1	5
Age 50-59	4	Apr22, Jun7, Jun9(17), Oct20	Age 50-59	2	Aug11, Oct19	6
Age 60+	6	Mar5, Jun9(16), Jul13, Aug3, Sep14, Sep21	Age 60+	0		6
Experience			Experience			
Less than 1 year	3	Feb8, Apr19, Sep14	Less than 1 year	1	Aug11	4
1-9 years	9	Jan16, Feb22, Feb25, Mar12, Apr22, May18, Jun7, Jul26, Oct1	1-9 years	1	Jun2	10
10-19 years	6	Jan19, Jul13, Jul28, Aug3, Sep15, Oct20	10-19	6	Jan22, May14, Jun3, Jul21, Aug1, Oct19	12
20+	4	Mar5, Jun9(16), Jun9(17), Sep21	20+	1	Nov1	5
Mine Site Experience			Mine Site Experience			
Less than 1 year	10	Jan19, Feb8, Feb25, Apr19, May18, Jun9(17), Jul26, Sep14, Sep15, Sep21	Less than 1 year	1	Jan22	11
1-9 years	8	Jan16, Feb22, Mar12, Apr22, Jun7, Jul28, Oct1, Oct20	1-9 years	5	May14, Jun2, Aug1, Aug11, Nov1	13
10-19	3	Jun9(16), Jul13, Aug3	10-19	3	Jun3, Jul21, Oct19	6
20+	1	Mar5	20+	0		1
Job/Task Experience			Job/Task Experience			
Less than 1 year	10	Jan19, Feb8, Feb22, Feb25, Apr19, May18, Jun9(17), Sep14, Sep15, Sep21	Less than 1 year	1	Oct19	11
1-9 years	10	Jan16, Mar5, Mar12, Apr22, Jun7, Jul26, Jul28, Aug3, Oct1, Oct20	1-9 years	5	Jan22, May14, Jun2, Jun3, Aug1	15
10-19	2	Jun9(16), Jul13	10-19	3	Jul21, Aug11, Nov1	5
20+			20+			
Day of the Week:			Day of the Week:			
Sunday	1	Feb22	Sunday	1	Aug1	2
Monday	4	Feb8, Apr19, Jun7, Jul26	Monday	1	Nov1	5
Tuesday	6	Jan19, May18, Jul13, Aug3, Sep14, Sep21	Tuesday	1	Oct19	7
Wednesday	5	Jun9(16&17), Jul28, Sep15, Oct20	Wednesday	3	Jun2, Jul21, Aug11	8
Thursday	2	Feb25, Apr22	Thursday	1	Jun3	3
Friday	3	Mar5, Mar12, Oct1	Friday	2	Jan22, May14	5
Saturday	1	Jan16	Saturday	0		1

2021 Fatal Comparison Chart (based on preliminary report data, fatal alerts, & final reports) Updated: 11/15/2021

2021 - Month	MNM	Coal	Totals	Difference	Totals	2020 - Month	MNM	Coal
January	2	1	3	+1	2	January	2	0
February	3	0	3	0	3	February	2	1
March	2	0	2	+2	0	March	0	0
April	2	0	2	+2	0	April	0	0
May	1	1	2	0	2	May	2	0
June	3	2	5	+2	3	June	3	0
July	3	1	4	+1	3	July	3	0
August	1	2	3	0	3	August	3	0
September	3	0	3	+1	2	September	2	0
October	2	1	3	-2	5	October	2	3
November	0	1	1	-2	3	November	2	1
December					3	December	3	0
2021 Total:	22	9	31	+5	29	2020 Total:	24	5

Product	2021 Fatal Dates	2021 Total	2020 Total	State (2021)	Total	MNM	Coal	Fatal Date
Alumina		0		Alaska	1	1	0	Jan16
Barium		0	1	Arizona	1	1	0	Sep15
Cement	Jul26	1	1	Georgia	1	1	0	Jul28
Clay		0		Idaho	1	1	0	Sep14
Coal	Jan22, May14, Jun2, Jun3, Jul21, Aug1, Aug11, Oct19, Nov1	9	5	Illinois	1	1	0	Mar5
Copper	Sep15	1		Missouri	2	2	0	Feb8, Mar12
Gold Ore	Sep14	1	1	Montana	2	2	0	Jun9(16&17)
Granite		0	1	Nebraska	1	1	0	Apr22
Gypsum		0		Nevada	1	1	0	Feb25
Iron Ore		0		New Mexico	1	1	0	Sep21
Kaolin		0		Ohio	1	0	1	Oct19
Lead Ore	Jan16	1		Pennsylvania	2	1	1	May14, Jul26
Lime		0		Tennessee	3	3	0	Feb22, May18, Jul13
Limestone	Feb8, Aug3	2	5	Texas	4	4	0	Apr19, Jun7, Aug3, Oct20
Phosphate		0		Utah	2	1	1	Jan19, Aug1
Platinum	Jun9(16&17)	2		Wisconsin	1	1	0	Oct1
Sand/ Sand & Gravel	Jan19, Feb25, Mar5, Mar12, Apr22, Jun7, Sep21, Oct1, Oct20	9	10	West Virginia	5	0	5	Jan22, Jun2, Jun3, Aug11, Nov1
Sandstone		0	2	Wyoming	1	0	1	Jul21
Shale		0						
Silver Ore		0						
Stone	Apr19, Jul28	2	1					
Titanium		0						
Traprock		0						
Zinc	Feb22, May18, Jul13	3						
				Part 48 = 16				Part 46 = 15
				All Coal = 9				Non Metal SUR = 15
				MNM: UG = 5				
				Metal: SUR = 2				

Month	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	TOTAL	AVG
January	3	2	2	1	2	3	5	1	3	2	1	24	2.18
February	3	3	0	2	3	1	1	5	5	3	3	29	2.64
March	2	0	3	3	3	3	5	2	3	5	2	30	2.73
April	2	0	0	1	0	2	0	6	3	2	2	18	1.64
May	2	2	3	1	2	2	4	6	1	5	1	29	2.64
June	5	3	2	3	3	4	3	6	3	2	4	38	3.45
July	4	3	3	1	4	2	2	2	4	4	2	31	2.82
August	3	3	5	2	2	1	4	3	3	2	3	31	2.82
September	3	2	2	1	3	3	2	3	3	5	4	31	2.82
October	3	5	0	6	4	1	0	3	5	1	6	34	3.09
November	1	3	2	2	0	0	0	6	5	4	4	26	2.6
December		3	2	4	2	3	3	3	4	1	4	29	2.9
Total:	31	29	24	27	28	25	29	46	42	36	36	350	2.69/mo

Average over past 10 years (2011-2020) = 36 per year

Average over past 5 years (2016-2020) = 27 per year

Stay Safe!

2021 – Combined Coal and MNM Fatal

Jan 16

Machinery

Alaska

On Saturday, January 16, 2021, a 47-year-old drill operator with over 7 years of experience was fatally injured while assisting another drill operator in removing the down-hole drill (DHD) from Company Drill #40-008. The driller was installing a J wrench on the DHD wrench slots when the DHD rapidly rotated in a counter-clockwise direction, crushing his right thigh between the J wrench and the drill mast. The machine power was on, and no action was taken to prevent unplanned movement of the DHD.

Cited Regulations: 48.27 and 56.14105

Root Cause:

- Adequate policies and procedures were not in place to ensure miners stayed clear of moving drill parts.
- Policies not in place to ensure that miners turned off or blocked equipment against hazardous motion while conducting maintenance activities.
- Policies were not in place to ensure miners were de-tooling the DHD within the scope of the manufacturer’s instructions.
- The task training program had a deficiency that allowed inadequacies in the miners’ training.

Best Practices:

- Establish and discuss safe work procedures before starting any task. When performing maintenance ensure the equipment is locked/tagged out and adequately blocked from all potential motion.
- Identify and control all hazards. Train all workers to recognize potential hazards and use safe job procedures to eliminate hazards before beginning work.
- Follow manufacturer’s procedures for using equipment, and monitor employees for compliance.
- Position yourself in a safe location away from potential “danger-zone” areas.
- Train miners to safely perform their tasks.
- Conduct equipment inspections and correct any defects affecting safety.

Use the following links to view additional information:

Preliminary Report	Fatal Alert	Final Report
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Stay Safe!

2021 – Combined Coal and MNM Fatal

Jan 19

Powered Haulage

Utah

On Tuesday, January 19, 2021, a 39-year-old truck driver with over 15 years of total mining experience backed a haul truck to the edge of a dump point that was over steepened by a loader removing material at the bottom of the slope. When the edge of the bank failed, the haul truck traveled backwards and overturned and landed on the roof of the cab.

Cited Regulation: 56.14130(g), 56.9304(a), 56.9301, 56.3130, 56.9304(b)

Root Cause:

- Adequate policies or procedures were not in place to dump material a safe distance from the edge of the dump site.
- Use mining methods that maintained slope stability of the dump bank were not being used. The mining method involved removing material from the toe of the dump bank, creating a hazardous condition at the dump site.
- Adequate dump site restraints were not provided.
- Dump sites were not inspected prior to dumping.
- Miners were allowed to not wear seat belts while operating mobile equipment.

Best Practices:

- Always dump material in a safe location. If ground conditions aren't reliable, dump loads a safe distance back and push the material over the edge.
- Never load material from the toe directly below an active dump point. This may lead to an over steepened and unstable slope.
- Never drive haul trucks beyond cracks on the top of the dump site.
- Always construct substantial berms as a visual indicator to prevent overtravel. Clearly mark dump locations with reflectors and/or markers.
- Always wear a seat belt.
- Install advanced systems that restrain miners during roll-overs.
- Maintain communication between equipment operators and loaders.
- Train miners to use safe dumping procedures and recognize dumping hazards such as material slides and other unsafe conditions.

Use the following links to view additional information:

Preliminary Report	Fatal Alert	Final Report
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Stay Safe!

2021 – Combined Coal and MNM Fatal

Jan 22

Powered Haulage

West Virginia

On Friday, January 22, 2021, a 38-year-old shuttle car operator with 11 years of experience received fractures to the right lower leg when the shuttle car he was operating was struck in the operator's compartment by another shuttle car. On February 21, 2021, the injured miner passed away as a result of the injuries sustained during the accident.

On May 11, 2021, the Chargeability Review Committee determined that this death should be chargeable to the mining industry.

Cited Regulation: Safeguard cited – 75.1403-10

Root Cause:

- The mine operator did not have policies or procedures in place to ensure safe underground haulage when: 1) mobile equipment traveled through flypads; and 2) shuttle cars from different MMUs share a common intersection where flypads are used.

Best Practices:

- Install and maintain proximity detection systems on mobile section equipment.
- Communicate your presence and intended movements. Wait until miners acknowledge your message before moving your equipment.
- Do not tram equipment through ventilation curtains. Tram only through fly pads in designated haulage routes.
- Use clear curtains for fly pads and ventilation controls on working sections.
- STOP and SOUND an audible warning device before tramping equipment through fly pads. Ensure directional lights are on when operating mobile equipment.
- Avoid areas where equipment operators cannot readily see you.
- Wear personal strobe light devices to increase visibility.

<i>Use the following links to view additional information:</i>		
Preliminary Report	Fatal Alert	Final Report

Stay Safe!

2021 – Combined Coal and MNM Fatal

Feb 8

Powered Haulage

Missouri

On Monday, February 8, 2021, a 38-year-old ground-man with about 8 months experience died when he became entangled in a self-cleaning tail pulley while attempting to shovel under an adjacent fluted tail pulley.

Cited Regulation: 56.14105, 56.14107(a), 46.5(a)

Root Cause:

- The mine operator did not ensure that the miner received the minimum required training to safely perform his job, or that the miner was observed by an experienced miner while working until he had completed such training.
- The mine operator did not ensure equipment was properly guarded.
- The mine operator did not ensure that power to equipment was off and that the equipment was blocked against hazardous motion before allowing the performance of maintenance.

Best Practices:

- Design, install, and maintain area guards with signage and locks in addition to a physical barrier. Find more information on area guarding at <https://www.msha.gov/guarding-slide-presentation-guarding-conveyor-belts-metal-and-nonmetal-mines>.
- Design and maintain secure guards so miners can perform routine maintenance on belt conveyor systems without contacting moving machine parts.
- Do not perform work on a belt conveyor until the power is off, locked out and tagged, and machinery components are blocked against motion.
- Never clean pulleys or idlers manually while belt conveyors are operating.
- Establish policies and procedures for conducting specific tasks on belt conveyors.
- Ensure that people assigned to work on belt conveyors are task trained, understand the associated hazards, and demonstrate safe work procedures before beginning work.
- Ensure all new miners receive new miner training and task training.

Use the following links to view additional information:

[Preliminary Report](#)

[Fatal Alert](#)

[Final Report](#)

Stay Safe!

2021 – Combined Coal and MNM Fatals

Feb 22

Powered Haulage

Tennessee

On Monday, February 22, 2021, a 26-year-old underground chute puller with over 5 years mining experience was fatally injured as a passenger of a rail-mounted locomotive when he was crushed between the deck of the locomotive and an overhead chute

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Install controls such as rail stops at loading points, crossings, etc., where track equipment must stop.
- Install reflective signs or warning lights well in advance of low clearance areas to alert miners of the upcoming hazard.
- Develop safe working procedures to avoid low clearance and pinch point areas. Monitor workers to ensure these procedures are followed.
- Always look in the direction the equipment is moving in, and keep all body parts within the operator's compartment while it is moving.
- Conduct proper travelway examinations to identify and mitigate the hazards presented by low clearances.
- Train all workers to recognize potential hazards and understand safe job procedures and tasks to eliminate hazards before beginning work

Use the following links to view additional information:

Preliminary Report	Fatal Alert	Final Report
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Stay Safe!

2021 – Combined Coal and MNM Fatal

Feb 25

Slip and Fall

Nevada

On Monday, February 25, 2021, a 26-year-old plant operator with over 3 years mining experience died after entering a cyclone discharge box. The local fire department recovered the victim lodged in an 18-inch wide discharge pipe that was full of water.

Cited Regulation: 46.7 and 56.16002(c)

Root Cause:

- The mine operator did not have adequate policies and procedures in place for confined space entry or safe access.
- Miners were not task trained on safe access or confined space entry policies and procedures.

Best Practices:

- Wear a fall protection harness, properly tie off to a permanent support structure, and attach a lifeline when entering a bin or other confined space. Have a second person monitor the lifeline to make sure there is no slack in the fall protection system.
- Use personnel lifts or ladders to safely access elevated work areas.
- Always use fall protection when there's a potential fall hazard.
- Examine work areas and equipment. Report defects and do not use unsafe work equipment.
- Assess risks and hazards before beginning maintenance activities.
- Train miners to safely perform their tasks and properly use their personal protective equipment.

Use the following links to view additional information:

Preliminary Report	Fatal Alert	Final Report
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Stay Safe!

2021 – Combined Coal and MNM Fatal

Mar 5

Machinery

Illinois

On Friday, March 5, 2021, a 63-year-old mine manager with 43 years of mining experience died while operating an excavator along an elevated roadway adjacent to a dredge pond. The ground under one excavator track sloughed off which causing it to overturn, fall about 13 feet, and slide into the pond.

Cited Regulation: 56.9300(a) and 56.18002(a)

Root Cause:

- Berms/guardrails were not installed on the elevated roadway where a drop off hazard existed.
- Policies and procedures were not in place ensuring that the miners conduct a workplace examination to identify and correct hazardous ground conditions before work commenced along the elevated roadway. Miners were allowed to perform work and travel in the area despite the existence of conditions that adversely affected safety.

Best Practices:

- Construct berms or install guardrails on roadways where a drop-off exists. Ensure berms and guardrails are at least as high as the mid-axle height of the largest equipment using the roadway.
- Examine and maintain roadways to prevent slope instability such as over steepened banks, sloughs, and cracking on the roadway and bank.
- Install locked gates at the entrances of roadways that are infrequently traveled. Post speed limit signs and install delineators at the edges of roads.
- Always wear seat belts when operating mobile equipment.
- When working near water, wear flotation devices and ensure combination seat belt cutter/window breaker tools are installed in equipment.
- Train equipment operators in the safe performance of their tasks, potential hazards, and the use of alternative/emergency exits in cabs. Examine these exits during preoperational examinations.

Use the following links to view additional information:

[Preliminary Report](#)

[Fatal Alert](#)

[Final Report](#)

Stay Safe!

2021 – Combined Coal and MNM Fatals

Mar 12

Handling Material

Missouri

On Friday, March 12, 2021, a 35-year-old miner with 8 years of mining experience was fatally injured when a 43-pound safety pin struck him. The victim attempted to insert the safety pin into a spud beam while the beam dropped into the spud well. He was unable to place the entire safety pin into the spud beam, and as a result, the safety pin struck the spud well casing causing the pin to suddenly pivot upward and strike him.

Cited Regulation: 46.7 and 56.14105

Root Cause:

- The mine operator’s policies and procedures were not adequate to ensure that the spud beam was safely removed or replaced, which includes ensuring that safety pins are securely in place.

Best Practices:

- Always ensure hoisted equipment movement has stopped and the hoist operator has set the brake before working on hoisted equipment.
- Ensure the hoist operator can see miners working on hoisted equipment.
- Establish an effective communication protocol, which includes confirmation of instructions, between the hoist operator and miners working on hoisted equipment.
- Position yourself in a safe location to maintain balance and protection from any energy of cantilevering tools or objects.
- Stay in a Safe Zone when working around cables and sheave wheel systems.
- Always maintain a work area that is clean and clear of debris.
- Train equipment operators in the safe performance of their tasks and potential hazards.

<i>Use the following links to view additional information:</i>		
Preliminary Report	Fatal Alert	Final Report

Stay Safe!

2021 – Combined Coal and MNM Fatal

Apr 19

Powered Haulage

Texas

On Monday, April 19, 2021, a 28-year-old haul truck driver with 37 weeks of experience stopped his haul truck in front of his personal vehicle to get his lunch. While standing and eating his lunch, the haul truck rolled forward, pinning the miner between the haul truck and his personal truck.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Do not leave mobile equipment unattended unless the controls are placed in the park position and the brake is set. NEVER use a steering column-mounted "dump brake" for parking.
- When parking mobile equipment on a grade, chock the wheels or turn them into a bank. Maintain equipment braking systems in good repair and adjustment.
- Position yourself in a safe location away from potential "danger-zone" areas.
- Train miners to safely perform their tasks.

Use the following links to view additional information:

Preliminary Report	Fatal Alert	Final Report
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Stay Safe!

2021 – Combined Coal and MNM Fatal

Apr 22

Powered Haulage

Nebraska

On April 22, 2021, a 53-year-old dredge operator with 6 years of mining experience was fatally injured while leaving the mine. His personal vehicle struck a partially closed gate on the mine road.

Cited Regulation: None

Root Cause:

- The mine operator did not ensure that the manual barrier gate was securely fastened in the open position.

Best Practices:

- Ensure that manual swing barrier gates can be secured when opened or closed to prevent unintentional movement.
- Conduct thorough travelway examinations to identify and mitigate hazards.
- Paint or tape swing barrier gates with reflective and distinguished markings to differentiate them from their surroundings. Install additional lighting near barrier gates.
- Maintain proper speed for road conditions.
- Establish safe traffic patterns with proper signage.
- Be alert to road conditions and always keep a clear line of sight.

Use the following links to view additional information:

Preliminary Report	Fatal Alert	Final Report
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Stay Safe!

2021 – Combined Coal and MNM Fatal

May 14

Fall of Roof

Pennsylvania

On Friday, May 14, 2021, a 32-year-old continuous miner operator with 11 years experience was fatally injured when a piece of rock fell from the roof and struck him. The victim was working under unsupported roof.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Never work or travel under unsupported roof.
- Thoroughly examine the roof, face and ribs where people will be working and traveling, including sound and vibration testing.
- Scale loose roof and ribs from a safe location. Prevent access to unsupported and hazardous areas until appropriate corrective measures can be taken.
- Follow the approved roof control plan and provide additional support when cracks or other abnormalities are detected. Never exceed the maximum cut depth specified in the approved roof control plan.
- Mark the second to last row of bolts with reflective material and train miners not to travel inby this location.
- Train miners to identify hazards from the roof, face and ribs.

Use the following links to view additional information:

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Stay Safe!

2021 – Combined Coal and MNM Fatal

May 18

Machinery

Tennessee

On Tuesday, May 18, 2021. A 35-year-old contract laborer with a year mining experience died when struck by a trailer. A telehandler was towing a trailer with a diesel pump onboard up an inclined underground roadway when the tow hitch broke. The trailer rolled down the roadway, striking and fatally injuring the contract laborer.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Use towing hardware (hitches, tow bars, receivers, couplers, pins, safety chains/cables, etc.) which is properly designed and rated. Before each use, examine towing hardware for wear, cracks, and other damage.
- Never exceed the recommended maximum towing capacity of a tow vehicle or trailer. Follow the manufacturer's recommendations and only use equipment designed for towing.
- Always use properly sized safety chains in conjunction with hitches. Safety chains keep the trailer connected to the tow vehicle in case the other tow hardware fails.
- Never position yourself directly behind equipment being towed uphill.
- Establish procedures for safe and proper towing. Train miners to follow these procedures and identify hazards associated with towing.

Use the following links to view additional information:

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Stay Safe!

2021 – Combined Coal and MNM Fatal

June 2

Fall of Rib

West Virginia

On Wednesday, June 2, 2021, a 26-year-old CM Section Foreman with nearly 6 years of mining experience was fatally injured while installing a rib bolt. He was using a rib drill on the full face continuous mining machine when the corner of the mine rib sheared off and pinned him against the mining machine. The piece of rib that struck the victim consisted of rock and coal, and measured approximately 6 feet wide, 4.5 feet high, and 2 feet thick.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Support loose roof and rib material adequately or scale loose material from a safe location before working or traveling in an area.
- Examine the roof, face and ribs immediately before starting work in an area and throughout the shift as conditions warrant.
- Take additional safety precautions when mining heights increase and in areas where mine conditions change.
- Train miners to recognize roof and rib hazards and to stop work in the area until the hazards are corrected.

Use the following links to view additional information:

Preliminary Report	Fatal Alert	Final Report
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Stay Safe!

2021 – Combined Coal and MNM Fatal

June 3

Powered Haulage

West Virginia

On Thursday, June 3, 2021, 42-year-old section foreman was fatally injured when he was hit by a shuttle car. The victim was struck when he walked into the path of a loaded shuttle car that was traveling to the dump point.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Install proximity detection systems on mobile equipment to protect personnel and eliminate accidents of this type.
- Be aware of your location in relation to movement of equipment, especially in lower seams.
- Sound audible warnings, distinguishable from surrounding noise, and reduce speed when approaching and before traveling through check curtains. Wear reflective clothing or strobe lights to aid visibility when working around mobile equipment.
- Ensure all personnel are clear of the traveling path and turning radius before moving equipment.
- Train miners and equipment operators to communicate their location and wait for acknowledgement before moving.

Use the following links to view additional information:

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Stay Safe!

2021 – Combined Coal and MNM Fatal

June 7

Handling Material

Texas

On Monday, June 7, 2021, a 55-year-old hopper operator with over 6 years of mining experience entered the top of a primary feed hopper to remove a large rock. While trying to break up the rock, raw material that remained on the sides of the hopper sloughed off engulfing the miner.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Equip hoppers with mechanical devices, grates/grizzlies or other effective means of handling material so miners are not required to enter or work where they are exposed to entrapment by caving or sliding material.
- Establish and assure policies and procedures are followed to safely remove blockages in bins and hoppers. Follow manufacturer recommendations.
- Provide a safe means of access that allows miners to safely conduct tasks such as removing large rocks and other material.
- Wear an appropriate safety harness, lanyard and lifeline which are securely anchored and constantly monitored and adjusted by another person, as needed, prior to entering bins or hoppers.
- Train miners in safe work procedures and hazard recognition especially when removing blockages in bins or hoppers.

Use the following links to view additional information:

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Stay Safe!

2021 – Combined Coal and MNM Fatal

June 9

Powered Haulage

Montana

On Wednesday, June 9, 2021, two development supervisors (55-year-old with 24 years experience and a 65-year-old with 42 years experience) were fatally injured when a locomotive collided with the personnel carrier in which they were riding.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Install lights or other engineering controls to let miners know when it is safe to travel on track haulageways.
- Implement a communication system so that one person, who is not on any mobile equipment, has the sole authority to authorize travel on track haulageways.
- Establish and maintain effective communication protocols that require identification, location and intended travel, between locomotives, light vehicles and foot traffic.
- Train miners on proper traffic patterns and procedures.

Use the following links to view additional information:

Preliminary Report	Fatal Alert	Final Report
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Stay Safe!

2021 – Combined Coal and MNM Fatal

July 13

Fall of Roof/Back

Tennessee

On Tuesday, July 13, 2021, a 68-year-old scaler operator was fatally injured when a rock falling from a pillar in a benched area at a room-and-pillar zinc mine struck a miner. The miner was in a personnel lift basket near ground level to load blasting supplies. The rock fell from a height of approximately 40 feet, striking the basket.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Support or remove loose material from a safe position before beginning work.
- Design, install, and maintain the ground support to control the ground where people work or travel, after blasting, and as ground conditions warrant.
- Use scaling equipment capable of maintaining safe ground conditions suitable for the mining dimensions.
- Establish safe work procedures to ensure a safe work location for miners conducting scaling operations. Train all miners to recognize hazards and understand these procedures.
- Perform thorough workplace examinations where miners work or travel.
- Be alert for changing conditions, especially after activities that could cause back/roof disturbance.

Use the following links to view additional information:

Preliminary Report	Fatal Alert	Final Report
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Stay Safe!

2021 – Combined Coal and MNM Fatal

July 21

Machinery

Wyoming

On Tuesday, July 21, 2021, a 31-year-old Millwright miner received fatal injuries while adding a boom extension to a crane. The miner was working under the boom to remove the boom pins when he was struck by the boom.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Never perform work under raised machinery or equipment until such machinery or equipment has been securely braced in position, blocked and secured against motion. Be alert for hazards that may be created while the work is being performed.
- Conduct repairs from a safe location per manufacturer’s recommendations. Verify the release of all stored energy before initiating repairs.
- Use a lifting device compatible with the load being lifted and ensure blocking material is competent, substantial, and adequate to support and stabilize the load. Always use the manufacturer’s safety devices or features to secure components against motion, and secure assemblies that rotate to prevent movement.
- Establish and discuss safe work procedures before starting any task. Train miners in safe work procedures and hazard recognition. Monitor personnel routinely to ensure safe work procedures are being followed.

<i>Use the following links to view additional information:</i>		
Preliminary Report	Fatal Alert	Final Report

Stay Safe!

2021 – Combined Coal and MNM Fatal

July 26

Slip/Fall of Person

Pennsylvania

On Monday, July 26, 2021, a 33-year-old contract employee with 8 years experience was performing maintenance on a cement cooler when a wooden board broke, causing him to fall 23 feet onto a concrete floor. The victim was not wearing fall protection while.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Ensure a safe means of access is provided and maintained to all working places. Use personnel lifts or ladders to access elevated work areas safely.
- Use fall protection when a fall hazard exists. Ensure fall protection has a suitable fall arrest and secure anchorage system.
- Examine work areas, tools, and equipment. Report and correct defects. Do not use unsafe equipment.
- Assess risks and eliminate or control hazards before beginning maintenance activities. Do not place yourself in a position that will expose you to hazards while performing a task.
- Train miners and ensure they perform work safely, use tools properly, and utilize personal protective equipment correctly.

<i>Use the following links to view additional information:</i>		
Preliminary Report	Fatal Alert	Final Report

Stay Safe!

2021 – Combined Coal and MNM Fatal

July 28

Fall/Sliding of Material

Georgia

On Wednesday, July 28, 2021, a 42-year-old ledge foreman at a stone operation was fatally injured. The victim fell while standing on a rock ledge trying to extract dimensional stone when the rock ledge broke off, causing the miner to fall approximately 30-40 feet.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Use fall protection when a potential fall hazard exists. Ensure fall protection has a suitable fall arrest and secure anchorage system.
- Examine working places to identify loose ground or unstable conditions before work begins, after blasting, and as changing ground conditions warrant. Ensure examiners have adequate training and experience to recognize potential hazards.
- Assess risks and control hazards before beginning work activities. Remain a safe distance from cracks and any sign of unstable ground conditions.
- Ensure a safe means of access is provided and maintained to all working places. Use personnel lifts and ladders, as required.
- Train miners and ensure they perform work safely, use tools properly, and utilize personal protective equipment correctly.

Use the following links to view additional information:

Preliminary Report	Fatal Alert	Final Report
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Stay Safe!

2021 – Combined Coal and MNM Fatal

August 1

Inundation

Utah

On Monday, August 1, 2021, a 48-year-old section utility person drowned in a flash flood. The victim was riding in a personnel carrier to the portal. As the personnel carrier was being engulfed by water, the miner exited the vehicle, and the water carried him away.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Monitor flash-flood watches and warnings and other adverse weather conditions, such as severe storm events, that could affect the safety of mine personnel. Use NOAA Weather Radio or a smartphone app to monitor hazardous weather conditions in your area.
- Establish policies and procedures to provide adequate warning to all mine personnel of ongoing weather conditions pertaining to flash floods and other adverse weather conditions.
- Establish policies restricting access to areas likely, or known, to be affected by flash floods or other adverse weather conditions. Do not travel across flooded roadways.
- Properly design drainage systems, especially in areas where the terrain enhances water runoff and flooding. Changes in a watershed, such as timbering or surface mining, can increase water runoff and flooding.
- Examine drainage systems and features to ensure they are functioning and unobstructed.

Use the following links to view additional information:

<u>Preliminary Report</u>	<u>Fatal Alert</u>	<u>Final Report</u>
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Stay Safe!

2021 – Combined Coal and MNM Fatal

August 3

Powered Haulage

Texas

On Monday, August 3, 2021, a 62-year-old utility worker with over 14 years of mining experience was run over by a customer's haul truck while he was walking to his normal work area.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Ensure adequate illumination sufficient to provide safe working conditions.
- Communicate with mobile equipment operators and make eye contact to ensure they acknowledge your presence. Be aware of the location and traffic patterns of mobile equipment in your work area.
- Wear high visibility clothing when working around mobile equipment.
- Wear strobe lights near mobile equipment.
- Ensure traffic controls provide for safe movement of mobile equipment and are followed. Operate mobile equipment at reduced speeds in work areas.
- Stay clear of normal paths of travel for mobile equipment and train all persons to recognize work place hazards.

Use the following links to view additional information:

Preliminary Report	Fatal Alert	Final Report
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Stay Safe!

2021 – Combined Coal and MNM Fatal

August 11

Powered Haulage

West Virginia

On Monday, August 11, 2021, a 53-year-old contract truck driver with 10 years of experience was fatally injured while conducting a pre-operational examination of a truck. The rear wheels of the vehicle struck the truck driver when the truck rolled forward.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Block mobile equipment against motion. Adequately chock wheels or turn wheels into a bank.
- Use specially designed truck-wheel chocks of the appropriate size and material to hold the vehicle securely. Do not use lumber, cinder blocks, rocks, or other makeshift items to chock.
- Never position yourself in hazardous areas around equipment parked on a grade that is not blocked or secured from movement.
- Maintain the equipment's braking systems. Perform repairs and adjustments when necessary and follow the manufacturer's recommendations. Do not exceed the manufacturer's load limits.

Use the following links to view additional information:

Preliminary Report	Fatal Alert	Final Report
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Stay Safe!

2021 – Combined Coal and MNM Fatal

September 14

Falling Material

Idaho

On Tuesday, September 14, 2021 a 70-year-old person with no mining experience entered a trench to search for gold when the walls of the trench collapsed on him.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Stay clear of potentially unstable areas. Do not enter trenches if the trench walls are not properly supported for the full height or sloped to a safe angle.
- Do not abandon trenches or excavations without removing the potential of collapse by filling or sloping the walls to a stable angle.
- Carefully examine ground conditions before performing tasks near excavated embankments, trenches, or ditches.
- Follow OSHA Trenching and Excavation Safety Guidelines located at <https://www.osha.gov/sites/default/files/publications/osh2226.pdf>
- Train miners about the inherent dangers of trenching work.
- Keep visitors within sight and sound of a responsible person.

Use the following links to view additional information:

Preliminary Report	Fatal Alert	Final Report
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Stay Safe!

2021 – Combined Coal and MNM Fatal

September 15

Other

Arizona

On Wednesday, September 15, 2021, a 33-year-old contract welder was fatally injured when he crawled 40 feet into a 30-inch-diameter stainless-steel pipe. The victim was welding a joint from the outside of the pipe, and then entered the pipe to troubleshoot issues related to argon gas leakage. Coworkers found him unresponsive.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Remove dangerous working materials and gasses by means of a high volume of fresh airflow before entering confined spaces.
- Assess risks and hazards before beginning work activities to determine what personal protective equipment (PPE) and atmospheric testing is needed prior to entry and during work execution.
- Test atmospheres from a safe location with a calibrated gas monitor capable of detecting harmful and noxious gasses before entering and continuously while working in confined spaces.
- Designate a miner to maintain contact with the miner entering a confined space in the form of visual or voice contact, or signal lines.
- Ensure miners use the appropriate PPE, including dry, flame-retardant clothing, and respiratory protection equipment.
- Train miners to identify confined spaces and understand their associated hazards.

<i>Use the following links to view additional information:</i>		
Preliminary Report	Fatal Alert	Final Report

Stay Safe!

2021 – Combined Coal and MNM Fatal

September 21

Powered Haulage

New Mexico

On Wednesday, September 21, 2021, a 68-year-old contract truck driver with 20 years of experience was fatally injured while operating a haul truck. The victim was found lying in front of his truck near the edge of a haul road. The truck was upright and in the opposite direction of the expected route of travel

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Establish a site traffic plan to include traffic routes, speed limits, and access points. Train miners to follow all traffic controls.
- Conduct pre-operational examinations to identify and repair defects that may affect the safe operation of equipment before placing equipment into service.
- Operate mobile equipment at speeds consistent with conditions of roadways, grades, curves, and traffic.
- Maintain control while operating mobile equipment. Never exceed a vehicle's design capabilities, operating ranges, load limits, and safety features.
- Always wear a seat belt when operating mobile equipment.
- Never exit a moving vehicle. Remain in the seat with your seat belt secured.

Use the following links to view additional information:

Preliminary Report	Fatal Alert	Final Report
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Stay Safe!

2021 – Combined Coal and MNM Fatal

October 1

Handling Materials

Wisconsin

On Friday, October 1, 2021, a 25-year-old plant operator with 4 years experience was fatally injured when he entered a surge bin used as a feed hopper and was engulfed by material.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Design surge bins and feed hoppers to prevent blockages. Equip bins and hoppers with mechanical devices or other effective means of handling material, so miners are not required to enter or work inside bins and hoppers.
- Provide a safe means of access that allows miners to safely conduct tasks, such as removing large rocks and other material.
- Ensure handrails and gates are substantially constructed, properly secured, and free of defects.
- Don't stand on material stored in bins. Material stored in a bin can bridge over the hopper outlet, creating a hidden void beneath the material's surface.
- Establish policies and procedures to remove blockages in bins and hoppers safely. Train and ensure miners follow these policies and procedures.
- Wear an appropriate safety harness, lanyard, and lifeline. Ensure these are maintained in good condition and securely anchored. Assign another miner to constantly monitor and adjust the lifeline, as needed.

Use the following links to view additional information:

Preliminary Report	Fatal Alert	Final Report
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Stay Safe!

2021 – Combined Coal and MNM Fatal

October 19

Falling Material

Ohio

On Tuesday, October 19, 2021, a 58-year-old mechanic with over 17 years mining experience died when the bed of a rock truck fell on him while he was trying to remove a pin from the bed leveling cylinder on an articulating haul truck.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Securely block from motion machinery or equipment that has been raised, and properly use mechanical blocking devices. Ensure that blocking material is competent, substantial, and adequate to support and stabilize the load.
- Position yourself in a safe location and away from potential “red-zone” areas where you can be injured. Observe and follow all warning labels and signs on equipment.
- Never work under an unsupported or inadequately supported load and never depend on hydraulics to support a load.
- Outfit haul trucks with a dump box lock bar that mechanically blocks the bed from coming down.
- Develop and follow safe work procedures.
- Always consult and follow the manufacturer’s recommended safe work procedures for the maintenance task.

Use the following links to view additional information:

Preliminary Report	Fatal Alert	Final Report
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Stay Safe!

2021 – Combined Coal and MNM Fatal

October 20

Machinery

Texas

On Wednesday, October 20, 2021, a 50-year-old welder with over 12 years experience died after being struck by the excavator bucket while assisting in repositioning a hopper.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Never position yourself between mobile equipment and a stationary object.
- Do not work in pinch points where inadvertent movement could cause injury.
- Carefully inspect and secure the pins in an excavator's bucket before each use.
- Before beginning work, analyze all tasks, establish safe work procedures, train miners, and eliminate hazards. Be alert for hazards that may be created while the work is performed.
- Identify and apply methods to protect personnel from hazards associated with the work performed.
- Monitor all employees to ensure safe work procedures, including safe work positioning, are followed.

<i>Use the following links to view additional information:</i>		
Preliminary Report	Fatal Alert	Final Report

Stay Safe!

2021 – Combined Coal and MNM Fatal

November 1

Powered Haulage

West Virginia

On Monday, November 1, 2021, a 49-year-old Assistant Chief Electrician with 25 years mining experience lost control of a four passenger rubber-tired personnel carrier while traveling down a slope. The vehicle crashed at the bottom of the slope pinning the victim underneath.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices: Fatal Alert is not currently available.

- Immediately remove equipment from service when defects affecting safety are found.
- Conduct adequate preoperational checks and weekly examinations of mobile electrical equipment. Correct any defects affecting safety before operating mobile equipment.
- Maintain control and stay alert when operating mobile equipment.
- Maintain roadways free of excessive water, mud, and other conditions that impact an equipment operator's ability to control mobile equipment.
- Operate mobile equipment at speeds consistent with the conditions of roadways, grades, clearance, and visibility.
- Never rely on Regenerative Braking as a substitute for keeping brakes properly maintained.

Use the following links to view additional information:

Preliminary Report	Fatal Alert	Final Report
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Stay Safe!

2021 – Combined Coal and MNM Fatal

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. Currently, there is one 2021 mining accident pending chargeability determination.

The following are various links to [Safety Training Materials](#) on MSHA's website.

- Toolbox Safety Talks: <https://arlweb.msha.gov/epd/efsms/toolbox/>
- Mobile Equipment Safety: <https://www.msha.gov/training-education/safety-and-health-materials/safety-topic-mobile-equipment-surface-mines>
- Conveyor Systems: <https://www.msha.gov/training-education/safety-and-health-materials/safety-topic-conveyor-systems>
- Impoundments and Dams: <https://www.msha.gov/training-education/safety-and-health-materials/safety-topic-impoundments-and-dams>
- Seat Belts: <https://www.msha.gov/training-education/safety-and-health-materials/safety-topic-seat-belt-usage>
- Guarding: <https://www.msha.gov/guarding-slide-presentation-guarding-conveyor-belts-metal-and-nonmetal-mines>
- Training Videos: <https://www.msha.gov/msha-training-videos>
- Another very helpful item is MSHA's Data Retrieval System. With your Mine ID number, you can research the violation history and accident history of the mine. This is great site-specific information to use during annual refresher. When you type in the ID number, it will pop up a suggestion; always click on the suggestion instead of clicking enter. <https://www.msha.gov/mine-data-retrieval-system>

Stay Safe!