FAI-6886164-1

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION

Underground
(Coal)

Fatal Electrical Accident
September 1, 2022

Coalburg Tunnel Mine
Kanawha Eagle Mining, LLC
Winifrede, Kanawha County, West Virginia
ID No. 46-08993

Accident Investigators

Jamie Shufflebarger
Mine Safety and Health Specialist

Joshua McNeely
Mine Safety and Health Specialist

Originating Office
Mine Safety and Health Administration
Beckley District
1293 Airport Road
Beaver, West Virginia 25813
Vernus Sturgill, District Manager

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OVERVIEW

On September 1, 2022, at approximately 4:40 p.m., Kristofer Ball, a 33 year-old roof bolter with approximately 12 years of mining experience, was fatally injured when he contacted an energized 480-volt trailing cable.

The accident occurred because the mine operator did not: 1) fully protect the roof bolting machine's trailing cable, and 2) provide adequate task training for handling the roof bolting machine's trailing cable.

GENERAL INFORMATION

Kanawha Eagle Mining, LLC (Kanawha Eagle) owns and operates the Coalburg Tunnel Mine. This is an underground coal mine located in Winifrede, Kanawha County, West Virginia. Coalburg Tunnel Mine employs 19 miners and operates three eight-hour shifts per day, five days per week. The mine has no active mechanized mining units and does not produce coal. The mine operator transports coal by overland belt conveyor from the Winchester Peerless Rachel Mine to the Coalburg Tunnel Mine. Haul trucks transport the coal from the Coalburg Tunnel Mine to the South Hollow Preparation Plant.

The principal management officials at Coalburg Tunnel Mine at the time of the accident were:

Donald Stallings	General Mine Foreman
Richard Turner	Chief Electrician
Christopher Williams	Director of Safety

The Mine Safety and Health Administration (MSHA) completed the last regular safety and health inspection on June 29, 2022. A regular safety and health inspection was ongoing at the time of the accident. However, no MSHA inspectors were on-site at the time of the accident. The 2021 non-fatal days lost incident rate for Coalburg Tunnel Mine was zero, compared to the national average of 3.08 for mines of this type.

DESCRIPTION OF THE ACCIDENT

On September 1, 2022, at 2:00 p.m., Ball began his shift at the Coalburg Tunnel Mine. Kanawha Eagle contracted Jenmar Enterprises Inc. (Jenmar) to assist with the installation of supplemental roof support and use glue (resin) to reinforce the mine roof in the track entry after a recent roof fall in the area. Ball, along with Shannon Gartin, Crew Leader for Jenmar; Tracy Adams, Roof Bolter for Jenmar; and Kevin Gibson and Arthur Muncy Jr., General Laborers for Jenmar, met with Stallings and discussed plans for work to be conducted during the shift. Ball, Gibson, Adams, and Muncy traveled on the No. 956 rail mounted personnel carrier to the No. 32 crosscut to install supplemental roof support in the track entry. The miners used the No. 709 locomotive to pull the roof bolting machine's trailing cable slack from the No. 6 distribution box. The No. 6 distribution box was located at the No. 29 crosscut of the No. 2 belt line. According to interviews, Ball tied the trailing cable to the No. 709 locomotive's canopy leg using a rope hanger comprised of a nylon web cloth with a single metal S-hook fastened to the end. While pulling the trailing cable, the tension on the rope hanger caused the metal S-hook to puncture the trailing cable's outer jacket and inner conductor insulation of the red phase lead (one of three energized wires that run through the trailing cable).

At approximately 4:10 p.m., Ball and Gartin finished pulling the trailing cable slack. Gartin told Ball to take a break while Gartin unhooked the trailing cable from the No. 709 locomotive on the end nearest the roof bolting machine. According to interviews, at approximately 4:40 p.m., while sitting in the No. 709 locomotive's operator's seat, Ball reached out from under the canopy and contacted the energized metal S-hook with his left hand. Gartin was walking down the operator's side of the No. 709 locomotive when he noticed Ball in distress. Gartin called out to Muncy, who was near the No. 6 distribution box, to deenergize the trailing cable. After Muncy deenergized the roof bolting machine, Gartin removed Ball's hand from the trailing cable and began cardiopulmonary resuscitation (CPR). Adams and Gibson, who were passing the No. 3 distribution box, learned of the accident, and proceeded to the accident scene. Gibson took over administering CPR while Adams called outside to Cecil Mullins, Dispatcher, to notify him of the accident and to ask him to call 911. Adams, Gibson, Gartin, and Muncy transported Ball to the surface on the No. 956 rail mounted personnel carrier. At 4:55 p.m., Ball arrived on the surface where Alan Williams, Manager of Safety, took over CPR until 5:02 p.m. when Emergency Medical Technicians with the Kanawha County Ambulance Authority arrived at the mine. Cody Fluharty, Physician for Region 3-4 Medical Command, gave the order to cease resuscitation efforts over the phone and pronounced Ball dead at 5:10 p.m.

INVESTIGATION OF THE ACCIDENT

On September 1, 2022, at 4:41 p.m., A. Williams called the Department of Labor National Contact Center (DOLNCC). The DOLNCC contacted Joseph Bias, Supervisory Mine Safety and

Health Inspector, who contacted James Preece, Assistant District Manager, and Joshua McNeely, Mine Safety and Health Specialist. Bias contacted Richard Cregger and Andrew Goad, Mine Safety and Health Inspectors, and sent them to the mine with McNeely. James Preece contacted Joseph Presley, Supervisory Mine Safety and Health Specialist, who contacted Jamie Shufflebarger, Mine Safety and Health Specialist, and sent them to the mine. David Mandeville, District Manager, assigned Shufflebarger as the lead accident investigator.

At 7:15 p.m., Presley and Shufflebarger arrived at the mine and met with Bias. Shufflebarger issued an order under the provisions of Section 103(k) of the Mine Act to assure the safety of the miners and preservation of evidence. MSHA's accident investigation team met with inspectors from West Virginia Office of Miners' Health, Safety and Training (WVOMHST) to discuss the investigation. In conjunction with the WVOMHST, the accident investigation team conducted an examination of the accident scene, interviewed miners, contractors, and management, and reviewed conditions and work procedures relevant to the accident. See Appendix A for a list of persons who participated in the investigation.

DISCUSSION

Location of the Accident

The accident occurred at the No. 32 crosscut of the No. 2 belt line in the track entry (see Appendix B).

Equipment Involved

The No. 709 locomotive involved in the accident was a Brookville 12-Ton Locomotive Model 1260B. Investigators tested the No. 709 locomotive and found no defects that contributed to the accident. The roof bolting machine involved in the accident was a Fletcher DDR-13-A Roof Bolter. Investigators tested the roof bolting machine and found no defects that contributed to the accident.

The trailing cable supplying power to the roof bolting machine was a Tiger Brand No. 2 GGC 480-Volt Cable. Investigators examined all 700 feet of the trailing cable and found no other damaged areas besides that caused by the metal S-hook. The metal S-hook punctured the trailing cable's outer jacket and inner conductor insulation of the red phase lead, which contributed to the accident (see Appendix C). Cable pull straps were available for use at the time of the accident, however, these straps were not used (see Appendix D). Investigators determined that the red phase lead was energized with 290 volts, phase to ground (voltage measured between a phase lead and the neutral ground), at the time of the accident.

Investigators also tested the entirety of the electrical circuit originating at the No. 2 belt line power center through the No. 3 distribution box to the No. 6 distribution box, which was powering the roof bolting machine. They found no defects in the electrical circuit that contributed to the accident.

Training and Experience

Ball had approximately 12 years of mining experience, with five weeks of experience at this mine roof bolting in the track entry. On July 25, 2022, Ball received experienced miner training and task training on the Fletcher DDR-13-A Roof Bolter, and on July 26, 2022, Ball received

task training on the Brookville 12-Ton Locomotive Model 1260B. The mine operator provided two cable pull straps that were located on top of the No. 709 locomotive at the time of the accident but were not used. According to interviews, none of the miners had been trained on how to use the cable pull straps or told that metal hooks should not be used to pull the trailing cables.

Ball's task training did not include proper handling of the roof bolting machine's trailing cable using pull straps. Investigators determined that this lack of training contributed to the accident.

Examinations

Nathan Williams, Electrician, performed the last electrical examination of the Fletcher DDR-13-A Roof Bolter on August 24, 2022. The examination record did not identify anything that contributed to the accident.

Turner performed the last electrical examination of the No. 709 locomotive on August 22, 2022. The examination record did not identify anything that contributed to the accident.

ROOT CAUSE ANAYLISIS

The accident investigation team conducted an analysis to identify the underlying causes of the accident. The team identified the following root causes, and the mine operator implemented the corresponding corrective actions to prevent a recurrence.

1. Root Cause: The accident occurred because the mine operator did not fully protect the roof bolting machine's trailing cable.

   Corrective Action: The mine operator developed and implemented a new written procedure for pulling trailing cables with a more suitable type of non-metallic pull rope, such as a cable pull strap, which fully protects the cable. The mine operator trained all miners on this new procedure.

2. Root Cause: The mine operator did not provide adequate task training for handling the roof bolting machine's trailing cable.

   Corrective Action: The mine operator revised their training plan to include the new written procedure for pulling trailing cables and will provide this training to all miners before they handle energized cables.

CONCLUSION

On September 1, 2022, at approximately 4:40 p.m., Kristofer Ball, a 33 year-old roof bolter with approximately 12 years of mining experience, was fatally injured when he contacted an energized 480-volt trailing cable.

The accident occurred because the mine operator did not: 1) fully protect the roof bolting machine's trailing cable, and 2) provide adequate task training for handling the roof bolting machine's trailing cable.

Approved By:

_____ _____

Vernus Sturgill
District Manager Date

ENFORCEMENT ACTIONS

1. A 103(k) order was issued to Kanawha Eagle Mining, LLC.

   A fatal accident occurred on September 1, 2022, at approximately 4:40 p.m. This order is being issued under the authority of the Federal Mine Safety and Health Act of 1977, under Section 103(k) to insure the safety of all persons at the mine and requires the operator to obtain the approval of an authorized representative of MSHA of any plan to recover any person in the mine or to recover the mine or affected area. This order prohibits any activity in the affected area. The operator is reminded of the obligation to preserve all evidence that would aid in investigating the cause or causes of the accident in accordance with 30 CFR 50.12.

2. A 104(a) citation was issued to was issued to Kanawha Eagle Mining, LLC for a violation of 30 CFR 75.517.

   On September 1, 2022, a fatal accident occurred when a roof bolter contacted an energized 480-volt trailing cable. The mine operator did not fully protect the Fletcher DDR-13-A roof bolting machine's energized 480-volt AC cable from damage. A rope hanger, comprised of a nylon web cloth with a single metal S-shaped hook fastened to the end, was used to pull up the excess trailing cable and secured it to the No. 709 Brookville 12-Ton Locomotive Model 1260B's canopy. The metal S-shaped hook punctured the outer jacket of the trailing cable and inner conductor insulation of the red phase lead. The roof bolter contacted the energized metal S-shaped hook and received a fatal electrical shock.

3. A 104(d)(1) citation was issued to Kanawha Eagle Mining, LLC for violation of 30 CFR 48.7(a)(1).

   On September 1, 2022, a fatal accident occurred when a roof bolter contacted an energized 480-volt trailing cable. A rope hanger, comprised of a nylon web cloth with a single metal S-shaped hook fastened to the end, was used to pull up the excess trailing cable and secured it to the No. 709 Brookville 12-Ton Locomotive Model 1260B's canopy. The metal S-shaped hook punctured the outer jacket of the trailing cable and inner conductor insulation of the red phase lead. The roof bolter contacted the energized metal S-shaped hook and received a fatal electrical shock. Cable pull straps were available for use at the time of the accident, however, these straps were not used. The mine operator did not provide adequate task training for handling the roof bolting machine's trailing cable. The mine operator engaged in aggravated conduct constituting more than ordinary negligence by not training any of the miners on the proper use of cable pull straps and the hazards of using a rope hanger with a metallic hook. This violation is an unwarrantable failure to comply with a mandatory standard.

APPENDIX A – Persons Participating in the Investigation

Kanawha Eagle Mining, LLC

Douglas Fala	Vice President of Kanawha Valley Operations
Dewayne Pinson	Vice President of Maintenance
Todd Myers	Senior Vice President of Risk Management & Associate General Counsel
Jonathan Ellis	Outside Counsel
Larry Adkins	Director of Underground Maintenance
Christopher Williams	Director of Safety
Alan Williams	Manager of Safety
Glen Stover	Maintenance Manager
Donald Stallings	General Mine Foreman
Richard Turner	Chief Electrician
Nathan Williams	Electrician
Cecil Mullins	Dispatcher

Jenmar Enterprises Inc.

Shannon Gartin	Crew Leader
Tracy Adams	Roof Bolter
Kevin Gibson	General Laborer
Arthur Muncy Jr.	General Laborer

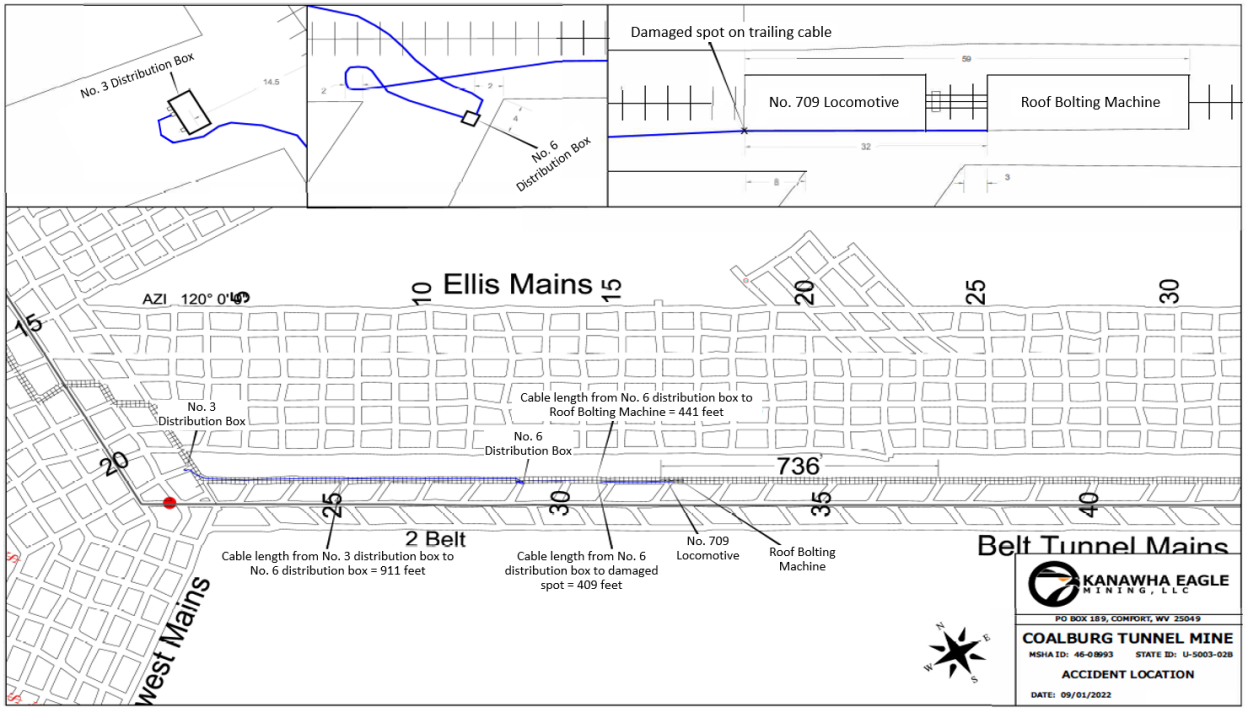
West Virginia Office of Miners' Health, Safety and Training

Eugene White	Director
William Stewart	Roof Control Supervisor
McKennis Browning	Inspector at Large
Charles Moles	Assistant Inspector at Large
Jeffory Davis	Chief Electrical Inspector
Travis Dorsey	Electrical Specialist
Jeremy Ball	District Inspector

Mine Safety and Health Administration

Joseph Presley	Supervisory Mine Safety and Health Specialist
Joshua McNeely	Mine Safety and Health Specialist
Jamie Shufflebarger	Mine Safety and Health Specialist

APPENDIX B – Drawing of Accident Scene



NOT TO SCALE

APPENDIX C – Trailing Cable Punctured by Metal S-Hook

APPENDIX D – Cable Pull Strap