CAI-2013-05

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

COAL MINE SAFETY AND HEALTH

REPORT OF INVESTIGATION

Underground Coal Mine

Fatal Powered Haulage Accident
February 12, 2013

Loveridge #22
Consolidation Coal Company
I.D. No. 46-01433

Accident Investigators

Richard Vincent
Coal Mine Health and Safety Inspector

C. W. Moore
Mining Engineer – Ventilation

Originating Office
Mine Safety and Health Administration
District 3
604 Cheat Road
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Bob E. Cornett, District Manager

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PHOTO OF ACCIDENT SCENE

OVERVIEW

On February 12, 2013, at approximately 9:35 p.m., Glen Clutter (victim), a 51-year-old general inside laborer and acting motorman, with 31 years of mining experience sustained fatal injuries. A slate bar struck the victim as he attempted to re-rail a supply car. Clutter and Scott Shay, General Inside Laborer, were attempting to re-rail the first of four cars that had de-railed. The car shifted and the slate bar struck Clutter on the right side of his face and on the forehead.

The accident was caused by the failure to assure the supply car was secured or blocked against motion before it was lifted, failure to perform adequate task training, failure to maintain the track, and failure to perform an adequate preshift examination.

GENERAL INFORMATION

The Loveridge No. 22 Mine, I.D. No. 46-01433, is located near Mannington, Marion County, West Virginia. Consolidation Coal Company (Consol), is a subsidiary of Consol Energy, Inc. The mine accesses the Pittsburgh No. 8 coal seam by three portals: the Sugar Run and the Miracle Run Portals near Fairview, West Virginia, and the Metz Portal near Mannington, West Virginia. Most miners enter the mine vial elevator at the Metz Portal.

Coal is mined from the 84-inch coal seam by four continuous mining machine sections and one longwall section. The Loveridge mine employs 601 underground employees and 91 surface employees. The average production is approximately 18,200 tons per day. The mine typically operates eight-hour shifts, three shifts a day, and six days a week. The mine is ventilated with six main mine fans and one bleeder fan. Maintenance is conducted as needed. Coal is transported from active workings to the surface at Sugar Run by a conveyor belt system. Diesel, battery, and trolley powered rail-mounted vehicles are used to transport supplies and mine personnel. The mine liberates approximately 11 million cubic feet of methane every 24 hours.

The principal officials for the Loveridge No.22 Mine were:

Brian Dellhoma..... Superintendent, Loveridge Mine
Jim Zuchowski..... Assistant Superintendent
Wayne Conaway ..... Safety Supervisor, Loveridge Mine

An MSHA Health and Safety Inspection (E01) was completed on December 31, 2012. Another E01 investigation was ongoing at the time of the accident. The

Nonfatal Days Lost (NFDL) incidence rate during 2012 was 1.44 compared to the national average of 3.24.

DESCRIPTION OF ACCIDENT

On February 12, 2013, the afternoon shift started at 4:00 p.m. Kevin Carter, Shift Foreman (Sugar Run) assigned Clutter and Scott Shay, General Inside Laborers, to transport supplies from Sugar Run to Miracle Run. Clutter and Shay entered the mine at the Miracle Run Portal shortly after 4:00 p.m. They each took a locomotive (motor) and travelled from Miracle Run to Sugar Run. Shay operated the No. 55B motor (lead) and Clutter was operating the No. 51 motor (tail). They were delayed at No. 55 block near the Sugar Run Portal bottom due to water over the track. Upon arrival at Sugar Run, Clutter and Shay spoke with Tim Shaffer, Shift Foreman (Sugar Run). Shaffer told them to transport a trip of supplies needed for the Metz Portal to Miracle Run and bring back empty supply cars. The Metz motor crews would then take these supplies from Miracle Run to the Metz Portal. Shaffer instructed Clutter and Shay to evaluate the weight of the contents of the supply cars and determine if it was possible to transport everything in one trip. Clutter and Shay decided the supplies needed taken in two trips of four cars.

The slope crew dropped the first four cars down the tail track. Clutter and Shay retrieved the four cars on Sugar Run bottom. Before leaving, they spoke with Shaffer again to decide where to place the empty supply cars when they returned. Shaffer instructed them to place the empty supply cars in the crossover entry. Clutter and Shay coupled the first trip and proceeded to Miracle Run where they transferred the supplies to the Metz supply motor crew. There were no issues encountered on the first trip. They then picked up six empty supply cars to take back to Sugar Run. Upon returning to Sugar Run, they put the empty cars in the crossover and waited for the slope supply crew to drop the cars for their second trip. The slope crew dropped the other cars into the mine. Clutter and Shay discussed where to place the cars on the Miracle Run side. It was decided to place the cars from the second trip in the 60-pound spur at Miracle Run. They believed the 60-pound track spur was more level than the loaded track, and Clutter was concerned the trip could get away from them due to its weight and placing the trip in the spur with one motor. Clutter and Shay hooked onto the supplies and proceeded towards Miracle Run.

The No. 55B motor was the lead motor heading toward Miracle Run. The trip was composed of four longwall shield carriers. The carrier behind the No. 55B motor contained a longwall tailgate drive motor, the next carrier contained a longwall shearer drum and ranging arm, the third carrier contained longwall hydraulic hoses, and the last carrier contained electrical cables and reels. The

No. 51 motor completed the trip. Just before reaching the Miracle Run bottom, the cars behind the No. 55B motor derailed between the No. 124 and 126 blocks. Clutter and Shay evaluated the derailment and decided to put the cars back on the track one at a time beginning with the end of the first car adjacent to the No. 55B motor (See Appendix I). They decided to use cribbing materials and airbags. Clutter and Shay began by separating the cars to make room for the airbag. Working on the "wire side" of the track, the air hose was extended and the airbag was placed under the coupler with the intention of lifting the car straight up. They placed the air bag on the mine floor and placed cribbing between the airbag and the coupler. When the car was lifted with the airbag, the trucks (wheels) were turned and the flange of the wheels would not clear the top of the rail. A slate bar was used to straighten the wheels to align them with the rail and force the flange over the rail. Shay stated that when Clutter barred the wheel, the car suddenly shifted approximately 3 to 4 inches toward the wire-side with "tremendous force." When the car shifted, it contacted the slate bar, causing it to strike Clutter on the right side of his face and forehead. Shay asked Clutter if he was okay and received no response. Shay checked Clutter and saw that he was seriously injured and called Jack Saurborn, Dispatcher, for help. Saurborn radioed for anyone in the area to provide assistance and called for an ambulance.

Rocky Polce, Maintenance Foreman, arrived first at the accident scene. Shortly thereafter, Ernie Payne and John Nicholson, Mechanics, and Bob McBee, General Inside Laborer, also responded. First aid was administered and the victim was placed on a backboard and transported to the Miracle Run Bottom. While en route, Polce called the dispatcher and instructed him to call for a life flight. Clutter was taken to Miracle Run bottom, transferred to a mobile cart, placed in the elevator, and transported to the surface. The Grant Town Fire Department arrived approximately three minutes after Clutter arrived on the surface. Clutter was transferred to an ambulance and taken to a helicopter. Clutter was taken to Ruby Memorial Hospital where he was pronounced dead at 3:27 p.m. on February 14, 2013.

INVESTIGATION OF THE ACCIDENT

Consol notified the MSHA call center at 10:10 p.m. on February 12, 2013, that a serious accident had occurred at the mine. A non-contributing citation was issued for a violation of § 50.10 because MSHA was not notified at once, without delay, and within 15 minutes.

The call center notified John Hayes, Ventilation Supervisor at 10:14 p.m. who notified Greg Fetty, Staff Assistant. Fetty called the mine and verbally issued a 103(j) order at approximately 10:30 p.m. to ensure the safety and health of miners and preserve the accident scene until an investigation could be completed.

Richard Vincent, Coal Mine Safety and Health Inspector, traveled to the mine to begin the investigation.

Upon arriving at the mine, mine management briefed Vincent regarding the circumstances of the accident. Vincent traveled to the accident site and began the investigation in conjunction with the West Virginia Office of Miners' Health, Safety, and Training (WVOMHST), mine management, and the United Mine Workers of America (UMWA). Photographs, measurements, and sketches were made of the area.

The accident investigation team assembled on February 22, 2013, and conducted interviews of persons having knowledge of the accident. A list of those persons who participated in the investigation is contained in Appendix A of this report. The team returned to the accident site periodically to continue the investigation, obtain measurements, map the area, and obtain photographs.

DISCUSSION

Accident Location

The supply trip derailed between the No. 124 and No. 126 blocks of the Main West track haulage, developed in March 1973. The accident investigation revealed the track rail rolled out for a distance of approximately 120 feet on the wire side. Rock dust, dirt, dried mud and other loose material covered most of the track ties and rail spikes in the area where the accident occurred. The rail (85 pound) had deteriorated from years of exposure to the elements. The bottom flange of the rail had rusted and weakened. A citation that did not contribute to the accident was issued to the mine operator for failure to maintain the track.

Examinations

A pre-shift examination was required in the haulage way where the accident occurred because persons were scheduled to work or travel during the oncoming shift. The mine operator conducted an examination by travelling through the area in a track-mounted vehicle. However, the examination noted no deficiencies with the track or its components.

The accident investigation revealed the track and its components were not maintained to prevent a derailment. Additionally, the mine operator was required to examine the remaining portions of underground rail haulage "on foot" and record and correct any deficiencies. A noncontributory citation was issued to the mine operator for failure to conduct an adequate examination of the track.

Equipment

The equipment involved included a 15-ton capacity General Electric locomotive (Company No. 51) and a Goodman 15-ton capacity locomotive (No. 55B), four Irwin shield carrier cars (Nos. 8607, 09-16349, 8608 and 8433), and a 74-ton capacity pneumatic air bag. These locomotives, in conjunction with the shield carriers, were used to transport supplies and equipment throughout the mine. The shield carriers were coupled to one another and to the No. 51 and No. 55B locomotive by the use of jennies and automatic couplers. When checked, there were no deficiencies on the locomotives or carrier cars contributing to this accident. A review of the mine operator's weekly electrical examination records revealed that no deficiencies existed with either motor. The pneumatic air bag was inflated and functioned as intended.

Air bag and Cribbing

The air bag involved in the accident was a Savatech Corporation high capacity lifting air bag (36" X 36", 74.1 ton rating). The airbag is a combination of Kevlar, rubber and other materials. Although the air bag is rated to lift 74.1 tons, the capacity of the air bag decreases as the airbag is inflated. The 36" X 36" air bag inflates to a maximum height of 20 inches, which decreases the lifting capacity to slightly over 20 tons.

To begin use, the air bag is placed on a flat surface. The manufacturer recommends building a foundation between the ground and the airbag, leaving just enough distance between the object being lifted and the airbag to allow it to be inserted when the distance between the object being lifted and the airbag exceeds 2 ¾". This recommendation was not followed. Cribs were placed between the airbag and the object being lifted, rather than between the ground and the airbag.

The air bag may be inflated using compressed air, from either a bottled source or an air compressor. The air bag involved in the accident was inflated using the locomotive's air compressor. Airflow (inflation and deflation) and air pressure are regulated through a controller provided by the manufacturer. The supply line (yellow) is connected between the air source and the controller. Up to four distribution lines (blue, green, grey or red) are connected between the controller and the air bag. Supply lines are either 20 or 35 feet in length, 5/8" outside diameter, and have a bursting pressure of 1,000 pounds per square inch (psi). All connections are made using double guard couplers, which cannot be disconnected when the bag is pressurized.

The maximum working air pressure is 118 psi and is regulated through the controller. One air bag may be placed on top of another to increase lifting height,

but this does not increase lifting capacity. The manufacturer recommends that on each side of the air bag foundation, additional safety supports, such as cribbing, matting or blocking, (or combination of all) should be used, progressively during lifting. This prevents load-shift failure or lift bag failure. This also reduces the height, from which the load would fall in case of air bag or inflation system malfunction or failure. This recommendation was not followed in that the load was not blocked as it was raised. The condition of the track did not increase the hazards of the rerailing process.

CONSOL's re-railing procedures

The mine operator had written standard operating procedures for re-railing equipment using airbags. These procedures are very similar to the recommendations of the manufacturer. The procedures were not followed in that Page 14, Item 1a6 states "never place blocking material on top of air bag" and Page 16, Item 1f states, "follow load with cribbing or blocking only where vertical and no horizontal motion is desired."

Training

Clutter had over 31 years of underground mining experience. The victim was last task trained on February 1, 2012, and given annual re-training on January 17, 2013.

Shay was given annual retraining on January 15, 2013. He was tasked trained to operate the locomotives at the mine several times between 2011 and 2012, with the last training being conducted on April 6, 2012.

A review of the annual training records of the miners involved resulted in no deficiencies. However, the persons interviewed stated that the task training for operating a motor did not include instruction on the proper use of airbags when re-railing derailed cars.

ROOT CAUSE ANALYSIS

An analysis was conducted to identify the most basic causes of the accident that were correctable through management controls. During this analysis, root causes were identified that, if eliminated would have either prevented the accident or mitigated its consequences.

Listed below are root causes identified during the analysis and their corresponding corrective actions implemented to prevent a recurrence of the accident.

Root Cause
The operator did not train the supply motormen on the task of using air bags and blocking when re-railing track mounted equipment.

Corrective Action
The operator developed a written procedure to re-rail track mounted equipment. The operator trained all motormen in this new procedure which included the proper procedures for using air bags and blocking to re-rail track mounted equipment.

Root Cause
The mine operator's policies and procedures did not ensure that safe work policies and procedures were followed regarding the proper use of airbags and blocking raised equipment when re-railing derailed cars.

Corrective Action
A Notice to Provide a Safeguard issued to the mine operator requires each locomotive operator to block and secure raised cars. Abatement of the Safeguard notice included training each locomotive operator in the requirements of the safeguard.

Root Cause
The mine operator did not maintain the track to prevent a derailment between the No. 124 and No. 126 blocks of the Main West Haulage. The wire-side rail rolled out for a distance of approximately 112 feet and there were no steel ties. The track was spiked to wooden track ties and the rail was rusted and deteriorated.

Corrective Action
The operator has submitted a plan to the District Manager that requires the operator to perform enhanced examinations from 9-South Mains to the St. Leo

haulage. The purpose of the examinations will be to detect any loose ties, deteriorated rail, loose material under the rails, and other track defects.

Root Cause

The operator did not perform an adequate pre-shift examination of the track. This could have prevented the derailment because the track deficiencies would have been repaired. The Main West haulage between the No. 124 and the No. 126 block had missing track ties. When a supply crew traveled across this area, 112 feet of rail rolled out on the wire side of the track.

Corrective Action

All pre-shift examiners have been retrained on the requirements for pre-shift examinations and on how to properly examine the track during pre-shift examinations. Additionally, 30 CFR § 75.363(e) requires the mine operator to review with mine examiners, on a quarterly basis, citations and orders issued in areas where preshift, supplemental, on-shift, and weekly examinations are required.

CONCLUSION

The accident was caused by the failure to assure the supply car was secured or blocked against motion before it was lifted, failure to perform adequate task training, failure to maintain the track, and failure to perform an adequate preshift examination.

Bob E. Cornett
District Manager

9-4-2013
Date

ENFORCEMENT ACTIONS

Section 103 (k) Order No. 8044071 was issued on February 12, 2013 to Consolidation Coal Company, Loveridge No. 22 Mine: A serious accident has occurred at 126 block on the Main West track haulage. All persons are prohibited from entering the area to protect and preserve the accident scene.

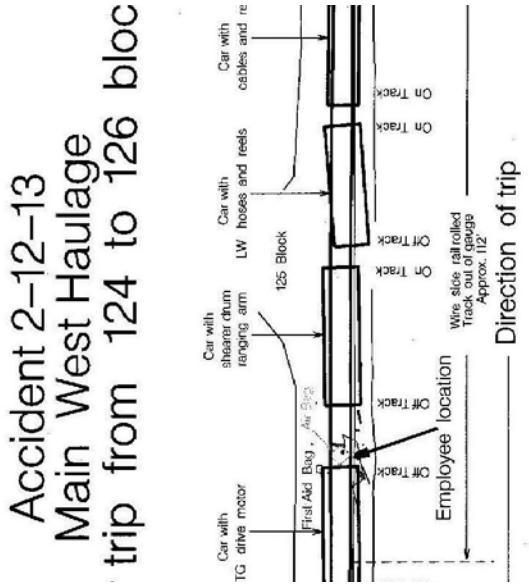
A 314(b) Safeguard was issued requiring the mine operator to utilize the following safety precautions while re-railing track mounted equipment. A fatal accident occurred at this mine on February 12, 2013, when a slate bar struck a miner attempting to re-rail a flat car transporting a longwall tailgate drive motor. The miner and a co-worker attempted to raise the flatcar with a lifting air bag. When the miners inflated the air bag, the flange on the flatcar wheel (front truck set, wire side) did not clear the top of the rail when the miners inflated the air bag. When the miners attempted to slew the flat car onto the track with a slate bar, the flat car shifted, causing the slate bar to fly back and strike the victim. Re-railing track-mounted equipment creates a struck-by or crushing hazard to miners due to potential shifting of unsecured equipment which can result in a serious or fatal injury. This is a Notice to Provide Safeguard requiring the mine operator to utilize the following procedures when attempting to re-rail any piece of rolling stock:
(1) The object being raised shall be secured in a manner to prevent it from rolling on the rail by using a suitable chain, wheel chocks or other device capable of preventing movement;
(2) The lifting air bag or jack shall be rated for the load being lifted;
(3) The lifting air bag, if used, shall only be used in conjunction with a pneumatic controller, which shall be operated at a distance of at least 1 ½ times the length of the tether away from the object being raised.
(4) The lifting air bag or jack shall be used on a solid and level foundation;
(5) If using a lifting air bag, the distance from the top of the deflated air bag to the object being lifted shall not exceed 2 ¾ inches;
(6) Materials such as cribbing shall not be placed between the air bag or jack and the object being lifted;
(7) Cribbing or blocking shall be installed to prevent unintended shifting or movement of the object being raised. Cribbing or blocking materials shall not be installed or removed while the air bag is inflating or deflating or while the jack is being raised or lowered; and
(8) Each of the requirements listed above shall remain in place while desired horizontal movement for re-railing occurs.

A 104(a) Citation was issued for a violation of 75.1726(b). On February 12, 2013, an accident occurred at this mine that resulted in fatal injuries to one miner. The accident investigation determined a failure to securely block raised equipment

occurred to a supply motorman when the supply car he was attempting to re-rail shifted causing the slate bar that he was using under the supply car to be propelled back at him when the weight of the car shifted. The supply car was raised with an air bag, however the sides of the car were not blocked allowing the car to move.

A 104(a) Citation was issued for a violation of 30 CFR 48.7. On February 12, 2013, an accident occurred at this mine that resulted in fatal injuries to one miner. The supply motormen have not received adequate task training in the use of air bags and blocking when re-railing track mounted equipment. This mine has had one fatal and one permanently disabling injuries in the recent past from shifting/falling equipment while being re-railed.

APPENDIX I - SKETCH OF ACCIDENT SCENE



APPENDIX II - Victim Information

Accident Investigation Data - Victim Information
Event Number: 6 2 5 6 9 7 6

U.S. Department of Labor
Mine Safety and Health Administration

Victim Information: 1

1. Name of Injured/Ill Employee:	2. Sex	3. Victim's Age	4. Degree of Injury:
Glen L. Clutter	*M*	*51*	*01 Fatal*

5. Date(MM/DD/YY) and Time(24 Hr.) Of Death:	6. Date and Time Started:
a. Date: 02/14/2013 b.Time: 15:27	*a. Date: 02/12/2013 b.Time: 16:00*

7. Regular Job Title:	8. Work Activity when Injured:	9. Was this work activity part of regular job?
016 General Inside Laborer	*060 Supply Motorman*	Yes X No

10. Experience:	Years	Weeks	Days		Years	Weeks	Days		Years	Weeks	Days		Years	Weeks	Days
a. This Work Activity:	*9*	*20*	*2*	b. Regular Job Title:	*9*	*20*	*2*	c: This Mine:	*9*	*20*	*2*	d. Total Mining:	*31*	*50*	*2*

11. What Directly Inflicted Injury or Illness?	12. Nature of Injury or Illness:
048 Slate Bar	*140 Severe Brain Injury*

13. Training Deficiencies:
Hazard: | New/Newly-Employed Experienced Miner: | Annual: | Task: X

14. Company of Employment: (If different from production operator)
Operator
Independent Contractor ID: (if applicable)

15. On-site Emergency Medical Treatment:
Not Applicable: | First-Aid: X | CPR: | EMT: | Medical Professional: | None:

16. Part 50 Document Control Number: (form 7000-1) *220130500008*
17. Union Affiliation of Victim: *2555* *United Mine Workers of Amer.*

APPENDIX III – Persons Participating in the Investigation

Listed below are persons furnishing information and/or were present during the investigation:

Consolidation Coal Company/Consol Energy

Todd Moore	Corporate Safety Director
Brian Stock	Manager of Safety – Ohio Valley Division
Brian Dellhoma	Superintendent
Wayne Conaway	Safety Supervisor
Rocky Polce	Maintenance Foreman
David Haught	Safety Department
Richard Shockley	Safety Department
Terry Hamilton	Shift Supervisor

United Mine Workers of America

Jim Summerfield	Safety Committee/Trackman
Ernie Payne	Safety Committee/Mechanic
William Reda	General Inside Labor
William Keener	General Inside Labor
Scott Shay	General Inside Labor (eye witness)
James Lamont	UMWA International Safety Rep.

West Virginia Office of Miners Health Safety & Training

Ed Peddicord	District Inspector-at-Large
John Meadows	Assistant District Inspector-at-Large
Dan Burgoyne	District Inspector
Rick Metheny	District Inspector

Mine Safety and Health Administration

Richard Vincent	Coal Mine Safety and Health Inspector
C.W. Moore	Mining Engineer, Ventilation