

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION
COAL MINE SAFETY AND HEALTH

AMENDED REPORT OF INVESTIGATION

Underground Coal Mine

Fatal Powered-Haulage Accident
April 7, 2006

Candice 2
Mystic LLC
Wharton, Boone Country, West Virginia
I.D. No. 46-08429

Accident Investigators

Douglas W. Johnson
Coal Mine Safety and Health Inspector

Rodney Lusk
Coal Mine Safety and Health Inspector

Originating Office:
Mine Safety and Health Administration
District 4
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Robert G. Hardman, District Manager

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The original report has been amended as follows:

- Page 3, 2nd paragraph, misidentified miner properly identified
- Page 3, last paragraph, list of miners recovering the victim was deleted



OVERVIEW

At approximately 12:15 p.m., on Friday, April 7, 2006, a 53-year old mobile bridge operator was fatally injured when he was caught in the pinch point between the mobile bridge conveyor boom, the low-low belt framing and the tail dolly.

The accident occurred because the continuous haulage system was restarted without following the proper communication procedure to ensure all mobile bridge operators were ready to move the system. Other factors contributing to the occurrence of the accident were safety devices installed on the continuous haulage system which did not reliably disable the machines, the continuous haulage system was not disabled prior to the #1 mobile bridge operator exiting the operator's compartment, and the location of the victim in the pinch point area between the mobile bridge conveyor and the low-low belt structure. Work practices and procedures contributed to the accident.

GENERAL INFORMATION

The Candice 2 underground mine is located near Wharton, in Boone County, West Virginia. 137 people are employed at the mine, 131 work underground and 6 work on the surface of the mine. The mine has three operating mining units which utilize continuous haulage bridge systems. The room and pillar method of mining is utilized at this mine. The mine is operated in the Winifrede bituminous coal seam which is accessed by drift portals. The mining height is approximately 4 ½ feet. The mine produces approximately 3,000 clean tons per day.

The principal officers for the mine at the time of the accident were:

Tim Elliot.....President
Bennie Milam.....Operations Manager
Fred Houchins.....Mine Superintendent

Miners employed at the mine are represented by the United Mine Workers of America (UMWA), District 17, Local 781.

The last regular inspection of the mine by the Mine Safety and Health Administration (MSHA) was completed on December 19, 2005. An inspection was started on January 4, 2006 and was ongoing at the time of the accident. The mine's Non-Fatal Days Lost (NFDL) incidence rate for 2005 was 6.54, compared to the national average of 5.21 for mines of similar type and classification.

DESCRIPTION OF THE ACCIDENT

The Casey Section day shift crew entered the mine the morning of April 7, 2006 at their normal starting time of 7:00 a.m. under the supervision of Les Perry, section foreman. The crew arrived on the active mining section and Ron Echard, continuous mining machine operator began mining in the #6 face. Echard was assisted by Mike Rollins, continuous mining machine operator helper. The mobile bridge conveyors were operated by Densil Blankenship, #4-bridge operator; Randy Houchins, #3-bridge operator; Donald McCoy, #2-bridge operator; and Jackie Toler, #1-bridge operator.

After mining in the #6-face was completed, the working place was roof bolted by Chris Snuffer and Ronald Kidd, roof bolting machine operators. After the area was roof bolted, mining continued in the #6-right crosscut, the #2-left crosscut, and the #3-face.

The next cut to be taken was the #4-right crosscut, which would be taken from the #4-entry. To facilitate the positioning of the continuous mining machine, the mobile bridges had to be moved outby (away from the face) to the furthest extent possible to allow the continuous mining machine to negotiate from the #3 face to the #4 entry. While the continuous mining machine was moving, the bridge operators had to wait for several minutes. During this time, Houchins disabled his mobile bridge conveyor by actuating the machine stop control, which also disabled the entire mobile bridge conveyor system.

As Houchins left his operator's compartment, he notified the other bridge conveyor operators via an on-board radio communication system.

During Houchins absence, the mobile bridge conveyor system remained idle for approximately ten minutes. During the idle period, Jackie Toler, #1 mobile bridge operator, also exited his operator's compartment. Toler did not communicate his intentions to the other bridge operators when exiting the compartment.

The continuous mining machine completed the move from the #3 face to the #4 entry and Houchins returned to his mobile bridge conveyor. Densil Blankenship, #4 mobile bridge operator, asked over the on-board radio system if the other bridge operators were ready to move. He received confirmation from Randy Houchins, #3 mobile bridge operator, who said that they were ready to go. Blankenship began tramming his machine, leading the other bridges towards the continuous mining machine. After moving forward a few feet, the machines tightened up, indicating that all of the mobile bridge machines were not moving in unison. One or more of the machines were being dragged by the others.

Blankenship realized that one of the mobile bridge machines was not moving under its own power, and he attempted to contact the three other machine operators. When Blankenship did not get a response from the #1 bridge operator, the #2 bridge operator reported that he did not think Toler was on his machine because he could not see Toler's light. An additional attempt was made to contact Toler over the radio system, without a reply. Blankenship disabled his machine, exited the operator's compartment, shut down the low-low belt conveyor, and traveled back down the low-low belt to locate Toler. Toler was not in or near his mobile bridge machine, so Blankenship traveled outby toward the section belt conveyor drive. As Blankenship traveled past the tail dolly, and began to cross the low-low belt, he noticed the light from a cap light lying on the conveyor belt just outby the tail dolly. Blankenship looked in the tail dolly and saw Toler lying in it.

Blankenship immediately flagged McCoy to come to the tail dolly and turned off the section belt conveyor. Blankenship also flagged Shannon Dolin, belt examiner, who was working along the section belt conveyor to come to the scene. Shannon arrived at the scene and immediately called over the mine telephone to the surface of the mine to report the accident. Fred Houchins, Mine Superintendent, and Jimmy Dotson, Maintenance Chief, immediately went underground and traveled to the accident site. Shannon traveled to the face area of the section and notified Chris Snuffer, roof bolter operator and EMT, and Perry who immediately came to the accident site. The victim was recovered from the tail dolly and transported to the surface area of the mine in a mantrip vehicle. At the surface of the mine, the victim was transported by the Boone County Ambulance Authority to the Boone Memorial Hospital.

INVESTIGATION OF THE ACCIDENT

MSHA was notified at 12:21 p.m. on April 7, 2006, that a serious accident had occurred at the Candice 2 mine. MSHA personnel from the Madison, West Virginia Field Office traveled to the mine and issued a 103(k) order to ensure the safety of all persons during the accident investigation. The accident investigation was conducted in cooperation with the West Virginia Office of Miners' Health, Safety and Training (WVOMHST), with the assistance of the mine operator and employees. Persons who participated in the investigation can be found in Appendix A.

An investigation of the physical conditions was conducted. Photographs, measurements and sketches were taken or created and the underground portion of the investigation was completed on Thursday, April 13, 2006. Interviews were conducted at the Madison Field Office and the Candice 2 Mine Office.

DISCUSSION

Continuous Haulage System

Continuous haulage systems, known as mobile bridge conveyors, commonly consist of a series of piggybacked mobile bridge carriers (MBC) and chain bridge conveyors. An Oldenburg Stamler, model SCH-36, mobile bridge system was in operation on the Casey Section at this mine. The system was detached from the continuous mining machine and trammed independently. Mobile bridge conveyors are specifically numbered and always occupy their respective positions in the bridge train. The #4 mobile bridge conveyor is the most inby machine and receives the discharged coal from the continuous mining machine. The #3 and #2 mobile bridge conveyors operate behind the #4 mobile bridge conveyor. The #1 mobile bridge conveyor occupies the most outby position and is connected to and discharges coal onto a tail dolly which rides on the low-low belt. Immediately outby and connected to the tail dolly is the "trainer" which keeps the belt trained to run in the center of the low-low belt.

All of the disabling devices on all four machines functioned properly except for the arm switch on the #1 mobile bridge conveyor. The arm switch serves as an arm rest, but must be raised to allow an operator to exit the operator's compartment. The arm rest, which pivots upwards from the rear portion of the arm rest, activates an electric safety switch which disables the machine. There was an accumulation of coal in the operator's compartment near the arm switch which prevented the arm rest from being raised above ½ of the fully raised position. The accumulation of coal did not prevent the electric safety switch from activating because the arm rest need only be raised ½ to 1 inch to activate the switch. When tested, the electric safety switch worked intermittently and would not reliably disable the machine due to an internal malfunction.

In each bridge conveyor operator's compartment is a LED interface display consisting of several rows of lights which indicate the fault status of each bridge and the entire continuous haulage system. When the system is active, i.e. ready for operation, the top

row of green lights is on, indicating all machine functions can be engaged. When any one bridge is disabled, the lights located in the second row indicate the entire system is disabled. When an individual bridge is disabled, a specific light comes on in the third row indicating to the bridge operator which disabling device was activated. The left light indicates the offside emergency stop switch, the center light indicates the panic bar in the operator's compartment, and the right light indicates the arm rest for the operator's compartment is in the raised position. Upon restart the individual or individuals who disabled his or their machine(s) must push the "reset" button to clear the fault of the machine. The entire system is then ready for operation.

Each bridge is also equipped with a voice communication system consisting of headphones with a microphone whereby each operator is in constant contact with each other while in the operator's compartment. The communication systems on all four mobile bridge conveyors were in good working order.

Human Factors

Jackie Toler had 32 years of mining experience, and had been employed at this mine for approximately 11 ½ years. He had operated a bridge conveyor at this mine for the past six months. Co-workers stated during interviews that, from their observations, Toler apparently had an impaired left knee which may have affected his mobility.

Accident Scene

The mining height in the area of the #1 mobile bridge conveyor was approximately 57 inches. Production began on the Casey section to establish a new panel set-up during the day shift on April 3, 2006. A high area was cut from the mine roof approximately 8 feet high from the section belt head to approximately 10 feet in by the #1 mobile bridge conveyor operator's compartment. The high area was approximately 12 feet wide from the right rib line looking in by. The high area was cut to allow the conveyor belt to be hung to create a belt cross under for men and machines and to create adequate clearance for the placement of a belt storage unit. The victim upon exiting his machine would have been standing in this high area.

The connection between the mobile bridge conveyor and low-low belt structure creates a pinch point. The distance from the operator's compartment to the low-low belt was two feet, the distance from the edge of the chain conveyor of the #1 mobile bridge conveyor to the low-low belt was approximately 3½ feet and the low-low belt is approximately 26 feet out by the operator's compartment. Toler was apparently in the pinch point area when the bridge train unexpectedly moved forward. As the #1 mobile bridge conveyor was pulled forward by the advancing bridge train, skid marks were created on the mine floor which measured approximately 11 feet long.

A paint mark was made by the victim on the low-low belt structure to indicate the furthest extent of outby travel of the bridge train. When the bridge train moved out by to allow the continuous mining machine to move from the #3 to the #4 entry, it reached the

limit delineated by the paint mark. After marking the rail with paint, the victim evidently walked outby and entered the pinch point between the bridge conveyor and the low-low belt.

ROOT CAUSE ANALYSIS

An analysis was conducted to identify the most basic causes of the accident that were correctable through reasonable management controls. 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 established communication procedure to ensure that all mobile bridge conveyor operators were ready to move was not followed. Three of the four bridge operators began moving their machines forward without receiving voice confirmation from the #1 mobile bridge conveyor operator to ensure that it was safe to begin movement of the continuous haulage system.

Corrective Action: The approved training plan required confirmation of all mobile bridge operators prior to movement to ensure that the machines were safe to begin operation. All mobile bridge operators received additional task specific training to ensure that the communication procedure was followed. Supervisory personnel received training to ensure that adequate oversight is provided to ensure that mobile bridge conveyor operators communicate prior to movement of the continuous haulage system.

Root Cause: The #1 mobile bridge operator exited the operator compartment without ensuring that the bridge conveyor was disabled. Effective procedures were not in place to assure that safety devices were functioning properly and to ensure that miners would use safety devices as intended. The design of the operator compartment allowed the operator to exit the compartment without disabling his mobile bridge carrier.

Corrective Action: Miners were provided with additional training to ensure adherence to the requirements of the approved training plan. The arm rest safety device was modified to raise its profile and a chain screen was installed from the top of the operator compartment canopy to the arm rest in order to prevent miners from exiting the operator's compartment without raising the arm rest safety device.

Root Cause: The #1 mobile bridge conveyor operator entered a pinch point area between the mobile bridge conveyor and the low-low belt structure. A safe work practice was not in place and followed to ensure that the miners would not enter hazardous locations.

Corrective Action: Although miners had been trained in accordance with the approved training plan, the miners, including supervisors, were provided with additional training to reinforce their understanding of the hazards associated with the operation of a mobile bridge system. Reflective signs were placed on the mobile bridge chain conveyor boom to identify the pinch point area.

CONCLUSION

The accident occurred because the continuous haulage system was restarted without following the proper communication procedure to ensure all mobile bridge operators were ready to move the system. Other factors contributing to the occurrence of the accident were ineffective safety devices on the continuous haulage system which did not reliably disable the machines, the continuous haulage system was not disabled prior to the #1 mobile bridge operator exiting the operator's compartment, and the position of the victim in the pinch point area between the mobile bridge conveyor and the low-low belt structure. Work practices and procedures contributed to the accident.

ORIGINAL SIGNED BY

Robert G. Hardman
District Manager

October 13, 2006

Date

ENFORCEMENT ACTIONS

1. A 103(k) Order No. 7250874 was issued to Mystic LLC to ensure the safety of all persons in the area of the section dumping point to the faces of MMU-001 and to protect the area of the accident from disturbances.

2. A 314(b) safeguard, No. 7245863, was issued to Mystic LLC for a violation of 30CFR 75.1403. Adequate communications procedures between the four mobile bridge operators on the Casey Section (MMU-003) were not being followed. The mobile bridge conveyor system transports material, i.e. coal, as well as the operators during its normal operation. The #1 mobile bridge operator left the operator compartment without informing the other mobile bridge operators. The other mobile bridge operators began to move the mobile bridge conveyors forward without confirmation from each mobile bridge operator that it was safe to move. The #1 mobile bridge conveyor was dragged forward which led to fatal injuries to the #1 mobile bridge operator. In addition, the #1 mobile bridge operator left the operator compartment without disabling his machine. These conditions present the hazards of crushing, pinching or trapping any miner within close proximity to the machines. This is a Notice to Provide Safeguards requiring that the mobile bridge operators on the Casey Section and all other mobile bridge systems at this mine must follow proper communications procedures, that the #4 (lead bridge) mobile bridge operator receive voice confirmation from each operator before the movement of any mobile bridge conveyor and that each mobile bridge operator disable their individual mobile bridges before leaving the operator compartment.

3. A 104(a) citation number 7245864 was issued to Mystic LLC for a violation of 30CFR 75.1725(a). The #1 Mobile Bridge Carrier, Oldenberg Stamler model SCH-36, in operation on the Casey Section (MMU-003) was not being maintained in safe operating condition. Loose coal present behind the arm bar prevented it from being raised to disable the machine. In addition, when tested, the disabling switch, activated by raising the bar, did not reliably disable the machine due to an internal malfunction in the switch. Failure to disable the machine led to a fatal accident which occurred on April 7, 2006.

APPENDIX A

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

Candice #2 Mine

Bennie Milam.....Operations Manager
Fred Houchins.....Mine Superintendent
Roger Cook, Jr. General Mine Foreman
Jimmy Dotson..... Maintenance Chief
Les Perry.....Casey Section Foreman
Harold Brown.....Maintenance Supervisor
Shannon Dolin Belt Examiner

Ron Echard..... Continuous Miner Operator
Tony Argabright..... Scoop Operator
Brad Browning..... Electrician
Chris Snuffer (EMT)..... Roof Bolter Operator
Randy Houchins..... Mobile Bridge Operator
Donald McCoy..... Mobile Bridge Operator
Densil Blankenship..... Mobile Bridge Operator
J.R. Gray Mobile Bridge Operator
Leon Sturgill Electrician
Ricky Kinser Mobile Bridge Operator
Kyle Elswick..... Mobile Bridge Operator
Ronald Sturgill..... Mobile Bridge Operator

United Mine Workers of America

Gene SaundersOrganizer/Retired/District 17
Phillip Camden..... Field Representative/District 17
James Martin.....Safety Committeeman
Wendell RollinsSafety Committeeman

P&A Engineers and Consultants

Shelly Bowling..... Survey Manager
Terry Weaver Instrument Operator
Eric Fowler..... Instrument Operator
Glen Jarvis Instrument Operator

Spilman Thomas & Battle, PLLC-Attorneys at Law

Mark E. Heath..... Attorney

West Virginia Office of Miners' Health, Safety, and Training

C.A. Phillups..... Deputy Director
Terry Farley Health and Safety Administrator
Harry Linville..... Inspector-at-Large
Danny Cook Electrical Inspector
Rodney Leake Electrical Inspector
John Kinder..... District Mine Inspector
Willie Barker..... Safety Instructor
Steve Cox Safety Instructor

Mine Safety and Health Administration

Jesse P. Cole..... District Manager
Luther Marrs Assistant District Manager
Terry Price Madison Field Office Supervisor
Clark Blackburn Madison Field Office Supervisor
Douglas W. Johnson Accident Investigator/Inspector
Rodney Lusk Accident Investigator/Inspector
Tim Justice Coal Mine Safety and Health Inspector
Danny Meadows Coal Mine Safety and Health Inspector
Charles Ward Coal Mine Safety and Health Inspector
Eugene D. Hennen, P.E..... MSHA Mechanical Safety Division