CAI-2008-17

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
July 17, 2008

Butcher Branch Mine
Century Operations LLC
Beverly, Bell County, Kentucky
MSHA ID 15-18924

Accident Investigators

Clayton E. Sparks
Coal Mine Safety and Health Inspector Supervisor

Vernus Sturgill
Coal Mine Safety and Health Inspector – Ventilation / Roof

Originating Office
Mine Safety and Health Administration
District 7
3837 S. US Hwy. 25E
Barbourville, Kentucky 40906
Irvin T. Hooker, District Manager

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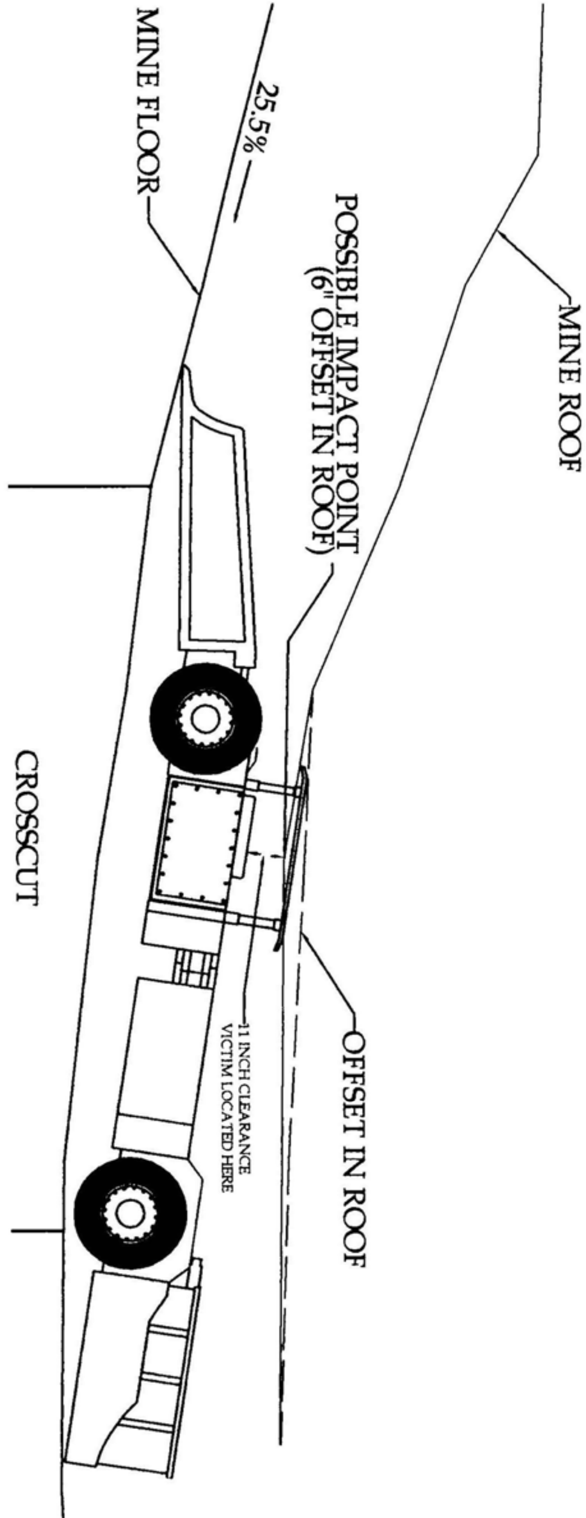
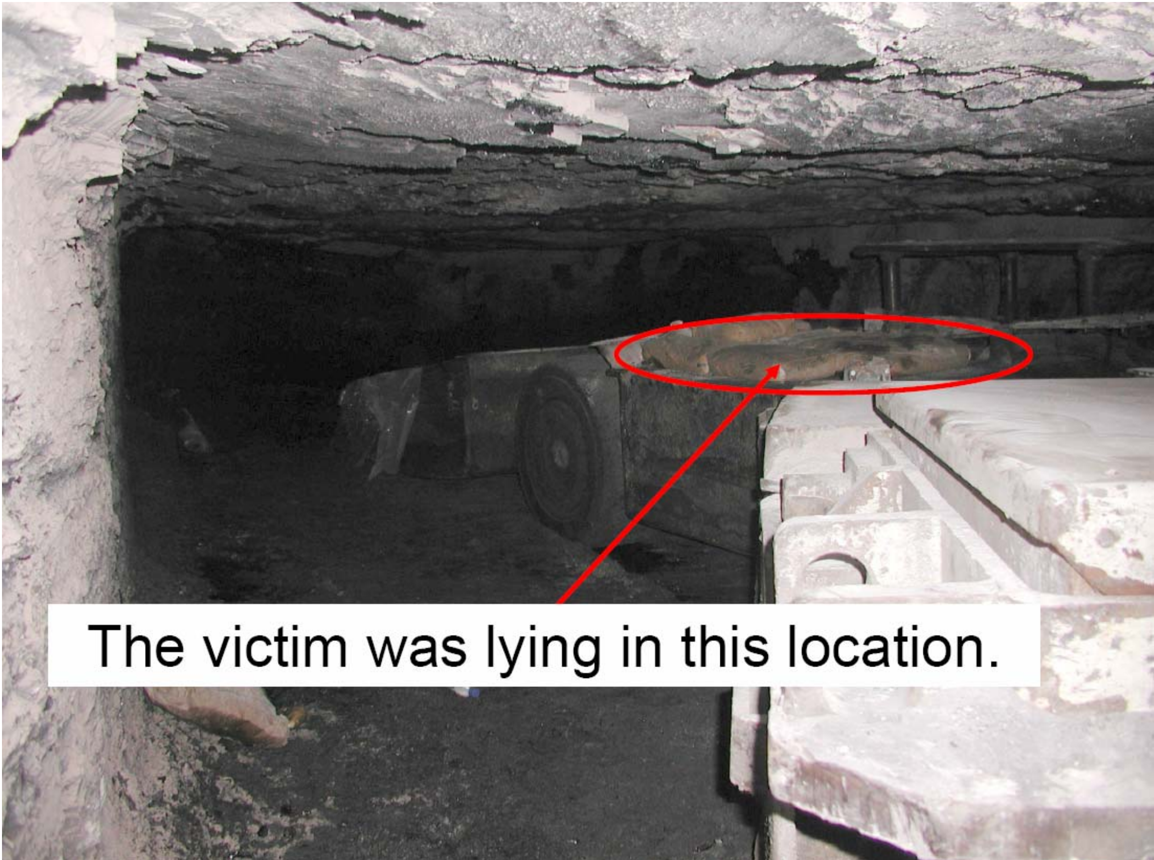
SKETCH OF ACCIDENT SITE
Butcher Branch Mine
At Survey Station #919



PHOTOGRAPH OF ACCIDENT SCENE



OVERVIEW

At approximately 4:30 p.m. on Thursday, July 17, 2008, Joseph D. Roberts, a 45-year old shuttle car operator with 22 years of mining experience, was fatally injured in a powered haulage accident. The accident occurred as the victim was riding on top of a 488 S&S scoop. The scoop was being trammed, battery end first, and encountered a dip in the mine floor. While attempting to stop the scoop, the scoop operator dropped the bucket into the mine floor, which caused the scoop to raise upward, pinning the victim against the mine roof. He was air lifted to Holston Valley Hospital in Bristol, Tennessee and diagnosed with a broken pelvis. On Tuesday, July 22, he was treated for kidney failure and placed on a ventilator. On Friday, July 25, while undergoing emergency surgery, the victim died.

The accident occurred because: (1) management policies and procedures were inadequate and failed to ensure that miners did not ride on top of mobile equipment, (2) adequate examinations were not being conducted and no corrective actions taken as required on mobile equipment, (3) the scoop's service brakes and emergency braking systems were not maintained in a proper operating condition.

GENERAL INFORMATION

The Butcher Branch Mine, operated by Century Operations LLC, is located at Beverly, Bell County, Kentucky. The victim was an employee of Century Operations LLC.

The mining operation utilizes a continuous mining machine with shuttle car haulage and produces coal from the Hazard #4 Seam. The average mining height is 72 inches. Total employment at the mine is 48 of which 45 are underground miners. The mine operates two production shifts and one maintenance shift on a five to six days-per-week schedule. One continuous mining section is on advance and produces an average of 1,082 tons per day. A system of conveyor belts transport coal from the working section to the surface where it is trucked to other locations for processing.

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

Larry Heatherman ....President
Onzie Sizemore...........................Surface Operations Manager / Safety Director
Tommy Glycadlis..Superintendent
Bobby Hubbard ....Section Foreman

Prior to the accident, the Mine Safety and Health Administration (MSHA) had completed the last regular safety and health inspection on June 26, 2008. An inspection was started on July 21, 2008 and was ongoing at the time of the accident. The Non-Fatal Days Lost (NFDL) injury incidence rate for the mine in 2008 was 0.00 compared to a National NFDL rate of 4.32.

DESCRIPTION OF ACCIDENT

On the afternoon of July 17, 2008, the second shift crew entered the mine at 3:00 p.m. Their assignment was to rock dust in areas of the No. 4 Mains. Brian Caldwell, scoop operator, was assigned to take the outby scoop to the working face. The scoop had been previously loaded with two pallets of rock dust. Caldwell trammed the scoop inside via the primary escapeway. Caldwell stopped at the outby battery charging station, located at Survey Station #007 on Butcher Branch Mains in order to put the scoop on charge and determine the condition of the batteries. After arriving at the charging station, Caldwell discovered that no power was present on the charger and waited for the remainder of the crew to arrive. The rest of the second shift crew traveled in behind Caldwell on the Mac 8 personnel carrier, also stopping at the outby charging station. Bobby Hubbard, section foreman, assigned Joseph Roberts to assist Caldwell at the charging station. After Caldwell exited the Mac 8 personnel carrier, the remainder of the second shift crew continued toward the face area while Caldwell and Roberts stayed behind. Roberts then traveled to the power center and restored power to the charging station. Roberts returned to the charging station and climbed on top of the scoop's main starting box. Roberts and Caldwell traveled inby four to five crosscuts where they met the second shift crew who had stopped. At this location, there was another scoop loaded with a rock dusting machine. Clifford Nolan, shuttle car operator, was assigned to bring this scoop to the face area, and followed behind Caldwell and Roberts, while the rest of the crew continued on to the face. When Caldwell and Roberts approached the intersection at Survey Station #919, the scoop encountered a dip in the coal bed which created a 25.5% degree downward slope in the mine floor. As the scoop descended the slope Caldwell engaged the service brake pedal which would not slow or stop the scoop. Caldwell then dropped and bowed his bucket downward in an attempt to stop the scoop. The scoop was subsequently pushed upward by the bowing of the bucket. At the bottom of the dip was an offset in the mine roof where Roberts was pushed by the scoop into the roof and injured. Caldwell ran to the top of the slope and stopped the other scoop that was entering the area. Caldwell then alerted miners inby that Roberts had been seriously injured. First-aid was given to Roberts by Caldwell and Bobby Hubbard, section foreman. Roberts was loaded onto a personnel carrier and

transported to the surface. The victim was then air-lifted to Holston Valley Hospital for treatment.

INVESTIGATION OF THE ACCIDENT

MSHA was notified by Data Trac call center at 5:03 pm on July 17, 2008, that the accident had occurred at the Butcher Branch Mine. An MSHA inspector traveled to the mine and issued a 103(K) order to ensure the safety of all persons during the accident recovery and investigation. The accident investigation was conducted in cooperation with the Kentucky Office of Mine Safety & Licensing.

DISCUSSION

Physical Factors

The accident occurred at Survey Station #919 in the No. 6 entry of the 001/MMU (mechanized mining unit) panel. A dip in the coal bed had occurred at this area which created a slope of approximately 25.5 % degrees. An offset brow was present in the mine roof at the bottom of the dip area. A single layer of rock dust bags, approximately 3 ½" thick, were stacked atop the scoop. The victim was riding on top of the rock dust bags. The distance between the offset brow and the layer of rock dust bags was less than eleven inches, which was not sufficient clearance.

Equipment

The machine involved in the accident was an S&S Model 488 Permissible Electrical Scoop, Serial Number 1087, Approval No. 2G-2831-1. The service brake disc and brake load linings were contaminated with hydraulic fluid which severely limited the service brake capacity of the scoop. Performance tests during the initial portion of the accident investigation were made by MSHA enforcement and Technical Support personnel and the service brake would not prevent the scoop's wheels from revolving on the grade in the accident area.

MSHA enforcement and Technical Support personnel also conducted emergency-parking brake performance tests during the initial portion of the accident investigation. These tests showed that the emergency-parking brake would not hold the scoop on the grade in the accident area. The examination of the service brakes and emergency braking disclosed that the emergency-parking brake caliper hung loosely in the caliper bracket due to a missing mounting pin nut. It was also determined that the brake pad-to-disc clearance adjustment for the emergency-parking brake was such that the caliper did not provide any

effective clamping force to the brake disc when this brake was applied. The caliper itself could be moved by hand relative to the brake disc with the brake spring applied. This resulted in irregular lining wear and a misaligned caliper piston which was leaking hydraulic fluid from the piston area onto the brake disc in the release position, i.e. tram position. This contaminated the brake disc pad linings for both the service brake and emergency-parking brake with hydraulic fluid rendering both ineffective.

ROOT CAUSE ANALYSIS

An analysis was conducted to identify the most basic causes of the accident that were correctable through reasonable management controls. During the analysis, root causes were identified that, if eliminated, would have either prevented the accident or mitigated its consequences. Listed below are these root causes and their corresponding corrective actions implemented to prevent a recurrence of a similar accident:

1. *Root Cause:* The mine operator failed to establish safe policies and procedures to prevent miners from riding on top of mobile equipment.

   Corrective Action: The mine operator has developed and implemented a written policy against riding on top of mobile equipment. All personnel at the mine were trained on the policy.

2. *Root Cause:* The mine operator failed to ensure that adequate examinations of mobile equipment were conducted and hazardous conditions corrected.

   Corrective Action: The mine operator has reviewed requirements for examinations of mobile equipment with electricians at the mine.

3. *Root Cause:* The mine operator failed to ensure that the braking systems for the scoop were maintained in proper operating condition.

   Corrective Action: The operator has repaired the braking system, thereby restoring it to proper operating condition.

CONCLUSION

The accident occurred because: (1) management policies and procedures were inadequate and failed to ensure that miners did not ride on top of mobile equipment, (2) adequate equipment examinations were not being conducted and no corrective actions taken as required on mobile equipment, and (3) the scoop's braking systems were not maintained in a proper operating condition.

Approved By:

Irvin T. Hooker
District Manager

1/28/2009
Date

ENFORCEMENT ACTIONS

1. A 103(k) Order No. 8319074 was issued to Century Operations LLC to ensure the safety of all persons in the mine until MSHA has determined that it is safe to resume normal mining operations in the area.

2. A 314(b) Safeguard No. 8333843 was issued in accordance with 30 CFR 75.1403. The mine experienced an injury accident when a miner was injured while riding on top of a scoop. This is a notice to provide safeguard requiring the operator to establish a standard operating procedure. The SOP shall require all miners to be task trained in the danger of this practice.

3. A 107(a) imminent danger Order No. 8333842 was issued to Century Operations LLC. On July 17, 2008 a miner was injured while riding on top of the s/s scoop s/n 488-1087. This scoop was being used to transport rock dust to the SMEPA NO4 Mains. The operator is to train all employees in the danger of this practice.

4. A 104(d)(1) Citation No. 8319075 for a violation of 75.523-3(b)(2) was issued to Century Operations LLC. The operator has failed to provide an adequate park brake on the s/s scoop s/n 488-1087 being operated on the 001 section. This condition contributed to an accident causing bodily injuries to a miner. The scoop operator had no control of the machine to stop it during an emergency. The cited condition has existed for several weeks. This was evidenced by the extensive accumulations of oil and extreme wear to the brake components and from information obtained through interviews.

5. A 104(d)(1) Order No. 8319076 for a violation of 75.523 was issued to Century Operations LLC. The operator has failed to provide a safe means to de-energize the s/s scoop s/n 488-1087 in the event of an emergency. When checked during an accident investigation the panic bar was inoperable. This condition contributed to an accident causing bodily injuries to a miner. The cited condition has existed for some time.

6. A 104(d)(1) Order No. 7523768 for a violation of 75.512 was issued to Century Operations LLC. The mine operator was not conducting adequate examinations of electrical equipment. An electrical examination of the S&S scoop s/n 488-1087 was conducted on July 14, 2008 and no hazards were identified and recorded in the weekly examination record book. On July 17,2008 this scoop was involved in an accident which resulted in a fatality. Serious defects in the service and emergency braking systems were found following this accident which clearly existed prior to the examination on July 14, 2008.. MSHA’s investigation showed that these defects could not have

occurred between the last electrical exam and the date of the accident, only three days later. This operator has engaged in aggravated conduct constituting more than ordinary negligence. This violation is an unwarrantable failure to comply with a mandatory standard.

7. A 104(d)(1) Order No. 7523769 for a violation of 75.1725(a) was issued to Century Operations LLC. The S&S scoop s/n 488-1087 was not maintained in safe operating condition. Adequate service brakes were not provided to stop the scoop. When tested in the entry where the scoop was being operated the service brake would not stop the scoop. Further testing of the braking system indicated that the saturation of the brake disc and brake linings with hydraulic oil contributed to the failure of the brake system to function properly. The accident investigation revealed that the defects in the scoop's braking systems had existed for several weeks and were obvious and extensive. This operator has engaged in aggravated conduct constituting more than ordinary negligence. This violation is an unwarrantable failure to comply with a mandatory standard.

Appendix A
Persons Participating in the Investigation

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

Company Officials

Owen Hensley .... Superintendent
Johnny Sizemore .... 1st Shift foreman
Onzie Sizemore.......... Surface Operations Manager / Safety Director
Bobby Hubbard .... 2nd Shift foreman
Bruce Jackson.......... Chief Electrician
Tommy Hall.......... 3rd Shift Foreman

Mine Employees

Brian Caldwell.......... Scoop Operator
Jerry Napier .... 2nd Shift Scoop Operator
Wendell Fuson.......... 3rd Shift Scoop Operator
Calvin Jackson .... Scoop Operator
Clifford Nolan .... Shuttle Car Operator
Chad Knipp.......... Shuttle Car Operator
Carlos Asher .... Miner Operator
Randall Miller .... Roof Bolter Operator
Marty Jones .... Roof Bolter Operator
Charles Smith.......... Roof Bolter Operator
Dennis Hensley .... Roof Bolter Operator
Teddy Osborne.......... Belt Boss / Fireboss
Timothy Lewis.......... 2nd Shift Electrician
Larry Barger.......... Repairman
David Nolan.......... 3rd Shift Electrician
Gerald McNamara Jr. .... 3rd Shift Repairman
Hayes Collins Jr. .... 3rd Shift Repairman
Ricky Sizemore.......... 1st Shift Electrician
Delmus Jackson .... Outby Repairman

Kentucky Office of Mine Safety & Licensing

Greg Goins .... Deputy Chief Accident Investigator
Tracy Stumbo.......... Chief Accident Investigator

Appendix A - Continued
Persons Participating in the Investigation

Mine Safety and Health Administration

Clayton E. Sparks .... Supervisory Coal Mine Safety and Health Inspector
Ronnie Brock...Staff Assistant
Charles J. Maggard .... Supervisory Coal Mine Safety and Health Inspector – Electrical
Sean Davenport .... Coal Mine Safety and Health Specialist – Electrical
Kevin Doan ....Coal Mine Safety and Health Specialist – Vent/Roof
Vernus Sturgill................Coal Mine Safety and Health Specialist – Vent / Roof
Lonnie Curnutt..Coal Mine Safety and Health Inspector
Jack Harris...Coal Mine Safety and Health Inspector
Terry Mills...Coal Mine Safety and Health Inspector
Terry Marshall…………………………...Technical Support

Attorneys

Marty Turner .... Attorney, Office of the Solicitor
Noel True...Counsel for Century Operations LLC

Appendix B
Victim Information – 7000-50b

Accident Investigation Data - Victim Information

Event Number: 4 4 4 4 2 1 8

U.S. Department of Labor

Mine Safety and Health Administration

Victim Information: 1

1. Name of Injured/Ill Employee: *Joseph D. Roberts*
2. Sex: *M*
3. Victim's Age: *45*
4. Degree of Injury: *01 Fatal*
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death: a. Date: *07/25/2008* b. Time: *5:30*
6. Date and Time Started: a. Date: *07/17/2008* b. Time: *15:00*
7. Regular Job Title: *050 Shuttle car/ram operator (standard side)*
8. Work Activity when Injured: *076 Ride/not operate equip - except mantrip*
9. Was this work activity part of regular job? Yes No *X*
10. Experience

	Years	Weeks	Days
a. This Work Activity:	1	0	0
b. Regular Job Title:	15	0	0
c. This Mine:	1	0	0
d. Total Mining:	22	0	0

11. What Directly Inflicted Injury or Illness? *077 Underground mining machines*
12. Nature of Injury or Illness: *170 Crushing*
13. Training Deficiencies: Hazard: New/Newly-Employed Experienced Miner: Annual: Task:
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: *X* Medical Professional: None:
16. Part 50 Document Control Number: (form 7000-1)
17. Union Affiliation of Victim: *9999 None (No Union Affiliation)*

Victim Information:

1. Name of Injured/Ill Employee:
2. Sex
3. Victim's Age
4. Degree of Injury:
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death:
6. Date and Time Started:
7. Regular Job Title:
8. Work Activity when Injured:
9. Was this work activity part of regular job? Yes No
10. Experience: a. This Work Activity: Years Weeks Days b. Regular Job Title: Years Weeks Days c. This Mine: Years Week Days d. Total Mining: Years Weeks Days
11. What Directly Inflicted Injury or Illness?
12. Nature of Injury or Illness:
13. Training Deficiencies: Hazard: New/Newly-Employed Experienced Miner: Annual: Task:
14. Company of Employment: (If different from production operator)
Independent Contractor ID: (if applicable)
15. On-site Emergency Medical Treatment: Not Applicable: First-Aid: CPR: EMT: Medical Professional: None:
16. Part 50 Document Control Number: (form 7000-1)
17. Union Affiliation of Victim:

Victim Information:

1. Name of Injured/Ill Employee:
2. Sex
3. Victim's Age
4. Degree of Injury:
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death:
6. Date and Time Started:
7. Regular Job Title:
8. Work Activity when Injured:
9. Was this work activity part of regular job? Yes No
10. Experience: a. This Work Activity: Years Weeks Days b. Regular Job Title: Years Weeks Days c. This Mine: Years Week Days d. Total Mining: Years Weeks Days
11. What Directly Inflicted Injury or Illness?
12. Nature of Injury or Illness:
13. Training Deficiencies: Hazard: New/Newly-Employed Experienced Miner: Annual: Task:
14. Company of Employment: (If different from production operator)
Independent Contractor ID: (if applicable)
15. On-site Emergency Medical Treatment: Not Applicable: First-Aid: CPR: EMT: Medical Professional: None:
16. Part 50 Document Control Number: (form 7000-1)
17. Union Affiliation of Victim: