

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

COAL MINE SAFETY AND HEALTH

REPORT OF INVESTIGATION

Underground Coal Mine

Fatal Machinery Accident
April 11, 2010

Coalfield Services, Inc. (R58)
Wytheville, VA

at

MC #1 Mine
M-Class Mining LLC
Macedonia, Franklin County, Illinois
I.D. No. 11-03189

Accident Investigators

Dean Cripps
Electrical Engineer

Bobby Jones
Mine Safety and Health Inspector

Originating Office
Mine Safety and Health Administration
District 8
2300 Willow Street
Vincennes, Indiana
Hubert Payne, District Manager

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Photograph showing approximate position of the stair stringer and manlift when accident occurred.

OVERVIEW

On April 11, 2010, at approximately 3:30 p.m., an employee working for Coalfield Services, Inc., (Coalfield) received fatal injuries in a machinery accident. The victim and three other Coalfield employees were working to attach a 16-foot long section of stairs to the side of the mine fan housing. The top end of the stair stringer was being held in place against the side of the return air duct with two locking C-clamps. The bottom of the stair stringer was resting on a 6-inch-by-6-inch (6x6) timber on the ground. The victim was standing at the bottom of the stair stringer holding onto the handrails. Two nylon slings were attached between the hook on the truck-mounted crane and the bottom of the stair stringer. The bottom of the stair stringer needed to be lifted slightly in order to remove the 6x6 timber. When the crane lifted the stairs, the top of the stair stringer began sliding down the side of the fan housing because the clamps were

not suitable to prevent movement. As the top of the stairs slid down, the bottom end of the stairs shifted away from the fan house and toward the victim. The stairs forced the victim backward against the frame of the articulating boom manlift that was parked directly behind him. The bottom of the stair section struck the victim in the chest as he was against the manlift.

GENERAL INFORMATION

The MC #1 Mine is located near Akin in Franklin County, Illinois. The mine operator is M-Class Mining LLC. The mine was under construction and was in non-producing status. The principal officers for the mine at the time of the accident were Barry Hale, President and Tim Kirkpatrick, Manager of Safety.

The mine operator developed a slope from the surface into the Herrin No. 6 coal seam. A 22-foot diameter dual compartment air shaft has been developed into the coal seam. A blowing fan was installed on the intake side of the air shaft and was put in service on March 29, 2010.

Coalfield Services, Inc., MSHA Contractor I.D. R58, located in Wytheville, Virginia, was contracted by M-Class Mining LLC to install an emergency escape hoist in the intake side of the dual compartment air shaft and to install the air duct on the exhausting (return) side of this shaft.

A regular safety and health inspection (E01) by the Mine Safety and Health Administration (MSHA) was ongoing at the time of the accident. The previous regular safety and health inspection of the mine was completed on March 29, 2010.

DESCRIPTION OF THE ACCIDENT

On April 11, 2010, Ray Oney (victim) reported to work at the mine fan construction site at his normal start time of 7:00 a.m. Oney and three other Coalfield employees installed the return-air duct portion of the mine fan housing. This air duct is rectangular and is installed over the return side of the dual compartment air shaft. The top of the air duct is approximately 12 feet above the ground.

The crew then assembled a set of metal stairs called a "stair stringer." The stair stringer was approximately 16-feet long and was being installed from the ground to the top of the fan housing. Once assembled, the stair stringer was attached to the headache ball/hook on the truck-mounted crane using two 10-foot nylon slings. The slings were attached at the midpoint of the stair stringer. Andrew Midkiff, Working Lead Man, then used the crane to swing the stair stringer into place against the fan housing. An articulating-boom manlift was used to provide access to the top of the fan housing. Jason Crofts, Journeyman Ironworker, was in the basket of the manlift. When the top step of the stair stringer was level with

the top of the fan housing, Crofts clamped it to the fan housing using two locking C-clamps. The bottom of the stair stringer was set on a 6x6 inch timber.

Oney checked the stair treads for leveling and found that the treads were tilted toward the fan house, indicating that the bottom of the stair stringer was too high. To level the treads, the crew decided to remove the 6x6 inch timber and replace it with a 4x4 inch timber. Crofts disconnected the nylon slings from the stair stringer. Midkiff rotated the crane boom so the nylon slings could be reattached near the bottom of the stair stringer. Oney reconnected the slings to the stair stringer approximately 36 inches from the bottom.

Oney was standing at the bottom of the stairs holding the handrails in a position described as if he were about to climb the stairs. Midkiff began hoisting the bottom of the stair stringer with the crane so the 6x6 inch timber could be removed. Just as he hoisted the bottom of the stairs, the top of the stairs began sliding down the side of the fan housing. Because the attached slings acted as a fulcrum, the bottom of the stairs pivoted up at the same time. This caused the stair stringer to move away from the fan housing and elevate upward simultaneously. The movement of the stair stringer pushed Oney backward.

The movement of the stair stringer was in line with the boom of the manlift. Oney was pushed by the stair stringer until he contacted the manlift, a distance of approximately eight feet. As he was backed against the manlift, Oney was struck in the chest by the bottom step of the stair stringer. He walked approximately ten feet from the location of the accident and fell to the ground.

Upon witnessing the accident, Midkiff immediately lowered the stair stringer to the ground. He ran to the victim and began rendering first aid. Crofts lowered the manlift basket to the ground. He ran to the nearby Conex trailer, retrieved his cell phone, and called 911.

Personnel from Cardinal EMS arrived and began medical treatment on the victim. The victim was transported by ambulance to Franklin Hospital in Benton, Illinois, where he was pronounced dead at 4:15 p.m.

INVESTIGATION OF THE ACCIDENT

The MSHA Call Center was notified of the accident at 4:11 p.m. on April 11, 2010, by Michael Houseman, Contracts Manager for Coalfield Services. A non-contributory citation was issued for a failure to comply with 30 CFR § 50.10, which requires a mine operator to contact the MSHA call center at once, without delay, and within 15 minutes. The call center notified Sylvester DiLorenzo, Supervisory Mine Safety and Health Inspector for MSHA District 8 in Vincennes, Indiana. Steve Miller, Benton Field Office Supervisor, issued a Section 103(j) Order to Tim Kirkpatrick of M-Class Mining, Inc. Dean Cripps, Accident Investigator, and Bobby Jones, Mine Safety and Health Inspector, from the

Benton, Illinois Field Office, were immediately dispatched to the mine. The 103(j) Order was modified subsequently to a Section 103(k) Order, to insure the safety of persons at the mine.

The accident investigation was conducted in cooperation with the Illinois Department of Natural Resources, Office of Mines and Minerals. A physical examination of the accident scene was conducted the evening of the accident. The investigation team conducted interviews with five persons on April 13, 2010. The on-site portion of the investigation was completed April 22, 2010. A list of persons who participated in the investigation are shown in Appendices A and B of this report.

DISCUSSION

Coalfield Services, Inc.

Coalfield Services, Inc., Contractor I.D. R58, is a commercial and industrial general contractor located in Wytheville, Virginia. The company primarily provides design, fabrication, and construction services to the mining industry. Coalfield was contracted by M-Class Mining LLC to remove several steel pipes that had been left attached to the air shaft wall by the shaft-sinking contractor, to install an emergency escape hoist in the intake side of the air shaft, and to install the ductwork on the return side of the air shaft.

Stair Stringer

The stair stringer being installed at the time of the accident measured 16-feet long. It consisted of two sections of eight-inch steel, C-channel with 17 stair treads bolted between them. Each stair tread was constructed of one-inch steel grating measuring 24 inches across and 11 inches front to back. The handrails were made of 1½-inch steel box tubing. Information provided by Coalfield Services, Inc. indicated that the stair stringer weighed approximately 1100 pounds.

Installation Procedure

The stair stringer was assembled on the ground near the air shaft. Using the truck-mounted boom crane, the stair stringer was then hoisted into position against the return air duct. Mounting bolt holes were already present in the stair stringer; however, bolt holes were not present in the frame of the air duct. The contractor planned to level the stair stringer and mark the locations for the bolt holes. The stair stringer was then to be removed and bolt holes drilled in the air duct. The top of the stair stringer would be bolted to the air duct and the bottom would be secured to a concrete pad.

Locking C-Clamps

When the stair stringer was hoisted into place against the fan housing, Crotts temporarily attached it to the air duct with two locking C-clamps. The clamps used were Vise-Grip Model 11R Locking C-Clamps. Crotts stated that he clamped each side of the stair stringer to the air duct. Both C-clamps were found on the concrete base of the air duct, directly below the planned attachment points of the stair stringer.

The adjustment of both C-clamps was examined. The jaws on the clamp on the left side of the stair stringer were adjusted wide enough to allow the clamp to be placed around the stair stringer and the air duct frame member. Evidence indicates that this locking C-clamp remained locked as the stair stringer began sliding down the air duct. The C-clamp did not appear to open until the stair stringer had pulled away from the air duct.

The clamp attached to the right side of the stair stringer was adjusted differently. The jaws on the clamp were adjusted closer together. When tested, the clamp could be locked onto either the stair stringer or the air duct frame, but this adjustment would not allow the clamp to be installed around both the stair stringer and the air duct frame. Therefore, it is the opinion of the accident investigators that the right side rail of the stair stringer was not clamped to the fan housing. The clamp's exact position, and when it opened, could not be determined.

Crane and Manlift

A Manitex model 26101C, truck-mounted crane was used to hoist and position the stair stringer. The crane was mounted on a Kenworth flatbed truck. The manlift was a Genie model Z-60/34, Self-Propelled Articulating Boom. No defects were observed on either piece of equipment.

ROOT CAUSE ANALYSIS

An analysis was conducted to identify the underlying cause of the accident that was correctable through reasonable management controls. Listed below is the root cause identified during the analysis and the corresponding corrective action implemented to prevent a recurrence.

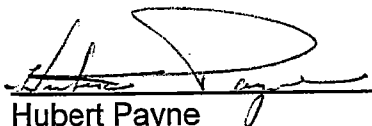
Root Cause: The policies and controls in place at this construction project did not ensure that persons would stay clear of hoisted loads.

Corrective Action: All employees received training concerning proper hoisting and rigging procedures and have been instructed to stay clear of hoisted loads. The contractor also submitted a written statement to the District Manager detailing procedures to be followed for installing the stairs.

CONCLUSION

The accident occurred because employees failed to stay clear of hoisted loads. The victim was standing at the bottom of the stair stringer as it was being hoisted. He was positioned between the stair stringer and the Genie manlift. When the stair stringer swung away from the air duct, it forced the victim back against the manlift. The stair stringer struck the victim in the chest, causing fatal injuries. In addition, a contributing factor to the accident was the method used to temporarily attach the stair stringer to the air duct. The method was not sufficient to support the weight of the stair stringer and hold it in place.

Approved By:


Hubert Payne
District Manager

Date July 15, 2010

ENFORCEMENT ACTIONS

1. A Section 103(j) Order, No. 6683336, was issued to prevent the destruction of any evidence which would assist in investigating the cause of the accident. The 103(j) Order was modified to a Section 103(k) Order to insure the safety of miners until the investigation could be completed.

2. A 104(a) Citation, No. 6683337, was issued to Coalfield citing 30 CFR § 77.210(b). An employee was struck by a set of stairs that was being installed on the return air duct as the bottom end of the stairs were being hoisted by a truck mounted crane. The employee was not being kept clear of the hoisted load.

3. A 104(a) Citation, No. 6683345, was issued to M-Class Mining, LLC citing 30 CFR § 77.210(b). A contractor's employee was struck by a set of stairs that was being installed on the return air duct as the bottom end of the stairs were being hoisted by a truck mounted crane. The employee was not being kept clear of the hoisted load.

APPENDIX A

Persons Participating in the Investigation

Mine Safety and Health Administration

Dean Cripps	Electrical Engineer, Accident Investigator
Bobby Jones	Coal Mine Safety and Health Inspector
Wilbur Deuel	Staff Assistant

State of Illinois Department of Natural Resources, Office of Mines and Minerals

Don McBride	Inspector at Large
Jerry Odle	Inspector
Joe Angleton	Director

Coalfield Services, Inc.

Michael Houseman	Contracts Manager
Robert Beatty, Jr.	Attorney

M-Class Mining LLC

Tim Kirkpatrick	Manager of Safety
Benjamin Bailey	Attorney
Jeffrey Baron	Attorney

Franklin County Coroners Office

Marty Leffler	Coroner
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APPENDIX B

Persons Interviewed

Coalfield Services, Inc.

Andrew Midkiff	Working Lead Man
Charles Jason Crotts	Journeyman Iron Worker
Thomas Bradley Crockett	Laborer
Steve Corder	Electrician

Doddridge Controls, Inc.

Jeremiah Sigley	Project Engineer
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APPENDIX C

Victim Information

Accident Investigation Data - Victim Information

U.S. Department of Labor

Event Number:

6	1	5	7	5	5	5
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Mine Safety and Health Administration



Victim Information: 1																																															
1. Name of Injured/Ill Employee: <i>Ray E. Orey</i>				2. Sex <i>M</i>		3. Victim's Age <i>61</i>		4. Last Four Digits of SSN:			5. Degree of Injury: <i>01 Fatal</i>																																				
6. Date (MM/DD/YYYY) and Time (24 Hr.) Of Death: <i>a. Date: 04/11/2010 b. Time: 16:15</i>						7. Date and Time Started: <i>a. Date: 04/11/2010 b. Time: 7:00</i>																																									
8. Regular Job Title: <i>195 Fireboss</i>				9. Work Activity when Injured: <i>088 Surface Construction, NEC</i>				10. Was this work activity part of regular job? <table style="width: 100%;"><tr><td style="text-align: center;">Yes</td><td style="text-align: center;"><input checked="" type="checkbox"/></td><td style="text-align: center;">No</td><td style="text-align: center;"><input type="checkbox"/></td></tr></table>				Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>																																
Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>																																												
11. Experience <i>a. This</i>			Years			Weeks			Days			<i>b. Regular</i>			Years			Weeks			Days			<i>c. This</i>			Years			Weeks			Days			<i>d. Total</i>			Years			Weeks			Days		
<i>Work Activity:</i>			<i>4</i>			<i>48</i>			<i>0</i>			<i>Job Title:</i>			<i>4</i>			<i>48</i>			<i>0</i>			<i>Mine:</i>			<i>0</i>			<i>6</i>			<i>0</i>			<i>Mining:</i>			<i>20</i>			<i>0</i>			<i>0</i>		
12. What Directly Inflicted Injury or Illness: <i>118 Stairs</i>						13. Nature of Injury or Illness: <i>170 Crushing</i>																																									
14. Training Deficiencies: <table style="width: 100%;"><tr><td>Hazard:</td><td><input type="checkbox"/></td><td>New/Newly-Employed</td><td><input type="checkbox"/></td><td>Experienced Miner:</td><td><input type="checkbox"/></td><td>Annual:</td><td><input type="checkbox"/></td><td>Task:</td><td><input type="checkbox"/></td></tr></table>												Hazard:	<input type="checkbox"/>	New/Newly-Employed	<input type="checkbox"/>	Experienced Miner:	<input type="checkbox"/>	Annual:	<input type="checkbox"/>	Task:	<input type="checkbox"/>																										
Hazard:	<input type="checkbox"/>	New/Newly-Employed	<input type="checkbox"/>	Experienced Miner:	<input type="checkbox"/>	Annual:	<input type="checkbox"/>	Task:	<input type="checkbox"/>																																						
15. Company of Employment: (if different from production operator) <i>Coalfield Services, Inc</i>								Independent Contractor ID: (if applicable) <i>R58</i>																																							
16. On-site Emergency Medical Treatment <table style="width: 100%;"><tr><td>Not Applicable:</td><td><input type="checkbox"/></td><td>First-Aid:</td><td><input type="checkbox"/></td><td>CPR:</td><td><input type="checkbox"/></td><td>BMT:</td><td><input checked="" type="checkbox"/></td><td>Medical Professional:</td><td><input type="checkbox"/></td><td>None:</td><td><input type="checkbox"/></td></tr></table>												Not Applicable:	<input type="checkbox"/>	First-Aid:	<input type="checkbox"/>	CPR:	<input type="checkbox"/>	BMT:	<input checked="" type="checkbox"/>	Medical Professional:	<input type="checkbox"/>	None:	<input type="checkbox"/>																								
Not Applicable:	<input type="checkbox"/>	First-Aid:	<input type="checkbox"/>	CPR:	<input type="checkbox"/>	BMT:	<input checked="" type="checkbox"/>	Medical Professional:	<input type="checkbox"/>	None:	<input type="checkbox"/>																																				
17. Part 50 Document Control Number: (form 7000-1)						18. Union Affiliation of Victim: <i>9999 None (No Union Affiliation)</i>																																									