

UNITED STATES  
DEPARTMENT OF LABOR  
MINE SAFETY AND HEALTH ADMINISTRATION

COAL MINE SAFETY AND HEALTH

REPORT OF INVESTIGATION

Underground Coal Mine

Fatal Slip/Fall of Person Accident  
September 23, 2009

Cowin & Company, Inc. (B84)  
Birmingham, AL  
at  
MC #1 Mine  
M-Class Mining  
Macedonia, Franklin County, Illinois  
I.D. No. 11-03189

Accident Investigators

Dean Cripps  
Electrical Engineer

Mike Rennie  
Supervisory Mine Safety and Health Inspector

Carol Tasillo  
Civil Engineer, MSHA Technical Support

Jerry Taylor  
Mine Safety and Health Specialist, MSHA Technical Support

Originating Office  
Mine Safety and Health Administration  
District 8  
2300 Willow Street  
Vincennes, Indiana  
Mary Jo Bishop, Acting District Manager

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Photograph showing the top deck bucket well opening with one section of grating removed.

## OVERVIEW

On Wednesday, September 23, 2009, at approximately 9:35 p.m., Robert B. Comer, a contract miner/driller was fatally injured when he fell from a work platform to the bottom of a shaft that was under construction. Comer and four other employees were working on the top deck of a two-deck work platform that was suspended in the 22 foot diameter shaft. A section of steel grating covering an opening in the center of the platform was removed to facilitate the removal of the concrete remix (a special pipe used during concrete pours in the shaft). Comer fell through the opening to the bottom of the shaft, a distance of approximately 38 feet. He was wearing a full-body harness and a lanyard, but the lanyard was not secured (tied off to a suitable connection).

The accident occurred because Cowin management failed to ensure that fall protection requirements contained in the regulations, the approved shaft sinking plan, and Cowin's fall protection policy were complied with.

## **GENERAL INFORMATION**

The MC#1 Mine, I.D. No. 11-03189, is located near Akin in Franklin County, Illinois. The mine operator is M-Class Mining LLC. The mine is under construction and is in non-producing status. The mine operator is developing a slope into the Herrin No. 6 coal seam. The principal officers for the mine at the time of the accident were Barry Hale, President and Tim Kirkpatrick, Manager of Safety.

Cowin and Company, Inc. located in Birmingham, Alabama was contracted by M-Class Mining to construct a 22 foot diameter ventilation shaft approximately 730 feet deep into the Herrin No. 6 coal seam. The principal officers for Cowin on this project are Mark Charlton, General Superintendent, Ron Robinson, Area Manager, Thomas Smith, Superintendent, and Bobby Maney, Superintendent.

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 June 29, 2009.

## **DESCRIPTION OF THE ACCIDENT**

On September 23, 2009, Robert Comer (victim) reported to work at the shaft construction site for his normal 3:00 p.m. to 11:00 p.m. shift. The day shift crew was working at the bottom of the shaft pouring concrete to form the bottom station. This work was being performed from the top deck of a two deck work platform. At 3:00 p.m., Comer and four other Cowin employees, Bobby Maney, Superintendent; Eric Todich, Miner/Driller; Frank Edwards, Miner/Driller; and Jamie Holland, Miner/Driller, were lowered to the work deck in the muck bucket and relieved the day shift crew. They continued the concrete pour without incident, completing it at about 9:00 p.m.

Maney asked the crew if they wanted to go to the surface and eat lunch or continue working and quit early. The crew decided to keep working so they could quit early.

The crew began cleaning up and sending out equipment and tools used during the concrete pour. A metal chute that had been placed on the top deck to direct the concrete across the shaft was sent to the surface. The work platform was then raised up in the shaft to the location of the concrete remix. The remix was attached to the bottom of the slickline (steel pipe) on the shaft wall. The remix was going to be disconnected and sent to the surface and then the crew was

going to the surface. To facilitate removal of the remix, a section of grating covering an opening in the center of the work deck was removed. This created an opening in the floor of the work deck measuring approximately two feet by eight feet.

Maney, Todich, and Holland were facing the shaft wall and working to disconnect the remix. Edwards was standing on the grating in the center of the work deck steadying the hook on the end of the hoist rope. Comer was standing near the opening that had been created by removal of the grating. Maney, using a walkie-talkie radio, instructed the hoist man on the surface to raise the hoist rope. Edwards released the hook and turned to walk to the edge of the work deck opposite the concrete remix. Edwards heard a noise and turned back to see Comer falling thru the opening in the floor of the work deck. Maney turned to see if the hoist rope had been raised high enough and also saw Comer falling. Edwards and Maney both saw Comer fall to the shaft bottom 38 feet below the work deck.

Maney immediately called on his walkie-talkie for someone to call 911. Todich heard this, turned, and saw the victim lying on the shaft bottom. He and Edwards then climbed down the ladder to the bottom deck of the work platform. Todich then climbed down the concrete forms lining the shaft wall to the shaft bottom. The victim was conscious and talking when Todich reached him. Todich immediately began rendering first aid.

Maney made a call to the surface and told the hoisting engineer to put the muck bucket on the hoist rope and send it below. Edwards climbed back to the top deck and he, Maney, and Holland began removing the rest of the grating from the center of the work deck so that the muck bucket could be lowered to the shaft bottom. The muck bucket was lowered to the work deck where Maney and Holland got inside. The bucket was then lowered to the shaft bottom. Maney and Holland assisted Todich in caring for the victim while the bucket was sent back to the surface for a stretcher and first aid supplies. Todich and Holland removed the belt and harness from the victim. The stretcher was sent to the shaft bottom in the muck bucket. The victim was placed on the stretcher and the stretcher was placed across the top of the muck bucket. Maney, Todich, and Holland got inside the bucket and held the stretcher while the bucket was hoisted through the work platform to the surface. The stretcher was taken off of the bucket on the surface and placed on the ground near the shaft collar. The victim was still conscious and talking at this time.

Personnel from Cardinal EMS arrived and began medical treatment on the victim. A helicopter from Air Evac Lifeteam was also sent to the scene. The

victim was transported by ambulance to Franklin Hospital in Benton, Illinois, where he was pronounced dead at 10:48 p.m.

## INVESTIGATION OF THE ACCIDENT

The MSHA call center was notified of the accident at 10:14 p.m. on September 23, 2009, by Cowin Superintendent Bobby Maney. 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 Adron Wilson, Supervisory Special Investigator for MSHA District 8 in Vincennes, Indiana. Wilson verbally issued a Section 103(j) Order to John Moore, Vice President of Safety for Cowin, to prevent the destruction of any evidence which would assist in investigating the cause of the accident. Dean Cripps, Accident Investigator, and Mike Rennie, Field Office Supervisor from the Benton Illinois Field Office were immediately dispatched to the mine. The 103(j) Order was then modified to a Section 103(k) Order, to ensure the safety of persons at the mine until an investigation could be conducted.

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 night of the accident. Interviews with four persons were conducted by the investigation team September 24, 2009. Personnel from MSHA's Technical Support Group assisted in the investigation of the accident scene September 25. The on-site portion of the investigation was completed September 30, 2009. A list of persons who participated in the investigation is shown in Appendices A and B of this report.

## DISCUSSION

### Location of the Accident

The accident occurred in a shaft that was under construction. The 22 foot diameter, concrete lined shaft had been excavated from the surface to a depth of 733 feet by drilling, shooting, and mucking. The shaft had intersected the coal seam to be mined and the only remaining excavation was for a sump hole. The work platform from which the victim fell was suspended near the shaft bottom.

### Work Platform

The work platform was 19 ½ feet in diameter. It was suspended in the shaft by two 7/8 inch wire ropes, each of which is connected to a separate work deck electric winch located on the surface. The work platform was raised and lowered

in the shaft using these electric winches. The work platform had two decks with a permanently installed ladder between the decks. Steel handrails are installed around the outside of both decks. The floor of both decks was constructed of steel grating. A rectangular opening, referred to as the bucket well, measuring 97 inches by 91 inches was present in the center of each work deck. These openings allow the muck bucket to be lowered through the work platform to the shaft bottom. A five inch toe board was present around the openings. Steel handrails were normally installed around the bucket well openings.

On the day of the accident, the handrails around the bucket well on the top deck had been removed. Three sections of steel grating, each measuring 3 feet by 10 feet, had been installed to cover the bucket well. According to statements by witnesses, one of the sections of grating had been slid over on top of the adjacent section, creating the opening through which the victim fell. In order to remove the victim from the shaft bottom, all three sections of grating had to be removed, to allow the muck bucket clearance through the work platform. After the victim was hoisted to the surface, the grating was placed back over the bucket well.

There were several potential tripping hazards located on the work deck, including a ladder, a nylon sling, a concrete vibrator hose, and a wood board. Additionally, a set of suspension lugs used to secure the work platform suspension lines to the platform, were located along the walkway around the bucket well. Since there is no evidence that the material on the deck contributed to the victim's fall, it is believed he was clear of the tripping hazards at the time of the accident; however, it is possible that the victim may have tripped on the toe board surrounding the bucket well opening.

### Concrete Pour

On the day of the accident, a concrete pour was being made to form the bottom station of the shaft bottom. The day shift began the concrete pour, and the evening shift completed the task. Approximately 225 cubic yards of concrete was used to pour the bottom station. The concrete is supplied from the surface to the site of the pour through a six inch steel pipe or slickline attached to the shaft wall. The concrete remix is attached to the bottom of the slickline. As concrete flows from the surface down through the slickline, the components tend to separate. The remix is a specially designed steel pipe that causes the concrete to be remixed before it enters the flexible line which distributes the material. A flexible six inch rubber pipe, approximately 20 feet long, is attached to the bottom of the remix. Concrete flows through the remix into the rubber pipe. The flexible pipe allows the concrete to be distributed to different areas around the shaft wall.

The rubber tube on the bottom of the remix would not reach to the opposite side of the shaft. Due to the large amount of concrete that was being poured in order to form the bottom station, a metal chute was used to help distribute the concrete across the shaft. The handrails around the bucket well impeded the use of the chute, so they were removed, and grating placed over the bucket well. The chute was then placed on top of the grating.

When the concrete pour was completed, the metal chute was hoisted out of the shaft using the main hoist. The remix needed to be removed next and sent out of the shaft. The remix was attached to the slickline above the work platform. The work platform was raised up to the remix using the work deck winches. The rubber pipe attached to the bottom of the remix hung vertically between the work platform and the shaft wall.

### Removal of the Remix

The remix is taken out of the shaft after every concrete pour. The remix was to be hoisted out of the mine using the main hoist rope located in the center of the shaft. Since the remix was attached to the shaft wall, the hook on the main hoist rope could not be attached to the remix. A small winch, known as a tugger, was installed on the surface near the collar. The wire rope on the tugger hung next to the shaft wall at the slickline. The tugger is normally used to lower sections of steel pipe to extend the slickline, and to hoist other small parts and tools.

A nylon sling was wrapped around the remix, and the hook attached to the end of the tugger rope was attached to the sling. Tension was placed on the tugger rope supporting the remix. This allows the Victaulic coupling connecting the remix to the slickline to be removed. The plan was to use the tugger to raise the remix up in the shaft until the end of the rubber pipe was just above the work deck. The pipe would then be swung to the center of the shaft and lowered into the opening created by the removed floor grating. When the remix is lowered to the work deck, it is attached to a separate nylon sling. This sling attaches to the hook on the main hoist rope, the tugger is disconnected, and the remix hoisted out of the shaft.

After the work platform was raised up to the location of the remix, the victim assisted in moving the grating from over the bucket well. He was located on the side of the bucket well opposite the remix. Maney, Todich, and Holland then connected the sling and tugger rope to the remix. Todich began to loosen the Victaulic coupling when Maney turned and saw the victim falling through the opening in the work deck.



## Fall Protection

Nine (9) self-retracting lifelines were accessible from the top deck of the work platform. Four (4) Miller Fall Protection MightyLite lifelines were distributed and attached to the top rail of the handrail surrounding the outer edge of the work platform. Five (5) DBI Sala Ultra-Lok lifelines were suspended overhead and were attached to the work platform suspension system at the connection between the work platform suspension lines and the work deck winch ropes. The self-retracting lifeline units were in fair condition and appeared to be functional.

The harness worn by the victim did not contain any product labeling that was originally attached to the harness by the manufacturer; however, through photographs, the harness was subsequently identified by Miller Technical Support as one of their products. The victim was wearing a Miller Fall Protection, full-body harness, Model No. 1019-1, which is an existing product modification to an 8428 Series Non-Stretch Harness. The harness was modified to incorporate a miner belt with the harness. The harness included one dorsal D-ring. The leg straps were fastened with a tongue and buckle. The miner belt portion of the harness was physically attached with stitching, and was fastened with a tongue and buckle. Miller Technical Support stated that the miner belt is considered to be independent of the harness function. The miner belt provided two tongue and buckle straps that secured the victim's W65 self-rescuer and a leather pouch for the cap lamp battery and tools. Based on information provided by Miller Technical Support, the harness was manufactured in June 2008, and was purchased in September 2008. Miller Technical Support was also able to verify the age of the harness by its features.

The victim was wearing a 1/4-inch wire rope lanyard with a shock absorbing pack. The lanyard was identified as a Miller Fall Protection Model No. 907NLS. When the fall protection was initially inspected at the bottom of the shaft, the shock-pack end of the lanyard was connected to the dorsal D-ring and the other end of the lanyard was free.

The personal fall protection system worn by the victim was inspected as part of the accident investigation. The victim's harness and lanyard showed signs of wear and the metal fasteners were corroded, but all components appeared to be functional. The left leg strap of the harness was disconnected from its buckle. The right leg strap of the harness was fed through the leg strap buckle, but was not buckled. This indicates that the harness was not being properly worn by the victim prior to the accident. If the leg straps had been buckled and securely fastened at the time of the accident, both leg straps should have been disconnected from the buckles when the harness was removed from the victim.

Based on witness statements, the safety harness was removed from the victim without having to unbuckle the leg straps.

There were no indications that the harness or lanyard were subjected to an impact load caused by a fall. Fall arrest indicators incorporated into the D-ring back pad were undamaged, indicating the harness had not been subjected to the forces of a fall. Also, the shock-absorber pack on the lanyard was not deployed, and there were no indications that the lanyard had been subjected to the forces of a fall.

Witness interviews indicate that the victim was tied off to one of the overhead DBI self-retracting lifelines prior to the accident. Based on physical evidence, it is the opinion of the accident investigators that the victim was not tied off when he fell through the opening in the work deck. What caused the victim to fall could not be determined.

### Training and Experience

Training records were reviewed and no deficiencies were identified that would have contributed to the accident. The victim had worked for Cowin at this site since June 6, 2009. He had previously worked on several shaft and slope construction projects and had worked at several underground coal mines.

### Production Operator Oversight

Tim Kirkpatrick, Safety Director for M-Class Mining at the MC #1 Mine, visited the shaft construction site at least once a week and did a walk through inspection and talked to Cowin employees. He went down in the shaft about once a month to observe progress of the shaft and to make sure Cowin employees were working safely. Kirkpatrick said Cowin's people were always properly tied off when he was in the shaft.

## **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 could safely work in the shaft where there was a danger of falling. An opening through which a person could fall was present in the work deck and management failed to ensure that fall protection was utilized.

**Corrective Action:** The contractor submitted an addendum to their approved shaft sinking plan to the District Manager. The addendum details the 100% tie off policy for persons working in the shaft. All employees have been instructed in the requirements of the tie off policy, and have received training in proper use of fall protection equipment.

## CONCLUSION

The accident occurred because Cowin management failed to ensure fall protection requirements contained in the regulations, the approved shaft sinking plan, and Cowin's fall protection policy were complied with. Although the victim was wearing a full-body harness and a lanyard, he was not tied off. Additionally, it is the consensus of the investigation team that the full-body harness was not being properly worn by the victim.

Approved By:

*Mary Jo Bishop*

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Mary Jo Bishop  
Acting District Manager

*3/9/2010*

\_\_\_\_\_  
Date

## ENFORCEMENT ACTIONS

1. A Section 103(j) Order, No. 6683283, 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 ensure the safety of miners until the investigation could be completed.
2. A 104(a) citation citation, No. 6683285, was issued citing 30 CFR § 77.1908(o). An employee fell through an opening in the work deck to the shaft bottom, a distance of approximately 38 feet. The investigation revealed that although the employee was wearing a full body harness, the lanyard was not secured, nor was other acceptable means provided to prevent the victim from falling into the shaft.

## APPENDICES

### Appendix A

#### Persons Participating in the Investigation

##### Mine Safety and Health Administration

Dean Cripps	Electrical Engineer, Accident Investigator
Mike Rennie	Supervisory Mine Safety and Health Inspector
Steve Womack	Supervisory Mine Safety and Health Inspector
Carol Tasillo	Civil Engineer, MSHA Technical Support
Jerry Taylor	Mine Safety and Health Specialist, Technical Support

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

Don McBride	Inspector at Large
Jerry Odle	Inspector
Joe Angleton	Director

##### Cowin and Company

John Moore	Vice President Safety and Human Resources
Mark Charlton	General Superintendent
Ron Robinson	Area Manager
Thomas Smith	Superintendent
Bobby Maney	Superintendent

##### M-Class Mining

Tim Kirkpatrick	Manager of Safety
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## Appendix B

### Persons Interviewed

Bobby Maney	Superintendent
Eric Todich	Miner/Driller
Frank Edwards	Miner/Driller
Jamie Holland	Miner/Driller

## Appendix C

### Victim Information

Accident Investigation Data - Victim Information

**U.S. Department of Labor**



Event Number: 

6	1	5	7	5	4	4
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Mine Safety and Health Administration

Victim Information: 1															
1. Name of Injured/All Employee: <i>Robert B. Comer</i>				2. Sex <i>M</i>		3. Victim's Age <i>38</i>			4. Last Four Digits of SSN: <i>4818</i>			5. Degree of Injury: <i>01 Fatal</i>			
6. Date(MM/DD/YY) and Time(24 Hr.) Of Death: <i>a. Date : 09/23/2009 b. Time : 22:48</i>								7. Date and Time Started: <i>a. Date : 09/23/2009 b. Time : 15:00</i>							
8. Regular Job Title: <i>063 Miner NEC/UG Miner</i>					9. Work Activity when Injured: <i>032 Hang/reposition tubing/pipe/rope/wire</i>					10. Was this work activity part of regular job? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>					
11. Experience		Years		Weeks		Days		b. Regular		Years		Weeks		Days	
a. This								c. This		Years		Weeks		Days	
Work Activity:		<i>5</i>		<i>0</i>		<i>0</i>		Job Title:		<i>5</i>		<i>0</i>		<i>0</i>	
12. What Directly Inflicted Injury or Illness: <i>123 Mine floor, bottom</i>								13. Nature of Injury or Illness: <i>370 Multiple injuries</i>							
14. Training Deficiencies: 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>Cowin and Company, Inc</i>										Independent Contractor ID: (if applicable) <i>B84</i>					
16. On-site Emergency/Medical Treatment 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>							