



**JAHSA**

Joseph A. Holmes Safety Association

February March April  
2012

**Sonman Shaft Coal Company  
Explosion of 1944**

*....see inside for details*

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The Mine Safety and Health Administration and Joseph A. Holmes Safety Association Bulletin contains safety articles on a variety of subjects: fatal accident abstracts, studies, posters, and other health and safety-related topics. This information is provided free of charge and is designed to assist in presentations to groups of mine and plant workers during on-the-job safety meetings. For more information, visit the MSHA home page at [www.msha.gov](http://www.msha.gov)

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# March 6, 2012 Holmes Meeting

## Joseph A. Holmes Safety Association Western Kentucky Chapter

By: Robert Stone

The Joseph A. Holmes Safety Association was formed in 1916. Named for the organization's founder, the first association was composed of 24 leading national organizations. Dr. Holmes was a mining safety pioneer and the first director of the U.S. Bureau of Mines. His philosophy of safety in the mining industry was underlined by his position that the task of mining safety was too big for government alone to accomplish. To justify this conjecture, from 1900 to 1916, there were 5,982 deaths reported in the coal mining industry. From 1911 until 1916, 4,933 people were killed in metal and nonmetal mining industries. The government didn't even include fatalities in sand and gravel operations until 1958. The Association's purpose was to conserve the lives of those working in the mining and related industries by educating miners in hazards and work precautions and by rewarding individual's safe work achievements.

Representatives of the Bureau of Mines, U.S. Department of Interior, proposed the Joseph A. Holmes Safety Association organize local chapters throughout the nation for mine workers and mine company officials for teaching first-aid, safety principles, and hygiene. Organization of local chapters began in 1921. In 1926, the organization saw a need to initiate an independent effort to take over the function of organizing chapters. As a result, Article V of the Constitution of the Joseph A. Holmes Safety Association established the Holmes Safety Association, and from March 5, 1926,

all future chapters of the affiliated body are known as the Holmes Safety Association. The chief function of the Holmes Safety Association is to establish chapters in mining communities for promoting the safety and health of miners, their families, and residents of the communities.

The Western Kentucky Chapter was organized on July 26, 2003, with the first meeting held at Scarlet's Restaurant. Tom Galbreath (MSHA Inspector, Lexington Field Office) was instrumental in the organization of the chapter. At the first organizational meeting, Marty Tubbs (Vulcan) was nominated as President, Gary Joiner (Martin Marietta) was nominated as Vice-President, Brad Morse (Rogers Group) was nominated as Treasurer; and Robert Stone (IMI) was nominated as Secretary. Many very informative and interesting presentations have been made since then. The generosity of the member mining companies and those member vendor organizations have made all these dinners possible, as well as the very successful annual picnic events.

I've been here from the beginning, and for me, we in the mining industry are a special group of people. I think that we're a tighter knit group than most vocations caring about the well-being of one another. We're also about family, and I think that this organization champions both our occupational well-being and promotes its functions in a manner that always includes family. It is deserving of our support and participation.



# Certificate of Safety Award

The Western Kentucky Chapter gives the Certificate of Safety award to each company site that goes all year without a lost time injury accident. This year the chapter gave out 14 awards for 2011. There were 14 out of 16 sites that qualified this year. Next year we are looking for all 16 sites to qualify for the Certificate of Safety award for 2011.



Certificate of Safety awarded to Pine Bluff Sand and Gravel



Certificate of Safety awarded to Rogers Group



Rogers Group, Marion Mine & Mill, Hopkinsville Quarry, and Princeton Mine



Hunter Sand & Gravel, Dredge III, Dredge IV, and Dredge V

# Holmes Safety Council



*Kinder Morgan, Grand River Terminal*



*LaFarge West, Fredonia Quarry*



*Old Hickory Clay, Hickory Clay Mill*



*Pine Bluff Sand & Gravel, Cumberland River Quarry*



*Certificate of Safety awarded to Calx Resources*



*Pine Bluff Sand & Gravel, Dredge Pine Bluff, Floating Plant Sliver, and Floating Plant Armstrong*

# Holmes Safety Council

March 6th meeting had 67  
in attendance to hear Brian  
McGeorge speak.



The right "Mind Set"

Accountability

"If you see it, you own it."

Team work - the three Cs

Care

Courage

Courtesy

Take the time

Daily Safety Huddles

Time-outs

Being proactive

Good catch / Near hit program

Sharing the rewards

Individual and Crew Safety Incentives

## Western Kentucky Chapter Membership

- Pine Bluff Materials (Cumberland Rivers Quarry)
- Pine Bluff Materials (Dredge Pine Bluff)
- Pine Bluff Materials (Floating Plant Sliver)
- Pine Bluff Materials (Floating Plant Armstrong)
- Hunter Sand & Gravel (Dredge III)
- Hunter Sand & Gravel (Dredge IV)
- Hunter Sand & Gravel (Dredge V)
- Old Hickory Clay (Hickory Clay Mill)
- Kinder Morgan (Grand River Terminal)
- LaFarge West (Fredonia Quarry)
- LaFarge West (Three Rivers Quarry)
- Rogers Group (Marion Mine & Mill)
- Rogers Group (Hopkinsville Quarry)
- Rogers Group (Princeton Mine)
- Calx Resources (Chaudet Creek Quarry)
- Vulcan Materials (Grand Rivers Quarry)



Professional Miner Award Employees  
from Pine Bluff Sand and Gravel

In 2011 all of the companies worked a total of 1,140,702 hours with only two lost time injury accidents.

Job Well Done!

## Changes in the Western Kentucky Chapter

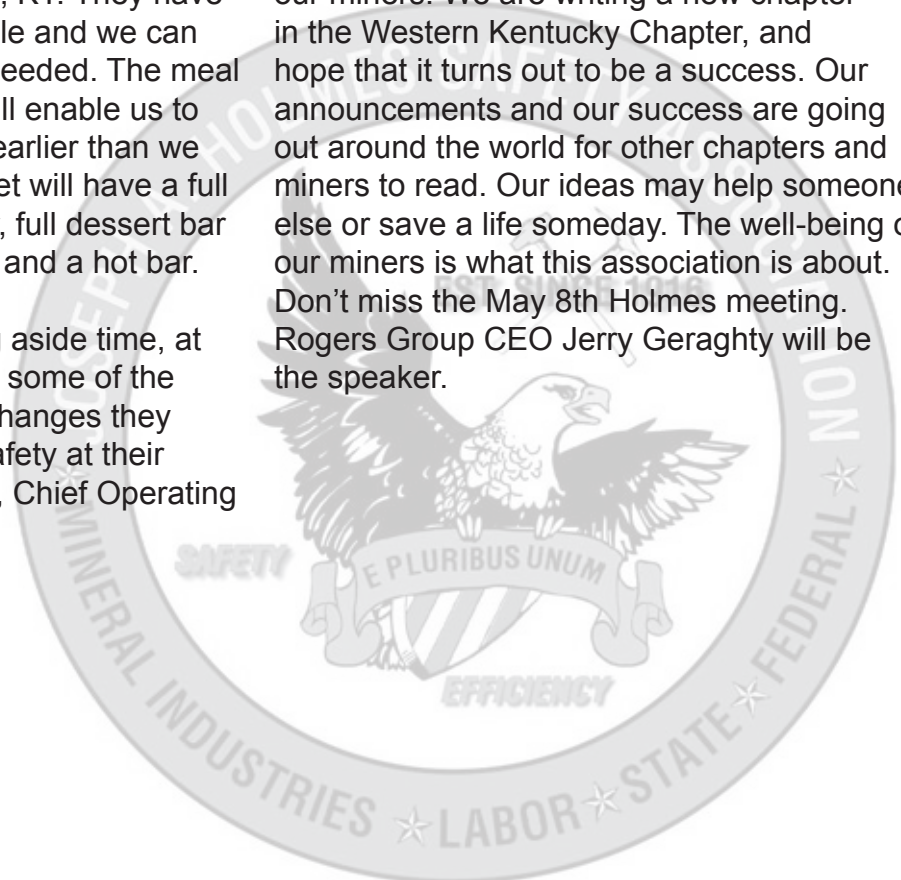
The Western Kentucky Chapter has become one of the biggest chapters in the nation that everyone looks to for guidance and success. All companies and organizations that are successful have to be open and willing to change. Sometimes change is hard, but it is necessary if you want to be more successful in your journey. The Western Kentucky Chapter's goal is to reach and tell many miners, as well as their families about safety.

First, the Western Kentucky Chapter will be moving to a bigger location to hold its meetings. Willow Pond Restaurant has been a good location for several years, but the Chapter has outgrown this location. We are moving the May 8th Holmes meeting to Ponderosa Steakhouse at 127 U.S. Highway 68E, Draffenville, KY. They have a room set up for 85 people and we can add a few more seats, if needed. The meal will be a buffet and that will enable us to start the meetings a little earlier than we have in the past. The buffet will have a full salad bar, soup of the day, full dessert bar with soft serve ice cream, and a hot bar.

Second, we will be setting aside time, at each Holmes meeting, for some of the companies to talk about changes they have made to help with safety at their location. Brian McGeorge, Chief Operating

Officer for Pine Bluff Sand & Gravel, stated in his presentation that all of the companies in the Western Kentucky Chapter should be on the same side when it comes to safety. Brian also said that if their company or another company could come up with an idea or a statement that helped their company become safer, then we should share it with the rest of the group. I feel like this would be a great idea for all of our companies to unite as one body, when it comes to the safety of our miners. Our membership had two lost-time accidents last year. Two miners getting hurt is two too many. By working together safety as one team, we would be much more beneficial to our companies and our miners.

These changes might not be easy for some, but let's give it a try for the safety of our miners. We are writing a new chapter in the Western Kentucky Chapter, and hope that it turns out to be a success. Our announcements and our success are going out around the world for other chapters and miners to read. Our ideas may help someone else or save a life someday. The well-being of our miners is what this association is about. Don't miss the May 8th Holmes meeting. Rogers Group CEO Jerry Geraghty will be the speaker.



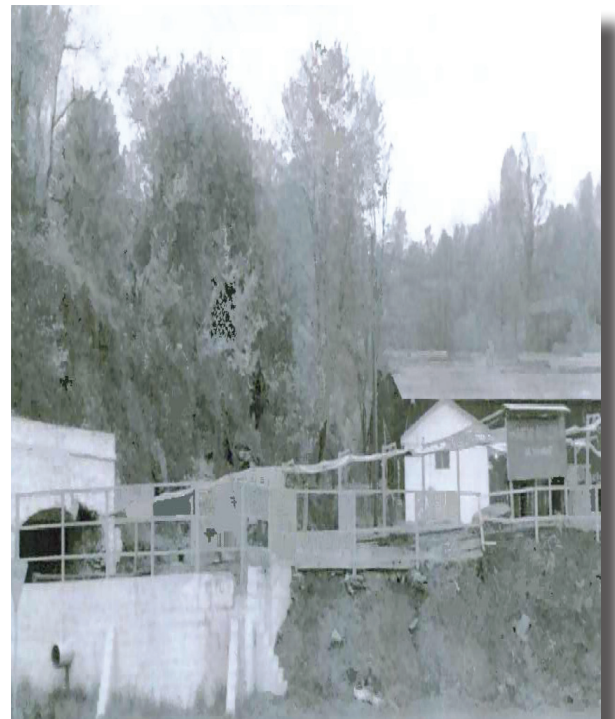
## Historical

# ***Siltix Mine Explosion 1966***

Report on Siltix Mine Explosion  
July 23, 1966  
Mount Hope, West Virginia

A gas explosion occurred in the Siltix mine of the New River Company, Mount Hope, West Virginia, about 8:45 a.m., Saturday, July 23, 1966. Seven men were killed by the explosion; all died from burns and/or forces. Two of the other 41 men in the mine at the time of the explosion were injured, one only slightly. Eleven men in the 6 left section heard the explosion, but they were unaware of what actually happened, and they erected a barricade in the return entries about 250 feet from the entrance to the 6 left section when they encountered smoke and fumes in the return entries. The men remained behind the barricade until they were rescued about 10:30 a.m., July 23. The men were in good physical condition when they were rescued. After leaving the barricade, seven of these men assisted in recovery operations in the 2 left mains section; two of these seven employees and three additional men were overcome by smoke and fumes and were removed from the mine.

Bureau of Mines investigators believe that the explosion originated in the shuttle car haulway about 100 feet outby the faces of No. 4 room off No.1 entry, 2 left mains, where an explosive mixture of methane and air was ignited by electric arcs and sparks from a shuttle car. Forces of the explosion extended throughout the 2 left main section into 6 left and 6 right off 2 left mains and were dissipated after traveling about 1,700 feet outby in 2 left mains.



### **Evidence of activities and story of the explosion**

The day-shift crew (7:30 a.m. to 3:30 p.m.) consisting of 48 men, entered the mine about 7:30 a.m., July 23, 1966, and they were transported in mine cars to their respective sections without incident. Employees of the 6 left and 1 right butts conventional loading sections reached their working faces promptly and were loading coal when the explosion occurred.

The continuous miner and shuttle cars in the 2 left main section had been moved back from the faces of the rooms at the end of the shift near midnight July 22 to clean up fallen roof rock in the pillar split (shuttle car roadway) between Nos. 3 and 4 entries. The continuous miner and shuttle cars were left at this location to be trammed back to the room faces by the day-shift crew.

Two electricians worked their entire shift, 12 midnight to 8 a.m., preparing electric face equipment in the 2 left main section. The electricians stated that only two other men visited the section during their shift, a roof



bolter and the fire boss. They stated further that neither they nor the roof bolter traveled to any of the working faces, that they worked their entire shift in the vicinity of the belt tail-piece.

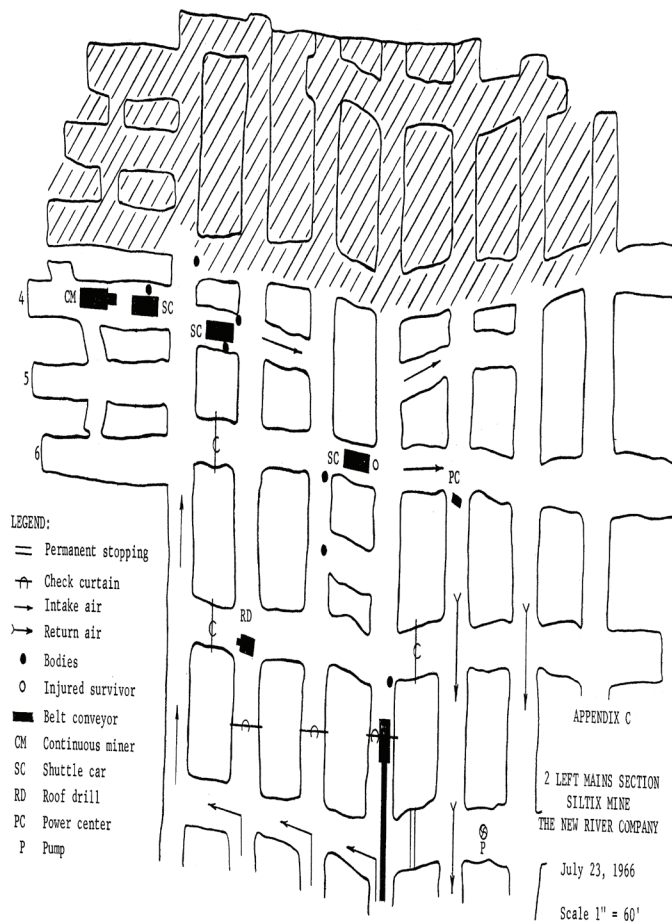
The day shift crew in 2 left mains, consisting of a foreman, continuous miner operator and helper, electrician, roof bolt machine operator, and three shuttle car operators, arrived on the section about 8:20 a.m. Company rules require that the section foreman notify the superintendent or the tippie foreman on the surface of the condition of the section and/ or that coal-producing operations have been started. Dallas Ayers, 2 left main section foreman, called to the surface about 8:30 a.m. and informed the superintendent that they were "loading." This was the last verbal contact the 2 left mains employees had with other mine employees prior to the explosion. Before entering the mine on July 23, Ayers was instructed to finish driving a crosscut tight off No. 4 room into the gob and then begin extracting the room pillars between Nos. 4, 5, and 6 rooms.

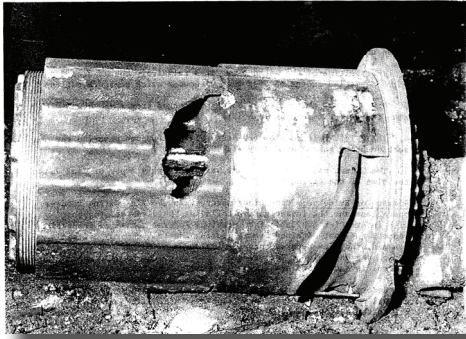
Lloyd Marcum, beltman, was shoveling coal spillage onto the belt conveyor at 6 left off 2 left mains when the explosion occurred. Marcum stated that prior to the occurrence, about two shuttle cars of coal and material passed by him on the 2 left mains belt conveyor. He stated further that the material appeared

to be coal and dust from the roadways rather than fresh coal. Marcum stated that while he was shoveling, a terrible blast of air tossed him about 60 feet outby along the belt conveyor. He said that smoke and dust suspended in the air prevented him from seeing for some time, although he did not see any flame. Marcum moved along the timberline adjacent to the conveyor belt until he reached the 6 left telephone and notified superintendent Keaton of the occurrence. Keaton instructed Marcum to remain at 6 left until he received assistance.

On the morning of July 23, the mine foreman, Maxwell Wallace, rode underground in the 6 left man trip with the section foreman and a crew of 10 men. The 6 left section crew began producing coal promptly, and coal was being loaded when the explosion occurred. Wallace and Wiley Cullop, section foreman,

were near the 6 left belt tailpiece when they felt an unusually strong blast of wind. Immediately thereafter, they observed dense dust suspended in the air. Neither Wallace nor Cullop were aware of what had occurred or had any idea of where the occurrence might have originated. Wallace instructed Cullop to assemble his crew near the telephone at the 6 left tailpiece and to keep the crew there until he received further instructions. Immediately thereafter, Wallace began traveling outby along the 6 left belt in an attempt to learn what had occurred.





*Damaged cable reel of No. 1 standard drive shuttle car*

Cullop assembled the crew at the telephone, and he then began calling the surface buildings on the telephone. The general superintendent answered Cullop's call, and after Cullop had explained what had occurred, the general superintendent suggested that possibly a roof fall had occurred in an intake air course and he (Cullop) was to ascertain if a fall had occurred. Thereafter, Cullop ordered the crew to remain at the telephone while he traveled outby. Cullop travelled about 1,000 feet in the belt entry toward the mouth of the section, and after observing nothing unusual, he returned to the telephone and began calling on the phone. The general superintendent again answered, informed Cullop that an explosion had likely occurred in the 2 left mains section and that he was to take his crew to fresh air at the entrance to 6 left. The 6 left crew immediately proceeded along the belt entry toward the entrance of the section; the crew traveled about 1,000 feet when they encountered thick black smoke moving inby

in the intake entry. To circumvent the smoke, the crew traveled through a man door in a permanent stopping between Nos. 2 and 3 entries and then traveled in No. 2 entry, a return air course, toward the entrance to the 6 left section.

Upon reaching No. 1 entry, at left mains, dense smoke was again encountered, blocking the escape route. When it appeared that all escape routes were blocked by the dense smoke, the section foreman and the crew decided to locate a suitable place in No. 2 entry, 6 left and construct a barricade. Members of the crew began searching for barricading materials in the return air courses. The barricade was constructed at a crosscut between Nos. 2 and 3 entries, 6 left, three crosscuts inby the mouth of 6 left. It consisted of three plies of brattice cloth supported by wooden timbers and nails and was shaped in a semi-circle. One end of the barricade was attached to the inby corner of the crosscut and the other was attached to the outby corner of the crosscut. The rear wall of the barricade was formed by a permanent stopping between Nos. 2 and 3 entries. From measurements taken during the investigation, the cross-sectional area within the barricade was about 580 square feet. The 11 men entered the barricade and remained therein for approximately 45 minutes; they were rescued about 10:30 a.m. The men remained calm while confined and all decisions made were agreed upon by all members of the crew. None of the men showed ill effects from their confinement, and all were in good physical condition when rescued. ♦



## Historical

# ***Sonman Shaft Coal Company Explosion***

### **Explosion at Sonman "E" Shaft**

An explosion occurred in the Sonman "E" mine of the Sonman Shaft Coal Company, Sonman, Cambria County, Pennsylvania, at about 10:40 a.m. on July 15, 1940. Sixty-three men were killed as a result of this explosion, of which number about fifty-five were killed by afterdamp and 8 were killed by burns and afterdamp. Few, if any, of the men were killed outright by burns and violence and it is probable that the eventual cause of death in all cases was due to afterdamp. Eighteen men escaped without assistance from the immediate explosion area and 12 others working on the same split of air escaped unaided. About 350 were in the mine at the time of the explosion.

Thirty-four bodies were found behind a barricade (at least 700 feet in by No. 3 haulage on 16 right) which had been ineffectively erected and located. Seven others were also found back of this barricade some distance in by from the group of 34 at and near the face of room No. 3, 16 right. A note found on one of the victims indicated that at least some of them were still alive at 6:00 p.m. The explosion was not general throughout the mine, but traversed a relatively small area in Nos. 16, 17 and 18 right entries off the north dip, and the flame of the explosion did not reach the entrance to these entries on the north dip or the faces of the entries. No water was used in this mine for allaying the coal dust. Rock dust had been sparsely applied at some locations on haulage entries.

The Safety Division of the Bureau of Mines at Pittsburgh, PA, was informed by telephone at about 12:45 p.m. that an explosion had occurred, by District Mine Inspector W. H. Filer when Filer arrived at the mine. He was unable to give any details but requested assistance and stated that he and Inspector Michael Thomas were entering the mine to obtain additional information. A group of Bureau of Mines employees, consisting of J. J. Forbes, G. W. Grove, M. J. Ankeny and E. J. Ristedt in a Bureau automobile and H. R. Burdelsky and J. W. Pero in a Bureau truck loaded with oxygen breathing apparatus, gas masks and accessories, left the Bureau of Mines station at 1:10 p.m. They arrived at the mine at about 4:00 p.m. and, after conferring with company officials, Messrs. Forbes, Grove, Ankeny, Ristedt, and Pero entered the mine at 4:45 p.m. Upon reaching the affected area about 45 minutes later, they found that the ventilation had been restored up 17 right to about No. 20 room.





From this point employees of the Bureau of Mines participated in the recovery work until its completion at 8:30 a.m. when the last body was recovered and left the mine about 11:00 a.m., July 16, 1940.

### Method of Mining

The mine is opened by two main dip systems of entries leading from the main slope. These main dip entries, known as the north dip and the south dip, are approximately parallel to each other and were driven roughly 6,000 feet apart. These main dip entries were originally driven in triplicate, but during the later life of the mine, sets of five entries were projected and driven on the main dips. Room entries are turned off the main dip entries to the right and left at about 500 foot intervals, approximately on the strike of the bed. These entries are generally driven in pairs from which the rooms, about 30 feet wide, are driven to the rise parallel to the main slopes on about 60-foot centers. In the more recently developed portions of the mine, the rooms are driven through from one pair of entries to the air course of the adjacent entries. While pillars have previously been extracted, the

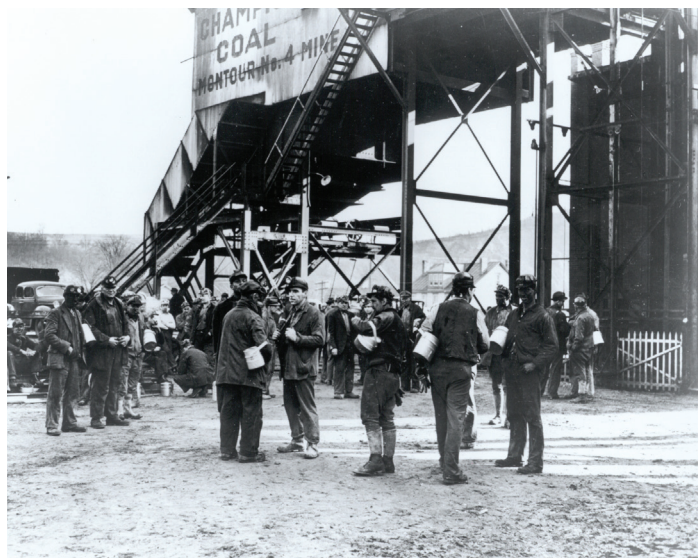
present system of mining, which is a modification of a mining method known as the Gary system, was laid out with a view to obtain the greatest possible recovery of coal without extracting the pillars.

Instead of the total extraction of pillars whereby the roof is caused to break and cave, rooms and entries are driven with the cut-throughs at legal intervals (not less than 16 yards nor more than 35 yards apart). After rooms have been driven to their limits, additional crosscuts are driven through the room pillars, leaving stumps for the support of the roof. Also whenever entries are no longer used or needed for haulage purposes, the chain pillars are partially extracted by driving openings through them.

Complete pillar mining was abandoned in order to avoid fracturing the roof, which in the past created a very serious and costly drainage problem. The present system was projected for an 80 percent recovery of coal but it is reported that only about 72 percent recovery is actually attained.

### Ventilation

The mine is ventilated by means of an 8 by 4 2/3-foot double-inlet Jeffrey Retrovane centrifugal fan driven by a 150-horsepower Westinghouse motor connected to the fan by means of a multiple belt drive. The fan is offset from the opening about 15 feet, but explosion doors have not been provided. It is operating exhausting



*continued*

and when the air was measured after the explosion, it was circulating about 100,000 cubic feet of air per minute at a water gage of about 4.2 inches. The fan is not reversible. No separate source of power is available for driving the fan in the event of failure of the regular power circuit and no auxiliary fan or auxiliary drive has been provided. A warning device has been installed on the fan whereby any stoppage or slowing down of the fan would give both a visual and audible warning at a nearby dwelling house, the residence



of the mine electrician. Arrangements have been made to have some member of the family always present, and in the event of a warning being sounded, the cause of the interruption is investigated and the mine is notified by telephone.

A much more reliable method would be to arrange to cut all power from the mine by means of an electric relay switch system activated by the vane in the fan duct, in the event of failure of the fan. At the same time, a visual and audible warning device should be installed at the mine surface plant or superintendent's office which would give warning in the event of failure of the fan.

## Explosion and Recovery Operations

The first indication of any trouble inside the mine was in the form of a telephone communication received by the mine superintendent on the surface. Some unidentified person underground, possibly one of the hoisting engineers, notified the superintendent that the air had reversed. The superintendent immediately sent someone to check on the fan at the Portage slope and another person to check on the air movement in the Shoemaker manway, which was a main intake. He then got in touch with the mine foreman, who had just arrived at the bottom of the main slope from the south dip, and directed him to proceed to the north dip to investigate the trouble. Subsequently, the superintendent notified the district mine inspector that some trouble had occurred at the mine. The mine foreman proceeded immediately down the north dip to 14 right where he met the fire bosses who were just coming off shift, the safety inspector, four loaders, and a machine helper who had escaped from the explosion area in 16 right and 12 men who had come out of 16 left after the explosion. After checking the men who had escaped, the mine foreman, accompanied by the safety inspector and fire bosses, proceeded down the north dip, checking all stoppings between the intake and return airways as they progressed toward 17 left.

At 17 left they found the air-lock doors on 17 left blown inby, causing a direct short circuit of the air from the right side of the north dip. They then removed a door which was not in use from 17 right and installed it at the location of the first air-lock door in 17 left. They then proceeded to 18 left and found the door partially damaged and noted that the forces were inby. They repaired the door temporarily and entered 18 right and found the manway door blown inby. They repaired this door and traveled in 18 right to the first door of the air lock located about 400 feet inby from the entrance to 18 right. This door was in place but had the top board blown off. After repairing

this door they tried to get up to the second door of the air lock, about 200 feet inby from the first door, but were unable to reach the second door because of smoke and dust. The party then returned to 17 right, which was the main air intake for the section, and traveled about 300 feet into 17 right when someone reported that two men had come out of 18 right and that nine (actually eleven) more were on their way out. The party then returned to the air lock door in 18 right with the intention of short-circuiting the air into 18 right when they were advised that the 18 right men had reached the north dip safely through the No. 1 face entry of 18 right at about 2:00 p.m. The mine foreman and others then returned to 17 right and found that the air was short-circuiting into the 17 right air course through the crosscuts. They were discussing this short circuit when Inspectors W. H. Filer and M. W. Thomas of the Pennsylvania Department of Mines arrived. From this point air was conducted up 17 right entry by closing off all openings to the left with canvas stopping. Arrangements were made to obtain additional air by cutting it off from the south dip sections of the mine. After proceeding up 17 right for some distance, the party was joined by two additional State mine inspectors, R. D. Joseph and D. J. Keenan. The first working place in 17 right, No. 15 room, was explored by apparatus crews where three bodies were recovered and a fourth located. A smoldering fire consisting of an

article of clothing belonging to one of the miners was later discovered and extinguished in No. 15 room about 1:30 a.m. when the fourth body which had previously been located was removed. An advance was made toward



No. 2 haulage road where it was found that a door had been blown out and the air was short-circuiting. While erecting canvas stoppings in the No. 2 haulage, the party was joined by J. J. Forbes, G. W. Grove, M. J. Ankeny, E. J. Ristedt, and J. W. Pero of the Bureau of Mines, at about 5:30 p.m.

The closing of No. 2 haulage enabled the further exploration of 17 right entry. The first work performed after the Bureau men reached the point where work was being advanced was the recovery of two bodies in 28 room. A recent fall had occurred in the room and the roof was still "working" and falling as the bodies were being recovered. The party then proceeded up 17 right to the junction of No. 3 haulage, which extends from 18 right to 16 right. In the immediate vicinity of this point six additional bodies were found. After closing a door on No. 3 haulage road and replacing four stoppings which had been blown out at the junction of the haulage road and 17 right, the recovery crews advanced inby on the No. 3 haulage road by temporarily replacing the stoppings with brattice cloth to the junction of 16 right air course and the No. 3 haulage

road. At this point, footprints were observed in the dust which had obviously been made after the dust from the explosion had settled. Shortly thereafter, the bodies of two men comprising a motor crew were found on the "tight" side alongside the first and second cars of a nine-car trip of coal attached to an electric locomotive.

The exploration work was then continued and on reaching the 16 right haulage road, other footprints were observed. Upon tracing these footprints up the entry during an exploration

by Messrs. Forbes, Grove, and Pero, wearing gas masks, numerous additional footprints were observed, leading to the belief that the men were probably barricaded at some inby point. As the ventilation had not been fully restored and there was still considerable carbon monoxide in the air, it was decided that a crew wearing oxygen breathing apparatus should make an exploration, if possible, to the face of 16 right. This crew, after exploring a short distance in 16 right, returned and advised that they had located a canvas stopping across the 16 right entry at about room 26. Messrs. Forbes, Grove, Pero, State Mine Inspector R. D. Joseph, and a few others then advanced to this canvas stopping, and after several calls which were unanswered, they decided to remove the stopping. After removing this stopping, a second canvas stopping, partially erected, was found 52 feet inby the first one. Two bodies were found lying outby the second brattice and 32 bodies were found inby strewn along the 16 right entry throughout a distance of about 170 feet from the second brattice to where the last body was lying.

While these bodies were being removed, explorations were made to the faces of 16 right heading and air course, but no additional bodies were found. Another barricade, erected by some or possibly all the men found in 16 right, was found at the entrance to No. 5 haulage road off 16 right. This barricade was well erected but the enclosed area was limited in capacity (a space 48 feet long, 17 feet wide and 4 feet 3 inches high). While the evidence indicates that at least some of the men spent several hours in this barricade, it had been abandoned before the men met their death and no bodies were found in it.



At about this time, the advance crews were joined by four additional State mine inspectors, G. J. Steinheiser, R. E. George, P. H. O'Neill and W. G. Knapper, who relieved the four State mine inspectors who had been on duty up to this point. Following the removal of the bodies from 16 right entry, additional explorations were made in the rooms leading off 16 right and seven additional bodies were found near the face in No. 30 room. The locating of these bodies and the exploration of the remaining rooms completed the recovery work on 16 right.

The crews then returned to the junction of 17 right and the No. 3 haulage road and continued the exploration work by conducting the ventilation into 17 right inby the No. 3 haulage road. After progressing a short distance in this entry, four additional bodies were found

opposite the first crosscut in No. 31 room off 17 right. After exploring the faces of 17 right and 17 right air course and 17 butt heading and air course, two additional bodies were found in 17 butt air course opposite the next to the last open crosscut. This completed the exploration work on 17 right and 17 butt and the crews again returned to the junction of 17 right and the No. 3 haulage road. At this point, the party was joined by H. B. Lindeman and E. L. Christensen of the Bureau of Mines.

The recovery crews then proceeded down No. 3 haulage road to 18 right. It was known that at least one body was lying on 18 right haulage road (No. 3 face entry) as it had been seen by some of the men who escaped from this entry. After erecting a few canvas

stoppings to advance the air, it was finally decided to send an oxygen breathing apparatus crew down 18 right to recover the body that was known to be there and locate the body of the last missing man. On recovering these two bodies, the last of which was reached about 8:30 a.m. by the apparatus crews, all the missing men having been located, further work was suspended and the recovery crews returned to the surface on orders from the State Department of Mines.

During the coroner's inquest the questions were raised as to why the recovery work was not conducted through 16 right, why if air had been put into 16 right it would not have reached the barricaded men and why the barricaded men were not reached sooner. The reasons why these things were not or could not be accomplished are as follows:

1. It was not feasible to conduct recovery operations by way of 16 right because the roof in the lower portion of this entry was known to be bad and danger boards had been placed to prohibit anyone from using the entry as a travelway. As a result of the unsafe roof conditions and previous falls, it was considered that travel on this entry was extremely difficult and dangerous. This was strengthened by the reports of the men who escaped from 16 right entry. Therefore, if it had been decided to enter the affected area by way of 16 right, it would have resulted in serious delay. In addition to this, if an effort had been made to conduct the ventilation up 16 right, it would have been necessary to construct numerous stoppings to prevent the air from entering the rooms between 16 and 17 right and the rooms driven off 16 right toward the barrier. This would have required a tremendous amount of labor and materials and much more time than taking the air up 17 right as was done during the recovery work.

2. Air could not have reached the barricaded men by putting it into 16 right regardless of the amount of air available or the amount

used because it would have returned through opening leading from 16 right toward 17 and 18 right long before reaching the barricaded men.

3. It is believed that everything humanly possible was done, under prevailing conditions, to reach the barricaded men at the earliest possible moment. It must be realized that, after the explosion occurred, the obtaining of men and materials and getting them into the mine, a distance of 2 miles or more, was a task of considerable magnitude. Moreover, after the material was delivered to the bottom of the north dips it was necessary to carry it by hand, as recovery work advanced, from the north dip at 17 right, up 17 right to No. 3 haulageway, and from there to the junction of No. 3 haulageway and 16 right, a distance of about a half a mile. This in low coal required time and arduous labor.

### **Cause of the Explosion**

An investigation to determine the cause of the explosion was conducted jointly by the Pennsylvania Department of Mines, the Koppers Coal Company, the United Mine Workers of America, and the Federal Bureau of Mines, but separate reports are formulated by each of these agencies. The State's commission consisted of R. E. George, chairman, R. D. Josoph, George Steinheiser, and M. W. Thomas. The State's investigation was conducted by Richard Maize, acting Deputy Secretary of Mines. The company was represented by L. C. Campbell, John Lindley, M. A. Evans, O. V. Simpson, Victor Duras, and J. M. Baker. The United Mine Workers of America was represented by James Hess, Joseph Yurich, and Harvey Younkers. The Bureau of Mines was represented by J. J. Forbes, G.W. Grove, M. J. Ankeny, and H. B. Lindeman.

The underground inspection and investigation of the explosion area was conducted on July 18, 19, 23, and 25 and hearings of witnesses were conducted by the Pennsylvania Department of Mines, July 20, 24, and 26.



## **State Inspectors' Findings and Conclusions**

1. Ninety-three (93) men were employed in the number two (No. 2) air split, one continuous circuit of air, and that the employment of more than seventy (70) men legally allowed on this air split, did not contribute as to either cause or propagate the explosion.
2. Control of the air current in the number two (No. 2) air split by single doors did not provide a constant supply of fresh air as required by law.
3. The air door situated at the junction of seventeen (17) right and the number three (No. 3) haulage road, which was found open and so secured following the explosion, did interrupt the air flow in the sixteen (16) right and that this interruption did not contribute to either cause or propagate the explosion.
4. Coal dust, present in variable quantities along the roadways, travelingways and airways, was thrown in suspension, carried by the explosion and subsequently deposited, did not contribute as to initiate the explosion and played little part, if any, in its propagation.
5. The fresh intake air used to ventilate the number two (No. 2) air split, and which traversed the roadway in which trolley wire was suspended from the roof and from which an open type electric trolley locomotive was operating, was first passed through an area in which pillars were mined to such an extent as to permit abandonment, and mined to such an extent as to cause caving.
6. Caving occurred in the number twenty-eight (No. 28) room off seventeen (17) right and that such caving was induced by the partial extraction of the coal seam, and was superinduced at this place by the presence of clay veins and a barrier pillar.
7. Caving in the number twenty-eight (No. 28) room off seventeen (17) right occurred just prior to the explosion and continued for some time afterward.

8. The explosive gas was suddenly liberated in considerable volume from the fall which occurred in the number twenty-eight (No. 28) room was carried in the air current.

9. A trolley locomotive operating in the sixteen (16) right heading was in the path of explosive gas contaminating the mine atmosphere.

## **Conclusion**

The explosion which occurred was initiated by the ignition of explosive gas in the mine atmosphere, by an arc or spark from a trolley locomotive operating at or near the junction of the number three (No. 3) haulage road and the sixteen (16) right heading, and was propagated by gas in the mine atmosphere. The ignition was indirectly brought about by the failure of the system of mining, which failure might have been anticipated, yet was not expected.

## **Coroner's Inquest**

A coroner's inquest was conducted by Patrick McDermott, coroner of Cambria County, which included the testimony of witnesses before a coroner's jury of five men at Portage, PA on August 13, 14, and 15. After hearing the testimony of mine officials, inspectors, survivors and others, the jury rendered the following verdict:

Freeman George and sixty-two others came accidentally to their death by asphyxiation and first and second degree burns in slope of Sonman Shaft Coal Company at Sonman by gas explosion on July 15, 1940, gas being ignited by a trolley locomotive. The ignition was superinduced by the failure of system of mining and negligence of officials directly in charge of mine management at time of explosion: Victor Duras, Superintendent; Leslie Steele, Mine Foreman; Guy Wahl, Assistant Mine Foreman. ◆

# Safety Ideas

## Battery Safety

Category: Maintenance

Mine Type: All Mines

Battery powered equipment is commonplace in modern mining operations. Battery power often has many advantages over other types of power for mining equipment.

In recent years, several hundred accidents have occurred where miners were blinded or seriously burned by batteries. Many of these accidents were related to charging, installing, removing, or maintaining batteries.

MSHA believes these types of accidents are preventable. **In addition, miners can be protected from needless serious injury if they wear personal protective equipment (PPE), such as chemical resistant rubber gloves, aprons and face shields.**

Batteries contain acid and can explode and/or catch on fire. In the event of a battery explosion or fire, acid and toxic fumes are released. When acid contacts the skin, extremely painful burns and scarring result. When breathed, the lungs are burnt from the toxic chemicals present in fumes. Blindness will likely result if this acid contacts the eye. These physical injuries are irreversible. Therefore, when working with batteries, it is important to prevent exposure by wearing PPE.

When batteries are being charged, explosive gasses are produced. Heat and sparks can ignite these gasses causing a fire or explosion. All smoking, open flames and spark producing items such as grinders, welders or other electrical equipment, should be kept well clear of batteries.



Surface leakage is a condition caused when dust mixes with spilled electrolyte on the battery, creating a low resistance path. This low resistance path can “short” the battery. A shorted battery creates heat that can potentially cause a fire. Batteries should be kept relatively clean and free of excess dust to ensure against shorting.

**Accidents and injuries involving batteries are avoidable.  
DO your part!!**

# Tire Explosion Hazards

Category: Fire and Haulage and Transportation

Mine Type: All mines, surface and underground

Heating a mounted tire and rim assembly, intentionally or not, can cause the tire to explode.

Causes include:

- Welding, cutting, or grinding on the rim.
- Heating the wheel hub or brake drum.
- Malfunctioning wheel bearings or dragging brake shoes.
- Lightning strikes or contact with power lines.



**Truck tire exploded after bed contacted overhead power conductor.**

Any one of these can produce sufficient heat to increase the pressure within the tire. Extreme heat can also cause the tire material itself to decompose and produce a combustible gas/air mixture within the tire which could ignite. Either situation can cause the tire to explode without any warning. Even tires with the valve stem removed can explode if heating initiates the decomposition process inside the tire.

## **In situations where a tire assembly has been heated:**

- If a fire or overheating is suspected, move away quickly to a safe location. Trajectory hazards are greater to the sides of the tire assembly, but debris can be blown in any direction.
- Keep all persons a safe distance from the tire assembly.
- Keep in mind that there can be a significant time delay until an explosion occurs. Depending on the level of heat exposure, this time delay may be several hours.

# Operating Large Surface Haulage Equipment Safely



Seven miners have died in similar accidents in the period of 2003 through mid-2004. These accidents involved equipment that were not properly maintained by the mine operator or were not kept under control by the equipment operator.

**Due to the potential and the high frequency of these accidents, it is recommended to incorporate these safeguards:**

- A preventative maintenance program should be implemented by the mine operator, contractor, or equipment operator for all haulage equipment. The maintenance program should ensure that systems such as brakes and steering are operational at all times.
- Always conduct pre-op checks to identify any defects before vehicles are placed into service. Brakes should be properly adjusted, will stop and hold equipment prior to operating, and have no air leaks.
- Know the vehicles' capabilities, operating ranges, load limits, and safety features. Operate in an appropriate gear for the grade, load and speed. Ensure all grades and haulage roads are appropriate for haulage equipment being used. Observe all speed limits and traffic rules. Training should incorporate these issues and potential hazards.
- Operators should monitor work habits and examine work areas to ensure that safe work procedures are followed. Ensure that all personnel wear their seat belts at all times and instruct them never to exit from moving vehicles.
- Operators should ensure that any contract truckers operating on mine property have an adequate maintenance/inspection program.

The mining industry is strongly encouraged to consider and adopt this suggestion. MSHA believes that injuries and fatalities could be avoided in the future as a result. The cost to implement these practices is minimal compared to the cost of accidents.

# Heat Stress

Summer heat is wonderful on the beach or when lying beside a pool, but when you are working in the heat, beware of the effects of heat stress. Heat stress can lead to heat exhaustion, heat stroke, and even death. As the temperatures of summer get hotter, you may want to review your first aid training for recognizing the symptoms and treatment for heat stress.



## Symptoms

Nausea  
Vomiting  
Headache  
Rapid heart rate  
Weakness  
Dizziness/Chills  
Difficulty breathing

## Treatment

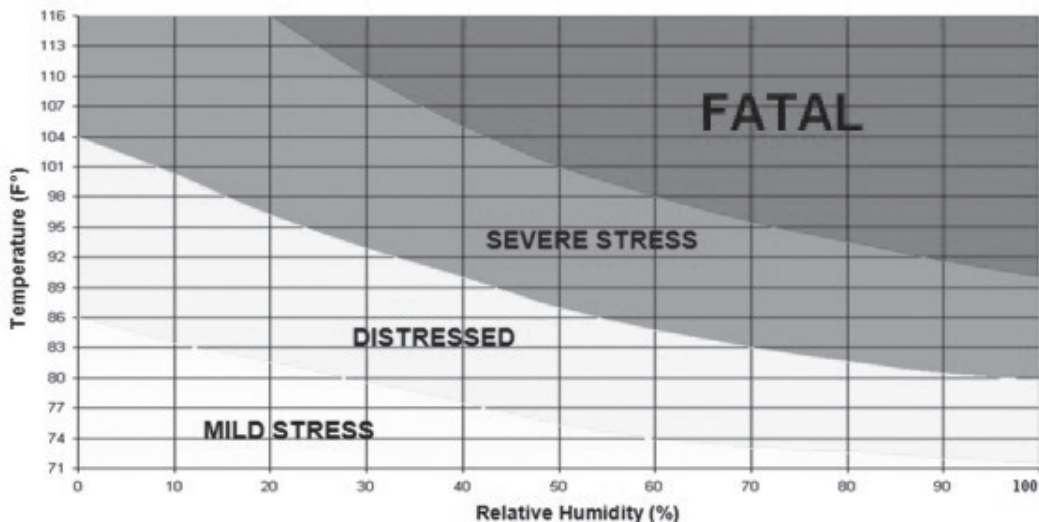
Rest  
Cool down (shade, air conditioning)  
Increase fluids

## BEST PRACTICES

- Communicate to all employees when temperature and humidity approach hazardous levels.
- Train employees in recognizing heat stress & dehydration.
- Provide and encourage consumption of fluids.
- Use the buddy system. Watch coworkers for signs of heat stress.

Note: If you feel thirsty, you are already dehydrated to some extent. A good rule of thumb is to drink as many ounces of water as you weigh in pounds every day. (A 150 pound person should drink 150 ounces of water per day)

HEAT INDEX CHART



# Work Experience Around Machinery

Category: All Mines

Mine Type: Haulage and Transportation

A miner sent in a list of tips for working around machinery underground. This list can also be applied to surface mines. He ended the letter (actually an email) with the words "From Experience." Well, experience does count, and in this case it counts to six.



## **So, in his own words (with minor editing), George's safety tips:**

1. Always assume that the operator of moving equipment cannot see you. Stay out of the way.
2. Don't make a practice of leaning or resting against equipment. You could get electrocuted.
3. Do not get between two pieces of mobile equipment. They could crush you.
4. Keep body parts inside the canopy of the equipment you are operating.
5. When using cables or chains to pull, always consider that they could break or pull apart. Stay out of pinch points, or the direction the cable or chain would fly, if it broke.
6. Watch for possible causes of accidents and stay alert at all times. Don't get in too big of a hurry and forget about safety.

# Get Out and Look

Category: Haulage and Transportation, Mobile Equipment and Maintenance  
Mine Type: All Mines

Whether you are operating a front-end loader, haul truck, mobile crane or a pick-up truck, your vision is generally impaired when you sit in the operator's seat. When you are working in a new area in the mine or if the conditions have changed in a familiar area, it's a good idea to get out of your equipment and inspect the work area before performing your job. Larger front-end loaders are often equipped with large decks above the engine compartment which allow you to scan the work area for hazards, smaller pieces of mobile equipment, and other miners.



A serious accident was recently avoided when a loader operator noticed that a pickup truck that had been near his work area wasn't visible. At some point, the operator lost track of the truck. Getting no response on his radio, the operator stopped his machine for a moment, climbed onto the engine deck and found the truck had stalled behind the loader and its radio was not operative due to the electrical failure. If he had continued backing up, he would have run over the truck.

Fortunately, the loader operator had been trained to "Get Out And Look" for hazards that may not have been present at the beginning of his shift. This loader operator also makes it a habit to "Get Out And Look" anytime he arrives at a work area.

**To attain a "G.O.A.L" of zero accidents means you gotta "Get Out And Look" for hazards.**



# Event Schedule

## Joseph A. Holmes Safety Association Western Kentucky Chapter

Mark your calendar for these upcoming meetings.

### **MAY 8**

May 8th Holmes meeting will be sponsored by Rogers Group, and Jerry Geraghty, CEO of this company, will be the speaker.

### **July 7**

July 7th will be the 6th annual Summer Sizzler Picnic, sponsored by Occunet, Pine Bluff Sand & Gravel, LeFarge West, and Vulcan.

### **September 11**

September 11th Holmes meeting will be sponsored by Kinder Morgan. We are asking the Vice President of Operations to speak at this event.

### **November 13**

November 13th Holmes meeting will be sponsored by Hunter Sand and Gravel. We are asking the company's CEO to speak at this event.



## Joseph A. Holmes Safety Association

# Bayer Construction Awarded National Land Reclamation Award for Second Time



Bayer Construction of Manhattan, Kansas, has been awarded the National Land Reclamation Award for the second time, the first being in 2008 and again in 2011. Bayer Construction reclaimed a 20-acre limestone quarry along Highway 177 in Riley County, KS.

Bayer Construction, in addition to complying with regulatory standards and requirements, took into consideration the land owner's request that the land be returned to grazing pastures with brome grass as the vegetation. Heavy equipment was used to contour the land and place seed and topsoil. Also, a waterway lined with limestone ditch liner and a pond was constructed to facilitate grazing potential.

Kelly Briggs, President of Bayer Construction said, "We feel that by restoring disturbed land to a productive agricultural based ecosystem, we have a positive effect on our community, our environment and our industry."

Bayer Construction Company, Inc. was started in 1935. In addition to crushed limestone, their operations include civil site preparation, water and sewer line construction, and heavy and highway construction. Bayer Construction operates several portable crushing plants throughout North Central and Northeast Kansas. They employ 140 people and have been employee owned since 1993.

Nominations from mine operators to the State Conservation Service (SCS) are considered for the award. Scott Carlson of SCS judges all nominations. Most winners have been open pit coal mines.

# Accident Prevention Alert!

## 3 Foremen killed

On Saturday, March 3, 2012, a 32-year-old foreman was killed while attempting to install a canopy on a Joy 21 SC Shuttle Car. The canopy was suspended from the mine roof by a cable and chain. The foreman was seated in the operator's compartment of the shuttle car beneath the suspended canopy. The canopy shifted and fell.

On Saturday, March 10, 2012, a 34-year-old section foreman operating a continuous mining machine was killed when he was struck by a rock which fell from the right rib. The rock was approximately 10.5 feet long, 40 inches high, and 1 to 10 inches thick.

On Saturday, March 17, 2012, a foreman was killed while attempting to attach a nylon lanyard to a moving front-end loader and a transportation dolly on a highwall mining machine. The victim was pinched between the front-end loader and the dolly.

## +1

## Miner killed

On Sunday, February 26, 2012, a 52-year-old deckhand with 4 years of mining experience drowned after being assigned to measure the distance from the water surface to the bottom of empty barges that were to be loaded. Although the miner was wearing a flotation device, it was not designed to keep an unconscious miner's face above water.

## 4

## Consecutive weekends

See BEST PRACTICES in  
**Coal** Fatalgrams at  
[www.msha.gov](http://www.msha.gov)



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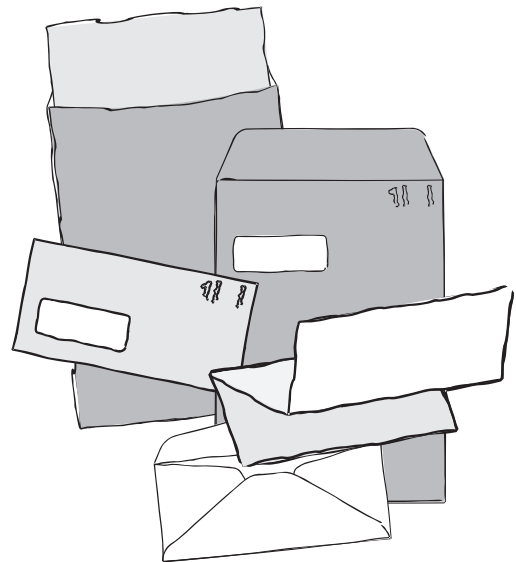
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