

**Joseph A. Holmes** Safety Association

# Bulletin

January 2002

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Hazard Alert!

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The 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 of groups of mine and plant workers during on-the-job safety meetings. For information visit the MSHA Home Page at [www.msha.gov](http://www.msha.gov).

**Please Note:** The views and conclusions expressed in Bulletin articles are those of the authors and should not be interpreted as representing official policy or, in the case of a product, represent endorsement by the Mine Safety and Health Administration.

**Cover page:** Cover created by the AVMDB Graphics Section. If you have a potential cover photo, please send an 8”x10” print or digital image on disk at 300 dpi resolution to Donald Starr, Joseph A. Holmes Safety Association Bulletin, National Mine Health and Safety Academy, 1301 Airport Road, Beaver, West Virginia 25813-9426.

# Mining Deaths Drop to New Low in 2001

ARLINGTON, Va. -- Fatal injuries at mines in the United States declined last year to a historic new low, according to preliminary data released today by the Mine Safety and Health Administration (MSHA). The data indicate that 72 miners died in on-the-job accidents nationwide in 2001, the lowest figure on record and 13 fewer mine deaths than in the year 2000.

“A good year would be zero fatalities, because even one death is unacceptable,” said Dave D. Lauriski, assistant secretary of labor for mine safety and health. “We must keep working together to reduce mine accidents in 2002.”

Lauriski last year challenged the mining industry to reduce fatal accidents by 15 percent each year. “Preliminary numbers indicate that the mining industry met that challenge in 2001,” Lauriski said.

The nation’s metal and nonmetal mining sector set a historic low record with 30 fatalities during 2001, compared with 47 in 2000. The previous metal and nonmetal low fatality record was 40, in 1994. The metal and nonmetal mining sector produces metals such as copper and gold, and nonmetallic minerals such as salt, stone, sand and gravel.

Lauriski said, “The metal and nonmetal mining industry has shown what can be done, with its safest year on record.”

In the coal sector, mine fatalities increased by four to 42 in 2001. Thirteen miners died in an explosion last September at the Jim Walter Resources No. 5 mine in Brookwood, Alabama. The accident remains under investigation.

“The Brookwood accident was heartbreaking because miners lost their lives in a heroic attempt to save the lives of others,” Lauriski said. “We will determine the cause and share the information with everyone in the mining industry to help prevent future tragedies.”

Article from DOL/MSHA News Release No. 02-10  
Mine Safety and Health Administration

Wednesday, January 2, 2002

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# MSHA, Massey and WV Develop Innovative Training

## Curriculum Aimed at Enhanced Mine Safety

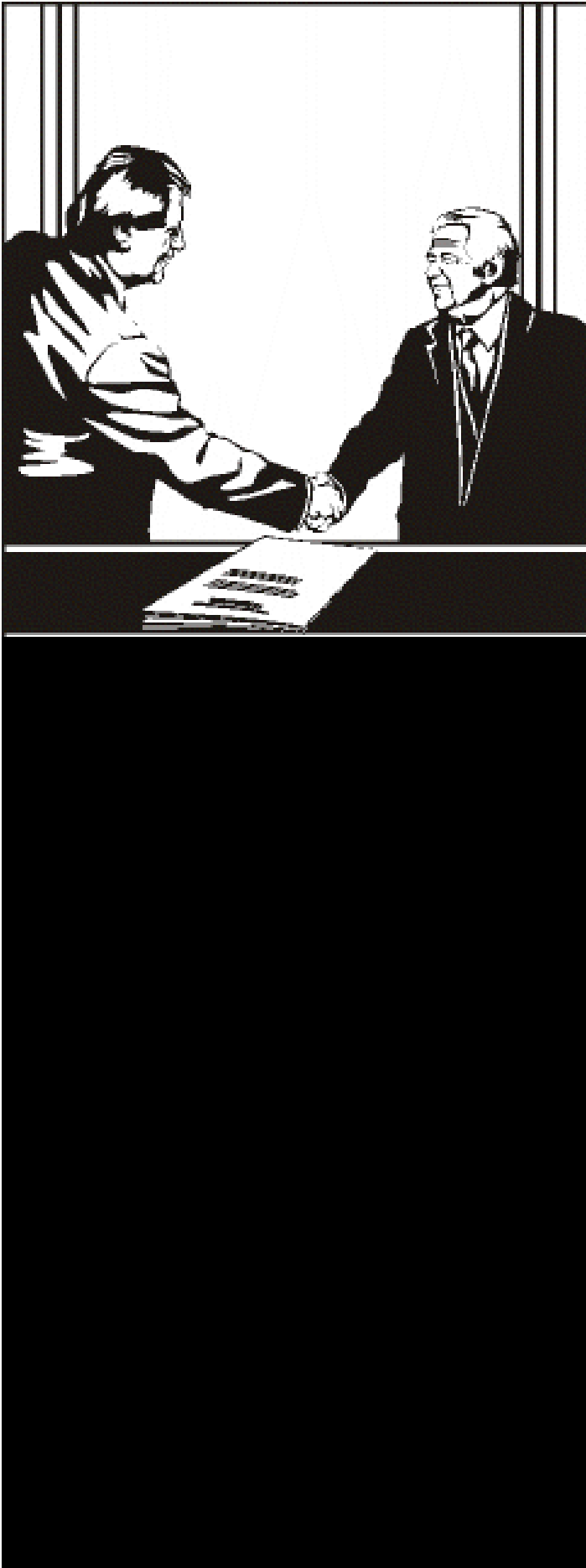
ARLINGTON, Va.--The U.S. Department of Labor's Mine Safety and Health Administration (MSHA), in a strategic partnership with the state of West Virginia and Massey Energy, has developed a new training course on mine safety designed specifically for Massey coal mine supervisors in West Virginia. Massey supervisors in Kentucky and Virginia also will participate.

"Compliance assistance is a crucial part of our strategy to reduce mine injuries and fatalities," said Dave D. Lauriski, assistant secretary of labor for mine safety and health. "We're pleased that Massey recognizes the importance of well trained supervisors to maintaining a safe and healthful mining operation, and we are pleased to form this cooperative arrangement."

Representatives of MSHA, the state of West Virginia, and Massey Energy have been meeting over the past several months to develop a safety curriculum, create instructional materials and activities, and identify personnel for serving as instructors. The resulting curriculum includes topics such as general mining methods, MSHA and West Virginia mine safety regulations, hazard and task training, pre-shift and on-shift responsibilities, and Massey Energy's own structured safety program. MSHA expects nearly 800 supervisors, section foremen, and mine managers will take part in the new training program at MSHA's National Mine Health and Safety Academy near Beckley, West Virginia.

"One unique feature of the program is the hands-on training these supervisors will receive in the academy's mine simulation lab," said Lauriski. Participants will perform examinations inside the academy's simulated underground mine. These include longwall, retreat and development mining situations, as well as evaluation of bleeders.

Article from Department of Labor News Release  
Mine Safety and Health Administration  
USDOL 01-478  
Date: Dec. 19, 2001  
Office of Information and Public Affairs  
Contact: Rodney Brown  
Phone: 703-235-1452



# Electrical Safety

## Best Practice Series

Electrical or electrically-related fatalities have often occurred in coal and metal/nonmetal mines.

Victims have included electricians, truck drivers, supervisors, maintenance personnel, crusher operators, and mechanics.

### *To help prevent electrical accidents you should:*

- **NOT** do electrical work unless you're qualified.
- **ALWAYS** de-energize equipment and use lockout and tagout procedures. To ensure that equipment is not energized, test before troubleshooting or attempting to make repairs.
- **NOT** rely on someone else to do it; anyone working on electrical circuits or equipment must put their lock on equipment and be sure it's been de-energized.
- **ALWAYS** be careful of overhead power lines. Contact kills!
- **NEVER** touch or handle energized high-voltage cables.
- **ALWAYS** handle trailing cables with proper equipment.
- **NEVER** "wire out" or "bridge out" fuses.
- **REMEMBER** that water conducts electricity and can provide a path that kills.
- **ALWAYS** be careful around battery chargers. The gas that bubbles off batteries is highly explosive.



# INBY IS OUT!

## Best Practice Series

Roof falls are a leading cause of mine fatalities. Most roof and rib accidents have occurred from:

**Miners** traveling inby support.

**Inadequate** or improper roof/rib examinations.

**Not** following approved roof control plans.

**Improper** body/hand positioning.

**Failure** to communicate with other miners and mine management when adverse roof/rib conditions are found.

**Using** improper tools and equipment to correct adverse roof conditions.

### *To prevent roof/rib accidents, miners should:*

- Never go inby support for any reason.
- Be aware of roof and rib conditions-examine roof and ribs wherever they work or travel.
- Know their approved roof control plan and follow it—all the time.
- Make sure they are in a safe position before energizing or moving their machinery.
- Communicate unusual conditions to other miners and mine management.
- Use proper equipment when correcting adverse roof conditions.



*illustration by Duran*

## Operating Equipment Near Water

Operating equipment near a body of water can pose a potential hazard in your job. Several miners have died in drowning or drowning-related accidents.

These fatalities occurred when either out-of-control trucks ended up in the water, or when ground failed beneath a piece of equipment and the machine fell into the water.

### *Equipment operators should:*

- **ALWAYS** check ground conditions before starting work and during your shift. Look for signs of instability such as cracks or settlement, and report possible unsafe ground conditions to the proper person as soon as possible.

- **ALWAYS** keep draglines as far back from the edge as possible, and **NEVER** undercut the support for the machine.

- **ALWAYS** move equipment back at any indication the edge may be unstable.

- **ALWAYS** keep equipment tracks perpendicular to the edge so that if part of the edge collapses, the machine will still be supported and can be moved back.

- **ALWAYS** be alert in rainy weather because it can affect ground stability.

### *Mine operators should:*

- **PROVIDE** ample berms where there is danger of equipment leaving the roadway, or going over a dump site, and ending up in the water.

- **PROVIDE** traffic patterns and roads that minimize the danger of machines traveling near bodies of water.

- **MAKE** sure there's enough illumination to allow miners to detect potentially unsafe ground conditions when working near water.

- **PROVIDE** training for equipment operators on the hazards of operating equipment near a body of water.

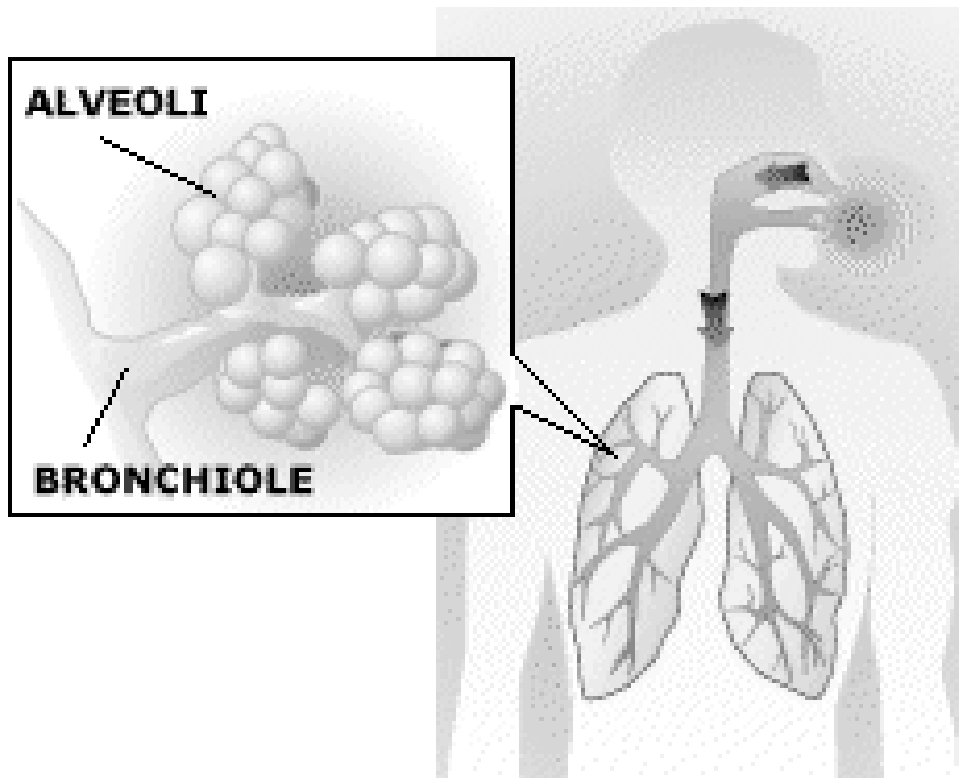


*illustration by Duran*

# What is black lung?

Black lung, or coal workers' pneumoconiosis, is the name given lung diseases caused by inhaling coal mine dust. Only the smallest dust particles make it past the nose, mouth and throat to the alveoli deep in the lungs.

1. The alveoli, or air sacs, are responsible for exchanging gases with the blood. They are located at the ends of each bronchiole.

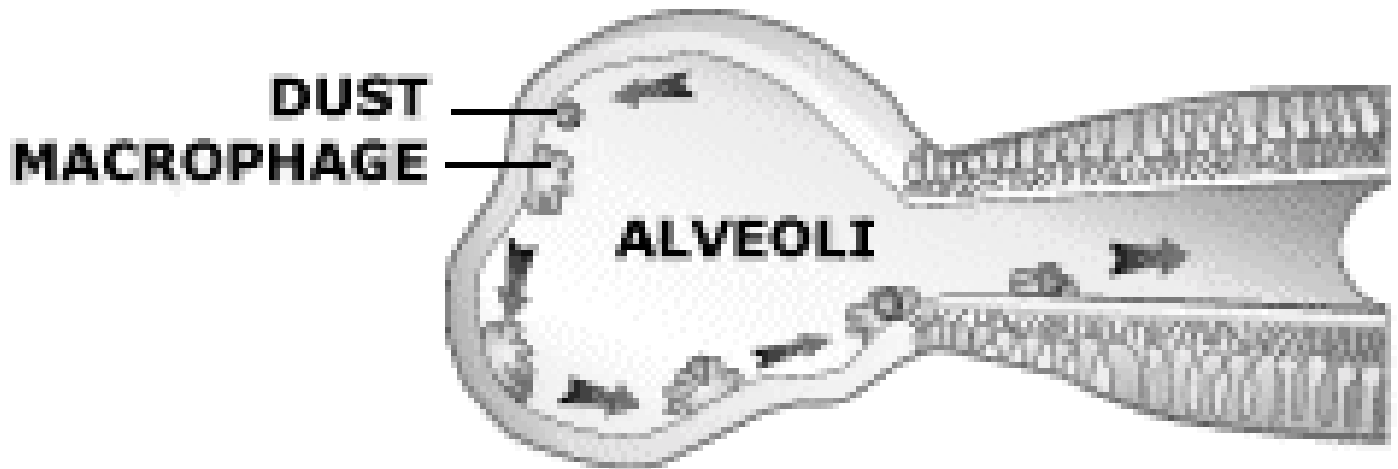


The above information, obtained from newspaper article on Black Lung, "Dust, Deception & Death", The Courier-Journal, Louisville, Kentucky, dtd. January 14, 2002.

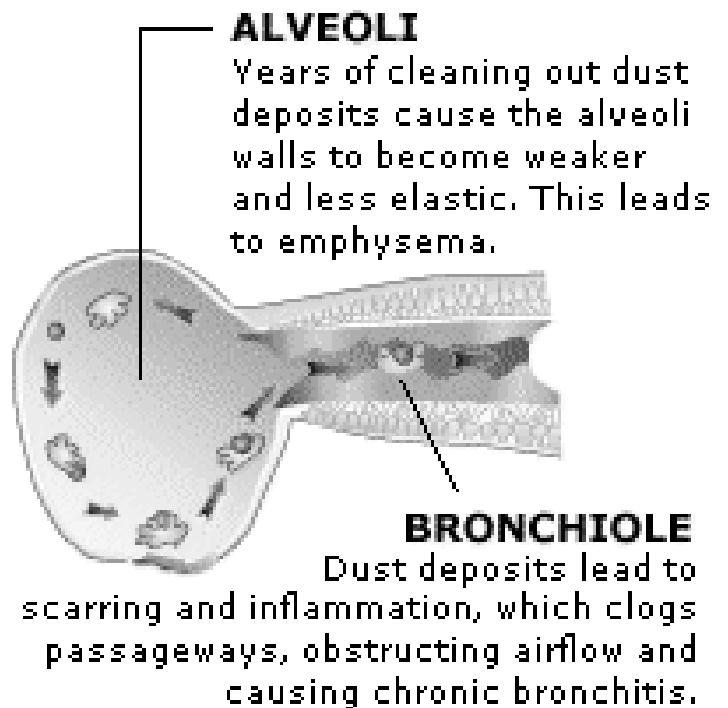
Graphic by Joanne Meshew, Gardiner Harris and R.G. Dunlop, The Courier-Journal. Sources: "Education Black Lung," published by the National Jewish Center for Immunology and Respiratory Medicine in Denver; MSHA Informational Service.



2. Macrophages, a type of blood cell, collect foreign particles and carry them to where they can be coughed out or swallowed.



3. If too much dust is inhaled over an extended period of time, some particles and dust-laden macrophages collect permanently in the lungs.



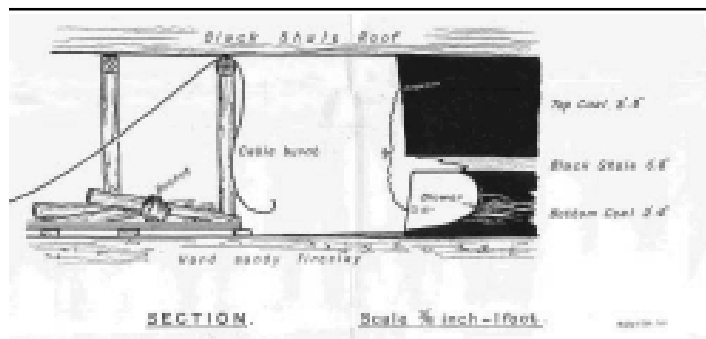
# History: International

## HAIG PIT DISASTER - 5TH SEPTEMBER 1922

*To be classified as a disaster, an accident or explosion at a mine had to claim at least ten lives. The Whitehaven coal field suffered many disasters and innumerable smaller accidents. It has been estimated that over 1200 men, women, and children have lost their lives while winning coal in the Whitehaven collieries.*

*Between 1880 and 1910, over 1000 fatalities occurred every year in British coal mines. An average of four miners killed and 517 injured every day. In 1910 the national fatality figure rose to 1818 killed. Of these, 501 died in explosions, 658 through falls of ground, and 286 through haulage accidents. There were two major disasters that year, an explosion of firedamp at Wellington Pit, Whitehaven, killed 136 men and boys, and an explosion of coal dust at Hulton in Lancashire, killed 344.*

It was 5 a.m. on any normal day when William Weightman, the Deputy in Charge of the Six Quarters Seam, was working overtime to cover for another man on holiday. The report book showed that gas had been detected in the North District, and three areas were fenced off, but when Weightman went down earlier



*A cross section of Moore's Place where the shot being fired by Weightman had released a pocket of gas (a blower) which had ignited causing the explosion. The Chief Inspector of Mines stated in his report to Parliament "Weightman should certainly have the benefit of the doubt in the absence of direct evidence, that it was his fault."*

that evening, the areas were reported to be clear. Fourteen men entered the Southwest District including the Deputy Daniel McKenzie & thirty-eight men went to the Six Quarters North District. A further nineteen went to the drifts and eleven to the main haulage road and shaft bottom. At 7 a.m., Carl Brewster, a Shotfirer, descended & went to the North District. Also in the mine was Under Manager, Alexander Millar.

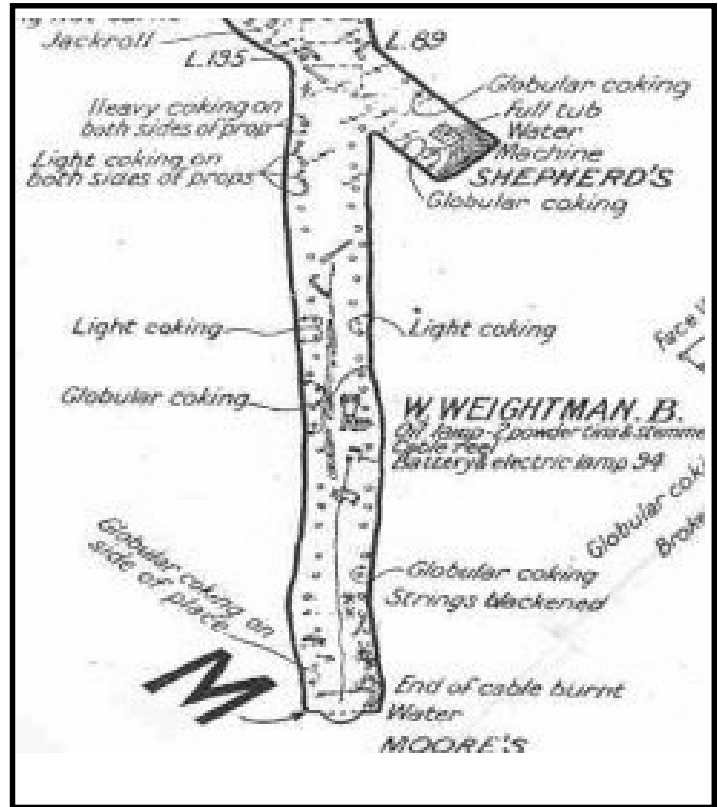
Just before nine, the Banksman, Alexander Pitblade, noticed a cloud of dust coming up the down-cast shaft (No.4 shaft). The agent, Robert Steel, was informed at William Pit, and after calling the Mines Rescue, set off for Haig along with Mr. Brodie, William Pit, Manager, and Mr. Cook, the Inspector of Mines.

When the explosion struck, Millar, the Under Manager and Trevaskis, a rope splicer, were standing underground near the Compressor House, when they were knocked off their feet, by a blast coming from the North District, Six Quarter Seam. Trevaskis suffered broken ribs but Millar, more or less unhurt, moved in by until he came across the first dead body, a young man called Thomas Telford, aged 19. He had been thrown with great force and was lying between some tubs and the side wall. In the Southwest District, the men knew there had been an explosion and were making their way out. By the time Steel, Brodie, Cook and Thompson arrived, they could hear Millar calling for help, and found him, near unconscious, 120 yards down the drift. They dragged him back to the junction with the help of John Rothery and Mr. Kilpatrick, who had made their way to the scene. The search resumed and a Hewer, named William Carter, was found dying under empty tubs, de-railed at No.1 crossing.

Cook and Steel managed to reach the Six Quarters Junction, and after deciding there was no risk of fire, started the fan at 10:30 a.m. The air was full of after-damp (mainly Carbon Monoxide) and a white vapour, and they decided all must be dead in the area of the explosion. Steel, Brodie and Millar were all taken to the surface suffering from the effects of gas and were taken to the local hospital. A halt in the rescue attempts was called until repairs could be carried out to improve the atmosphere.

By early afternoon, the repairs were completed and the air was making its normal course. The rescue party moved in, recovering dead bodies and making

further repairs as they went. Afterdamp was still causing problems, with many rescuers having to be helped back to the shaft top, some unconscious, but things were improving with the erection of further brattices (planks or a wooden frame with a canvas cover to control air circulation). By 3 a.m. on the 6th, 22 hours after the shift had entered the mine, the bodies of 25 men had been recovered. The remainder had been buried by roof falls and their bodies were not recovered until the 10th September.



A diagram of the area at the source of the explosion. The cross section above (top right) is marked M on this drawing.

No pen picture can ever hope to bring home to those who have not experienced it, what real warfare means, and no pen picture can visualise the scenes at the pit head following a big disaster. The latter is infinitely worse than warfare. Women with children in their arms and little hands clinging to their skirts, wait with steadfast patience for possible news of the bread winner, and those around, who realise that all are doomed, dare not tell. Possibly the worst scenes of all, ensue during the identification of the bodies of the deceased. On Tuesday night, in some instances, men were not available for this purpose and women were ushered into the outbuilding of the pit, where the bodies were being made as presentable as possible, to pronounce the dreaded "yes" or "no". Twice within a decade has Whitehaven experienced pit disasters on a large scale, and the stoicism of it's colliery workers & their families has been brought into bold relief.

*Whitehaven News, 6th September 1922*

(See next page)



Scene of the Great Disaster at Haig Colliery, Whitehaven, on Sept. 5th, 1922, whereby 39 men lost their lives.

*“Scene of the Great Disaster at Haig Colliery, Whitehaven, on Sept 5th, 1922, Whereby 39 Men Lost Their Lives”*



*J. McAllister about to descend the mine*

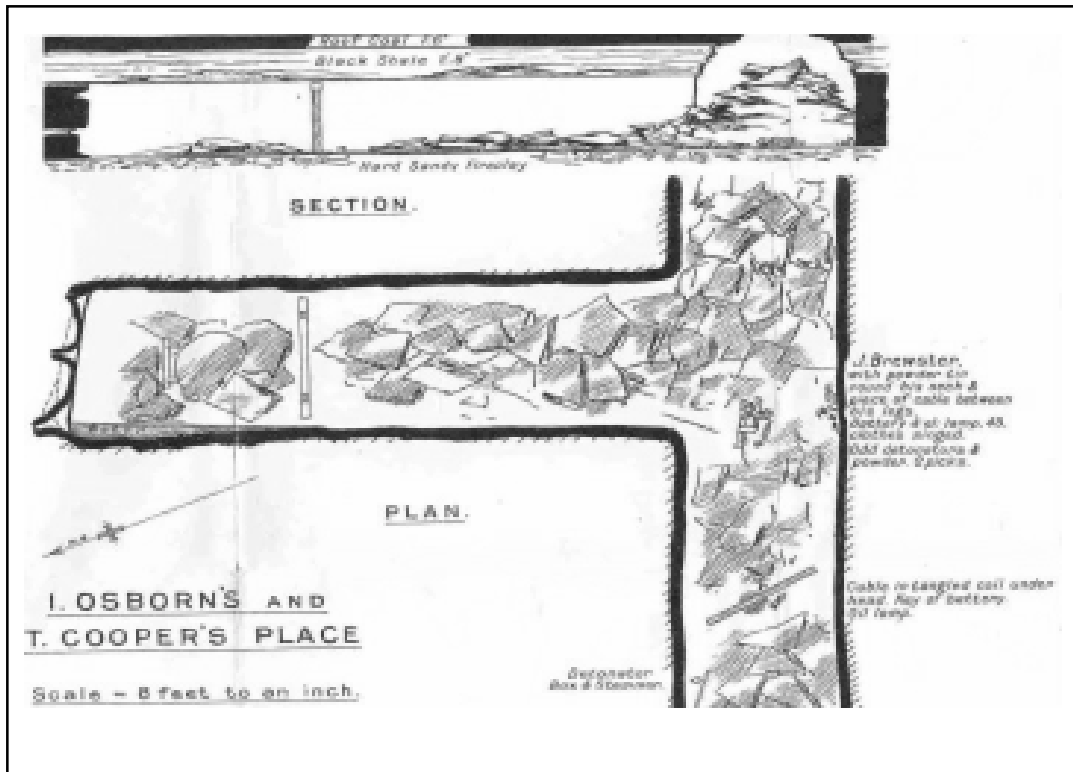
The enquiry heard evidence regarding the strong feeder of firedamp (a release of methane from the coal strata) found discharging from the fissure at Moore's Place. Questions were raised about the safety procedures adopted by Weightman and Brewster, but it was thought most unlikely either would have fired shots into a face if there were any suspicion of a blower behind it.

A youth named Joyce was described as having a miraculous escape. He was on the telephone, in a manhole on the main road, when the explosion ripped past. This alone, saved him from certain death. A Mayors fund was opened to "place the relatives beyond the reach of poverty" and money poured in from around the country. A letter and 20 shillings was received from a mother in Scotland for Mrs. McCreadie because her own two sons, who had been killed in the war, bore the same names as the McCreadie boys, Robert and Gordon. ■

**This article is from the Haig Colliery Mining Museum, Whitehaven, Cumbria, England, Mining Diasters, website [www.haig1.freeserve.co.uk/menu\\_exe.html](http://www.haig1.freeserve.co.uk/menu_exe.html)**

...Yesterday, our Reporter called on some of the men who were down the mine when the explosion occurred but escaped. In some instances, their recollection of what occurred after the explosion was distinctly hazy. Our Reporter called up on Mr. T. Travaskis, Rope Splicer, who resides in Catherine Street. Mr Tervaskis escaped with his life but is severely injured. He has three ribs broken, is suffering from internal injuries, has sustained severe wounds on the back of his head and forehead, and has been burned down the left side. Our Reporter found Mr. Trevaskis lying in a clean, comfortable, well-furnished bedroom, where he is being nursed by his devoted wife. He was much too ill to talk, but managed, speaking slowly, and with an effort, to tell our representative that the explosion sounded, at the place where he was working, "like a gun shot". After that he knew no more. From other sources, our representative gathered that Mr. Trevaskis was found unconscious, his head lying over a tub".

Whitehaven News 7th September 1922





*illustration by Duran*

## **HAZARD ALERT**

# **Explosive Gas and Dust**

During the past 5 months, eight explosions have occurred at metal/nonmetal mining operations. These accidents resulted in one fatality and nine nonfatal injuries. MSHA believes each of these accidents could have been prevented. MSHA requests that mine operators reevaluate all work procedures now in place regarding handling, storage or use of explosive fuels or dust. Here is a brief synopsis addressing each event gleaned from the preliminary information reported to MSHA. This information is not intended to replace the investigation findings pertaining to these accidents.

**February 7, 2001** - An explosion occurred in the dust collector for the pulverized coal fuel system at a cement operation in Virginia. Temperature spikes reached 170 degrees Fahrenheit which indicated problems in the coal grinding mill. Subsequently, hot embers were transported from the coal mill through the

cyclone into the dust collector bag house where they initiated the explosion.

**February 8, 2001** - An explosion occurred in the kiln at a cement operation in Pennsylvania. Two natural gas lines were lit and inserted into the kiln during the pre-heat, start-up procedure. After it was determined that the flames appeared to be extinguished, one of the lines was removed and relit. As the line was being reinserted into the kiln, it ignited the accumulation of gas.

**March 20, 2001** - An explosion occurred inside an enclosed weigh scale sump at a crushed stone operation in Wisconsin. A lit, hand-held propane torch had been placed inside the sump to thaw a buildup of ice. The flame extinguished, allowing an explosive mixture of gases to accumulate. When a second lit torch was placed in the sump, it ignited the explosive gases.

**April 2, 2001** - An explosion occurred in the coal grinding mill at a cement operation in Alabama. The explosion, which was initiated by hot embers generated

in the coal mill, damaged the grinding mill, the cyclone and the duct work of the pulverized coal feed system.

**May 3, 2001** - An explosion occurred in a transfer chute at a cement operation in California. The access door had been opened and a miner was removing built-up material with an air lance. It is believed that the metal to metal contact generated by the air lance on the side of the chute provided the ignition source that ignited the coal dust.

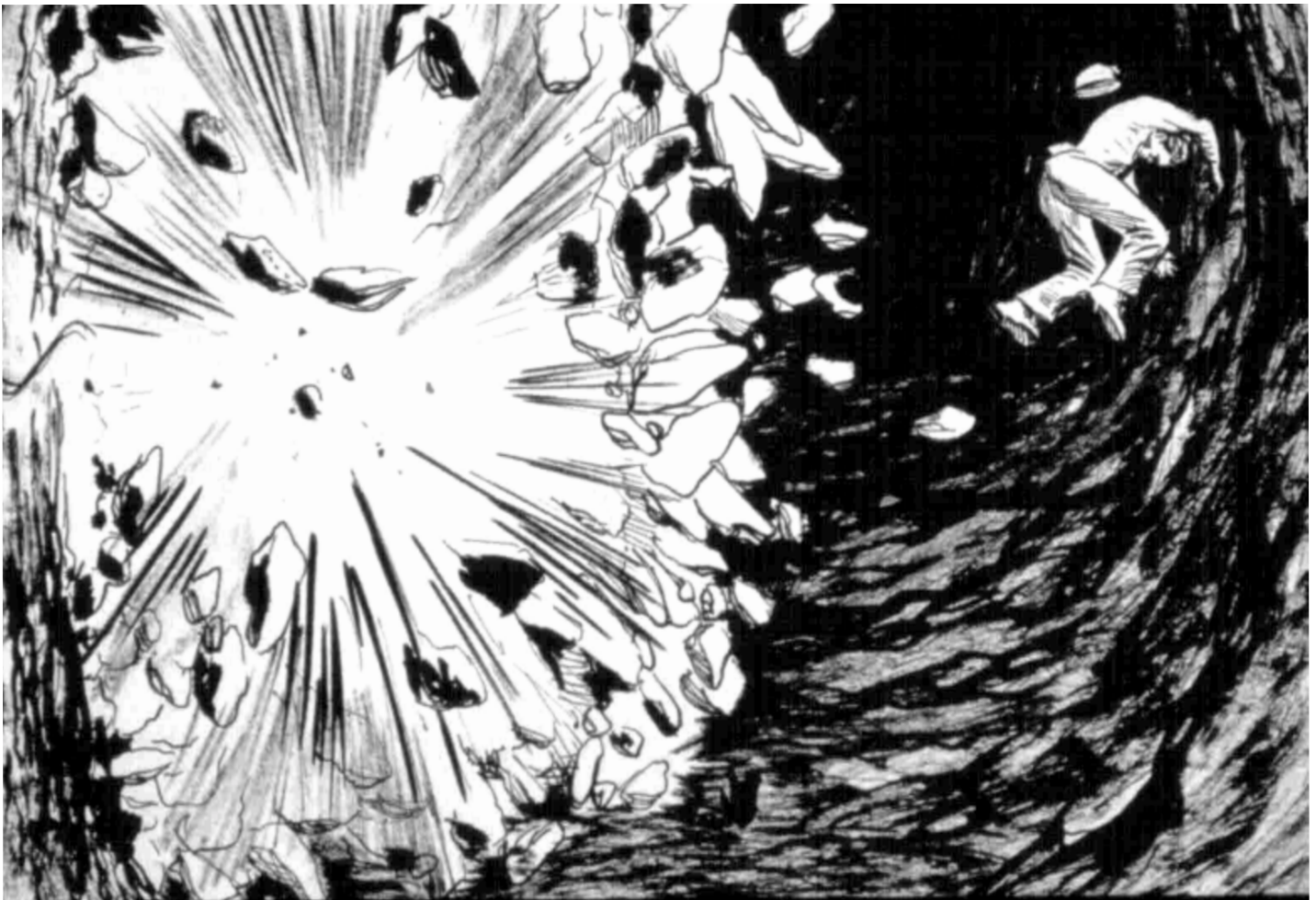
**May 19, 2001** - An explosion occurred in a kiln at a clay operation in Texas. The kiln had been taken off-line and several repairmen had entered it to perform maintenance. As the repair was being done, an accumulation of organic dust fell and traveled through the piping into the combustion chamber where it was ignited by hot material.

**May 30, 2001** - An explosion occurred in the storage bin of the indirect fired, pulverized coal feed

system at a cement plant in Virginia. A fire was detected in the bin and carbon dioxide was introduced into the closed system. The coal feed was stopped and the bin was emptied. When the coal feed was restarted, hot embers remaining in the bin ignited the coal dust.

**May 31, 2001** - An explosion occurred in a kiln at a cement operation in Missouri. Propane was being used to pre-heat the kiln during the start-up procedure. The flame extinguished and the kiln filled with gas which was subsequently ignited.

*illustration by Duran*





- Post for viewing, by all miners, a mine map which clearly depicts the type and location of all underground utility lines within the mining property. The mine map should be located in a convenient and public accessible area.

- When active mining operations are in the vicinity of underground utility markers, call your local One-Call Center or the toll-free National Referral Center.

- Request the utility company to identify the exact location of the utility line. Temporary line markers should be placed at 20 to 25 feet intervals directly above the utility line throughout the active mining area. The line markers should extend at least 150 feet beyond the ends of the active mining area.

The mining industry is strongly encouraged to consider and adopt these precautions. MSHA believes that unnecessary injuries and fatalities could be avoided in the future as a result.

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## MSHA - POST ACCIDENT INVESTIGATION REMEDIES

# “Mark Your Buried Utility Lines”

Recently a fatal mining accident occurred when a 992D Caterpillar Wheel Loader operator was in the process of removing rock binder material above a coal seam in preparation for removal of the coal. The loader bucket penetrated a buried 20-inch diameter, high pressure, public utility natural gas transmission line. The loader became engulfed in flames resulting in serious and ultimately fatal burns to the loader operator.

Based on the accident investigation it was determined that the utility company line markers may not have provided adequate location information for the miner while working in the vicinity of the underground utility line.

Each curvature in a transmission line may not be adequately identified by line markers to alert a mine operator of the exact location in an active mining area.

Therefore, the following precautions are recommended to minimize the potential for additional accidents involving accidental contact with underground utility lines:

- Determine the type and location of all underground public and private utility lines.
- The utility line information should be retained and transferred to any future change in mine operators.





# Joseph A. Holmes Aracoma Council Member Sponsors Needy Families During Christmas Holidays...

Story submitted by Jake Blevins

*For several years Rockspring Development, Inc., a subsidiary of R.A.G. located at East Lynn, Wayne County, West Virginia, has been a very active member of the Aracoma Council of the Joseph A. Holmes Safety Association. Ed Rudder, Safety Director, currently serves as Vice President of the Aracoma Council. According to Gwen Merritt, mine clerk, the employees of Rockspring Development, Inc. have been sponsoring needy families in the area at Christmas for the previous five years.*

The employees decided that buying each other Christmas gifts was ridiculous when driving to work every day they passed homes with children that needed coats and shoes. They started making donations by cash, payroll deduction and toys. The second year, the response of employees was so great that two additional grade schools were included in the program.

Merritt said that they originally contacted the Headstart Program at the East Lynn Elementary School and asked if they could sponsor a needy family. Judy Queen, Headstart Coordinator, works with the school faculty to obtain clothing and shoe sizes and a "wish list" of toys that the children would like to receive for Christmas. They make sure that all children in the selected homes are bought for regardless of age. Each child receives a toy, shoes, coat, pants, shirt and underwear. The families are also given a food basket including a ham and all the trimmings for their Christmas dinner.

The children are invited to a Christmas party at the mine training center and Santa (who looks a lot like Ed Rudder) joyfully gives them their gifts while they are served cookies and punch. Nelson Sumpter, President, welcomes the children and their parents to the party and expresses his sincere appreciation to them for making Christmas truly special at Rockspring Development.

Merritt, along with Nell Epling, mine clerk, and Regina Francis, plant clerk, unselfishly donates numerous hours shopping for the children, selecting the right size to fit each child and searching for specific toys from their wish list. They also buy the food and prepare the food baskets for the families.

Rockspring Development is a Partner in Education with the East Lynn Grade School which is located near the entrance to the mine. The company recently donated \$10,000 to the school for computers. The school is also located near the East Lynn Lake, a state park. According to Merritt, schools located near such state facilities only receive limited funding for playground equipment since such equipment is available at the park. Rockspring Development donated \$7,000 and now the school has one of the best equipped playgrounds in the state.

During the previous summer, families in southern West Virginia were devastated by flooding. Thousands were left homeless. The Aracoma Council sponsored a drive for food and cleaning supplies. During this time, Sumpter was the superintendent of Laurel Creek Company, Inc., located at Dingess, Mingo County, West Virginia, also a subsidiary of R.A.G. When Sumpter and Linda Gibson, Administrative Assistant, were informed of the drive, they immediately initiated a response at their two mines and preparation plant. Within a few days, Linda had collected approximately \$3,000 in food and cleaning supplies. Laurel Creek Mines is also a Partner in Education with the Dingess Elementary School and have made similar donations to the school project for several years. Larry Heatherman is the President of Laurel Creek Mining. ■

## *Santa and His Helpers*



*Front Row: Regina Francis; Plant Clerk, Ed Rudder, Safety Director, Gwen Merritt, Mine Clerk. Second Row: Nell Epling, Mine Clerk, Nelson Sumpter, Superintendent.*

# Wellness

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## THE IMPORTANCE OF GOOD NUTRITION

### Nutrition and Health

In recent years, scientists have learned that the average American diet can be dangerous to your health. Diet is implicated in one-third of all cancer deaths and a large proportion of heart attacks. In fact, what we eat and drink is now known to be a factor in 6 of the 10 leading causes of death—heart disease, cancer, stroke, diabetes mellitus, chronic liver disease and cirrhosis, and arteriosclerosis. Combined, these disorders account for nearly 70 percent of all deaths in the United States. (National Academy of Sciences) The consumption of alcohol also plays a major role in two other leading causes of death—accidents and suicide.

Diet is also a factor in a wide variety of other health problems, including high blood pressure, high blood cholesterol, osteoporosis, gallstones, and dental diseases. Eating too many calories contributes to obesity, which affects about 34 million people in this country.

Excess body fat is of particular importance to miners. Besides its adverse cardiovascular effects, excess body fat impedes mobility and heat dissipation and increases the likelihood of orthopedic problems. Relative body fat in excess of 20 percent has a more harmful effect on physical performance than has age.

### Practicing Good Nutrition

Although the link between diet and disease is well established, many people are misinformed or confused about nutrition. Others are apathetic or have trouble making the changes necessary to adopt a healthful eating pattern. As a result, the country continues to pay a steep price, both in terms of human suffering and massive health care costs.

One problem is that the science of nutrition is very complex. The huge array of possible food choices, each with different nutritional qualities and health implications, can seem absolutely overwhelming. Much information is unknown, and new studies come out all the time, often conflicting with older reports. Sometimes, even the experts disagree; so how can anyone make sense of it all?

Fortunately, you don't need to know biochemistry to make intelligent decisions about eating. Over the years, a consensus has developed about the requirements of a healthy diet, and this information has been distilled into some fairly simple guidelines for proper nutrition. It's sort of like driving a car: you don't need to understand how the engine works or the physics of internal combustion. You just need to know where to buy gas, how much it costs, and how often to fill the tank.

The same is true for nutrition. There are some general rules for healthful eating. You probably know most of them already. Implementing these guidelines, for most people, do not involve a great amount of sacrifice. The approach is simple, but all the basic elements of a healthful diet are covered.

**The rest is up to you.** Making the personal changes needed to incorporate the guidelines into your everyday life requires some commitment, knowledge, and effort. But the results are well worth it!

## THE BUILDING BLOCKS OF FOOD

Before proceeding, it's necessary to first define some important terms and concepts. In particular, you need to know the "building blocks" of food and how they are used by the body.

### Carbohydrates

Carbohydrates are the cheapest and most efficient source of energy for the body. Two types of carbohydrates exist:

[Simple carbohydrates](#), also called sugars, can be readily digested and converted directly into energy, or stored in the body as fat.

[Complex carbohydrates](#), comprised of many sugar molecules hooked together, are concentrated energy sources. The most common form is starches, found in breads, cereals, vegetables, pasta, rice, beans, etc.

One form of complex carbohydrates, called **fiber** or roughage, cannot be digested by the body. However, soluble fiber is believed to lower blood cholesterol levels; insoluble fiber aids in elimination and may be associated with reduced rates of colon cancer.

### **Fats**

Fats, or lipids, are concentrated sources of calories that supply more than twice the energy of carbohydrates. High-fat foods include meats, dairy products, butter and oils, pastries, and nuts. The major components of fats are fatty acids, which fall into two basic categories:

[Saturated fats](#), found mostly in animal products, which are associated with elevated cholesterol levels and heart disease.

[Unsaturated fats](#), derived mostly from vegetable sources, which can reduce total cholesterol levels.

Fats store energy, protect and insulate the body, and aid in the absorption of fat-soluble vitamins. They also provide “essential” fatty acids, needed for growth and development.

### **Protein**

Proteins are used for building, maintaining, repairing, and replacing tissues. The building blocks of protein are amino acids, which can be found in animal or plant sources. If too few calories from carbohydrates and fats are available in the diet, proteins will be used for energy. When excess protein calories are eaten, they are stored as fat.

### **Vitamins and Minerals**

Vitamins are complex organic compounds that function as catalysts to help regulate metabolic processes. Minerals are inorganic compounds that are required in the many chemical reactions that normally

occur in the human body, including the formation of tissues and the regulation of physiological processes. Both vitamins and minerals are essential for metabolic balance and energy production.

### **Water**

Water is the primary component of body fluids. In fact, the human body is mostly composed of water—55 to 65 percent for females and 65 to 75 percent for males. This simple compound is crucial for many of the body’s most important functions:

[Digesting and absorbing food from the gastrointestinal tract, and eliminating waste products.](#)

[Carrying nutrients and oxygen to and from working tissues through the blood and other body fluids.](#)

[Dissipating heat through the evaporation of sweat.](#)

[Lubricating and cushioning joints and tissues.](#)

[Maintaining proper muscle tone and endocrine gland function.](#)

Water is also important for weight control since adequate levels of hydration suppress the appetite naturally and help the body metabolize stored fat. On average, you should drink 6 to 8 cups of water a day—that’s about two quarts.

## **FOOD ENERGY**

Foods provide the energy you need to perform the many activities you do each day. The energy in food is measured in kilocalories, or more simply, **calories**.

Most of the energy you need, about two-thirds, is used for metabolism, the basic processes required to sustain life. These include the constant functioning of the heart, kidneys, liver, brain, lungs, muscles, and other organs. The remaining energy is used for physical activity, including all movement for work or play. The more activities you perform, the more energy you need.

“Caloric balance” occurs when the intake of food

**(See next page)**

energy equals the energy expended for metabolism and physical activity. When excess energy is consumed in food, it is stored as fat. Conversely, when more energy is used than consumed, the body burns its internal fat or other sources of stored energy.

Different foods contain different amounts of energy. Carbohydrates are the cheapest and most abundant source, containing 4 calories per gram. Fats are a particularly high source of energy, with 9 calories per gram. The other primary source of food energy is protein, containing 4 calories per gram. Proteins are metabolized for energy during periods of starvation, crash dieting, etc. ■

## **Avoid Slips, Trips, Twists and Falls, Especially During the Winter...**

During the second Quarter of FY 2001, MSHA experienced its greatest number of slips, trips and falls for the year. Several of these were due to ice, snow or other inclement weather conditions. Let's be prepared this year!

**D**on't be in a hurry!

**O**bserve the path ahead to identify possible slipping and tripping hazards.

**N**ever take a shortcut across icy ground.

**T**ry to park in non-icy areas.

**S**hower your path with as much light as possible.

**L**imit the load you carry across icy or slippery areas.

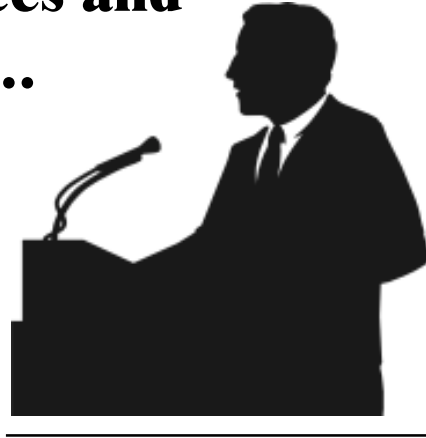
**I**nspect ladders for slipping hazards.

**P**rovide a means of removing snow or ice from your shoes.

**U**se handrails when going up and down stairs.

**P**ay attention to your step.

# Conferences and Meetings...



## 2002 Joint Mine Health & Safety Conference

March 11-14, 2002  
Branson, Missouri  
For further information:

Sylvia Ortiz  
(512) 232-2232  
(800) 687-7345  
(512) 232-6126 FAX

## Joint National NASMIA, MSIA and JHSA Meeting Scheduled in June 2002

The 2002 Joint National Meeting of the National Association of State Mine Inspection Agencies, Mine Safety Institute of America, and the Joseph A. Holmes Safety Association will be conducted June 3-6, 2002, in Virginia Beach, Virginia.

Make plans now to attend what promises to be one of 2002's most exciting and informative mining industry meetings at a great location in the Southeast. More detailed information about program activities will be released by the Virginia Host Committee early in 2002.

Meeting accommodations will be at the Holiday Inn Sunspree Resort, 3900 Atlantic Avenue, Virginia Beach, Virginia 23451 (Telephone: 757-428-1711)

Watch for further details and register early!!!

## Annual Arkansas Mine Safety and Health Conference

The Arkansas Department of Labor would like to invite you to attend the annual Arkansas Mine Safety and Health Conference on **February 13-14, 2002**. The conference will be held at Clarion Resort on the Lake 4813 Central Avenue Hot Springs, Arkansas. Phone (501) 525-1381.

The purpose of the conference is to provide a forum for the mining community to focus on mine safety and health concerns. Mine managers, superintendents, safety directors, state and federal agencies, industry, and others who have responsibility in matters relating to mine health and safety should make plans to attend.

Registration fee for the conference is \$45.00 in advance and \$50.00 at the door and this fee covers lunch on the first day and all materials and breaks. Please complete and return the attached registration form by January 25. You will be responsible for making your own room reservations. A block of rooms has been reserved for conference participants at a special rate (Single or Double \$59.95 + tax). You may make your reservations by contacting the Clarion Resort on the Lake at 501-525-1391. Please identify yourself as a participant at the Arkansas Mine Safety and Health Conference in order to receive the reduced rate.

The conference is a cooperative effort of the Arkansas Department of Labor, Federal Mine Safety and Health Administration, and mining industries in the state of Arkansas.

For more information on the conference, call Bonita Stocks at 682-4520, or e-mail: [bonita.stocks@mail.state.ar.us](mailto:bonita.stocks@mail.state.ar.us).

For those who would like to come early, there will be a **Four Man Scramble Golf Tournament** at Glenwood Country Club, February 12 at 10:30 a.m. Contact Brad Smith at 501-623-8893 for more information and to sign up for the tournament.

**(See next page)**

**MSHA/State Grants Safety Conference**  
**February 19-21, 2002**  
**Starved Rock Lodge**  
**Utica, Illinois**

This conference is for mine operators, supervisors, safety representatives, and associated contractors and is cosponsored by the Mine Safety & Health Administration (MSHA) and the Illinois Department of Natural Resources, and the Office of Mines and Minerals (OMM) State Grants Program. This conference will be given at no cost to the attendees. However, pre-registration is mandatory for the lunch buffet to be served on February 19 & 20, 2002.

**ACCOMMODATIONS:**

A block of rooms has been set aside for conference attendees in the name of the OMM for February 18, 19, 20 & 21. Contact the lodge directly to make room reservations prior to January 18.

Phone: (815) 667-4211.

Other area accommodations available include Quality Inn, Comfort Inn, Ramada Ltd, Holiday Express, and Days Inn. ■

# The Academy

**Mine Construction, Maintenance, and Repairs Safety Workshop**

April 2-4, 2002

**Mine Fire Control Seminar**

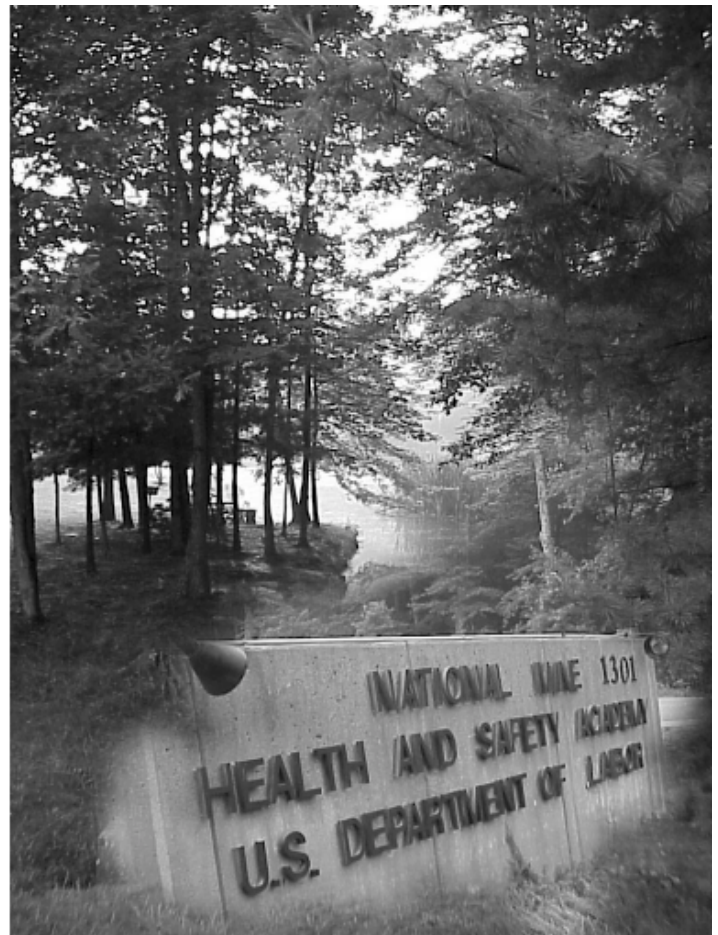
June 20, 2002

**Roof Control Seminar**

May 29-30, 2002

**Surface Haulage Safety Seminar**

August 20-22, 2002



# HOW TO FOLLOW DIRECTIONS

Being safe on the job means following directions. Can you follow directions? Sure you can. Or can you? Here is a simple test to see if you really can. **CONCENTRATE** and give it a try, but you only have three minutes to complete it.

1. Read everything before doing anything.
2. Put your name in the upper right hand corner of the paper.
3. Circle the word “name” in sentence two.
4. Draw five small squares in the upper left hand corner of the paper.
5. Put an “X” in each square.
6. Put a circle around each square.
7. Sign your name under the title. (How to follow directions)
8. After the title write “yes, yes yes.”
9. Put a circle around each word in sentence No. 7.
10. Put an “X” in the lower left corner of the paper.
11. Draw a triangle around the “X” you just put down.
12. On the reverse side of this paper multiply 70 by 70.
13. Draw a triangle around the word “paper” in sentence 4.
14. Call out your first name when you get to this point in the test.
15. If you think you have followed directions to this point, call out, “I have.”
16. On the reverse side of this paper add 8250 and 9850.
17. Put a circle around your answer. Put a square around the circle.
18. Count out loud, in your normal speaking voice, from one to ten.
19. Now that you have finished reading carefully, do only sentence one and two.

**This test is a vivid way of pointing out that directions are written to be followed.**

# Join Today! and Grow with us...

## Apply for Membership...

Membership is free. Your organization can become a Joseph A. Holmes Safety Association Chapter by completing a membership application and submitting it to the Holmes Safety Association.

Contact Person: \_\_\_\_\_ Phone No. \_\_\_\_\_

Company Name: \_\_\_\_\_

Street/P.O. Box: \_\_\_\_\_ City: \_\_\_\_\_

State: \_\_\_\_\_ Zip: \_\_\_\_\_ E-Mail \_\_\_\_\_ Address: \_\_\_\_\_

MSHA ID Number: \_\_\_\_\_

Type of Product: \_\_\_\_\_

Type of Operation: Coal \_\_\_\_\_ Underground \_\_\_\_\_ Surface \_\_\_\_\_ Mill \_\_\_\_\_ Other \_\_\_\_\_

Name you would like to call the chapter being established: \_\_\_\_\_

Name and organization of person assisting in recruiting this application: \_\_\_\_\_

Signature of Applicant: \_\_\_\_\_ Date: \_\_\_\_\_

Send to:

Joseph A. Holmes Safety Association

P.O. Box 4187

Falls Church, VA 22044-0187

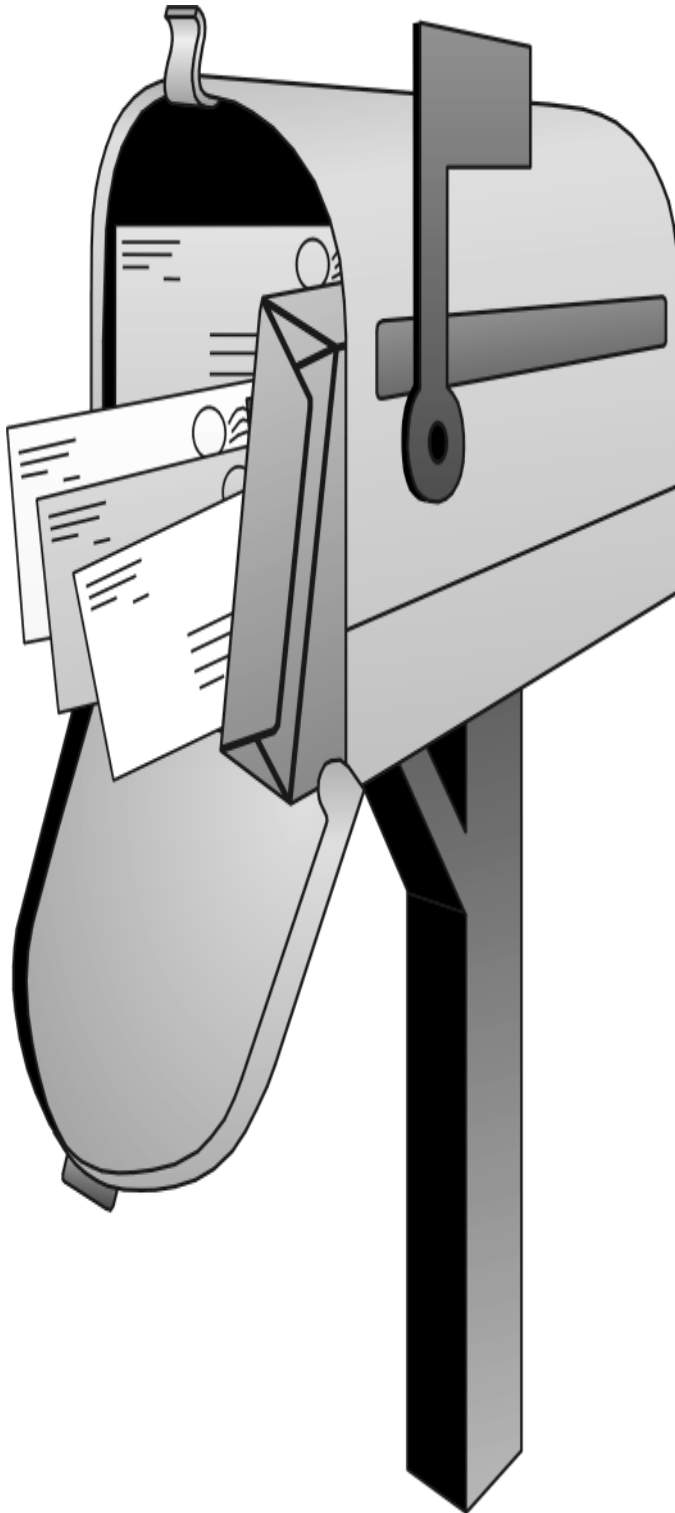
or

Telephone: (703) 235-8264

Fax: (703) 235-9412



# For **address changes** and new subscription requests:

**Contact:**

Bob Rhea  
Joseph A. Holmes Safety Association Bulletin  
Mailing List  
MSHA-US DOL  
4015 Wilson Blvd. Rm. 523A  
Arlington, VA 22203-1984  
703/235-1400 Fax: 703/235-9412  
e-mail: rhea-robert(@msha.gov

Please address any comments to:  
Donald Starr,  
Joseph A. Holmes Safety Association Bulletin  
DOL-MSHA  
National Mine Health and Safety Academy  
1301 Airport Road  
Beaver, WV 25813-9426  
Please call us at 304/256-3283  
or Fax us at 304/256-3524  
e-mail: starr-donald@msha.gov

**Reminder:** The District Council Safety Competition for 2002 is underway - please remember that if you are participating this year, you need to mail your quarterly report to:

**Mine Safety & Health Administration  
Educational Policy and Development  
Joseph A. Holmes Safety Association Bulletin  
P.O. Box 4187  
Falls Church, Virginia 22044-0187**

# Joseph A. Holmes Safety Association

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### Officers of the Joseph A. Holmes Safety Association

*President: Doyle Fink*, Federal (Retired), Texas

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*2nd Vice President: William Vance*, Mgmt., New Mexico

*3rd Vice President: Chuck Edwards*, Supplier, Pennsylvania

*4th Vice President: Doug Conaway*, State, West Virginia

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John Shutack	Federal	VA	Mike White	Labor	DC
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Cindy Shumiloff	Federal	WV	<b><u>Management</u></b>		
Emmitt Sullivan	Federal	WA	Lloyd Armstrong	Mgmt.	MN
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Brian Luby	Mgmt.	NM
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**Supplier**

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Steve Walker	Supplier	WV

**Insurance**

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