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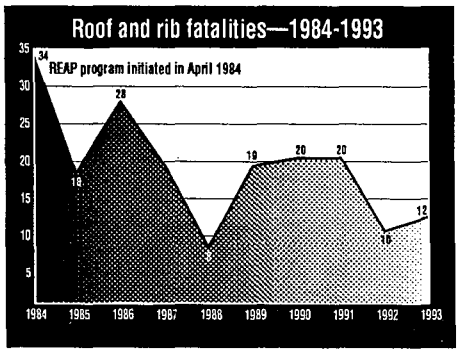

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Please note: The views and conclusions expressed in HSA Bulletin articles are those of the authors and should not be interpreted as representing official policy of the Mine Safety and Health Administration.

KEEP US IN CIRCULATION

The Holmes Safety Association Bulletin contains safety articles on a variety of subjects: fatal accident abstracts, studies, posters and other 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.

REAP program celebrates 10th birthday

It has been 10 years since the nationwide Roof Evaluation and Accident Prevention (REAP) program was created to revitalize the campaign against the most deadly safety hazard in coal mining—underground falls of roof and rib.

The charter members of the program were the Bureau of Mines, United Mine Workers of America, American Mining Congress, Bituminous Coal Operators Association, National Independent Coal Operators Association, State Departments of Mines, individual coal companies, and the Mine Safety and Health Administration (MSHA).

The reason behind MSHA'S initiation of the plan to create the REAP program in 1984 was the fact that the first 13 fatalities that year were roof and rib type accidents.

Since the turn of the century, more than 44,000 coal miners have lost their lives in roof and rib fall accidents. While injury rates in coal mining generally have greatly improved, roof and rib falls remain one of the major causes of death in underground coal mines. Since April 1984, the REAP program has worked to reduce these accidents within the mining industry. The coal mining industry has gone from 34 roof and rib type fatalities in 1984 to 12 in 1993 (see accompanying chart).

In half of the 12 accidents in 1993, the victims were inby supported roof, that is, traveling or working beyond areas of safely supported roof. There also were double fatalities in three of the roof fall accidents.

Given the widespread use of modern roof control technology and the current high level of awareness of roof hazards, it is difficult to understand how roof falls could claim the lives of six persons working inby supported roof.

The original REAP program was divided into four sections:

1) Training.
2) Statistics.
3) Technology.
4) Enforcement.

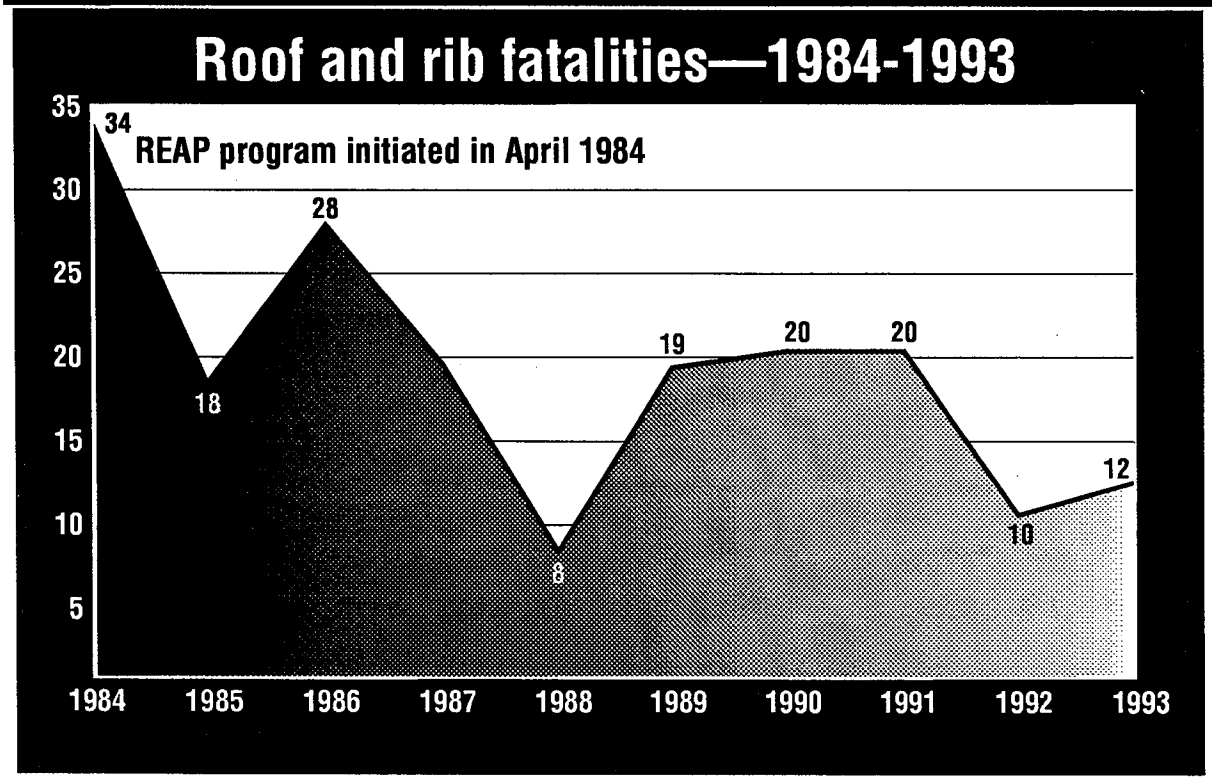
During the past 10 years, MSHA, working closely with the mining community, carried out the following activities to reduce roof and rib type accidents:

Training

- Videotapes were developed, distributed, and shown to coal mining managers, supervisors, and employees. These tapes recorded the impressions of miners who had been involved in roof fall accidents.
- Videotapes of the 1992 fatalities, produced at the MSHA'S Beckley, W. Va. Academy, were distributed and shown to the mining industry.
- The Academy also produced a roof control fatal slide program, and monthly roof control safety posters were printed which were distributed to mine operators.
- Hard hat stickers were printed and distributed to each underground coal miner. These stickers bore the slogan "Inby is Out."
- Printed articles about the "REAP" program and various roof control subjects were carried in the Holmes Safety Association ***Bulletin***.
- MSHA safety specialists conducted REAP presentations at the Bureau of Mines' eight seminars on ground control, held in West Virginia, Virginia, and Kentucky which were open to the mining community.
- REAP was promoted frequently through the many Holmes Safety Association chapters.
- Roof-control-related training was given to miners as part of the Small Mines Training Initiative Program.
- The Academy produced a Job Safety Analysis (JSA) video of a roof bolting machine operation. These tapes were advertised and distributed by the Academy.

Statistics

- The Management Office issued a quarterly report on accident frequency and in rates to aid in monitoring REAP improvement. This information was made available to each MSHA district as well as to other organizations.



REAP, which now occupies a permanent place in our health and safety program. The offices of Coal Mine Safety and Health, Technical Support, Information and Public Affairs, and Educational Policy and Development have all been given assignments to support REAP.

Technology

- Extendible line curtain was developed and is being used. This curtain allows miners to perform work while remaining under supported roof.

Enforcement and Rulemaking

- MSHA worked with state inspection agencies and industry to ensure that supervisors complied with approved roof control plans.
- New and improved roof and rib regulations were promulgated in 1988.
- Improvement in regulatory programs, such as MSHA'S revised underground coal mine roof support safety standards, Subpart C, were given the highest priority.
- Regulations require that a readily visible warning, or a physical barrier, be installed to impede travel beyond permanent supports.
- The rapid growth of the use of Automatic Temporary Roof Supports (ATRS) and ATRS regulations contributed to the roof fall fatality decreases.

Although improvements have been made, the REAP awareness campaign is still needed. MSHA therefore remains fully committed to get roof and rib type fatalities to **ZERO**, REAP needs the industry's continued commitment. Continued success will depend on the joint efforts of everyone involved in underground coal mining, whether in management or labor, industry, or government.

In 1992, the mining industry went more than five months without an accident from a roof or rib fall. If the mining industry is able to work more than five months without a roof or rib type fatality, it should be able to work safely for a year or more by complying with the roof control plan and by stopping their employees from going inby supported roof.

Please lend your support to the "REAP" program and we'll all "REAP" the benefits of safer, more productive coal mines.

Thinking safety and REAP is a big PLUS!
Practicing safety and REAP is a MUST!

Tony Turyn, REAP Coordinator

Holmes Safety Association Monthly safety topic

Fatal machinery accident

GENERAL INFORMATION: A 19-year-old general clean-up person and relief truck driver, with one year of mining experience, was fatally crushed while helping the crusher operator and other employees unplug the primary impact crusher.

A river divided the operation with the quarry, primary and secondary crusher (mills), screening plant, and surge piles located on the south side. A washing plant, screening units, stockpiles, and scale house/mill office were on the north side. A cable suspension bridge supporting a conveyor belt system and pedestrian walkway connected the two operations. Vehicular traffic accessed both areas by utilizing public roads and bridges.

Two types of ledges were mined at the quarry using air-track drills and conventional blasting methods. Broken limestone was hauled by 50-ton trucks to the primary crusher and crushed to minus 6 inches. The rock was stockpiled into surge piles. Conveyors located in a reclaim tunnel beneath the piles transported the rock to the secondary plant where it was further crushed and screened. The product was then transported via conveyor belt across the river to the wash plant and stockpiles. Front-end loaders were used to load the construction aggregates and road building materials into customers trucks for various markets.

The quarry and mill operated one 10-hour shift, 6 days a week with a total of 22 employees.

DESCRIPTION OF ACCIDENT: The victim reported for his regularly scheduled work shift at 7:30 am. Because a truck driver had quit the previous day, the foreman assigned the victim to operate a haulage truck. His job was to haul blasted rock from the quarry to the crusher. The victim had previously driven the haul truck and had filled in as a driver when a regular driver was absent.

Work progressed normally through the day until about 3 pm, when the impact crusher plugged up and stalled the drive motor. The crusher operator turned the green light at the rock bin off and turned the red light on. A red light meant for the truck drivers not to dump their loads and to proceed to the crusher to assist the crusher operator in unplugging the crusher.

The crusher was unplugged at about 3:30 pm, and the men went back to their regular jobs.

About 5:00 pm, the crusher again plugged, stalling the diesel drive motor. The crusher operator again turned the red stoplight on and employees began arriving to assist him.

The "flop gate" was opened and the victim and the truck driver entered the interior of the crusher. A sledge hammer was used to break up large boulders on top of the impact rotor. When the rocks were small enough to be handled they were placed on the "flop gate." The two workers then exited the crusher and the crusher operator tried to move the rotor by jogging the starter switch. The rotor was still "hung" and the truck driver told the crusher operator he would go down on the conveyor belt below the impact rotor and see if a rock had gotten caught in the area of the splash pan. While the truck driver was doing this, the victim and another truck driver walked to the rear of the crusher and out of the crusher operator's sight. They did not let the crusher operator know of their plans. The victim re-entered the rotor compartment and used his hunting knife to remove some small pieces of rock wedged between the rotor and crusher housing. In removing the rocks, the victim was on his hands and knees on top of the impact rotor. The other truck driver was kneeling on the "flop gate" and also leaned

over on the rotor. From this position, he could see the truck driver's hands from the back side (breaker plate) as the truck driver was working below. The truck driver did not know the victim and his co-worker were positioned above him on the rotor. His co-worker made voice contact with the truck driver and asked him how he was doing. He replied that he thought he had about got it cleaned. It didn't occur to the truck driver that the victim was on the rotor since it was policy that an employee is not allowed to perform work above another employee when there is a danger of knocking material onto the employee below.

At about 5:20 pm, the truck driver told the victim to hurry up and get out of the crusher because their co-worker was about done below. While the truck driver was climbing out from below, the victim was attempting to turn around on the rotor to exit. Getting in a safe position, the truck driver told the crusher operator, "I think the crusher's clear now." The crusher operator, still unaware that the victim and his co-worker were unaccounted for, used the diesel motor starter to "jog" the rotor to see if it was free and would move.

The co-worker tried to grab the victim's hands as the rotor turned, but a rotor breaker bar had already caught the victim's feet pulling him down between the rotor and breaker wall panels. The next breaker bar came to rest against the victim's chest. His co-worker notified the crusher operator and truck driver that the victim had been on the rotor and was now trapped or pinned. The co-worker then ran, approximately about 300 feet to the shop to notify the foreman that the victim was pinned inside the crusher and hurt and to call for an ambulance and rescue personnel. The foreman called 911 and went to the main gate to direct the ambulance and medical crews to the site.

After notifying the foreman, the truck driver, an EMT-I, returned to the crusher and attempted, unsuccessfully, to render mouth-to-mouth resuscitation to the victim. The victims position as well as the pressure exerted by the impact rotor crusher bar made the lifesaving attempt futile.

The maintenance supervisor had been observing the crusher unplugging operation from a location near the front or diesel motor location when the accident occurred. The maintenance supervisor helped get the east side door opened and went to his truck to get wrenches to loosen and remove the nuts holding the outside pin bolts and breaker rods. This was done to relieve the pressure on the internal breaker wall panel.

While this was being done, EMT's had arrived at the scene. A short time later paramedics and the volunteer fire department also arrived. The "Jaws of Life" instrument was used to force the breaker wall plate outwards to relieve the pressure on the victim's chest and facilitate his removal.

The victim's eyes were dilated and he had no discernable pulse when an EMT reached his position inside the crusher. At about 6:10 pm, after 45 minutes of being trapped, the victim was removed from the crusher, placed on a backboard and lowered to the ground.

The nearby Army military med-evac helicopter had been summoned and had arrived while the rescue attempts were occurring. Cardiopulmonary resuscitation and oxygen were administered to the victim as he was being carried to the helicopter. The victim was airlifted to the community hospital where he was pronounced dead. The cause of death resulted from massive crushing injuries to the upper and lower torso.

CONCLUSION: The direct cause of the accident was the failure to ensure that all employees were in a safe location before initiating movement of the crusher. A contributing cause was the failure to provide and use an audible warning device or other effective means to warn employees of impending crusher movement.

Other contributing causes were: the failure of the victim to notify the crusher operator of his intentions to re-enter the crusher compartment; the afternoon of the accident had been hot and muggy; the plug-up occurred 30 minutes prior to quitting time; trucks were waiting to be dumped and paychecks were to be distributed at the end of shift. These factors could have caused employees to hurry with the unplugging of the crusher which exposed them to unnecessary risks.

Instability hazards in handling and storing materials

Part 3 of 3: Truck-built stockpiles

John Fredland, Kelvin Wu, and Donald Kirkwood
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Part 2 of this article (see February *HSA Bulletin*) focused on the hazards associated with the operation of a surge pile, with below ground feeders, to temporarily store or stockpile material. At many mines, especially crushed stone operations, material is stored simply by dumping it in a pile on the ground, where there are no draw-off facilities beneath the pile. The product may be placed using a conveyor, or by using dump trucks and/or other mobile equipment typically reclaimed from such a pile by loading it out at the toe of the pile with a front-end loader.

The slopes of these piles are typically near the angle of repose of the material. However, when material is loaded out at the toe, the remaining pile material tends to stand at a steep angle, which can exceed 45 degrees.

The dangers

The hazards with working any type of stockpile result from the fact that the relatively loose material, either above or below the worker, may become unstable. For equipment operating on top of the pile, there is the hazard of loss of support from below if the equipment gets too close to the edge of a slope. The hazard to load-out equipment and personnel at the base of the pile is from the sudden collapse of an oversteepened portion of the slope above them.

Operating equipment near the edge of a stockpile is dangerous because the slope is only marginally stable. An embankment intended to support the weight of heavy equipment near its edge, such as a highway embankment, is constructed with flat slopes and with the material being carefully compacted in thin lifts by a number of passes of heavy compaction equipment. In contrast, a stockpile has steep slopes and is in a relatively loose condition, especially near the edges where the material is not confined. As a result, the pile may look substantial, but near the edge it may not be capable of supporting both its own weight and the significant additional weight of a loaded haul truck.

A practice sometimes used in constructing stockpiles is to back a truck to the edge of the pile and dump the contents directly over the edge.

Figure 1.—Accident due to collapse of edge of pile.

This is a potentially dangerous practice because the edge of the pile may collapse under the weight of the truck. It's especially dangerous in areas where the slope has been loaded out at the toe (Figure 1).

When material is loaded out from the toe of a stockpile, the slope is steepened in that area. This weakens the slope, making it less stable and more prone to slide. As a result, the edge of the slope at the top of the pile is less capable of supporting the additional weight of a loaded haul truck. Also, as an equipment operator removes more material at the toe, the point can be reached where a collapse of the side of the pile can endanger the operator or anyone near the toe of the pile.

Figure 2.—Dumping inside berm, back from edge of pile.

Exposure to hazardous conditions can be avoided through training, so that workers recognize and appreciate the potential danger, and by following safe work practices.

Safe practices when dumping on pile

1. Operators must receive training on the hazards involved in operating heavy equipment on stockpiles. They must realize that the area near the edge of a steep slope may not support the additional weight of their equipment. They must be trained to look for cracks or other signs of slope instability and to avoid traveling on suspect areas.
2. Dumping material directly over the edge of a pile where material has been loaded out at the toe should be absolutely prohibited.
3. The practice which should be followed in placing material on simple stockpiles is to dump the material back from the edge of the pile (Figure 2). A good rule of thumb is to dump one truck length back from the edge. If material must be pushed over the edge, it's preferable that a track-mounted piece of equipment be used.
4. Near the edge of slopes, equipment should operate at reduced speeds to increase the operator's control. Anytime equipment is backed toward the edge of a slope, it should be backed slowly and brought to a gradual stop. An abrupt stop near the edge of a slope imparts an additional force which must be resisted by the strength of the slope material, and which can cause the collapse of a marginally stable slope.
5. Adequate berms should be maintained in any area where mobile equipment would be in danger of going over the slope. Benefits of properly constructed berms include: providing a good visual indicator of the location of the slope edge; providing sufficient resistance to give the operator an indication, by feel of contact, that the vehicle is at the berm; and keeping equipment at least the width of the berm away from the slope edge. While a berm should be capable of offering resistance to the passage of equipment over the edge, equipment operators must realize that the typical axle-height berm is not normally capable of stopping a large truck, and must not be relied on to do so.
6. Equipment operators may get a false sense of security from the presence of a berm. The presence of a berm does not necessarily indicate that it is safe to back to the berm and dump. The berm may have been undercut on the other side from

the load-out operation. Also, depending on the conditions, it may not be safe from the standpoint of the amount of load on the slope, especially for the larger capacity haul trucks, to back all the way to the berm. Larger trucks may need to stop short of the berm and dump farther back from the edge of the slope so that the significant weight that they add does not cause the slope to fail.

Safe practices—loading out from toe

Loader operators, and others who may work in the area, need to appreciate the potential dangers created by removing material from the toe of a pile (Figure 3), and need to follow safe work practices.

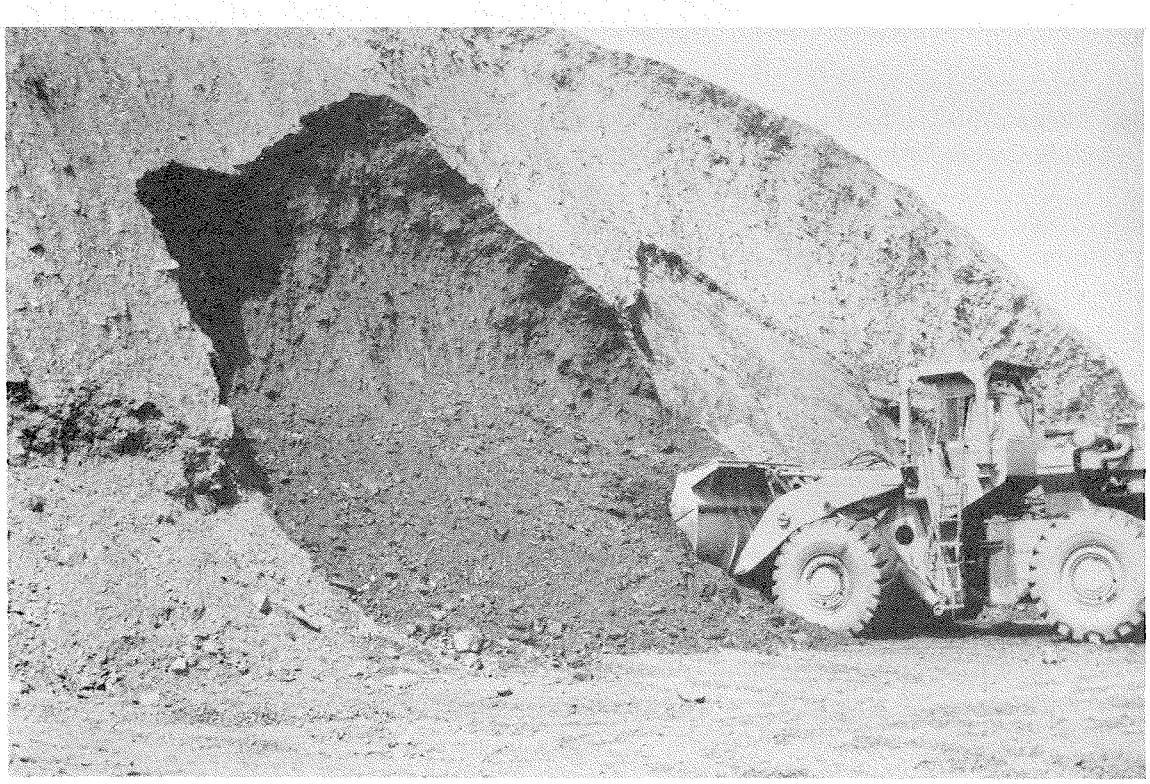


Figure 3.—Loading out from toe can create dangerous condition.

1. The height of material that has been oversteepened should be limited so that a collapse of the slope will not endanger the loader operator.
2. A good safety rule is that a loader should not work into the toe of a bank which is higher than the reach of the equipment. In Canada, there is a regulation that the height of a steep working face in unconsolidated material shall not be more than 2.0 meters above the reach of the loading equipment. With this limitation, the quantity of material which could he involved in a slide is restricted, and the operator is able to safely trim down steep or overhanging material.
3. When a portion of the slope has been oversteepened from being loaded out, material should be pushed down from the top of the pile, preferably using track-mounted equipment, to flatten the slope at least back to its angle of repose.
4. When working near the toe of the pile, the operator should keep the piece of equipment nearly perpendicular to the slope. This helps keep the operator's compartment back away from any potential slides.
5. Digging into frozen material can be dangerous because the ice binds the material and allows it to stand at steep slopes, or to form overhangs. As thawing occurs the material can collapse without warning. Operators should be aware of this potential hazard.
6. The activities of dumping additional material on a pile, and reclaiming material from the toe of the pile, need to be coordinated so that equipment is not working on top of the pile near an area where material is being loaded out, or has been loaded out, from the toe.

A note on spoil and waste piles

Problems can occur when the method of disposal of spoil or waste is to dump the material directly over the edge of a pile. This situation is similar to the cases described above for the truck-

built stockpiles. Normally there is less concern for a stability problem at the dump point of a waste or spoil pile because the pile is not loaded out at the toe and steepened. However, the same concern applies, that is, that the edge area of the pile must be capable of supporting the truck weight.

The stability of the edge is a concern in these situations for two main reasons. First, material such as spoil tends to be variable in nature. As a result of the end-dumping operation, zones of finer material can occur which may be significantly weaker than the average material. This possibility can be increased by the tendency for particle-size segregation which naturally occurs from end-dumping. The second reason for concern is that larger and larger capacity trucks are being used in these situations. A dump point which may be stable for a 35-ton truck, may not be stable when loaded with a 70-ton truck. With the larger trucks, it is especially important that the materials involved and the dump procedures be analyzed to ensure that the factors of safety for support of the truck are adequate. Based on the size of truck being used and the properties of the dump material, engineering analyses can be performed to indicate how close to the edge of the slope the truck can come, while maintaining an adequate factor of safety against slope failure.

Summary

If the goal of zero mining fatalities by the year 2000 is to be reached, progress must be made on accidents related to the instability of material during handling and storage. The keys are to provide training to miners so that they understand and appreciate the hazards involved, and to regularly review material handling procedures to ensure that hazardous situations are being avoided. The information provided in this article should assist mine operators in achieving these goals.

Hazards associated with overhead high voltage transmission lines

Low, medium and high voltage power transmission lines are commonly present at mine sites, along access roads, highways, through forests, across fields and in yards near our homes. Serious injuries or death can result if you come in contact with the power lines. Potential hazards occur when booms, cranes, truck beds, ladders, uninsulated tools, etc. are used in close proximity of power lines.

Recently, fatal accidents occurred in Virginia when a portable boom truck contacted an overhead high voltage line and when citizens handled downed power lines.

Safety precautions:

- Equipment operators at mine sites should be made aware of any overhead power lines in their work areas.
- When equipment such as booms from trucks, truck beds, ladders, etc. are to be extended into the air in close proximity to overhead power lines, the power should be de-energized by a certified electrician **before work is performed.**
- Clear communications should be established between the electrician and the personnel performing work in the areas with overhead power lines.
- Always assume downed power lines are energized.
- The potential for downed power lines are more likely after snow storms and high winds.
- Proper power company authorities must be notified when downed power lines are discovered.
- Never set up ladders or scaffolds, fly kites, trim trees, or install antennas near power lines.

Joseph A. Holmes: He gave birth to modern mine safety—Part 2

By Robert D. Johns

Some 1,500 people felt the first faint rumble of the earth shortly after dusk on Halloween night, 1911. Within seconds, a huge ball of fire and smoke belched from the mouth of the mine. The explosion in the experimental mine at Bruceton, Pa., had all the earmarks of one more disaster in the coal fields of Appalachia.

It was something else entirely: injuries, none; fatalities, none.

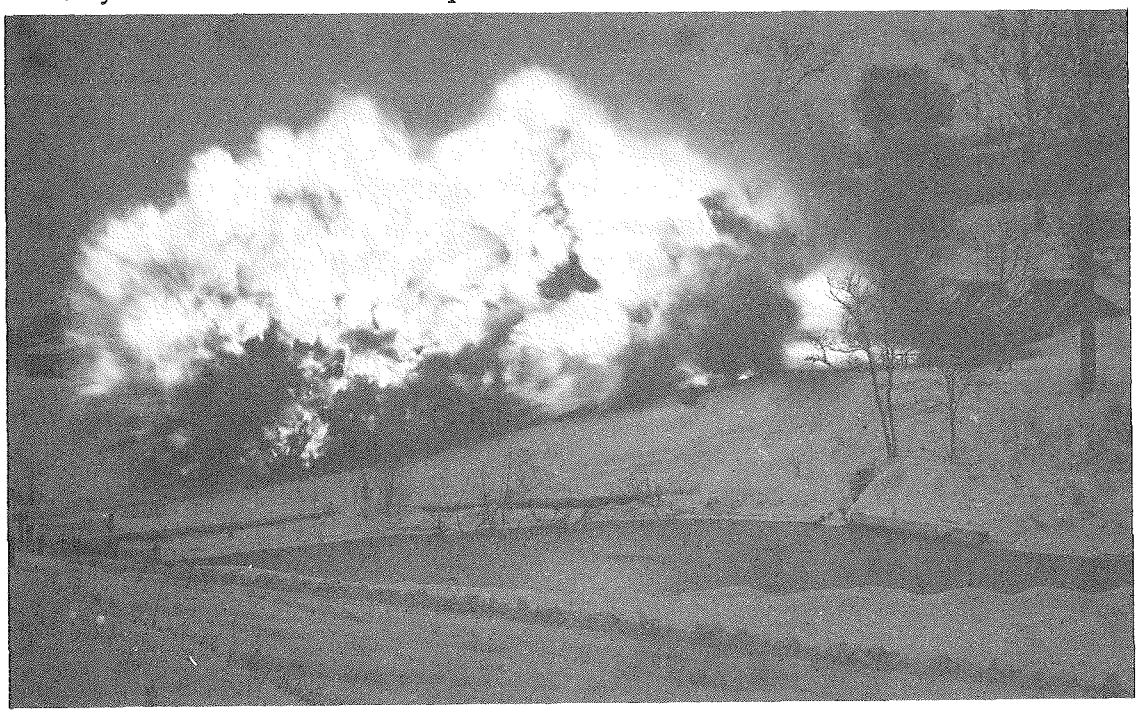
It was no accident that this was a different kind of mine explosion with a decidedly different outcome than usual.

The 1911 explosion at the Bruceton Mine, about 20 miles south of Pittsburgh, was one of the more dramatic demonstrations by Dr. Joseph A. Holmes, a man who earned the reputation of "founding father of modern mine safety."

Holmes had gathered more than 1,500 miners, mine operators, engineers and news people at the Bruceton Mine to demonstrate once and for all to a previously skeptical public that ordinary coal dust, by itself and without the presence of methane, has enormous explosive qualities. Before the demonstration was over, however, even Holmes himself might have been feeling a bit skeptical. An assistant tried twice to set off the explosive charge which had been planted in the mine. Nothing happened. Finally Holmes stepped forward, personally set off the explosives, and no one ever again doubted the danger of coal dust.

Commenting later on the significance of the experiment, Holmes said, "The great value of this experiment to the mining industry was in demonstrating to more than 1,500 people from every coal mining district of the United States the fact that ordinary bituminous or soft coal dust will explode from a charge of black powder badly placed in a mine; and that poisonous gases are given off from such an explosion in sufficient quantities to suffocate and poison any person in the mine.

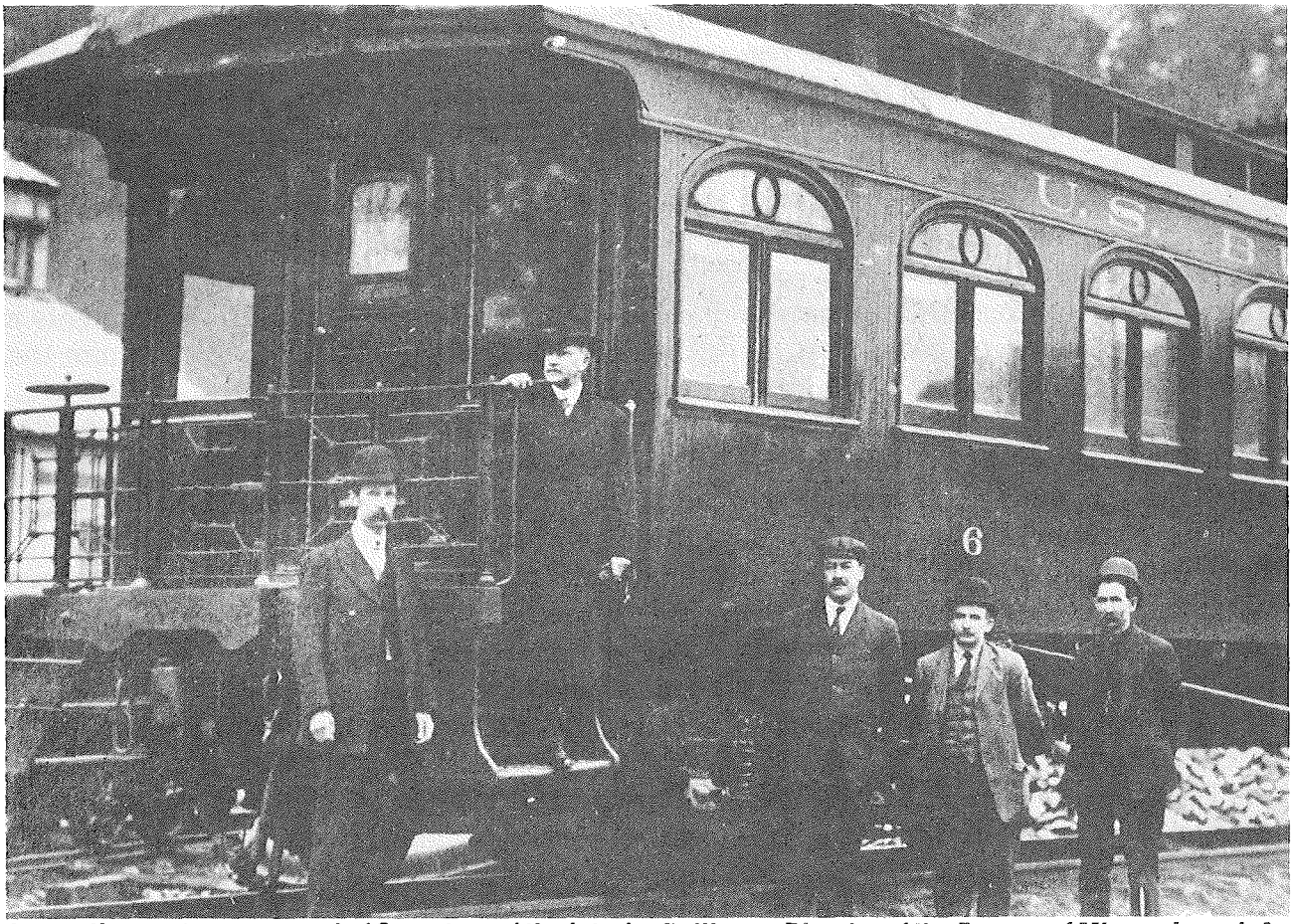
"No amount of writing or talking could be so forcible in the teaching of such a great lesson," Holmes concluded.



Coal dust explosion from main entry, Experimental Mine, Bruceton, Pennsylvania.

Witnesses to the explosion groped for words to describe the destructive force of the blast. One New York Times reporter described it, for example, as "terrifying to the layman." No one needed to ask what would happen to a man inside a mine at the time of such a blast.

Although Holmes and a few others had preached it for some time, it took a practical demonstration to make the mining in-



Inspection party, composed of Secretary of the Interior Ballinger; Director of the Bureau of Mines, Joseph A. Holmes; Dr. J.J. Rutledge and others in front of a Bureau of Mines rescue rail car at Marianna, Pennsylvania.

dustry fully understand the lethal characteristics of coal dust. This experiment, of course, involved only the particular type of coal dust present in the Bruceton Mine, but it was followed by experiments to determine the explosiveness of coal dusts from hundreds of mines across the U.S.

Under Holmes, direction, research was conducted to determine the effects on coal dust of humidification and wetting, incombustible materials' methane and oxygen. These experiments underlined two important facts: 1) The flammability of coal dust is appreciably increased by the presence of gas and 2) rock dust is an effective and practical means of preventing the spread of an explosion, better and possibly cheaper than wetting the coal dust.

Holmes, who is credited with making popular the slogan, "safety first," was responsible for many major improvements in mine safety. Among his other significant achievements he arranged for the importation of oxygen-breathing devices for mine rescue teams. Until he purchased several of these units for the Bureau of Mines, their use was extremely limited in American mines.

Holmes also negotiated for the donation of four railroad cars from the Pullman Company for use in mine rescue work at a time when the Bureau of Mines' budget would not permit their purchase. Pullman prepared the cars for mine rescue operations under Holmes direction and they were put on continuous standby for mine emergencies. If an explosion did occur the cars and personnel attached to them were immediately dispatched to the disaster area to provide mine rescue assistance with a measure of efficiency that was previously thought impossible.

Holmes was not one to waste his safety resources however, so instead of letting the rescue cars sit idle when there were no disasters, he arranged for them to be sent to the field with instructors assigned to each car to teach first aid and mine rescue. Literally thousands of miners and operators utilized the expertise of these nomadic instructors to improve the skills of their in-house rescue teams.

Holmes work eventually resulted in eight mine rescue cars being put into operation and four mine

rescue stations being established. He then proceeded to cement the methodology of mine rescue and directed attention to the need for specific first aid procedures.

Born in Laurens, S.C., in 1859, Holmes typified the zeal of early America. He saw problems in the mining industry, and put forth a determined effort to solve them.

He was graduated from Cornell University in 1881 and became a professor of geology at the University of North Carolina. After working to establish the North Carolina State Geological Survey, he became its director in 1891. In 1905 he became chief of the Technologic Branch of the U.S. Geological Survey. From that vantage he got a first-hand view of the tremendous waste of natural resources and the tragic death rate in the mines. He quickly began marshalling arguments for creation of a separate bureau of mines. With the help of James F. Callbreath, executive secretary of the American Mining Congress, and United Mine Workers President, John L. Lewis, Holmes arguments finally won out. On May 16, 1910, Congress created the U.S. Bureau of Mines and made it a branch of the Interior Department.

The *Mining and Engineering Journal*, five years later in its July 17, 1915, edition left no question about Holmes impact on the Bureau: "The Bureau of Mines became his child. He practically created it organized it and laid out its course. There is scarcely anything in it whereof the inception is not owed to him."

Holmes' appointment as the first director of the Bureau did not come as quickly as might have been anticipated. Initially President Taft wavered, but as reported in the July-December 1912 issue of *Coal Age* Magazine, "The wishes of mining men in all parts of the country prevailed over the personal desires of a few politicians and Dr. Holmes was appointed as the first head of the Bureau of Mines. His selection met with instant approval and the hearty cooperation which has been accorded him by all in the mining industry has proved without doubt the wisdom displayed in starting the initial work of the new bureau under his able direction."

Once installed at the helm of the Bureau, Holmes set out in earnest to find solutions for the disgracefully high fatality rate in the mining industry.

Holmes said at the time: "Both directly and indirectly, one of the important causes of injury and death in coal mines is the use and misuse of explosives or the use of explosives that ought not to be used." Consequently, Holmes had research done into the properties of explosives which resulted in major discoveries and improvements in their use. The black powder and dynamite that was used extensively in the mines of 1910 were found to produce a hot, relatively long-lasting flame which could cause an ignition of gas and dust. "Permissible" explosives were introduced during this era, and as the type and number of explosives used in the mining industry increased, the Bureau's testing facilities also increased to include for the first time an elaborate and scientific evaluation of each explosive.

Holmes explained that the purpose of developing "permissible" explosives was to "reduce the danger of disastrous explosions in mines where gas or dust is found. The flame from the explosion of black powder lasts 2,500 to 3,000 times longer than the flame from these permissible explosives; it is also hotter, and is therefore more likely to ignite gas or dust."

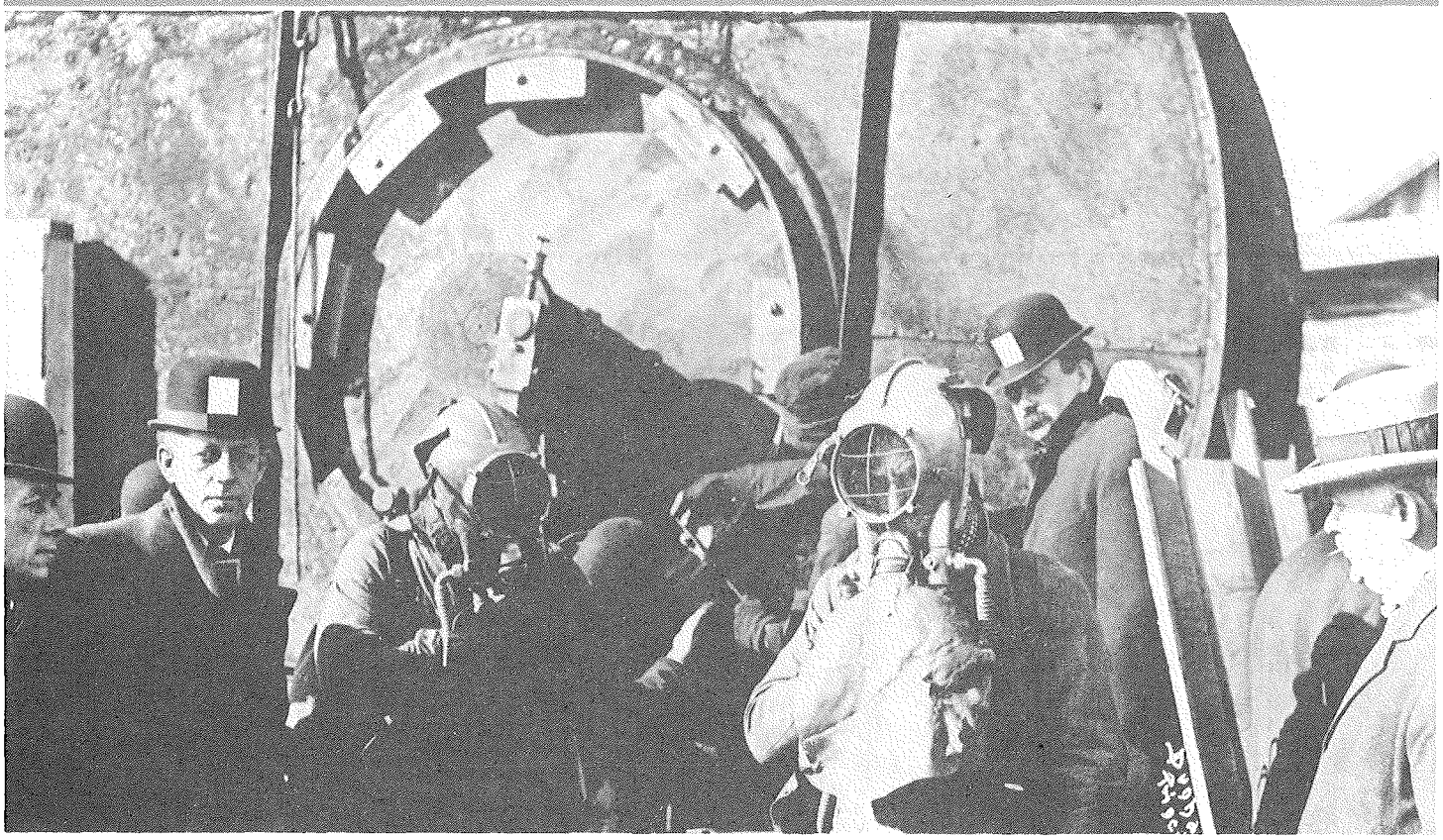
To properly conduct experiments on coal dust and explosives, Holmes realized that he needed more than a laboratory.

Obviously, no mine operator was willing to volunteer his mine for explosions, so Holmes arranged to acquire 38 acres of coal land near Bruceton, Pa. After years of work, the mine was developed to a point where large-scale tests could be undertaken, and the Bruceton Mine still is used today for important health and safety experiments.

In 1910 a new element of danger, electricity, was being widely introduced into the U.S. mining picture. Seeing the hazards involved in the unregulated use of electricity, Holmes initiated schedules for testing and approving electrical equipment for mine use. These schedules and earlier tests resulted in the manufacture of the first explosion-proof motor in the United States.

How did one man do so much?

Coal Age Magazine tried to answer that question in one of its 1912 editions:



Top of wrecked air shaft showing members of the press and mine officials with "helmet men" at the Cherry Mine where 400 men were entombed, November 13, 1909.

"Many men have weight; Dr. Holmes has momentum. Lots of people know what to do; he knows how to do it. His diplomacy is the sort that enables a man,without deception or hypocrisy, to be seemingly the same to all men, yet varying with each, according to his peculiarity and according to the mind of the man at the time."

Holmes died from tuberculosis on July 12, 1915, following a strenuous minerals exploration trip into the wilderness of Alaska. His death evoked many words of praise for both the man and his contributions.

The Mining and Engineering Journal wrote; "He was never willing . . . to relieve himself of arduous duties by delegating them to his assistants. Their purpose, in his mind, was solely to enable his Bureau to do more work, and he devoted himself indefatigably to finding it for them to do. With all of this, he made the Bureau of Mines a great thing in remarkably few years, but in doing it he killed himself, leaving the mining and metallurgical industries of this country his eternal debtors."

On July 14, 1915, the New York Times carried a less emotional testimonial which summed up in a single sentence the meaning and importance of Holmes work:

"Under Dr. Holmes direction, great progress was made in perfecting methods of saving lives in mine accidents and for lessening the dangers to which underground workers are exposed."

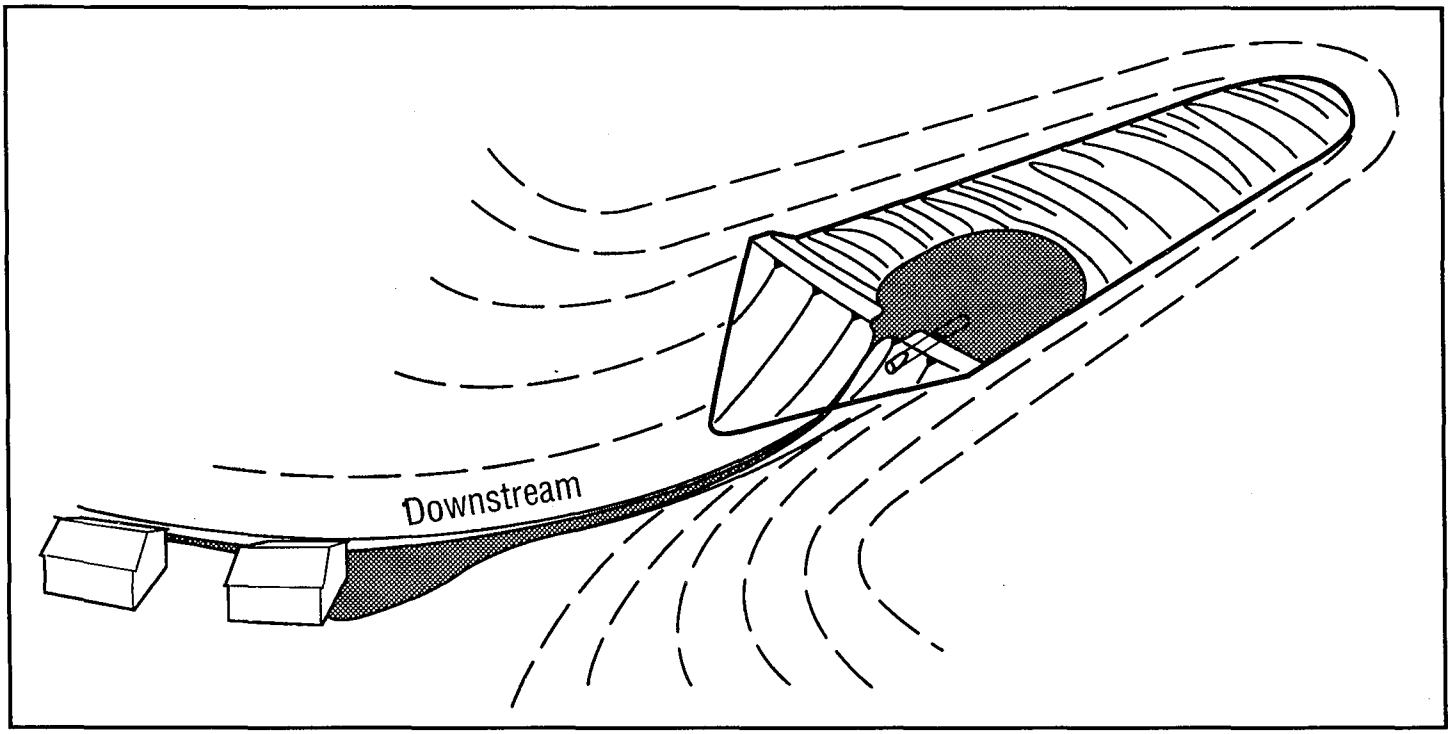
Reprinted from the March/April 1976 issue of the Department of Interior's MESA magazine.

REMINDER: The Winter Alert is still in effect!

- *Rockdust*
- *Preshift and onshift checks*
- *Check for methane frequently*
- *Keep equipment maintained*
- *Check the roof—especially near mine entrances*
- *Check ventilation often*
- *NEVER smoke underground!*

SPECIAL HAZARD ALERT

Waste impoundment structures



A sediment structure on the crest of a valley-fill refuse pile failed because the rock underdrains and a 4-inch drainpipe were clogged and frozen. The structure failed due to saturation by approximately 30 inches of water (1 acre-foot) that accumulated behind the berm along the crest of the refuse pile. The 4-inch drain-pipe usually conveys water to a sump where it is pumped to the mine's slurry impoundment. The uncontrolled water eroded the berm, but did not damage the grass-lined downstream face. An unused access road provided a pathway for the water to a nearby residential area where 3 houses were adversely affected and the surrounding area suffered from black water pollution.

Safety personnel from coal companies, as well as Federal and State inspectors should be aware of the possible adverse conditions that rapidly developed during the recent severe winter weather. Heavy snowfall and subsequent rain have put an extra burden on impoundment structures. Impoundments in areas that have been affected by recent high precipitation, should be examined as soon as possible.

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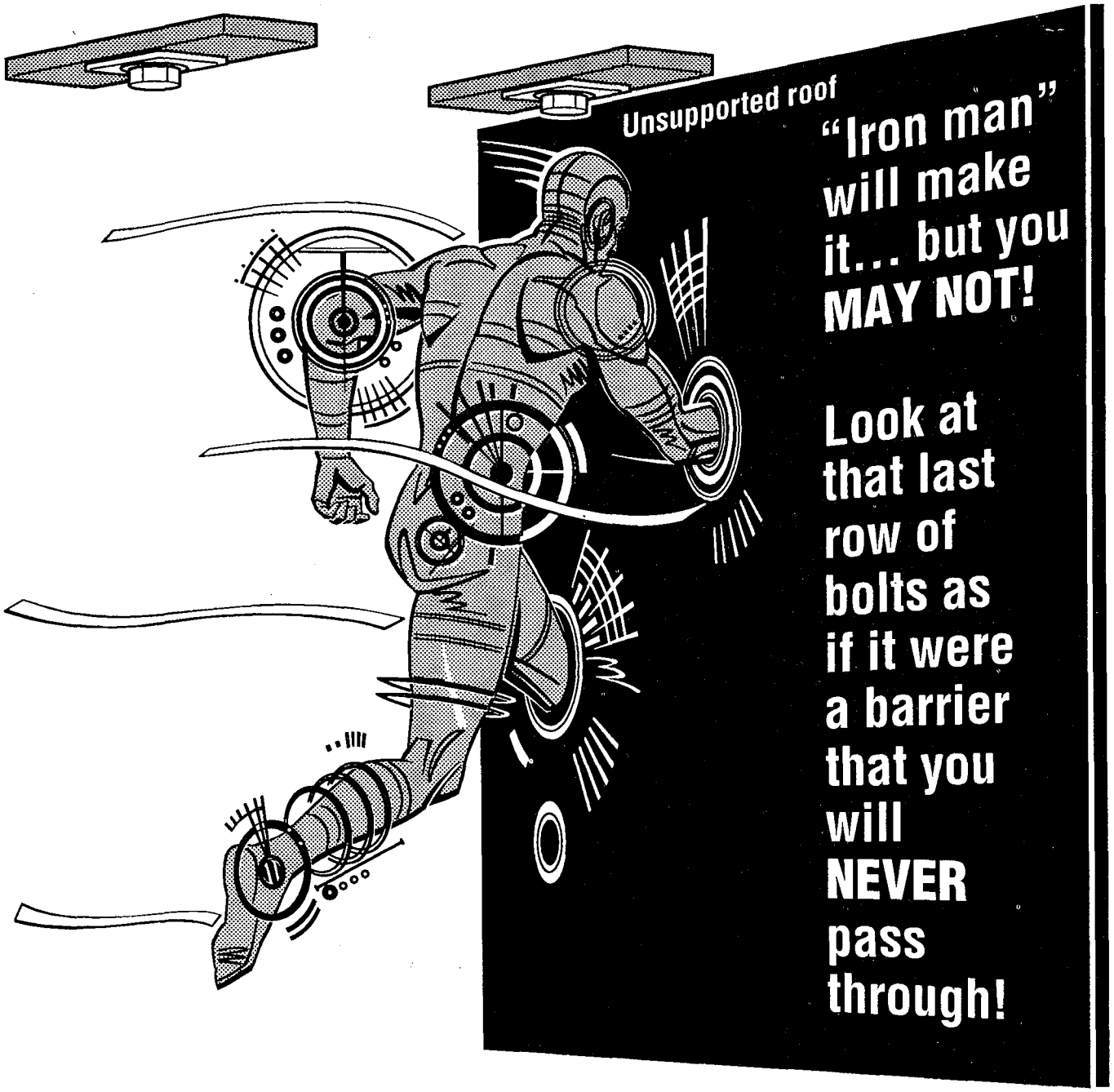
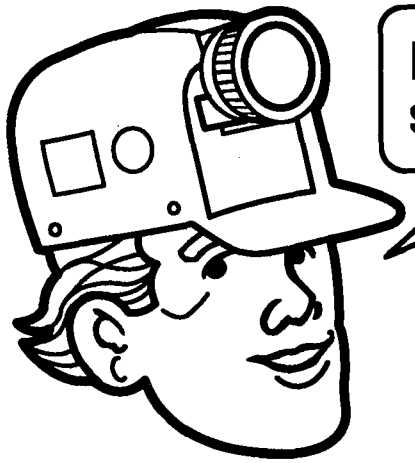




Perform a death-defying act... stay out of the Death Zone!

REAP

Roof Evaluation Accident Prevention

Working, dying on the road

- ***Studies say road workers are at high risk for early death***
- ***It is compounded by toxic substances workers encounter***

By Julie Carr, Staff writer for the ***Albany Times Union****, Albany,*

Albany's George Perkins loved his work.

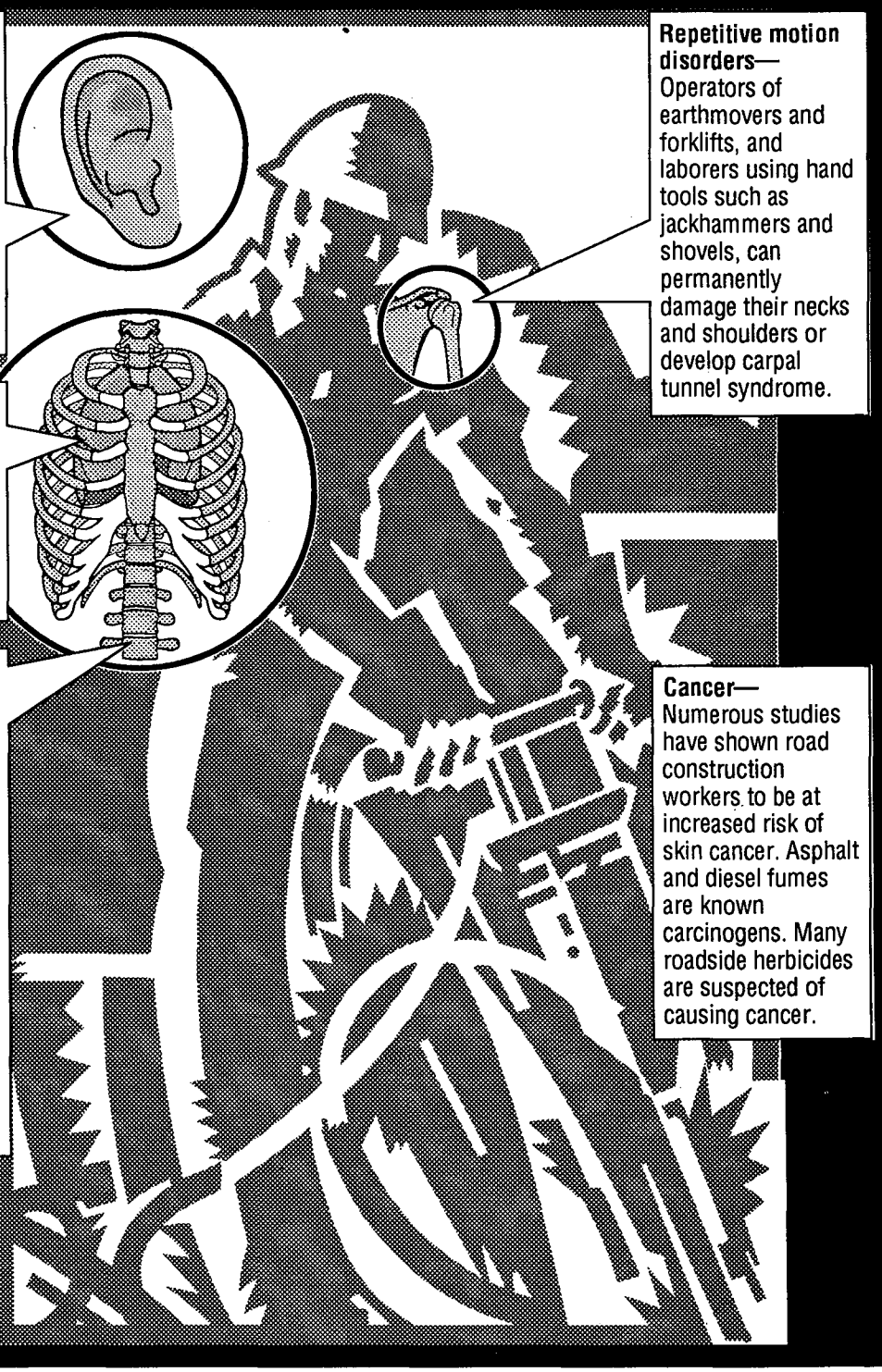
Trained in construction in the Army Corps of Engineers during World War II, Perkins spent his young life atop backhoes, earth movers, and bulldozers. His pride in helping build the New York State Thruway, like his pride in serving in Normandy, is unabashed.

"There's nothing I'd like any better than being able to work," said the 68-year-old Perkins from a bench at the South Mall Senior Center. "But they told me 'no more.'"

On a long, hot day in 1976,

Road hazards

Road construction workers are plagued with a host of serious, sometimes deadly, health problems associated with their work.



Hearing loss— Hearing loss is the most common occupational illness reported to the New York State Workers' Compensation Board, making up roughly half the non-injuries that receive compensation.

Chronic lung disorders— Silicosis, emphysema and chronic bronchitis can result from inhalation of fumes, dust, and sand.

Musculoskeletal problems— The constant jostling motion of heavy machinery causes slipped discs, backaches, groin strains, hernias, hemorrhoids, and other muscle and bone disorders. Such whole-body vibration has been linked to high blood pressure, blurred vision, impotence, and other genital disorders.

Repetitive motion disorders— Operators of earthmovers and forklifts, and laborers using hand tools such as jackhammers and shovels, can permanently damage their necks and shoulders or develop carpal tunnel syndrome.

Cancer— Numerous studies have shown road construction workers to be at increased risk of skin cancer. Asphalt and diesel fumes are known carcinogens. Many roadside herbicides are suspected of causing cancer.

after spending 10 hours on a back hoe, Perkins had an epileptic-type seizure, the kind now linked to inhaling carbon dioxide exhaust. He was 51.

No one knows how many road workers, like Perkins, suffer health problems or premature death because of their work. But in a number of emerging studies, the searing heat, toxic fumes and grueling labor associated with their jobs have been linked to chronic—sometimes deadly—disabilities and diseases.

Here are some recent findings:

• A National Institute of Occupational Safety and Health study, which has not yet been published, found that American construction workers under 65 suffered nearly twice the normal rates of cancers of the nasal passages and throat, three times the normal rates of asbestosis and sili-cosis, and slightly elevated rates of digestive diseases.

• The odds of a road worker contracting lung cancer were found to be four times as high as the odds of members of a control group, according to a West German-study published last year.

• White male laborers and operating engineers—the workers who dig ditches and maneuver heavy equipment—are twice as likely as the average person to die before they reach 65, according to a study conducted by the Calif. Health Dept.

• The New York state Health Department believes chemicals, particularly a now-banned herbicide containing Agent Orange, may have contributed to higher-than-average death rates in laborers, equipment operators, tree pruners, and highway maintenance supervisors employed by the [New York] state Transportation Department. Details of its analysis of the deaths of 9,600 men are due in several months.

Cancer and other health problems with long latency periods contracted by workers are grossly underreported in this country, according to a 1987 study commissioned by the National Academy of Sciences. Skin disease are the only non-injuries that are adequately reported, the panel found.

Nothing has been done to correct the problem in the six years since the study was published, said professor Earl S. Pollack of George Washington University, who directed the Survey.

"What we asked was that, at the very least, NIOSH should gather all able data on optional illness and publish it in a report annually," Pollack said last week. "That has never happened."

NIOSH spokeswoman Julie Tisdale said an annual surveillance report is kept, but an epidemiologist in the agency's surveillance unit said no annual illness report is published. Occupational health experts say that if the federal government does not require employers to document the scope of these problems, there is little incentive to improve conditions workers. Road workers often are too afraid, too unsure, or too proud to report problems, the experts say.

"If someone cuts his finger off, the worker files for workers' compensation and the employer has to pay. If that happens often enough the employer will say, 'Gee, I'd better make things safer'—if only because of the money," said Dr. James T. Posniakas, director of occupational and preventive medicine for the Community Health Plan. "There's not that kind incentive with occupational disease."

The nature of road work and other construction jobs makes their risks difficult for epidemiologists to track, said Pamela Susie of the Washington-based Occupational Health Foundation.

"Epidemiologists work from records and there are very few at construction jobs," she said. "And there are thousands and thousands of construction sites out there."

Meanwhile, nearly every new medical discovery in recent decades—from the dangers of asbestos and herbicides, to the sun's role in skin cancer, to the existence of carpal tunnel syndrome—are part of a road worker's everyday routine.

"They probably are exposed to the biggest array of toxic chemicals of any of the state workers, and in really big volumes," said Joanne Curtis, an industrial hygienist with the Civil Service Employees Association in Albany.

The dangers of inhaling dust, exhaust fumes and toxic chemicals are beginning to be documented, partly because they are targeted by advocates of a well-organized environmental movement. Among the hazards are cancers throughout the respiratory and digestive systems, seizures like Perkins now experiences about once every five years, heart attacks, bronchitis, and emphysema.

Add to that another series of hazards: asphalt and diesel fumes—both of which have been found to cause cancer—and the byproducts of moving traffic, including carbon dioxide and carbon monoxide from exhaust and asbestos from brake linings.

"A lot of people enter the trade in their youth and they're very active for many years," said Steve Tomasik, an environmental and occupational health specialist for the American Lung Association. "Then in their mid-40s or in their 50s, it catches up with them and they become chronically disabled."

Aside from its carcinogenic properties, Posniakas said, asphalt can exaggerate the cancer-causing effects of the sun. "Road workers actually have a potential double whammy because coal tar products increase the sensitivity to the sun," he said. "If you touch it to your skin, the affected area will burn more quickly."

Because studies are so rare and under-publicized, however, workers often are reluctant to believe what they hear—often not wearing respirators, masks, or sunscreen that might prevent their problems.

Ed Ruff, the AFL-CIO's occupational safety and health director in Albany, agreed. He said their future health is not foremost on the minds of road workers. "If you talk to a person in construction, they're going to say, 'My problem isn't breathing dust; my problem is getting hit,'" Ruff said.

Indeed, collisions, falls, and machinery accidents are the biggest documented dangers of being a road worker. Three of every 1,000 construction workers was involved in a fatal accident in 1991.

Christine Grosse of the Eastern New York Occupational Health Program said workers who suspect their ailments are work-related are also afraid for their jobs.

George Perkins never complained about his work, although he made a decision in his youth to stick close to the ground after a colleague fell off a bridge.

"It made you feel good to say you had a part in something," he said, gazing up at the towering tiers of interstate highway above the senior center. "When they're up there working, I could watch them all day."

Reprinted from the August 8 issue of the Albany, New York, ***Times Union.***

Oklahoma hosts third annual Health and Safety Conference

More than 160 persons from a dozen states attended the third annual Oklahoma Mine Health and Safety Conference October 19-21, 1993, in Oklahoma City. Sponsors of the event included the Oklahoma Department of Mines, and the Oklahoma Association of General Contractors.

Opened by a keynote speech by Ray Austin, MSHA's South-Central District Manager for Metal/Nonmetal, from Dallas, Texas, the conference featured two days of workshops on a variety of mine safety topics. Well-known experts from around the country focused on issues such as haul road safety, substance abuse, training innovations, and lightning hazards. Robert Glatter, Secretary-Treasurer of the Holmes Safety Association, discussed the purpose of HSA, its history, and promoted the HSA national Meeting to be held June 7-10, 1994, in Lexington, Kentucky.

The awards banquet was highlighted by an address by William Holgate, MSHA District Manager for Coal, Denver, Colorado, the presentation of a number of "Sentinel of Safety" awards, and awards to Oklahoma mine operations with outstanding safety records.

New mounting system for large surface mining equipment

A safety concern on larger surface mining equipment has recently received special attention. In February 1993, the Mine Safety and Health Administration's District 5 (Virginia) compiled lost-time haulage accident data and identified an increase in accidents at surface mining operations. Many of these accidents occurred to equipment operators who slipped or fell when mounting/dismounting equipment. Sixteen of such lost time accidents were reported in 1992. It was found that operators frequently tried to mount/dismount the equipment with tools, lunch buckets, or other items in their hands. The items prevented the operators from maintaining the necessary three-point contact when climbing on or off the equipment.

In an attempt to eliminate this category of accidents, District 5 initiated a special emphasis program for mines with large surface equipment. The program's objectives were to provide retraining for miners to maintain the three-point contact when mounting dismounting and address ways to improve the overall safety of the equipment. As can be seen in the photos above, this emphasis led to voluntary modification of equipment by both the coal mining companies and equipment manufacturers. Changes included shorter sets of steps with additional landings, rails along all walkways, safety belts, safety chains, and lanyards.

The identification of this hazard along with the improvements on the large equipment has significantly reduced the accidents. One lost-time accident has occurred since the special emphasis program was initiated in March 1993. By combining the efforts of MSHA, mine operators, and equipment manufacturers, a higher level of safety has been achieved.

Our September 1993 issue discussed how the Wylo mine in West Virginia also solved a safety problem with the mounting/dismounting of large surface equipment.

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Shotrock... Measure twice, blast once

The importance of measuring the parameters of a shot

By John Rathbun

The old carpenter's adage of "Measure twice, cut once" illustrates the wisdom of a true craftsman. Carpenters know that once the blade of the saw penetrates the piece of wood, they have committed their resource to a specific design and there is no turning back. The wisdom of measuring twice implies that the cost (in terms of time) to measure the wood a second time prior to cutting outweighs the cost of either recutting the wood or wasting it completely.

This same adage is even more applicable to blasting where there is more at stake. While measuring twice may be excessive, it is certainly time well spent to measure the parameters of the shot at least once, rather than to shoot the shot and discover poor results. Once the shot is initiated, the blaster has committed the energy of the explosives against the rock; whatever is left over is the result of his craftsmanship—good or bad.

Consequences of a poor estimate

There are a number of parameters that the blaster must measure on the site, but one of the most critical is the face height. Although the face height is often assumed to be a constant number in a large number of coal mines, this is not always the case. This often overlooked parameter can, and sometimes does, change from shot to shot, and in some cases, with rolling coal seams, within a shot.

Insufficient knowledge about the true face height can cause severe problems, not only in shot performance, but in coal damage and neighbor relations as well. A good blaster will take the extra time to measure the overburden height regularly.

Methods of measuring

There are many ways a blaster can accomplish this task. One of the easier ways is to hold a loading pole perpendicular to the face at the crest and allow a measuring tape to hang to the floor. A more advanced method involves laser profiling the face with a laser transit. Yet another method, that falls between these two in technology, requires the use of an Abney Level, a measuring tape and a scientific calculator. An Abney Level is a simple, inexpensive (less than $100), handheld inclinometer that measures angles to within ±10 minutes. When used properly, it can reveal not only the true face height but also the amount of toe at a particular point on ehe shot.

Figure 1 illustrates the use of the Abney Level. The blaster, standing on the highwall to be blasted, sights from the crest of the face (A) down to a spot on the pit floor (C) and measures an angle (ß = angle ACB) with the Abney Level. With the aid of a helper, the blaster then stretches out a tape from the crest, where he first sighted, to the spot

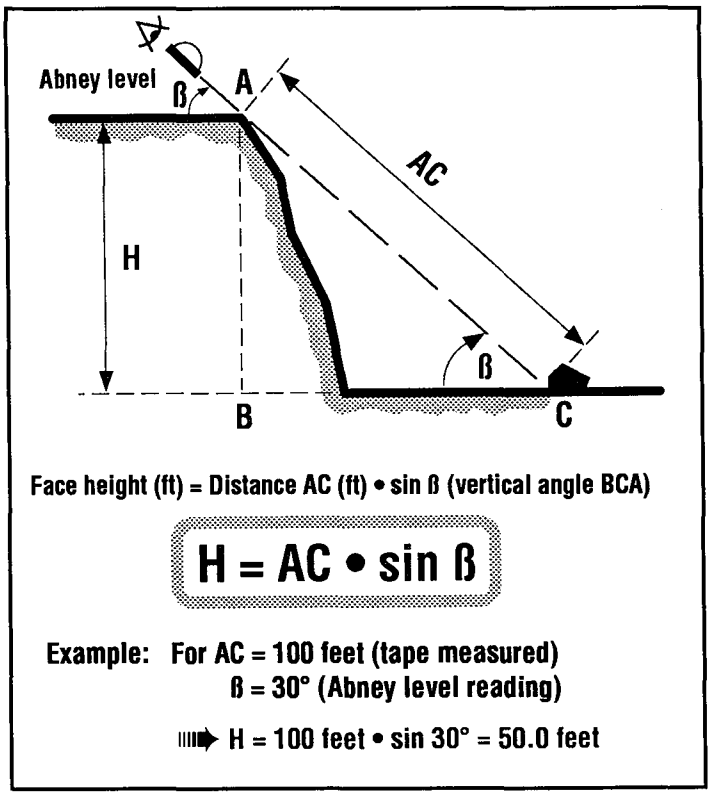

Figure 1.—Face height determination using the Abney level.

on the pit floor and records this distance (AC). He can then determine the height of the face (AB) with the help of a scientific calculator. This distance (AB), however, is the bench height distance. The blaster will then want to subtract out the coal thickness to determine the thickness of the overburden.

After the blaster has measured the distance, AC, he can measure the amount of toe in front of the crest by measuring from the spot marked on the pit floor (C) to the bottom of the face (D)(see figure 2). He finally arrives at the amount of toe (BD) by calculating the distance BC and subtracting the distance DC.

Becoming a true craftsman

Obviously, overburden height and the amount of toe aren't the only parameters with which a blaster should be familiar. Blasters need to know borehole depth and deviation, burden and spacing relationships, and even borehole diameters when loading with bulk products. A blaster must perceive himself as a craftsman, like a carpenter, and the rock to be blasted like fine wood. He must understand that it is far better to measure all parameters of the shot regularly and adjust the shot design accordingly if he wishes to be regarded as a true craftsman.

John Rathbun is Manager of Technical Development for Austin Powder Company, Cleveland, Ohio.

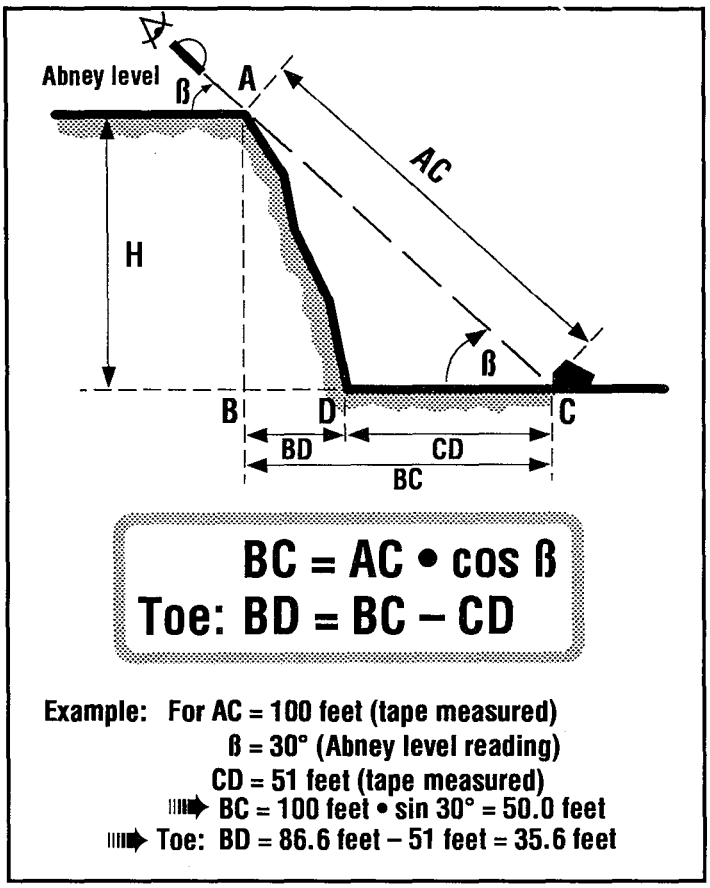

Figure 2.—Toe determination using the Abney level.

Reprinted from the November 1993 issue of Acquire's ***Coal Today.***

UMR/Missouri regional mine rescue contest

The UMR/Missouri Regional Mine Rescue Association sponsored the Mine Rescue Competition at the University of Missouri Rolla Mine on October 7-8, 1993. Seven teams from New Mexico and Missouri competed. Personnel from MSHA and the state of Missouri Department of Labor Standards officiated the competition. The National Mine Service Co. and Biomarine Co. coordinated and conducted the Benchman competition.

The competition results were as follows:

1st Place	ASARCO West Fork, Regulators
2nd Place	WIPP, Blue Team
3rd Place	Mississippi Potash, Mississippi Team
4th Place	Cominco American, Cominco Team

Drager Benchman

1st Place	WIPP Blue Team, Joe Baca
2nd Place	WIPP Blue Team, Fred Miller
3rd Place	Doe Run Team, Larry Griffin

Biomarine Benchman

1st Place	UMR UMR Team Chris Upp

Sentinels of Safety Awards

A. Z. Hudson, The Hudson Mining Co., Van Buren, AR, receiving the Sentinels of Safety Award for Reed No. 1, from William A. Holgate, District Manager, MSHA.

The San Juan Coal Co., San Juan Mine & Plant, Waterflow, NM, Bert Wisner accepted the award.
617,296 employee-hours in 1992, without a lost work day.

The Aluminum Company of America, Sandow Mine, Rockdale, TX, Nelson Mueller, Gary Oslick & Mike Moerbe accepted the award.
513,769 employee-hours in 1992, without a lost work day.

The Carter Mining Co., Caballo Mine, Gillette, WY, Wayne Jeffery accepted the award.
479,074 employee-hours in 1992, without a lost work day.

The Carter Mining Co., Rawhide Mine, Gillette, WY, Wayne Jeffery accepted the award.
354,530 employee-hours in 1992, without a lost work day.

AMAX Coal West Inc., Eagle Butte Mine, Gillette, WY, Don Haney accepted the award.
341,801 employee-hours in 1992, without a lost work day.

The Trapper Mining Co., Trapper Mine, Craig, CO, Kirk Libbee, Mike McGee, Frank Self, and Bob Richardson accepted the award.
335,085 employee-hours in 1992, without a lost work day.

The Peabody Coal Co., Seneca Mine, Hayden, CO, Curt Belden and Carolyn Moon accepted the award.
182,256 employee-hours in 1992, without a lost work day.

The Walnut Creek Mining Co., Calvert Mine, Bremond, TX, Rae Johnson, Andre Ford, and Kevin Stone accepted the award.
120,694 employee-hours in 1992, without a lost work day.

The Basin Cooperative Services, Glenharold Mine, Bismarck, ND Rob McAdoo and Deb Meyhoff accepted the award.
118,201 employee-hours in 1992, without a lost work day.

The Big Sky Coal Co., Big Sky Mine, Colstrip, MT, Gordon Brannon and Tracy Hendricks accepted the award.
111,442 employee-hours in 1992, without a lost zuork dny.

The Cyprus Empire Corp., Eagle #5 Mine, Craig, CO, Jim Shubin accepted the award.
108,896 employee-hours in 1992, without a lost work day.

Bert Wisner, San Juan Mine and Plant, Waterflow, NM, receiving the Sentinels of Safety Award for San Juan Mine and Plant, from William A. Holgate, District Manager, MSHA.

The Knife River Coal Mining Co., Gascoyne Mine, Scranton, ND, Bob Parker accepted the award.
89,366 employee-hours in 1992, without a lost work day.

The Pittsburg and Midway Coal Mining Co., Edna Mine, Oak Creek, CO, Ron Bugay accepted the award.
89,100 employee-hours in 1992, without a lost work day.

The Bellaire Corp., Indian Head Mine, Beulah, ND, Roger Motschenbacher accepted the award.
68,442 employee-hours in 1992, without a lost work day.

The Hudson Mining Co., Reed No.1, Van Buren, AR, A.Z. Hudson accepted the award.
54,280 employee-hours in 1992, without a lost work day.

The Red River Mining Co., Oxbow Lignite Mine, Caoushatta, LA, Tim Felche accepted the award.
36,240 employee-hours in 1992, without a lost work day.

The Cyprus Orchard Valley Coal Corp., Cyprus Orchard Valley Mine, Paonia, CO, Bill Gaston and K. Hallows accepted the award.
32,760 employee-hours in 1992, without a lost work day.

Slogan contest winner announced

We received a tremendous response from HSA members to our request for entries in our "1994 Slogan Contest" this past December. The slogan committee members had a difficult task in selecting our winner—Mr. Tim Rogers, from Retsof, New York. The winning slogan is "Be safe not sore in '94." The first runner-up is David C. Boyd, from Wingate, Texas, with his slogan of: "Working safer achieves more in '94."

Robert Glatter, Secretary, HSA

Holmes Safety Association Monthly safety topic

Fatal machinery accident

GENERAL INFORMATION: A 25-year-old general laborer with one month of mining experience was fatally injured when he stumbled and fell into the top of a hydro-seeder. The operation is a preparation plant and also provides seeding services to various businesses throughout the area.

DESCRIPTION OF ACCIDENT: The victim, a general laborer, and a truckdriver arrived at the hydroseeding shop to begin their shift at the usual starting time of 8:00 am. The owner instructed the victim and the truckdriver to proceed to the preparation plant and perform hydro-seeding on the berms along the haulage road, around a pond, and at a reclaimed area.

The truckdriver conducted a pre-operational examination of the Kaiser Jeep tandem truck and then proceeded to where the contractor had temporarily stored mulch, fertilizer, and seed. Both men loaded the truck with 70 bundles of mulch, 12 bags of seed, and 35 bags of fertilizer. After the truck was loaded, they proceeded to the preparation plant.

When they arrived at the preparation plant, they were met by the superintendent who provided the men with hazard training and drove them to the areas where he wanted them to hydro-seed.

Around 4 p.m., they hydro-seeded one more location. The superintendent then told the truck driver that they would have to stop hydro-seeding for the day because the mine was being closed and the access gate would be locked.

The two workers went to the pumping station next to the mine office to clean the hydro-seeder. The station is normally used to fill the water truck which is used to control roadway dust. After backing the truck under the fill pipe, the victim got on top of the hydroseeder and opened the access cover to the tank in order to pump water into the hydro-seeder tank. The truck driver filled the tank halfway, started the hydroseeder, and sprayed water toward the embankment until it ran clear in order to clean out the tank.

After the tank was cleaned, the truck driver filled the hydro-seeder tank halfway again. The victim attached a water hose to the hydro-seeder sprayer and began spraying the top of the hydroseeder to remove the fertilizer, mulch, and seed which had accumulated during operation.

The truck driver noticed that the nozzle on the hose was leaking. He saw the victim tighten the nozzle and then saw him stumble and fall, face forward, into the tank, through the opening where the cover had been removed.

The truck driver immediately climbed on top of the truck and turned the hydro-seeder off. He then lifted the victim from the tank and placed him on his back. He ran to the mine office to find help, but everyone had left the mine for the day. He called the ambulance service at 5:31 pm.

The owner arrived, climbed on top of the hydro-seeder and checked the victim for vital signs, but found none. He administered artificial respiration for several minutes.

The ambulance arrived at 5:59 pm, and the victim was examined by the ambulance attendants and a representative from the coroner's office.

CONCLUSION: Management failed to assure that the victim and his co-worker were familiar with the proper method of cleaning the truck. Contributing factors were that the tank cover was left open, which exposed the rotating augers, and two bags of fertilizer and 100 feet of water hose were stored in the walkway on top of the hydro-seeder tank in a manner that created a tripping hazard.

Holmes Safety Association proposed constitution changes

In accordance with Section 15. of the Holmes Safety Association Bylaws, Section 3. is herein proposed to be amended by the addition of paragraph (b) as follows:

SECTION 3. EXECUTIVE COMMITTEE (REPRESENTATIVES)

(a) The National Council officers, together with representatives of participating organizations and representatives from each mining area having active state councils, district councils or chapters, shall constitute the Executive Committee.

(b) Members of the Executive Committee who, in the interim of their membership, retire (in good standing) from their position as an authorized representative of an interest group as specified in Section 11.(a) shall retain their post as Emeritus Member of the Executive Committee for the remainder of their elected term. Thereafter, such Emeritus Member's status of continued participation on the Executive Committee is welcomed and encouraged as an attendant and non-voting member and to serve in any capacity so appointed or assigned by the President, except for such post which explicitly calls for a duly authorized representative of an interest group as specified in Section 11.(a).

Supporting Rationale

The above proposal is simply based on the belief that members who retire from given interest groups should be recognized within the bylaws and that their continued participation on the Executive Committee is welcomed and encouraged. Given same, the bylaws should be clear on the scarce limitation of their continued participation.

In accordance with Section 15. of the Holmes Safety Association Bylaws, Section 6. is herein proposed to be amended by the addition of paragraph (b) as follows:

SECTION 6. VACANCIES AND MEETING ABSENCES

(a) All vacancies, occurring during the year through resignation, death, or removal of elected officers, members of the Executive Committee, or representatives on the Board of Directors of the Joseph A. Holmes Safety Association, shall be filled by the President by appointment for the unexpired term.

(b) Vice Presidents and Executive Committee members must actively participate in the Holmes Safety Association. Vice Presidents and, Executive Committee members who fail to attend at least 2 consecutive Holmes Safety Association National meetings will be contacted by the Secretary/Treasurer by certified mail to determine their interest in remaining as a member of the Executive Committee. This matter, including the reason for their absence will be brought before the next scheduled meeting of the Executive Committee to determine if their membership in the Executive Committee should continue. Individuals will be notified by the Secretary/Treasurer of the decision of the Executive Committee.

Supporting Rationale

This proposal is submitted on the basis that there are a few given members on the Executive Committee who are inordinately absent from meetings. This change is proposed to insure active participation of the Executive Committee members and to determine their interest in remaining as members of the Executive Committee.

SECTION 11. EXECUTIVE COMMITTEE

(b) Duties. The Executive Committee shall be the overseer of the National Holmes Safety Association. No business shall occur before the membership in the regular session until the Executive Committee has reviewed and recommended such. The Executive Committee shall hold at least one meeting each year at a designated time and place by the President. The Executive Committee shall plan and promote national accident prevention campaigns and provide suitable trophies for the winners.

It shall supervise the activities of the Holmes Safety Association. The Executive Committee shall have authority to employ such clerical and other assistants as may be necessary to carry out the responsibilities and duties of the National Council. At least one regularly scheduled meeting of the Executive Committee for conducting business shall occur before the regular annual spring meeting of the National Council. The designated time and place of the meeting will be selected by the President from the appropriate zone as noted in Section 11 (d). Other meetings of the Executive Committee may be called by the president, or at the request of any of five members of the Executive Committee, held at a suitable time and place after written notice to its members at least 30 days before the meeting.

Supporting Rationale

Thirty days notice rather than 10 days notice would give Executive Committee members more time to secure flights to the meeting and possibly at a more economical cost.

SECTION 11 (d) SELECTION OF ANNUAL MEETING SITE

In order to reflect the National Scope of the Holmes Safety Association, the Annual Society spring meeting location should be rotated among the following four zones listed below. Annual meeting site location will be rotated in the following order: Zone One, Zone Two, Zone Three, Zone Four. Each year, at the annual spring meeting, representatives from the following four zones may petition the Executive Committee to consider their particular location as a meeting site for the next meeting in their particular zone. Should no representative of a particular zone desire to host the next annual meeting, the annual meeting site will be rotated to the next zone.

ZONE 1

Mississippi	Louisiana	Arkansas
Missouri	Tennessee	Alabama
Kentucky	West Virginia	Virginia
North Carolina	South Carolina	Georgia
Florida		

ZONE 2

Washington	Oregon	Idaho
Montana	Wyoming	North Dakota
South Dakota	Nebraska	Minnesota
Iowa	Alaska	

ZONE 3

Wisconsin	Michigan	Illinois
Indiana	Pennsylvania	Ohio
New Jersey	Delaware	New York
Rhode Island	Massachusetts	Connecticut
New Hampshire	Vermont	Maine
Maryland		

ZONE 4

California	Nevada	Utah
Arizona	New Mexico	Colorado
Kansas	Oklahoma	Texas
Hawaii		

Supporting Rationale

By moving the location of the Holmes Safety Association annual meeting to the four zones listed, more members and families would be able to participate.

In accordance with Section 15. of the Holmes Safety Association Bylaws, Section 12. is herein proposed to be amended as follows:

SECTION 12. NOMINATING COMMITTEE

(a) **FORMATION.** The Nominating Committee shall consist of five members from the Executive Committee, one of whom shall serve as chairman. The Nominating Committee will include: one member from industry labor; one member from industry management; one member from a state agency; one member from a federal agency; and one member from manufacturers, suppliers or insurance groups. The President shall appoint the Nominating Committee with each member of the Committee representing a different state, and designate a Chairman.

Supporting Rationale

This proposal is simply based on the belief that while the President should retain the exclusive right of appointing the Nominating Committee and its chairman, the bylaws should guide the diversity of its membership among the states represented.

SECTION 13. FINANCE COMMITTEE

The Finance Committee shall consist of 5 members appointed by the president, who are familiar with finances and investments. The committee shall have one representative from each of the five interest groups as specified in Section 11 (a). The Finance

Committee shall recommend to the Executive Committee proper means of securing requisite funds for the needs of the National Council. The Finance Committee shall furnish the Secretary/Treasurer and the Executive Committee with such financial statements and information as may be necessary for the proper functioning of the National Council. The President shall appoint the Committee representing a different state, and designate a chairman. The Secretary/Treasurer shall not be a member of the Finance Committee but shall attend its meetings.

SECTION 14. AUDITING COMMITTEE

The Auditing Committee shall consist of 5 members, appointed by the president. The committee shall have one representative from each of the 5 interest groups as specified in Section 11 (a). At least once each year the Auditing Committee shall examine and audit the funds and securities belonging to the National Council and report thereon at the annual spring meeting of the National Council. The President shall appoint the Committee representing a different state, and designate a chairman. The Secretary/Treasurer shall not be a member of the Auditing Committee but shall attend its meetings.

Supporting Rationale

Changing membership to five members would enable each interest group to be represented.

Harry Tuggle, 1st Vice President, Holmes Safety Association

Send your comments to:
Mr. Joseph Sbaffoni
% Pennsylvania Deep Mine Safety
100 New Salem Road, Room 167
Uniontown, PA 15401

Protect your hearing

Because you're a faithful reader, and have a memory like an elephant, you already know that prolonged exposure to noise levels above 85 decibels (dBA) can cause permanent hearing loss. And you know that the louder the noise, the less the exposure time required for permanent damage. And you probably even remember that the best way to prevent hearing loss is to reduce the level of noise at its source and/or reduce the time you are exposed to it —ear plugs and muffs are the last line of defense.

What you may not know (or take seriously enough) is that off-the job noise must also be counted when calculating how much noise your ears can stand in a day. Unlike your eyes (which you can close), your ears can't protect themselves from excessive stimuli. Your inner ear contains tiny, hair-like cells that send signals to your brain. They are like blades of grass.

When you walk on grass, the blades become flattened but spring back to normal; unless they are walked upon too frequently in which case a path forms on which no grass will grow. Too much noise over a period of time similarly destroys hearing cells. And it makes no difference to your ears whether that noise is heard on or off the job.

Let's look at an example. If at work you are exposed to 80 dBA for 5 hours, 86 dBA for 2 hours and 91 dBA for one hour, the time-weighted average of your workplace exposure is 85 dBA— a marginally acceptable level; but one which assumes no significant exposures in the next 16 hours. If, however, during the next 8 hours at home you listen to music for just 2 hours at 105 dBA (a level less than most teenagers play their tape decks), the time-weighted average for your home exposure is 100 dBA—far from safe. Even followed by 8 hours sleep in a quiet room, the daily load on your hearing would still be ***far*** too high.

Those of us who work in noisy environments must be more careful of noise exposure during our leisure hours. Blowing snow or leaves, cutting the lawn, sledding, or using power tools can all contribute to an overload of noise each day. While it would be difficult to reduce the noise level of these activities, we can certainly reduce our exposure time to them and/or wear hearing protection. **You can turn down that stereo!**

Reprinted from the Ontario Natural Resources' February 1994 issue of ***Safety Reminder.***

THE LAST WORD...

"Doing it the hard way is always easier."

"If wires can be connected in two different ways, the first way blows the fuse."

"Traffic congestion increases in direct proportion to the length of time the street is supervised by a traffic control officer."

"The less work an organization produces, the more frequently it reorganizes."

"When opportunity knocks, you've got headphones on."

"Only someone who understands something completely can explain it so that no one else can understand it."

"The hardest years in life are those between ten and seventy."

"Old age is like a plane flying through a storm. Once you are aboard there is nothing you can do."

"Ignorance breeds admiration."

"Idealism is what precedes experience; cynicism is what follows."

"Some people stay longer in an hour than others do in a month."

NOTICE: We welcome any materials that you submit to the Holmes Safety Association Bulletin. We cannot guarantee that they will be published, but if they are, we will list the contributor(s). Please let us know what you would like to see more of, or less of, in the Bulletin.

REMINDER: The District Council Safety Competition for 1994 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
Holmes Safety Association Bulletin
P.O. Box 4187
Falls Church, Virginia 22044-0187

Phone: (703) 235-1400