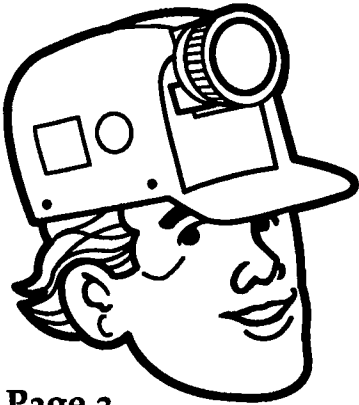

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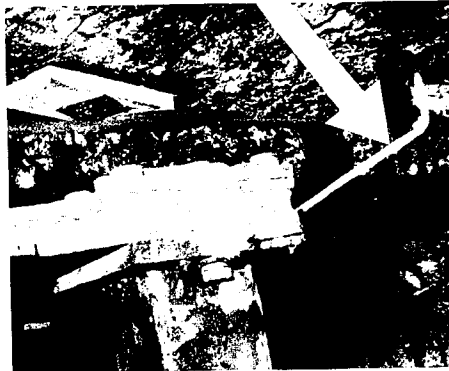
January 1993



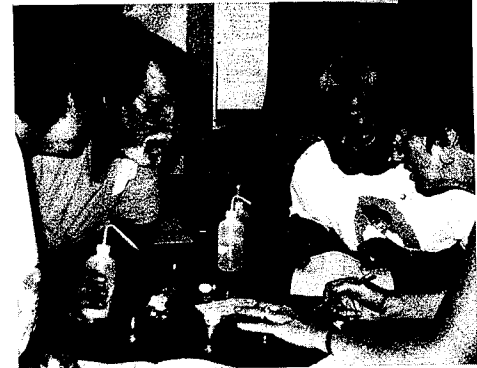
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Please note: The views and conclusions expressed in HSA Bulletin articles are those of the authors and should not be interpreted as representing official policy of the Mine Safety and Health Administration.

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.

Welcome new members

NAME	CHAPTER NUMBER	LOCATION	NAME	CHAPTER NUMBER	LOCATION
Valley Mining, Inc.	10144	Dennison, OH	Rabbit Creek Mine	10169	Winnemucca, NV
Jaynes Corp. General Contractors	10145	Albuquerque, NM	Triune, Inc.	10170	Farmington, NM
Miller Creek Mine	10146	Switz City, IN	Detion Construction	10171	Dillon, MT
O.J. Wilson Stone Co., Inc.	10147	Burnsville, NC	Rockview	10172	Pineville, WV
A.R. Rathbun	10148	Bristol, VT	Robert E. Schmidt	10173	St. Clairsville, OH
Champlain Construction Co. Inc.	10149	Middlebury, VT	Haskel Pit	10174	Hot Springs, AR
Warren W. Fane, Inc.	10150	Troy, NY	No. 1 Mine	10175	Summersville, WV
Warren W. Fane, Inc.—Crepesville	10151	Troy, NY	Rugby Pit	10176	Rickfield, WI
Warren W. Fane, Inc.—Perry Pit	10152	Troy, NY	Johnsville	10177	Hermitage, AR
Schodack Highway Dept.	10153	Castleton, NY	Target Mine	10178	Uniontown, PA
Vallen Safety Supply Co.	10154	Albuquerque, NM	Town of Walton	10179	Walton, NY
Logan's Excavating	10155	Nesquehoning, PA	Delhi Town Highway Department	10180	Delhi, NY
Belmont	10156	Houston, TX	Conquest Coal Mining, Inc.	10181	Grundy, VA
Luzenac Columbia	10157	Windsor, VT	Peaceful Valley Promotions	10182	Downsville, NY
Wayco Limited Partnership No. 1	10158	Louisa, KY	Town of Colchester	10183	Downsville, NY
Elk Run Coal Co., Inc.	10159	Sylvester, WV	Town of Franklin	10184	Treadwell, NY
C & B Mining Co.	10160	Shamokin, PA	Town of Walton	10185	Trout Creek, NY
Sebree Mine	10161	Sebree, KY	Town of Meredith	10186	Meredith, NY
Lady Dunn Prep Plant	10162	Mount Carbon, WV	Davenport Highway Dept.	10187	Davenport, NY
Quarry #2	10163	Granville, NY	Town of Hancock	10188	Hancock, NY
Connecticut Valley Chapter	10164	Ansonia, CT	Chem Serv	10189	Columbus, OH
Lawrence Sangravco, Inc.	10165	St. Johnsbury, VT	Stec's Adv. Spec. & Safety Award	10190	Rapid City, SD
Frank Parrish	10166	Whitehall, NY	Texas Workers Compensation Comm.	10191	Austin, TX
Tom No. 1—Trent	10167	Kaycee, WY	Billyn Corp.	10192	Graysville, PA
Tom No. 1—Thompson	10168	Kaycee, WY	Sewell Mine No. 4	10193	Dailey, WV

REAP Report



To: UNDERGROUND COAL MINE OPERATORS

February has historically been the worst month in the year for fatal roof fall accidents. Last February four miners were killed in falls of roof or ribs. Over 19 percent of all fatal roof fall and rib roll accidents during the last five years occurred in February.

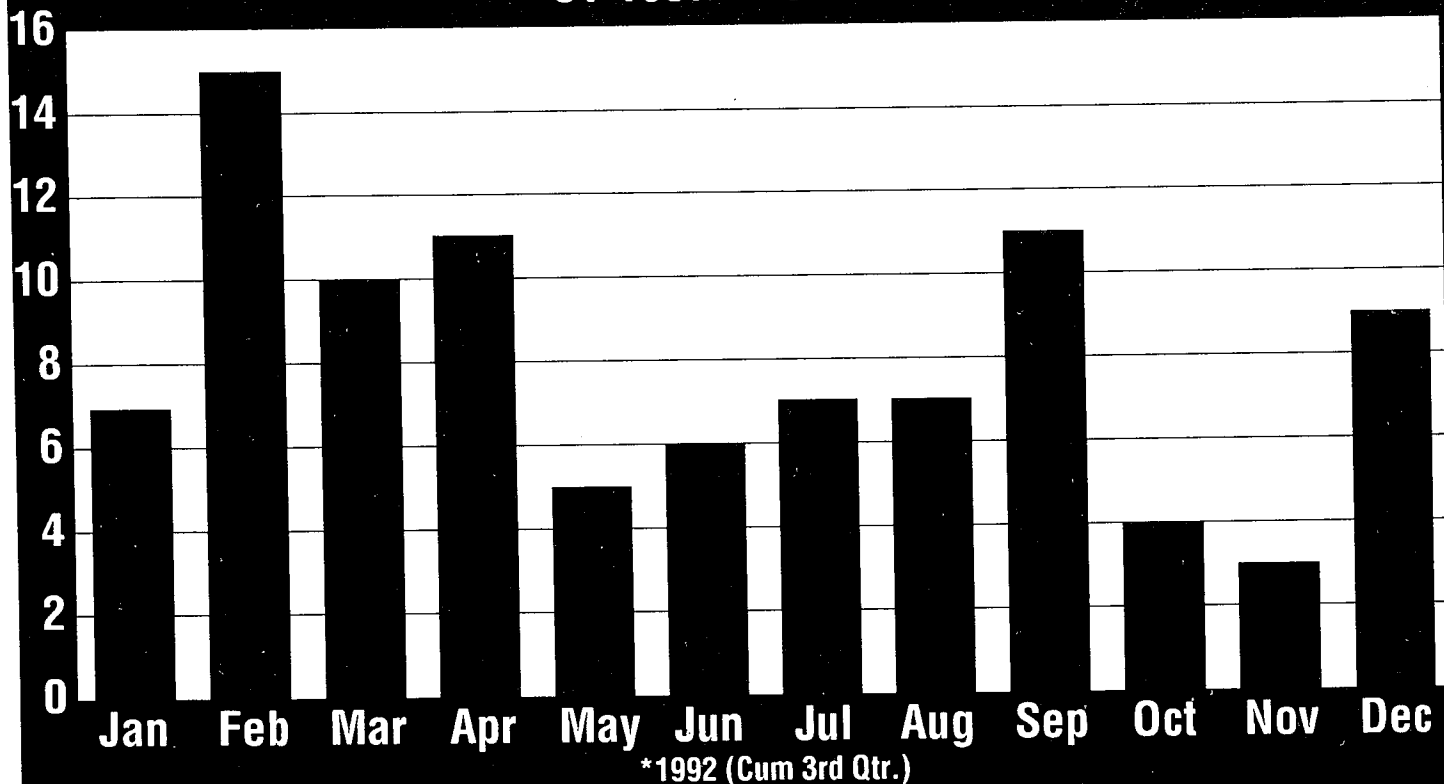
Let's all be especially careful this February and see if we can't prove the statistics wrong and get through February with zero fatalities from falls of roof or rib.

- Take time to warn each miner on the working section of the hazards of unsupported roof and ribs.
- Follow the approved roof control plan.
- Don't work or travel or permit others to work or travel under unsupported roof.
- Support or take down loose ribs.
- Examine the roof for cracks or faults.

Thinking safety and REAP are a big plus. Practicing safety and REAP are a must.

Tony Turyn, REAP Coordinator, MSHA

Roof fall fatalities by month CY 1987 - 1992*



Holmes Safety Association

Monthly safety topic



Fatal fall of roof accident

GENERAL INFORMATION: A 30-year-old foreman, with 8-1/2 years of mining experience, was fatally injured in a ground fall while examining a heading where a blast had been detonated.

The operation was an underground limestone mine employing 6 miners on two 8-10 hour shifts, 5 days a week.

A conventional mining cycle was used to develop the underground drifts. The faces were drilled and blasted, then mucked and trammed with a front-end loader to the surface. The loader operator scaled the ribs and roof while mucking. Face drilling, roof bolting, and additional scaling were performed on second shift. One main drift had been developed into the surface quarry highwall for approximately 400 feet. A side drift was being developed off the left rib of the main drift at a 10% incline. The side drift where the accident occurred was 28 feet wide with a 24 foot back. The angle cut that was shot off the face and right rib of the side drift was 36 feet wide and 24 feet high. Mechanical ventilation was provided to dilute mine gases and to clear the smoke from the mine following a face round blast.

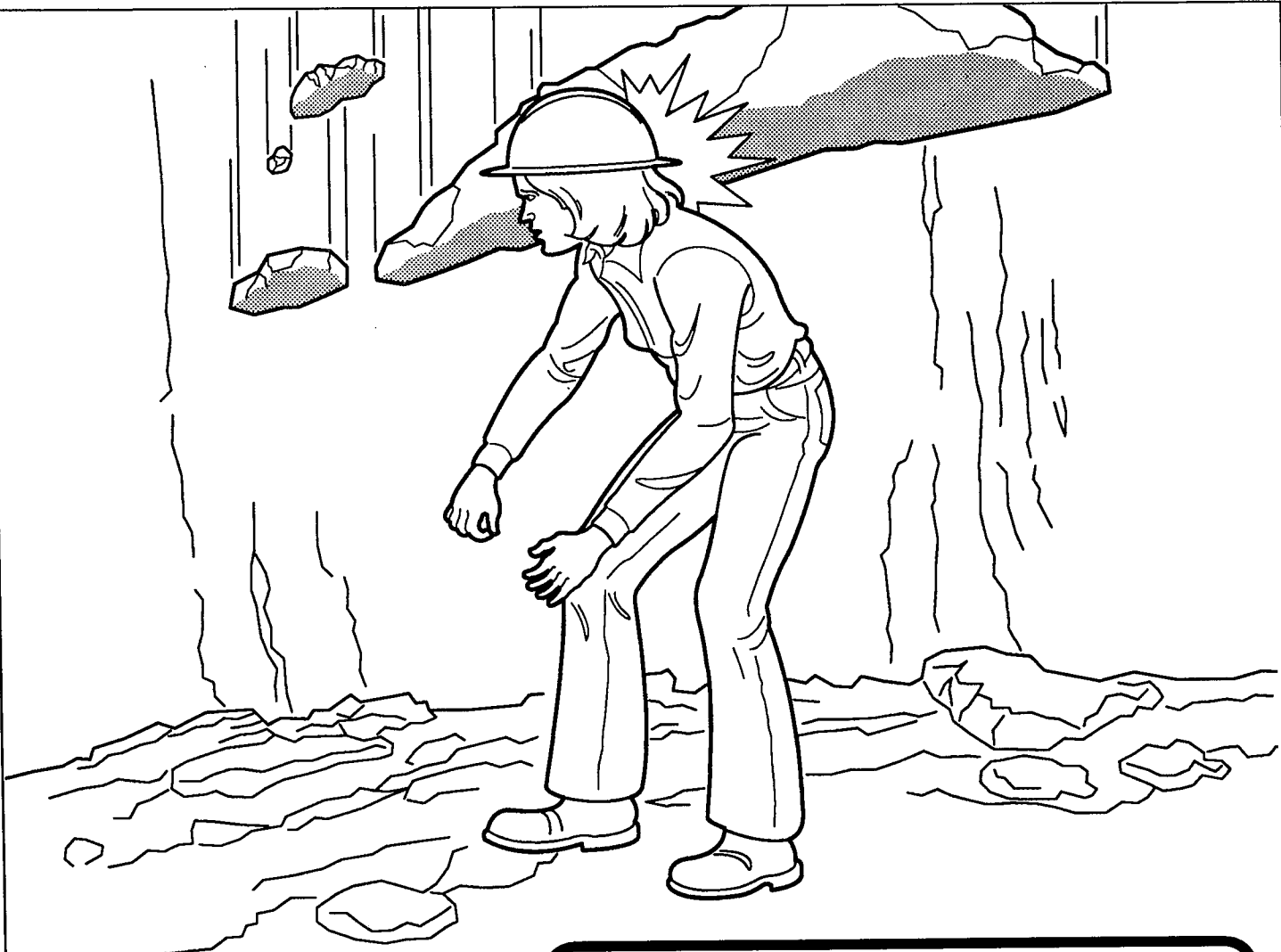
DESCRIPTION OF ACCIDENT: On the day of the accident, the victim (a foreman) reported to work at the usual starting time of 6:00 a.m. She reported to the pit superintendent for instructions for the day. The victim spent the morning on the surface in routine work. At about noon, she met the

driller/blaster at a booth where written orders/instructions were left near the entrance of the underground mine. They were there together when the round was blasted at 12:04 p.m. The victim then stated she was leaving for a quick lunch. The superintendent saw her at the mine office before she left for lunch and when she returned for a meeting, after which she left the office for the tunnel project.

About 1:40 p.m., the driller/blaster went back into the tunnel to check on the smoke from the blast. When he drove up into the inclined drift, where the blast occurred, he noticed the victim's pickup truck parked in front of the muck pile with its lights shining across the muck pile.

Plugging a 2,000 watt light into the cigarette lighter of her truck and placing the magnetic light on the roof of the truck, he began searching for the victim. He heard moaning coming from the back of the muck pile and, climbing over the crest, found the victim pinned beneath a large rock.

The driller/blaster removed the rock from her chest and tried to communicate with her but she kept drifting in and out of consciousness. He then ran back to his truck two-way radio and called the quarry foreman. The radio transmission was heard in the scale house by the production supervisor and the office clerk who then placed a 911 call. Employees were placed at the main gate to direct the rescue squad to the accident site.



Metal and Nonmetal mine fatalities to date — thru 12-09-92

Type	1988		1989		1990		1991		1992	
	UG	S	UG	S	UG	S	UG	S	UG	S
Electrical	2	2	1	3	2	2	—	7	—	3
Fall of roof/back	2	—	3	—	4	—	2	—	4	—
Haulage	2	17	1	11	—	18	—	19	3	16
Machinery	1	7	1	7	—	10	1	3	—	7
Other	4	11	5	16	4	14	6	10	—	8
Total	11	37	11	37	10	44	9	39	7	34

The superintendent, who was off mine property when notified of the incident, returned as the rescue squad was preparing the victim for transportation.

The victim was placed on a full backboard and transported to a waiting medevac helicopter, which flew her to the medical center where she was pronounced dead.

CONCLUSION: The accident was caused by the victim placing herself under the loose ground that fell on her. A contributing factor may have been that the illumination from the truck headlights may not have been adequate to detect the loose ground.

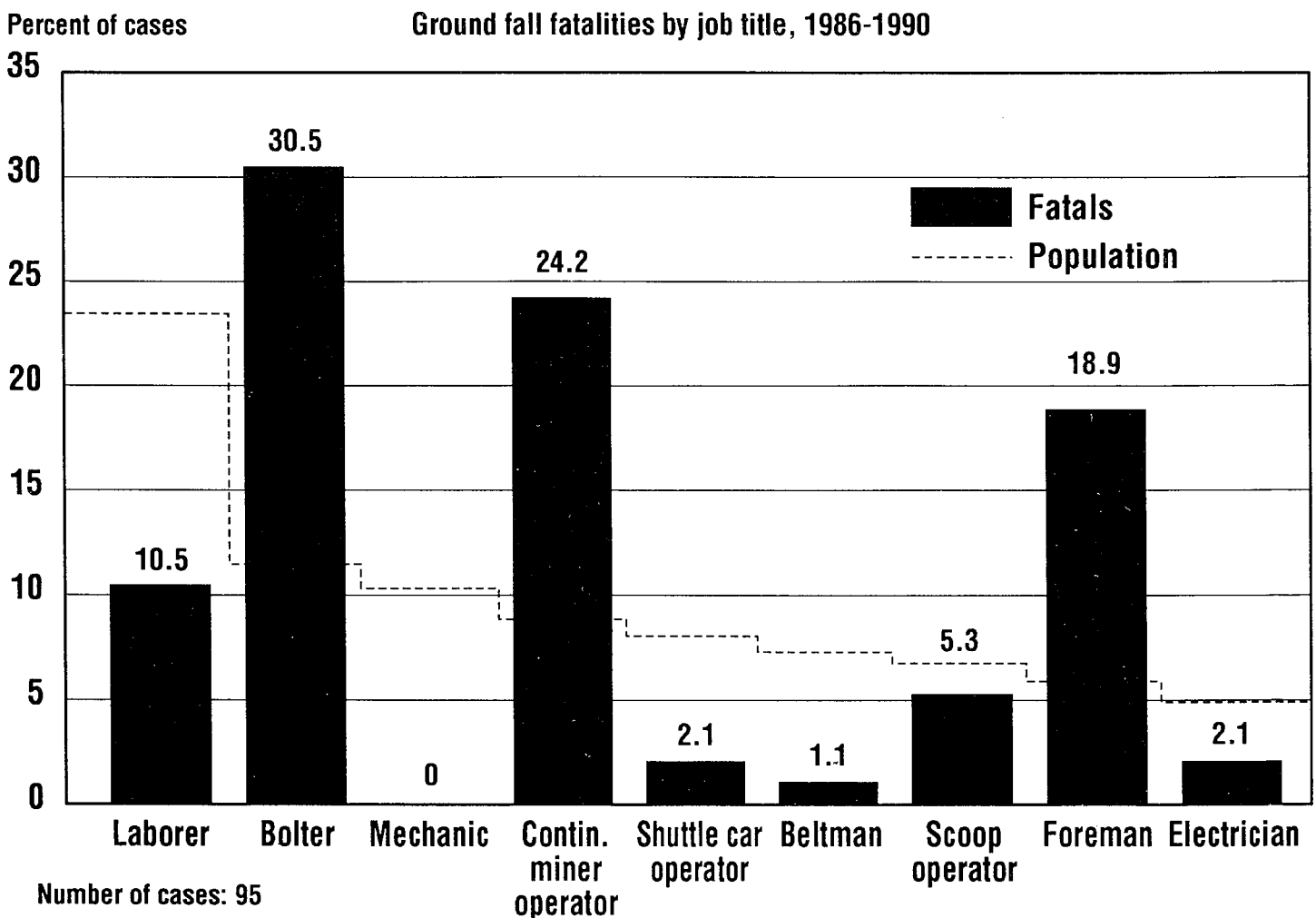
Miners ideas about how to stay clear of an unpredictable killer

By Arnold C. Love, Industrial Engineer, Pittsburgh Research Center, U.S. Bureau of Mines, Pittsburgh, PA
and Robert H. Peters, Research Psychologist, Pittsburgh Research Center, U.S. Bureau of Mines, Pittsburgh, PA

The number of deaths due to ground falls has steadily decreased over the past 40 years as a result of improvements in equipment design, increased automation, and better compliance with mine safety laws and company safety policies. However, ground fall accidents are still the leading cause of fatalities in the underground coal mining industry. Statistics from the Mine

Safety and Health Administration indicate that during the period 1987-91, 87 coal miners were killed by falls of roof and rib, and 4,310 miners were injured. Approximately half of the victims of the fatal accidents were in an area where the roof was unsupported. If miners never went under unsupported roof, 23% of the underground coal industry's fatalities could be eliminated.

Figure 1.—Variations in risk of being killed by a ground fall by job classification.



There is clearly a great need to find out why miners go under unsupported roof, and to develop effective ways to prevent this behavior.

Face crew workers are generally the most vulnerable to roof fall accidents because their work requires them to be near areas of unsupported roof. Figure 1 presents a comparison between percent of total ground fall fatalities experienced by persons in various job categories versus the proportion of the underground coal mining workforce employed in each of those job categories. The data on fatalities spans a five-year period, from 1986 to 1990. The percent of fatalities experienced by miners in each job category is illustrated by the vertical bars. The dotted line that goes across the graph in a stair step fashion shows the percentage of the workforce in each job category (as of 1986). Job categories are listed from left to right in descending order of their proportion of the workforce. From the graph, it becomes apparent that three face crew jobs account for more than their proportionate "share" of ground fall fatalities: roof bolters, continuous miner operators, and section foremen.

In order to better understand how to prevent face crew workers from going under unsupported roof, Bureau of Mines researchers interviewed a sample of 297 miners to obtain their views about (1) why people who perform various jobs in an underground face crew go under unsupported roof, and (2) how to prevent this behavior. Miners were asked to respond to a variety of questions concerning going under unsupported roof in private one-on-one interviews. All participants were assured that their responses would be held in confidence, and were told that their participa-

tion was completely voluntary.

Sample. Employees from six underground coal mines participated in the study. The sample was composed primarily of large mines operating in relatively high seams. The sample included only one small mine (50 employees) and only one mine operating in a low coal seam (40-42 inches). The mines were located in the northeast, southeast, midwest, and western coal fields. All of the mines were using the room-and-pillar method of extraction, remotely operated continuous miners, and roof bolters equipped with automated temporary roof supports. The number of miners interviewed from each job category is as follows:

Continuous miner helper	16
Continuous miner operator	37
Mechanic.....	26
Mobile bridge operator	8
Roof bolter	81
Scoop operator	19
Section foreman	29
Shuttle/ram car operator	52
Utility/general labor	20
Other	9

In order to determine what might cause miners who perform a particular type of job in a continuous mining face crew to go under unsupported roof, each miner was asked to respond to the following question: *Considering the different tasks involved in doing the (INSERT MINER'S JOB TITLE) job, which ones are most likely to cause them to go under unsupported roof?*

Some of the most frequently cited tasks and the number of people from each job category who mentioned them are shown in Table 1. Whenever miners cited a task, they were also asked to suggest changes in equipment, work procedures, or the work environment that might make it less likely

that people would go under unsupported roof while doing that activity.

Miners made several very important suggestions with regard to changes that might help to reduce the chances that people would go under unsupported roof while performing most of the activities listed in Table 1. These suggestions will be presented in this issue and two future issues of the HSA Bulletin. These articles will present:

1. Roof bolters' suggestions about how to avoid unsupported roof and problems they frequently encounter in doing their job.

2. Remote controlled continuous miner operators' ideas for work practice and equipment changes that would help keep people away from unsupported roof.

3. Face crew workers' suggestions concerning how to prevent people from unintentionally going in by roof supports.

Everyone who works underground should take time to consider whether there are any changes in his/her work procedures or equipment that might prevent them from being the next roof fall fatality. That should be discussed at safety meetings. Don't hesitate to bring up problems with avoiding unsupported roof that don't seem to have any good solutions. By putting their heads together they often discover good solutions that no one would have imagined on their own. For further information concerning Bureau of Mines research on human factors contributing to ground fall accidents, contact Robert H. Peters at (412) 892-6895.

Table 1.—Activities cited as likely to cause miners to go under unsupported roof

Activity	Job title						
	Miner operator	Roof bolter	Mechanic	Haulage operator	Scoop operator	Section foreman	Other
Walking through unbolted crosscuts	2	2	2	6		5	9
Unintentionally walking (no signs)		2	1			3	4
Hanging ventilation curtains	8	1		6			1
Hanging or extending ventilation tubing	11	1		9		2	4
Cleaning up/resupporting after roof falls		8		1		2	2
Restoring power to continuous miner	14		3	2		4	
Repairing continuous miner	8		9			2	
Retrieving wrenches and steels		18				1	
Operating the scoop beyond supports					13		3
Advancing shuttle/ram car beyond bolts				18			

Roof bolter operators: *Preventers and victims of roof fall accidents*

By Robert H. Peters, Research Psychologist, Pittsburgh Research Center, U.S. Bureau of Mines, Pittsburgh, PA
and Arnold C. Love, Industrial Engineer, Pittsburgh Research Center, U.S. Bureau of Mines, Pittsburgh, PA

Roof fall accidents are the leading cause of fatalities in the underground coal mining industry. Given that roof bolter operators play such an important part in preventing roof fall accidents, it is both ironic and tragic that ground falls kill more roof bolter operators than any other type of mine worker. Of the 87 coal miners killed by falls of roof and rib during the 5-year period 1987-91, 27 were roof bolter operators. Accident investigations indicate that approximately half of all roof fall fatalities occur inby supports. Given these statistics, and the fact that roof bolter operators perform much of their work in close proximity to unsupported roof, it seems especially important to know what might cause bolter operators to go inby supports.

In order to better determine what might cause roof bolter operators to go under unsupported roof, Bureau of Mines researchers recently asked 78 roof bolter operators the following question: *Considering the different tasks involved in doing the roof bolter operator's job, which ones are most likely to cause them to go under unsupported roof?** Whenever a task was identified the roof bolter operator was also asked, *What could be done to make it less likely that roof bolter operators would go under unsupported roof while performing that task?* Some of the most frequently mentioned tasks and countermeasures were as follows:

*Bolters interviewed were employed at six different mines. All bolter operators had been using bolting machines equipped with automated temporary roof supports for at least five years.

TASK: *retrieving wrenches and steels that fall under unsupported roof*

Suggested countermeasures:

- install a wrench holder near the bolter head
- use a bolt or a pole with a hook on the end to retrieve tools that fall beyond supported roof
- use "lock-in" wrenches that are less likely to come off unexpectedly
- if a wrench or steel falls beyond supported roof leave it there and use another one

TASK: *cleaning up and resupporting the roof after falls*

Suggested countermeasures:

- use a remotely operated continuous miner to remove the fallen material
- use a remotely operated scoop to remove the fallen material
- use bolters equipped with temporary roof supports that can be extended to reach high areas of the roof
- keep safety jacks someplace on the bolter to prevent them from getting covered with dirt and grease—a condition which serves to discourage miners from using them when they are needed

TASK: *repositioning straps or pans that fall off as the bolter moves forward*

Suggested countermeasures:

- use bolters equipped with devices that hold the straps securely in place while the bolter is moving forward

- if a pan or strap falls beyond supported roof leave it there and use another one
- use a bolt or a pole with a hook on the end to retrieve it

TASK: *scaling the roof*

Suggested countermeasure:

- ask the continuous miner operator to use the cutter head of the miner to knock down loose pieces before pulling out of the cut

TASK: *marking the roof to indicate where bolts need to be installed*

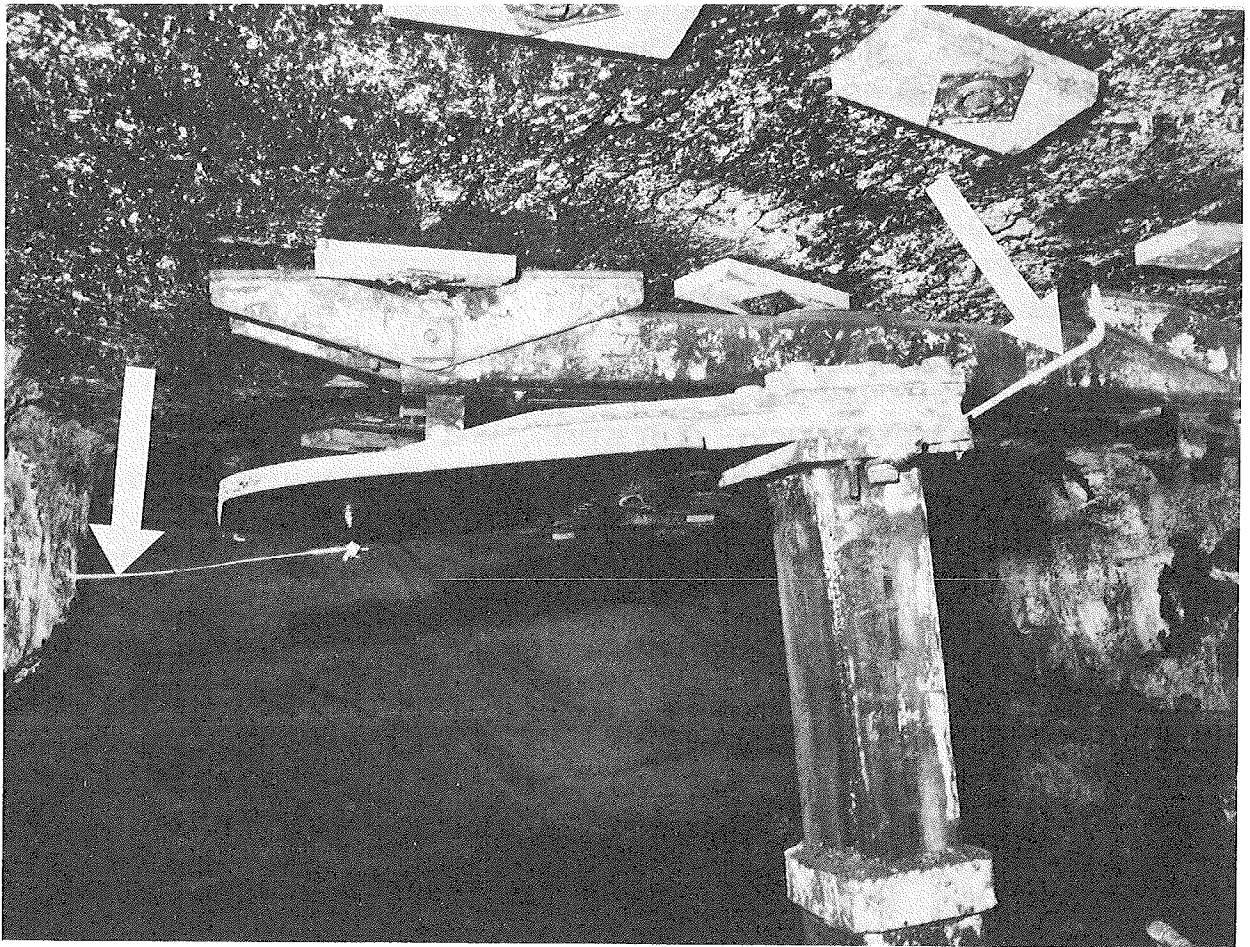
Suggested countermeasure:

Mount a measuring device near the front of the bolter to help the operator line

up the machine properly for the first row of bolts.

An employee at one of the mines that participated in our study had come up with an innovative idea for eliminating the need for anyone to get close to unsupported roof in order to determine the proper spacing between rows of bolts. He suggested welding flexible wire antennas onto the bolter's temporary roof support system as in the

photo above. These antennas serve as a convenient gauge for determining whether the next row of bolts is going to be spaced the appropriate distance from the rib and from the last row of bolts bordering the area of unsupported roof. This simple equipment modification allows bolting machine operators to establish the proper spacing between bolts quickly and accurately, and



Antenna used by bolting machine operators to gauge the distance between rows of bolts

eliminates the need for anyone to go near unsupported roof to take measurements.

As this last example nicely illustrates, the employee who does the job every day is often in the best position to come up with ideas for overcoming obstacles to the safe performance of that job. Mine operators should be sure not to overlook the wealth of good ideas that may very well lie hidden in

the minds of their underground employees.

Barriers to effective job performance

In order to prevent ground fall accidents it is critical that roof bolter operators perform their job in a safe and effective manner. When roof bolter operators fail to adhere to correct work procedures, they endanger not only their own lives but the lives of their coworkers as well. One reason roof bolter operators might deviate from correct work procedures is that they are trying to hurry because they have gotten behind in their work and are trying to get caught up. To explore this possibility more fully, roof bolter operators were asked the following three questions:

1. How often do roof bolter operators feel pressured to get caught up in their work?
2. What kinds of shortcuts might be taken to get caught up?
3. What causes roof bolter operators to get behind in their work?

Responses to question 1, "How often do roof bolter operators feel pressured to get caught up in their work?":

Each roof bolter operator was asked to respond to the following question using one of four response options: During the time that you worked as a roof bolter operator how often did you find yourself hurrying to stay ahead of the continuous miner? The number of roof bolter operators who chose each option to respond to this question is as follows:

<u>Response</u>	<u>Number</u>
Every day	26
A few times a week.....	19
A few times a month	14
Rarely or never	19

One third of the roof bolter operators said that they find themselves hurrying to stay ahead of the continuous miner every day, and another 24% said that this happens to them a few times a week. One bolter operator said: "It's hard to keep good roof bolter operators at this mine."

Roof conditions often slow up the bolter, a lot, and the miner operator is often waiting on the bolter to finish. Bolter operators are constantly thinking to themselves, "I wonder how much longer I've got until the miner will be waiting on me. Some of the bosses used to come around and criticize you when bad roof was causing you to get behind." These responses suggest that it is not uncommon for roof bolter operators to feel pressured to work quickly.

Responses to question 2, "What kinds of shortcuts might be taken to get caught up?":

Each roof bolter operator was asked to describe some of the shortcuts that might be taken in order to get caught up more quickly? The most frequently mentioned shortcuts were: spacing bolts further apart than the roof control plan allows; neglecting to do methane checks; neglecting to drill test holes; and neglecting to check the torque on bolts.

Because these shortcuts could lead to very hazardous conditions, it is important to understand what usually causes roof bolter operators to fall behind in their work. Therefore, we asked each bolter operator, *What are some of the causes of downtime and delays in your job?*

Responses to question 3, "What causes roof bolter operators to get behind in their work?":

Here are the reasons roof bolter operators cited most frequently:

Hydraulic hoses leaking or rupturing	(34)
Drill pods getting plugged up—losing suction	(21)
Hard roof causing frequent bit changes; slower drilling	(21)
Bad roof requiring longer bolts, more bolts, more scaling	(18)
Wet and muddy roof conditions	(11)
Drill steels getting stuck or breaking	(8)
Running out of supplies	(7)
Bolting areas where the roof has fallen	(7)
Problems with the dust filter or collector ...	(5)
Power cable failures	(5)

Numbers in parentheses indicate the number of persons who replied as indicated. Miners often cited more than one reason.

It is very important that roof bolter operators understand that they should never take potentially dangerous shortcuts in order to get caught up in their work. Mine operators must stress the importance of taking the time to do the job right—even if it means a delay in coal production. It is also important that mine operators do all that

they can to minimize downtime and delays in the roof bolting process so that bolter operators seldom fall behind in their work.

Mine operators and equipment manufacturers should seriously consider what they could do to alleviate or eliminate these problems. Some of the causes for delays in bolting reflect geological conditions, and are not controllable. However, it may be possible to reduce some of the other types of delays through better scheduling of people and equipment, better maintenance, or equipment redesign.

This article is the second of a series of four articles being published in the *Holmes Safety Bulletin* concerning the findings of a Bureau of Mines study on how to prevent coal miners from going under unsupported roof. For further information concerning human factors contributing to ground fall accidents contact: Robert H. Peters at (412) 892-6895.

Green River Safety Council presents awards

The Green River Safety Council held its 4th quarter meeting on October 29, 1992, at Madisonville, Kentucky. The highlight of the evening was the presentation of six "Certificates of Achievement In Safety" awarded to six mining operations for working the year of 1991 without a lost workday injury. The Certificates were awarded by

- **Island Creek Coal Company**, Weir Creek Mine worked 73,544 man-hours with zero lost workday injuries.
- **Charolais Corporation**, Mark Energy II Mine worked 88,117 man-hours with zero lost workday injuries.
- **Canyon Coals, Inc.**, Jacobs Creek Mine worked 71,379 man-hours with zero lost workday injuries.
- **Peabody Coal Company**, Moorman Surface Mine worked 41,260 man-hours with zero lost workday injuries.
- **Southard Coal, Inc.**, Cypress Creek Mine worked 70,671 man-hours with zero lost workday injuries.
- **Addwest Mining, Inc.**, Nickel No. 1 Mine worked 68,344 man-hours with zero lost workday injuries.

the Mine Safety and Health Administration and the American Mining Congress, and were presented by Mr. Rexford Music, District Manager of MSHA's District 10 located at Madisonville, Kentucky.

The six mines awarded are located in western Kentucky, and were awarded as follows:

Home kitchen shows our universal dependence on minerals and mining

By Gary Dillard, Staff Reporter

When momma puts the tea kettle on to boil, it's a simple task to notice the various minerals involved in the process: a copper-bottom steel kettle, sitting on top of a cast-iron stove eye-ring, receiving heat from natural gas.

That's three.

The stove itself contains a procelain finish, steel wire shelves, chrome plating on the control knobs, glass in the oven door, stainless steel reflectors, a bimetal thermocouple temperature control...

The list goes on.

Then there are a variety of mineral products in the refrigerator, from fluor-spar-based refrigerants to soldered copper tubing.

The kitchen sink and its cabinet contain minerals. So does the floor and what runs under the floor, and the ceiling, the roof, and the in-between.

In all, a list of almost 4 dozen different minerals and metals—all of which have to be mined—can be found in the average home kitchen.

Glenn A. Miller, curator of the Arizona Mining and Mineral Museum on Government Mall in Phoenix, hopes someday soon to have an interpretive exhibit at the mu-

seum that shows a cut-out section of a home kitchen.

"The kitchen is the one room of the house where everybody goes at least once a day," he says. So it makes an ideal display for a museum, one with which everyone can relate.

"There are minerals from the clay sewer pipe that runs under the kitchen to the clay tiles on the roof [in some Southwest homes]," he said. And dozens in between.

Just how many, all together?

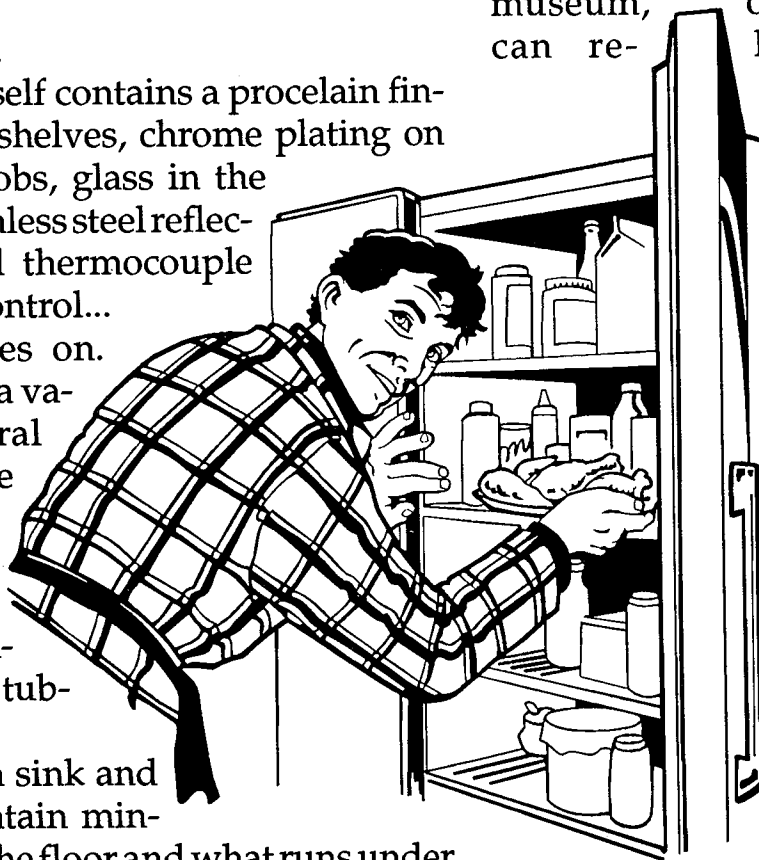
Developed a long list

Miller sat down with Ken Phillips, chief engineer for the Arizona Department of Mines and Mineral Resources [DMMR], the agency that operates the museum, and they came up with a list of

mineral-based products that are used in the kitchen.

They listed the materials that use minerals—or are minerals—and the minerals used or usable in those materials for various aspects of the kitchen, including roof and attic; ceiling and walls; floor, foundation and base; counter, sink and cabinets; refrigerator, oven, and range.

The variety of materials that use miner-



als is staggering. In fact, as the bumpersticker says, "if it isn't grown, it has to be mined."

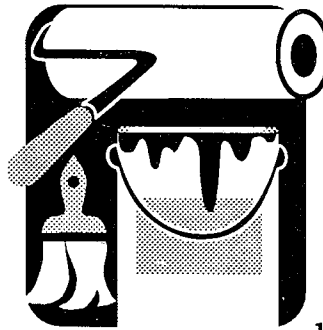
From the cosmetics used by men and women every morning to the plates at the breakfast table to the ink on the newspaper (or a host of materials that bring "The Today Show" into the home) to paint and glass and all the obvious things on the family car and the road it drives over, minerals are at work in our daily lives.

Virtually every manufacturing plant uses minerals—either in raw form or one that already has value added.

Paint requires many minerals

An example of the type of work DMMR has done is with paint manufacturers, of which Arizona has 14. Phillips stated, "As a commodity, paint uses the widest variety of industrial minerals because of the variety of colors and properties demanded by its many applications."

The most common filler in paint is calcium carbonate, but feldspar and silica can be substituted, and in some applications are



superior to calcium carbonate. Because of quality enhancements of these substitutes manufacturers might be willing to pay 1 percent more for them.

DMMR's work has had some immediate effects. Many foundries were using sand from California, for example, while a good quality material is available in northeast Arizona.

As well as providing feedstock to Arizona's growing industries, the state's industrial minerals producers are just down the road from southern California, arguably the largest industrial region in the world.

A partial list of home products using industrial minerals and metals

- Roof sealant around kitchen vent flange
- Asphalt roof shingles
- Aluminum or copper gutter/downspouts
- Galvanized roofing nails
- Steel wire nails
- Insulated copper wiring (Romex)
- Paints, both latex and enamel plus primer
- Ceiling fans with reinforced blades
- Joint compound
- PVC cold water pipes
- Black iron gas pipe
- ABS sink drain pipe and vent
- Aluminum window frame
- Caulking compounds
- Gypsum retarded portland cement
- Vinyl floor tile
- ABC sub base
- Kitchen and bath counter tops (Corian)
- Electrical outlets, switch plates, boxes, etc.
- Cast metal drawer and door pulls
- Porcelain-covered cast iron or stainless steel kitchen and bath sinks and tubs
- Refrigerants from fluorspar
- Soldered copper tubing
- Glass shelves
- Steel exterior casing and hardware for refrigerator
- Rock wool and/or vermiculite insulation
- Incandescent lighting
- Stainless steel reflectors
- Porcelain finish on oven and refrigerator
- *and much, much more...*

Sees potential in California

Phillips made a number of trips to southern California to talk with industries involved in the making of glass, asphalt roofing, wallboard joint cement, and other commodities.

Arizona has minerals that California doesn't have. With California having the toughest and most costly set of regulations in the nation, mining is becoming more difficult there, a factor that's a possible plus to development in Arizona.

Another potential market for Arizona's minerals, though one that hasn't been developed yet, is in Mexico. The state expects more trade with Mexico after conclusion of the North American Free Trade Agreement.

At present, Phillips said, not many Arizona minerals are going to northern Mexico, though some from southern California are.

One product, made in a twin-plant along the border, is a "cultured-marble" countertop, which is made of a resin and powdered minerals, such as marble.

For many products, a manufacturing plant needs both market and raw materials. Phillips said he believes Arizona could justify a plant that makes glass containers. The market definitely exists, he said, adding that he believes the proper type of silica sand is also available.

Other possible products: abrasives, ceramics, cosmetics, elastomeric coatings, fertilizers, fiberglass, foundry fluxes, ink, insecticides, wallboard joint cement, and water filtration and purification supplies.

Arizona's, and the Nation's, industrial-minerals industries, both producers and consumers, continue to grow.

Reprinted from the July 1992 issue of Rocky Mountain Pay Dirt

1993 Northeast Metal/Nonmetal Health and Safety Conference to be held February 17

The Pennsylvania Bureau of Deep Mine Safety, in cooperation with the Pennsylvania Aggregates and Concrete Association, and the Mine Safety and Health Administration will host the 1993 Northeast Metal and Nonmetal Health and Safety Conference. The theme of this year's conference is *SAFETY—Together We Can Make A Difference*.

The conference will be held at the Hershey Lodge and Convention Center located on West Chocolate Avenue and University Drive, Hershey, PA 17033-0446 (717) 534-8600. The one-day seminar will begin at 8:00 a.m. on February 17, 1993, and conclude at approximately 4:00 p.m.

The agenda features a variety of health and safety topics designed to provide par-

ticipants with useful practical information on the latest developments in the metal and nonmetal mining industry.

A block of rooms have been reserved at the Convention Center for persons desiring overnight accommodations. Room rates are:

\$69.00 (single) \$80.00 (double)

The cost of one night's lodging must be sent with your reservation.

The conference registration fee is \$30.00 per person. Pre-registration is encouraged. A late registration fee of \$35.00 will be charged after February 3, 1993.

For further information contact:

Matthew Bertovich or Allison Trader, Bureau of Deep Mine Safety, Uniontown, PA (412) 439-7469.

Eleventh South Central District

Joint Mine Health & Safety Conference, March 10 & 11, 1993

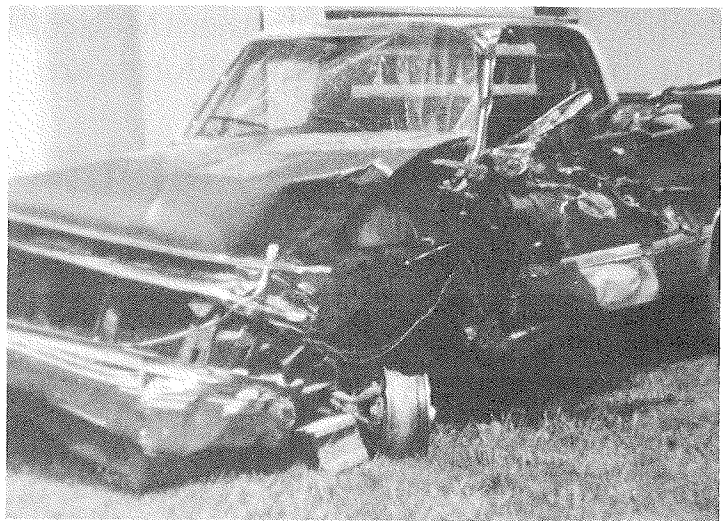
The planning committee, composed of representatives of South Central District MNM MSHA, District 9 Coal MSHA, Mining Industry, Contractors, Contractor Associations, Labor Organizations, and Educational Institutions invites you to participate in the Joint Conference. The Joint Conference promotes health and safety, and the creation of an environment of greater cooperation among industry, labor and government. Operators, supervisors, inspectors,

miners representatives, safety and health professionals alike will all benefit from this conference.

The conference will be held at the HILTON HOTEL, 1901 University Boulevard NE, Albuquerque, New Mexico, where a block of rooms has been reserved at a special rate. Further information will be forthcoming in the February Bulletin. Call Dan Haupt at (214)767-8401 for additional information.

Seat belt safety pays off

Dewey Osborne, who works in the AOWV Engineering Department, left his home on the morning of July 1 expecting his normal drive to work. Instead, as he was traveling on Buffalo Creek Road, his pick-up truck hydroplaned and entered the path of an oncoming coal truck (tractor-trailer). Luckily, Dewey was wearing his seat belt. The photos show the results of the confron-



tation. Dewey was indeed fortunate to "walk away" from the accident with only a slight knee bruise and elbow scratch, neither of which required attention.

Dewey stated that had it not been for the "Good Lord above" and seat belts, he would have been seriously injured and possibly killed.

Reprinted from the September 1992 issue of the Arch of WV News

Northeastern District

1991 Sentinels of Safety Award Winners

Underground nonmetal group

<u>Company name</u>	<u>Mine name</u>	<u>State</u>
Greer Limestone Co.	Greer Mine & Mill	WV
Con-Lime, Inc.	Bellefonte Mine & Mill	PA
Gouverneur Talc Co.	No. 1 Mine	NY
Commercial Stone Co., Inc.	Springfield Pike Quarry	PA

Open pit group

<u>Company name</u>	<u>Mine name</u>	<u>State</u>
Kyanite Mining Corp.	East Ridge Plant	VA
Nord Ilmenite Corp.	Nord Ilmenite	NJ
Windsor Minerals, Inc.	Ludlow Mines—Open Pits	VT

Quarry group

<u>Company name</u>	<u>Mine name</u>	<u>State</u>
Pfizer, Inc.	M.P.M. Division—Canaan	CT
Martin Stone Quarries	Martin Stone Quarries Sandstone	PA
Trap Rock Industries	Moore's Station Quarry	NJ
Lehigh Portland Cement Co.	Union Bridge, Maryland	MD
Riverdale Quarry Company	Riverdale Quarry Co.	NJ
Essroc Materials, Inc.	Essroc Aggregates	PA
Fanwood Crushed Stone Co.	Fanwood Mine and Mill	NJ
Rockydale Quarries Corp.	Rockydale Quarries Corp.—Roanoke	VA
Genstar Stone Products Co.	Marrlotsville Quarry	MD
Essroc Materials, Inc.	Essroc Materials, Inc.	MD
Lehigh Portland Cement Co.	Cementon Plant and Quarry	NY
Luck Stone Corp.	Fairfax Plant	VA
York Building Products Co., Inc.	Lincoln Stone	PA
Luck Stone Corp.	Leesburg Plant	VA
Medusa Aggregates Co.	W. Pittsburgh	PA
Genstar Stone Products Co.	Medford Quarry	MD
Tidewater Materials Corp.	Richmond Quarry	VA
American Asphalt Paving	American Asphalt Paving Sandstone	PA
Stavola Construction Materials, Inc.	Stavola Construction Materials, Inc.	NJ
Davison Sand & Gravel Co.	Connellsville Plant	PA
Luck Stone Corp.	Rockville Plant	VA

Quarry group

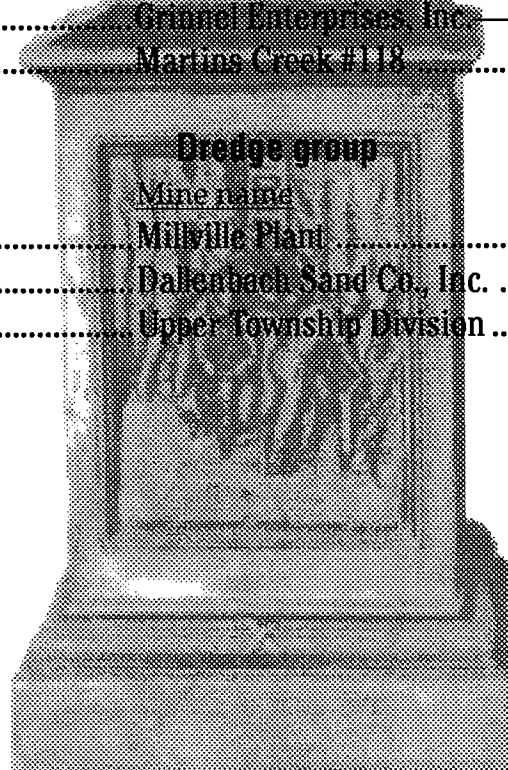
<u>Company name</u>	<u>Mine name</u>	<u>State</u>
White Excavating Co.	White Stone Co.	VA
Eastern Industries, Inc.	Nazareth Quarry #119	PA
R. A. Hamilton Corporation	R.A. Hamilton Corp.	NJ
W. S. Frey	Clearbrook Mine & Mill	VA
Luck Stone Corp.	Boscobel Plant	VA
Coolbaugh Sand & Stone Co.	Coolbaugh Sand and Stone Inc.	PA
Kibblehouse Quarries, Inc.	Kibblehouse Quarries, Corp.	PA
Tidewater Quarries	Springfield Quarry	VA
Sisson and Ryan, Inc.	Sisson and Ryan Quarry	VA
The General Crushed Stone Co.	Jamesville Plant	NY
Stone Industries, Inc.	Haledon Quarry and Mill	NJ
Essroc Materials, Inc.	Nazareth Quarry and Plant	PA
Davison Sand & Gravel Co.	Lower Burrell Plant	PA

Bank or pit group

<u>Company name</u>	<u>Mine name</u>	<u>State</u>
HRI, Inc.	Lake Ariel, Plant 126	PA
Manchester Sand, Gravel & Cement	Hooksett Plant GP #1	NH
Mahoning Valley Aggregates	Mahoning Valley Pit and Plant	PA
West Sand & Gravel Co., Inc.	Ft. Harrison Plant	VA
Aylett Sand and Gravel, Inc.	Aylett Sand and Gravel, Inc.	VA
Grinnel Enterprises, Inc.	Grinnel Enterprises, Inc.—Sand	NJ
Eastern Industries, Inc.	Martins Creek #118	PA

Dredge group

<u>Company name</u>	<u>Mine name</u>	<u>State</u>
U. S. Silica Co.	Millville Plant	NJ
Dallenbach Sand Co., Inc.	Dallenbach Sand Co., Inc.	NJ
The Morie Co.	Upper Township Division	NJ

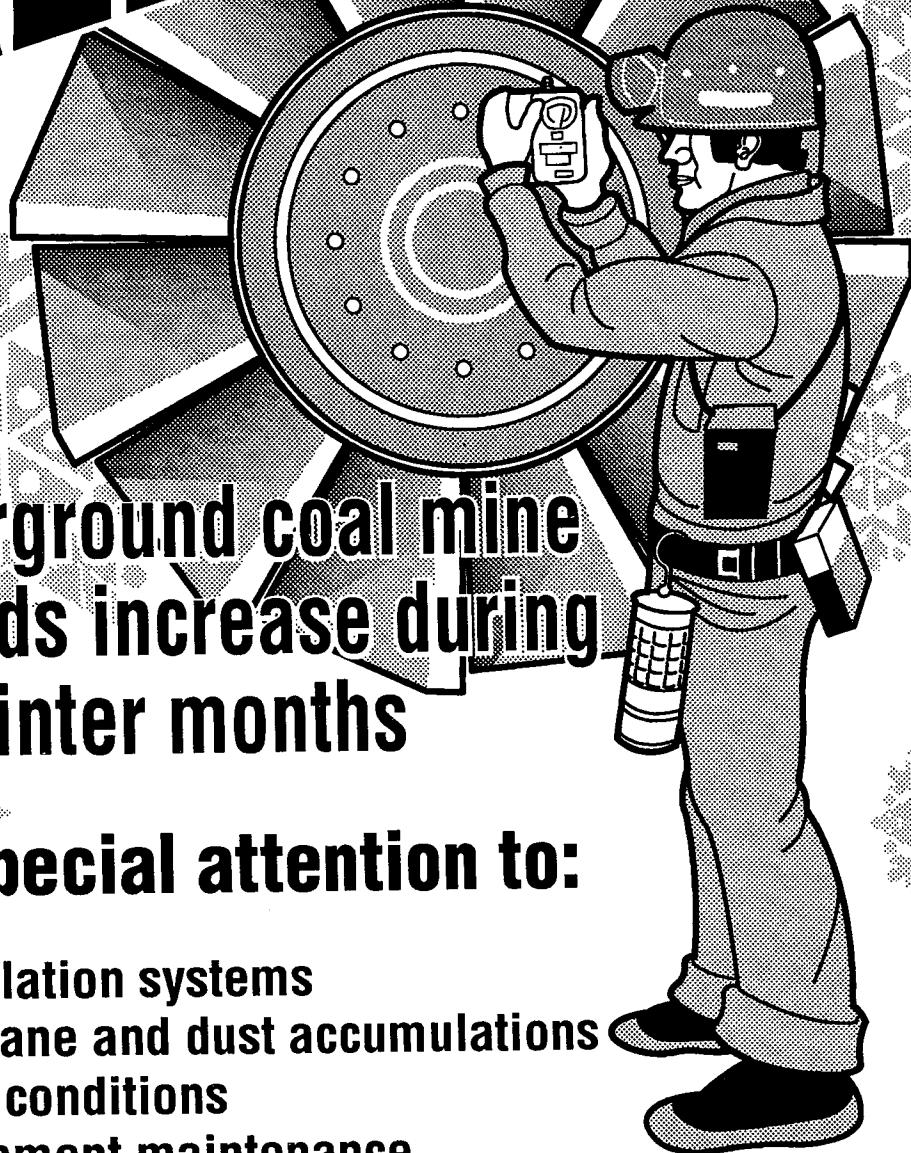


Winter ALERT!

Underground coal mine hazards increase during the winter months

Pay special attention to:

- Ventilation systems
- Methane and dust accumulations
- Roof conditions
- Equipment maintenance



Why sound safety programs fail

Successful safety programs require flexibility and follow-through

By Patrick Arden

Ten years after Phillips Petroleum implemented a comprehensive safety program, a Phillips plant explosion caused 23 deaths and more than 100 injuries. A record \$4 million fine levied by the Occupational Safety and Health Administration (OSHA) stunned the company and left its safety experts doubting the effectiveness of their program. But Weldon Dowden, manager of corporate safety for Phillips, realized that the tragic setback meant a successful safety program is not a stable system, but a dynamic, evolving plan requiring constant vigilance.

"If you have a car accident one day, it doesn't mean you don't know how to drive," Dowden says. "Since drafting a major safety program in 1979, we've had a 60 to 70 percent reduction in worker accident rates and a similar reduction in property loss. Are we satisfied? Of course not. Safety programs have to focus on things you may not have firm control over. That's why you need good employee training."

Pitfalls don't mean that your safety program has failed. By giving your program proper time to succeed and getting your workers involved, you can greatly improve its chances.

Make safety a top priority

It's estimated that more than 200,000 people have died at work since the OSHA act was passed 22 years ago. Some companies contend they do all they can about safety, but accidents will happen. The nature of

their industry—petrochemicals, construction, manufacturing, material handling—may carry inherent dangers, but good job safety plans, properly implemented and maintained, work wonders in reducing risks.

In 1991 the Mine Safety and Health Administration (MSHA) announced a plan to eliminate fatalities in the mining industry by the year 2000. Zero deaths in nine years may seem unrealistic in an industry that has long been considered hazardous to the health and safety of its workers, but MSHA insists the goal is attainable. The plan's central strategy aims to encourage mine operators to adopt job safety analysis training to recognize and eliminate hazards.

"An awful lot of accidents occur because of inattention and carelessness, and this is exactly what the JSA addresses," says Elizabeth Fitch, an MSHA program analyst. "Enforcement has helped get management to care about job safety; now we need to reach the miner, the person with the most to lose."

While MSHA's push for JSAs is purely voluntary, proposed legislation currently in Congress would require all employers to establish and maintain formal safety training programs. One proposal would require employers with more than 10 workers to form safety and health committees with both labor and management representatives to monitor and enforce the safety plan. Employees also would be paid for hours spent in training.

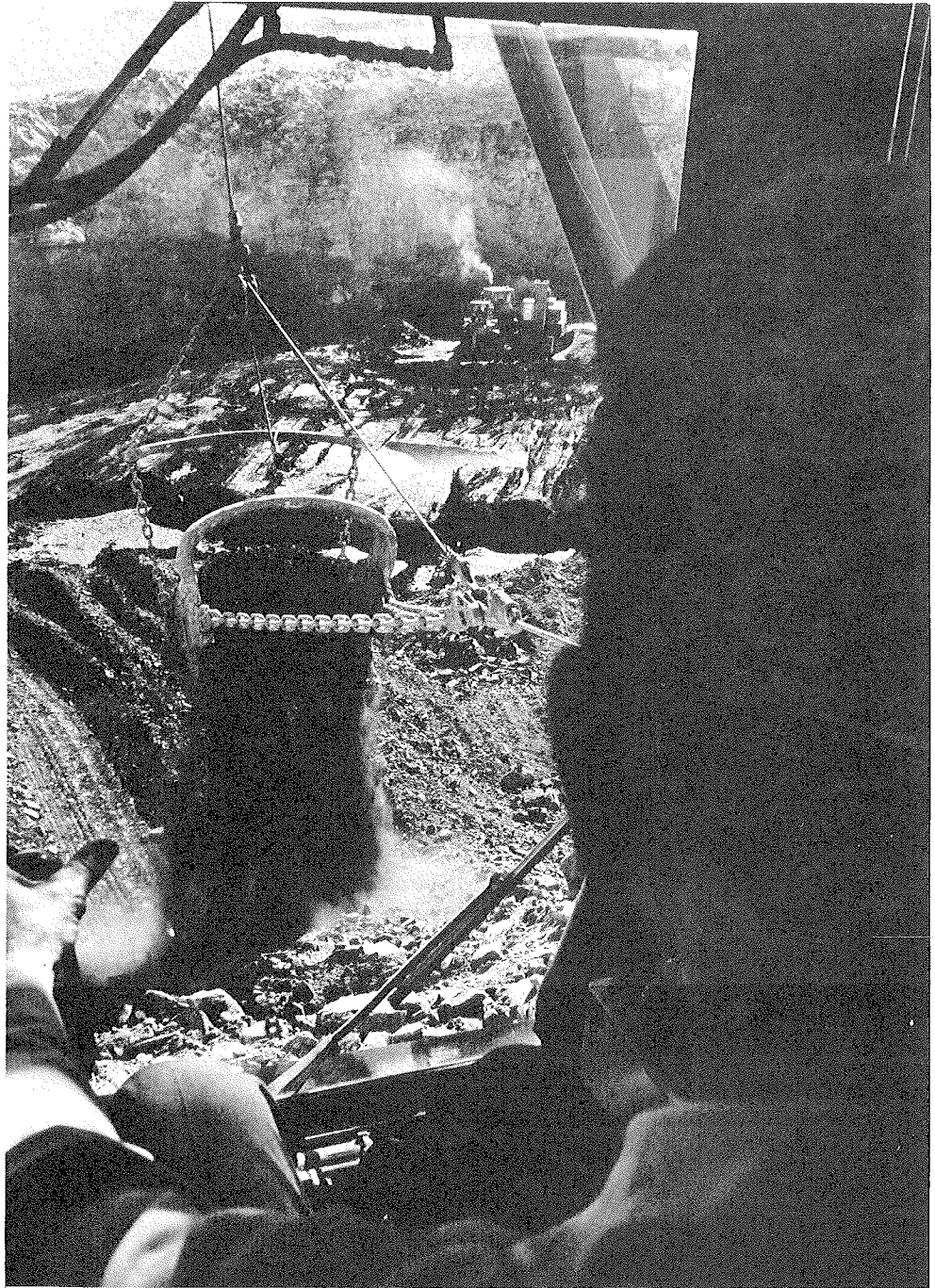
"We think JSAs would go a long way

toward abating workplace problems," says Franklin Mirer, safety director for the United Auto Workers. "Industry can't go on injuring people from the same causes. How can we expect to compete in the world if we have people in dangerous work situations, management paying through the nose for compensation, and product quality suffering as a result?"

"The companies that don't already have safety programs will suffer," says Joe Kelbus, safety training consultant, National Safety Council. "The present laws should be reviewed to focus on accident prevention, not on accident punishment. Now the rules focus on finding blame, and this creates an adversarial relationship between labor and management."

Many companies are learning that safety makes dollars and sense: in employee health, compensation, lost production, quality control, insurance costs, and equipment maintenance. But if so many companies are instituting safety programs, why are there still so many accidents?

"In too many instances, senior management just pays lip service to safety," says Joseph A. Kinney, executive director of the National Safe Workplace Institute. "Unless senior management is truly committed to



safety, forget it."

Stewart Burkhammer, safety manager for the Bechtel Group agrees. "The biggest pitfall is lack of management support. If senior management is not attuned to safety issues, their program will fail. If there isn't an effective system of checks and balances to correct unsafe conditions, the program will fail. If you don't have dedicated safety

professionals ensuring successful implementation, the program will fail. If it just sits on a shelf, it will fail."

Focus on the worker

During the last five years, six explosions at Texas refineries and chemical plants have killed 47 workers and injured more than 1,000. Two giant blasts, the Phillips accident and an-



JSAs to the rescue

While some companies try to place more reliance on sophisticated equipment and high-tech fixes, it's more important for safety programs to go back to the basics of the daily grind. Looking at exactly what work must be performed and how workers fulfill their roles will help prevent accidents while giving management insight into their organizations.

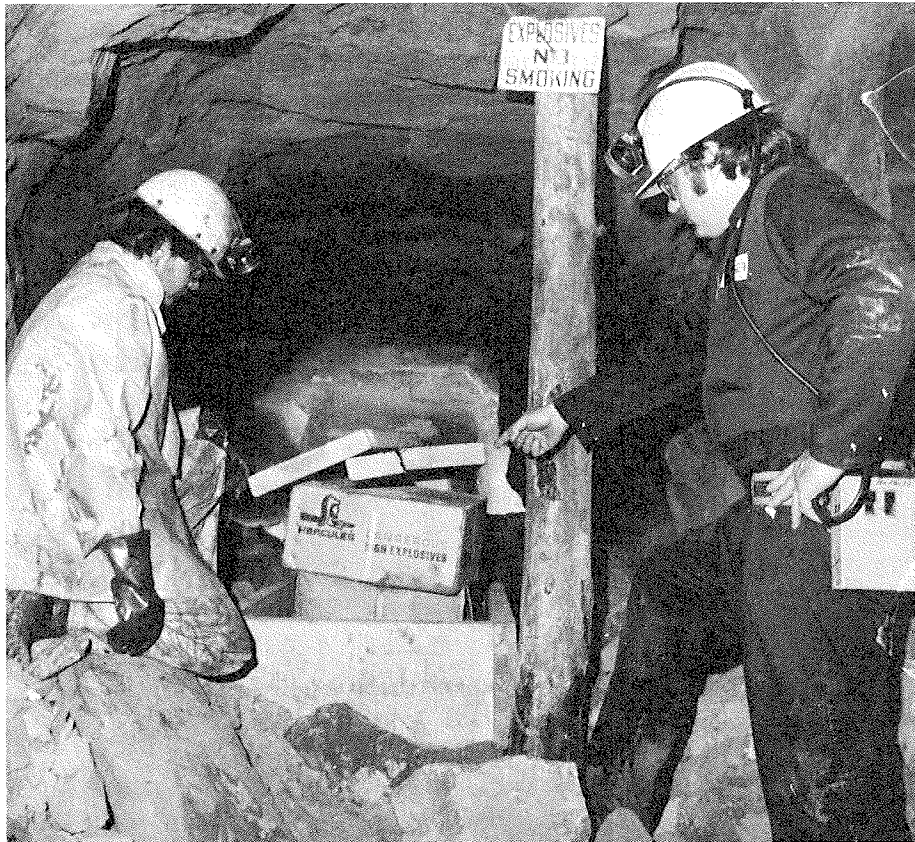
Job Safety Analysis has been found to be an effective management tool as well as the starting point for safety programs. It provides an easy formula for problem solving, and removes safety from a theoretical ivory tower and places programs squarely on the shop floor. Jobs are broken into specific tasks, and each task is studied to see if it can be made safer. OSHA inspectors use JSAs

when investigating accidents.

JSAs have been around in one form or another for more than 70 years, but now they're being used as an investigative tool in many areas beside safety, from ergonomic analysis to product quality control to streamlining operations.

Start your JSA program by analyzing jobs with high accident rates or those that deal with potentially dangerous situations, even if no accident has occurred yet. Enlist both the worker and the immediate supervisor in the process to ensure accurate data and successful implementation. This also fosters a valuable sense of teamwork. Then investigate other jobs that could be overlooking safety or jobs that may be new and untested, which might make them more likely

other in an Arco plant, which altogether resulted in 40 deaths, were blamed on subcontract employees. But Bechtel's safety program, operating at construction sites all over the world, has been a great success (only five fatalities in the last 490 million hours), and the company relies heavily on subcontract em-



ployees, many of whom speak different languages at the same worksite. Out of 10,000 workers in their current project re-

building Kuwait, 9,000 are subcontractors.

"When we look at the cause of an accident, we usually look at a worker's mistake rather than the work environment," says the UAW's Mirer. "We end up blaming the victim. Telling the worker to be careful tells him nothing at

all. We need training to recognize hazardous conditions and a system to identify and eliminate hazards in the work process."

to be involved in accidents.

Once a JSA is completed it must be subject to periodic review. This maintains the relevance and integrity of what it advocates as the correct cause of action. If employers think of JSAs as evolutionary instruments, they will be better prepared to meet the challenges of changing technology as well as the demands of a development marketplace. JSA worksheets should be handy for quick consultation and updating. If an accident does occur, the worksheet will help identify the exact cause. If unsafe behavior is identified as the cause of an accident, employers can be fairly sure that action has been performed numerous times in the past.

JSAs also make excellent training tools for

new or temporary employees since job responsibilities are clearly delineated. Not only can a JSA stop unsafe or inappropriate behavior, it also helps eliminate waste and can make your workplace more efficient.

The National Safety Council and MSHA promote the use of JSAs through various publications, workbooks, and classroom offerings in many different cities. If you're interested in bringing JSA strategies to your workplace, contact the Safety Training Institute, National Safety Council, 1121 Spring Lake Drive, Itasca, IL 60143-3201 or MSHA's National Mine Academy, Business Office, P.O. Box 1166, Beckley, WV 25802-1166.

Karlene H. Roberts, an organizational psychologist at Haas School of Business, University of California at Berkeley, thinks employee involvement is key. "There needs



to be sufficient training to trust the worker and sufficient decision-making power for the worker to stop potentially dangerous actions. The company president is very rarely at the scene of the accident."

In a 1987 study of management safety strategies, Roberts, along with Berkeley professors Todd LaPorte and Gene Rochlin, studied three organizations with excellent safety records: Navy aircraft carriers, where the number of major accidents (deaths or those that cause damage of \$1 million or more) has been slashed from 55 per 100,000 hours in 1953 to 1.89 in 1990; the air traffic control system, which has made flying fatalities ten times less likely than 30 years ago, in spite of its labor problems; and Pacific Gas & Electric Co.'s Diablo Canyon nuclear power plant, which is considered a model for safety even though built near an

earthquake fault.

Each organization operates in a potentially dangerous situation, yet they all cut accident rates through safety training. The study highlights the importance of relying on the worker, the one who should know the job best. While all three organizations have strong chains of command, they give employees the freedom to act in a tight situation.

With proper safety training, organizations can give their employees the expertise to make better decisions. The Berkeley study found it was important to stand behind the decisions of workers after making them accountable. Roberts relates a

story about a Navy aircraft carrier involved in an exercise, with jets taking off and landing in quick succession. The pressure was great because slowing an operation on an aircraft carrier increases the chance that something dangerous will happen. Consequently, work had to be performed extremely fast.

A member of a deck crew lost a tool in an engine, which could have started a deck fire. The deckhand told his supervisor, who then stopped the operation. The commander then got on the ship's P.A. system and barked an order to see the person responsible for halting the exercise. The commander then commended the deckhand, recognizing the value of worker involvement in accident prevention.

"If you chew a guy out, he's never going to bring you information again," says Rob-

erts. "Bad news will be suppressed, and bad news never gets better over time." Tom Mott, safety director for U.S. Steel, thinks the biggest mistake a company can make is



to exclude its employees from the development and implementation of a safety program. "If it's just someone on top telling workers how to do their jobs, it's not going to work. With proper training, knowledgeable employees help reinforce a safety program through shared commitment."

Weigh the intangibles

The National Safety Council's Kelbus states, "There are many reasons why safety programs fail, and sometimes it has nothing to do with safety procedures." Safety programs require effective management, and effective management is often a behavioral science. Employees disgruntled over lack of vacation time or any other issue

could stop a company initiative dead in its tracks.

Even if a company has a safety program, it may have some other reinforcement system that promotes unsafe behavior, perhaps under threat of punishment. Pressure to work fast and keep producing often leads to unfortunate—and avoidable—accidents.

"There are times when it's better to stop the line and look at what's happening," says Roberts. "I would much rather pay the cost of vigilance than the cost of cleanup."

The UAW's Mirer points out that the majority of accidents in his industry occur after the line has been stopped and repairs are being performed on machinery. Many times machines are not reassembled properly. Job safety programs help workers to understand their machines to better monitor their equipment and productivity.

Safety can pay off in unanticipated ways. Product and workplace design can be improved under the watchful eye of a safety program. Careful scrutiny of the working process puts the front office in touch with the nuts and bolts of their business. Safety programs also send the message that bosses actually care about the well-being of employees.

Unfortunately, the benefits of job safety may only be realized over time, or, worse yet, after an accident. But whatever the reason for its implementation, if a safety program is treated as a flexible, vitally important tool for the company and its workers, it stands a much better chance for success.

Reprinted from the June 1992 issue of Safety & Health. A publication of the National Safety Council, 1121 Spring Lake Drive, Itasca, Illinois 60143-3201

Holmes Safety Association

Monthly safety topic



Fatal fall of material accident

GENERAL INFORMATION: A 39-year-old truck driver, with 17 years of experience, received fatal crushing injuries when a section of pipe rolled from a flatbed trailer, struck and rolled over him.

A contractor was hired to purchase, deliver, and splice a 26-inch pipe to connect the preparation plant to a new slurry cell.

DESCRIPTION OF ACCIDENT: The dayshift construction crew started at their usual hour of 7:00 a.m. along with employees of the firm who had been contracted to install a 26-inch slurry line from the preparation plant to a new slurry pit three miles northwest of the plant. Mine employees began work at 8:00 a.m. on that day.

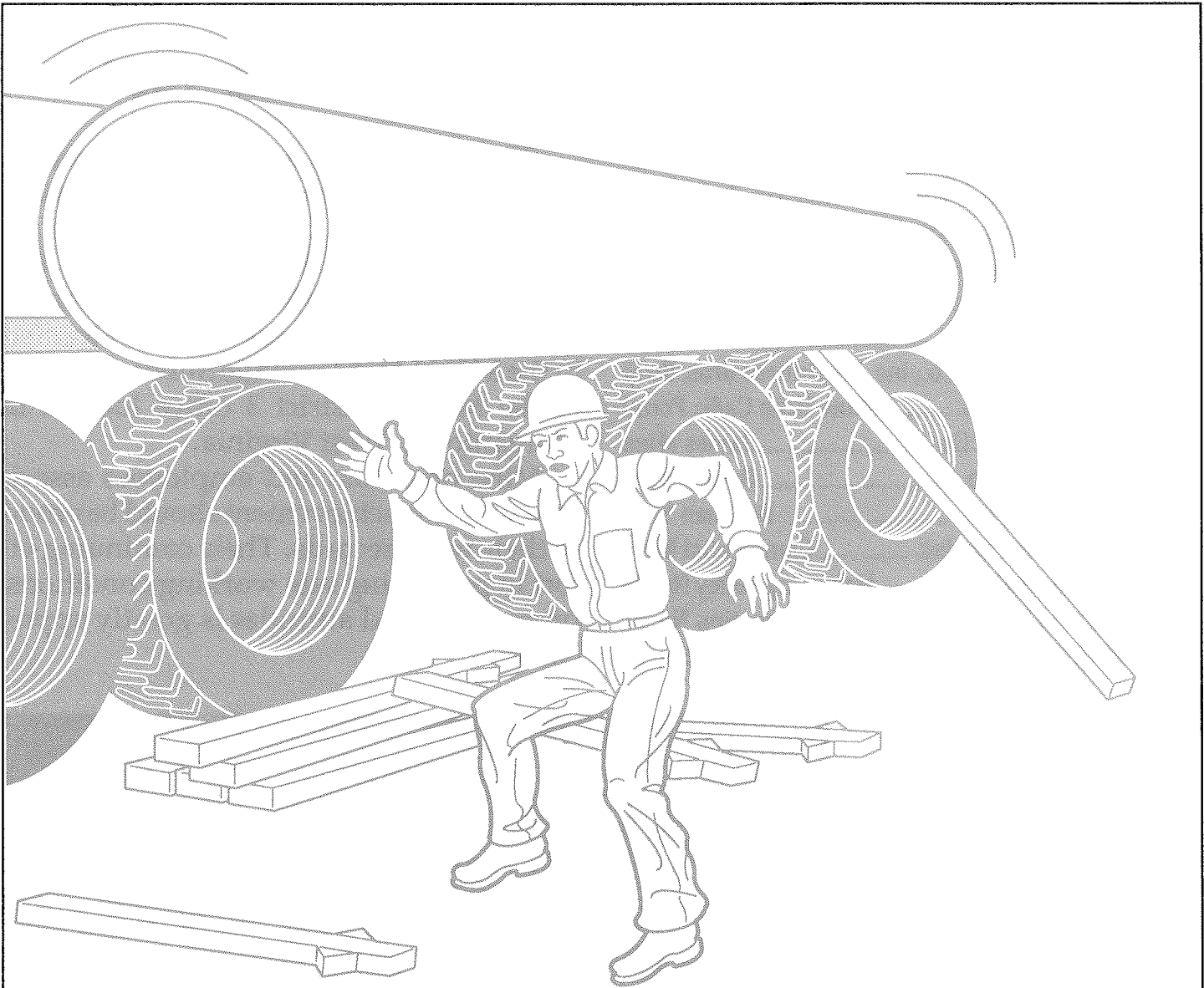
At 10:00 a.m., the victim entered the mine property and proceeded toward the warehouse where he was directed to deliver his cargo of pipe to a location on the west haulage road. The victim was told to wait for the forklift because of a delay.

At about 1:00 p.m., the warehouseman, drove the forklift to the unloading site where he was met by the utilityman who would assist with the unloading. While the victim removed the nylon straps securing the load during transport, the warehouseman and utilityman discussed the way the pipe had been loaded. All other loads had arrived with 2-inch pipes standing upright in brackets on each side of the trailer bed. This load arrived with 4-inch by 4-inch wood posts between the tiers with angled chocks on

each end to block the pipes against rolling. Each of the three tiers contained three pipes secured together with steel bands.

After the victim removed the straps, the utilityman climbed to the top of the load and cut all the metal bands from the top tier. When he dismounted, he advised the victim to move away from the trailer. They moved to the south side of the road across from the tractor. The warehouseman removed the top tier of pipe to a location approximately 60 feet southeast of the trailer. The utilityman again climbed to the top of the load and began removing the four 4-inch by 4-inch timbers. The victim asked the utilityman to hand these timbers to him because he wanted to keep them. The utilityman then cut the steel bands on the second tier and went to another job site. The warehouseman began unloading and, as he started back to unload the second pipe, he informed the victim of his plans. He removed this pipe and had driven about 50 feet when he heard the sound of pipe hitting the ground. He turned, just as the pipe from the center of the second tier rolled over the victim.

He went to the victim, saw he was seriously hurt, and drove to the warehouse area where he met the mine manager and reported the accident. The mine manager called in the accident by radio and traveled to the accident scene. Minutes later, emergency medical technicians arrived and, examining the victim, found no sign of life.



Type	1988		1989		1990		1991		1992	
	UG	S	UG	S	UG	S	UG	S	UG	S
Roof fall	8	—	19	—	20	—	20	—	10	—
Haulage	7	12	3	8	7	7	6	7	9	6
Machinery	7	4	7	6	7	3	2	3	6	3
Electrical	1	2	2	2	5	2	5	—	1	1
Other	3	8	12	9	3	10	7	10	8	11
Total	26	26	43	25	42	22	40	20	34	21

The coroner arrived and pronounced the victim dead of apparent crushing injuries caused by the pipe rolling over him.

mined what caused the pipe to roll. The accident occurred because the victim was allowed to be in a location that put him in danger of being struck by falling material.

CONCLUSION: It was never deter-

MSHA awards ten Ohio coal mines for excellent safety records during 1991

The Mine Safety and Health Administration presented Certificates of Achievement in Safety to the following Ohio Coal Mining Companies for working the entire year of 1991 without a lost-time injury:

Miller Mining, Inc. M & M Strip
 McGinness Bros. Coal Co., Inc. McGinness Bros. Strip
 Harrison Mining Corp. Nelms Mine Cadiz Portal
 James Brothers Coal Co. James Mine
 East Fairfield Coal Co. Gavers Mine
 Waterloo Coal Co., Inc. Bowman Strip
 Commercial Minerals, Inc. Commercial Mine
 Consolidation Coal Co. Mahoning Valley No. 36
 Consolidation Coal Co. Reclamation No. 61
 Valley Mining, Inc. Strip #3

The Mine Safety and Health Administration presented the Awards September 29, 1992, at the Grove Restaurant in Morgantown, West Virginia, during a Mid Ohio District Council Meeting of the Holmes Safety Association. These mines are located in the MSHA St. Clairsville Subdistrict area of the MSHA District 3 office located in Morgantown, West Virginia.

Mine operators and employees associated with this achievement should be proud of their work records. Their continuing effort in promoting safe working conditions, procedures, and attitudes is greatly appreciated.

FRONT ROW: Left-to-right:
 Roy Jones, Electrical
 Inspector; Robert Cerana, Coal
 Mine Inspector; Edward
 Warne, Pit Foreman; Allen
 Mann, Coal Mine Inspector.
SECOND ROW: Left-to-right:
 Lloyd Mackall, Safety Director;
 Kermit James, Superintendent;
 John McNab, President,
 Harrison Mining Corporation;
 Louis P. Jones, Cadiz Field
 Office Supervisor; Robert L.
 Crumrine, St. Clairsville
 Subdistrict Manager; Jim
 Hoblick, President of Mid Ohio
 District Council, Holmes Safety
 Association.



Teachers give A⁺ to second annual mineral education conference

Once upon a time, pencils, erasers and chalk were the tools of the classroom.

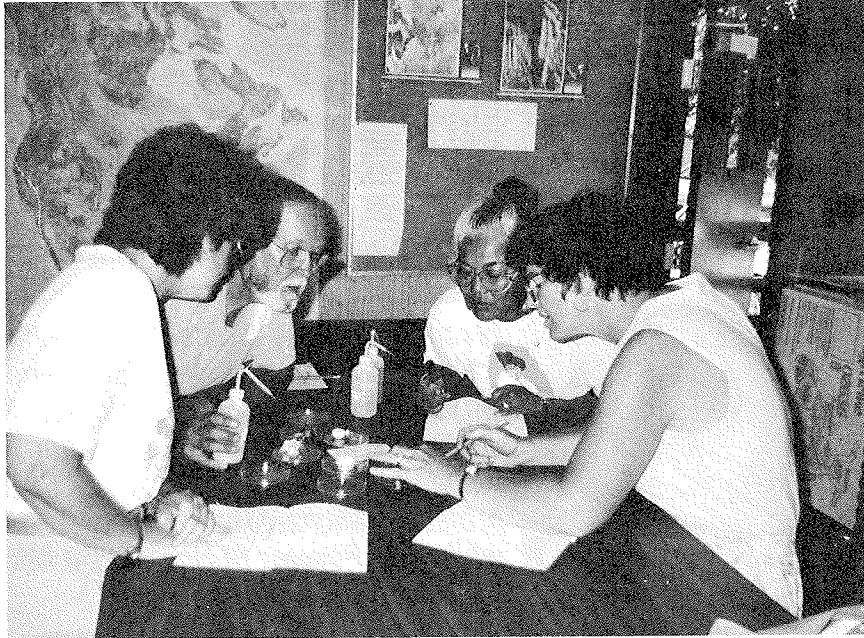
The second annual Mineral Education Conference chose instead to spark the learning process with provocative workshops, thought-provoking instruction, chocolate chip cookies, marble fudge cupcakes, and do-it-yourself concrete.

In a series of experiments in application workshops for teachers enrolled for the conference, cookies were "mined" for chocolate chips and ore bodies "drilled" in marble fudge cupcakes.

With a recipe and a bag of ingredients, teachers made batches of concrete in yet another workshop.

Sponsored by the California Mineral Education Foundation, the geology department of California State University Sacramento (CSUS), and the State Department of Conservation, the conference attracted classroom teachers from Azusa and Victor Valley in the south to Yuba City and Downieville in the north.

Among sample comments at the end of the three-day conference for elementary, junior high, primary, and high school teach-



ers were:

"Overall grade for the conference—A-plus."

"This conference changed my perception (of the mining industry) one hundred percent. It's a needed industry."

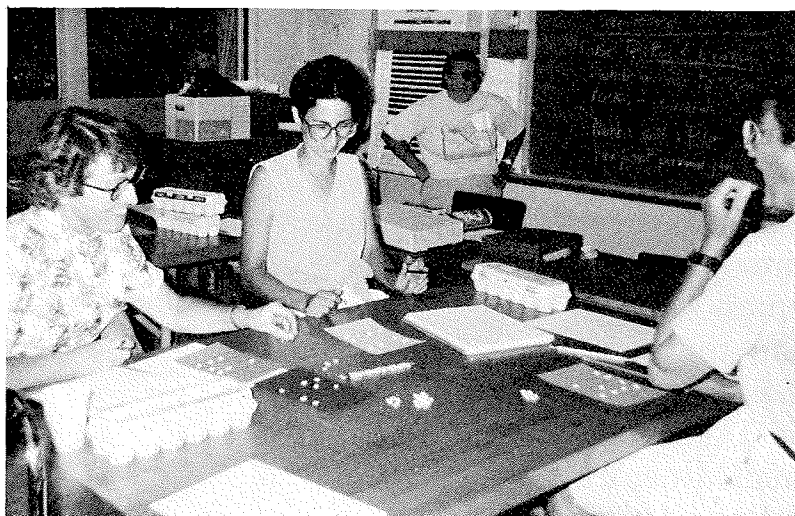
"Unbelievable regulations, it's a wonder mines get started at all."

Doubled in scope from the first year, the conference was held on the CSUS campus and coordinated by Barbara Stewart, managing director of the Foundation, and Brenda Kress.

Classroom application workshops were divided by grade level. Dr. Gregg Wheeler, chairman of the CSUS geology department, said workshop instructors were "the cream of Sacramento's earth science teachers."

In a departure from last year's schedule, teachers had the opportunity to talk with mining industry representatives on issues that may not have been addressed in classes or were of a controversial nature.

Participating in that program were: Gene Block, Cal-Mat; Dave Cahn, California Portland Cement; Stephen Grace, Lilburn Corporation; Paul Morton, PK Morton Associates; Craig Smith, Celite Corporation; and



Teachers not only "mined" chocolate chip cookies and "drilled" cupcakes, they tackled serious topics as well. (top left) Leslie Gordon, U.S. Geological Survey, and Dave Beeby, Department of Conservation, discuss "Uses and Value of Minerals." University of California at Berkeley professor Michael Hood (right) leads a class in geopolitics while Bob Reveles of Homestake Mining (bottom) covered socioeconomic issues.

Fred Carrillo, U.S. Bureau of Mines.

Classes covered the history of mining and mining techniques, environmental concerns and reclamation, genesis of ore deposits, uses and value of minerals,



socioeconomic issues, and geopolitics.

In addition to the cookie "mining" and cupcake "drilling," application workshops provided the opportunity for teachers to sort and classify a wide selection of rocks.

Special events included a barbecue and a demonstration of gold panning. Sharon DeHayes and Kirk McDonald of California Portland Cement demonstrated how to

make cement, and the company provided the materials for classroom application.

Field trips offered a visit to Yuba Placer Gold Company's dredge on the Yuba River with a tour conducted by manager Bill Brooks and his staff.

Teachers also toured Teichert's aggregate operation on Bradshaw Road in Sacramento, with Kelly Schlesinger and Dave Wada leading the group.

"The field trips gave teachers an opportunity to see extraction of gold by a very different method in Yuba City and to learn the importance of gold dredges in California history," said Stewart.

"In Sacramento, the focus was on how mining and urban development can co-exist using the Teichert operation as an example."

Stewart said 120 registrations were received, with actual attendance at 95. The drop was prompted mainly by the absence of a state budget, she added.

"Many teachers have received layoff notices and are unsure whether they will have a job when the school year starts," Stewart explained.

"Another factor was fewer companies sponsoring teachers on scholarships this year, probably because of the recession. We

were delighted to have the 95 teachers who attended."

For their attendance, teachers received certificates of completion for 24 hours of in-service training and rock and mineral kits. Blue T-shirts with the foundation logo and green tote bags with classroom materials were presented on arrival.

The Stewart Kress Company hosted a reception the night before the conference to introduce instructors, set up classrooms, and complete preparations for the morning opening.

Reprinted from August 1992 issue of Rocky Mountain Pay Dirt

Review Commission fulfills congressional intentions

By Ford B. Ford, Chairman of the Federal Mine Safety and Health Review Commission

"The Committee believes that an independent Commission is essential to provide administrative adjudication which preserves due process and instills much more confidence in the program."

Thus, the Senate Committee on Human Resources explained its rationale for splitting the enforcement and adjudicatory functions under the Federal Mine Safety and Health Act between the Secretary of Labor and the Federal Mine Safety and Health Review Commission.

As we approach the 15th anniversary of the Mine Act's passage, can we say with assurance that the Senate Committee's intentions have been realized? As one who is privileged to have served in both the enforcement and

adjudicative agencies created by the 1977 Act, I believe we can.

The 1977 Mine Act, both by its terms and in its execution, is one of the most stringent regulatory statutes ever enacted. It is, therefore, not unexpected that enforcement of the Act engenders its share of controversy and contentiousness. By placing the authority to resolve enforcement disputes in a totally separate and independent agency, Congress understood that a sense of fairness, in reality and in perception, was necessary to the overall credibility of the regulatory program.

The bifurcated structure of the Mine Act, the so-called "split-enforcement model," not unlike the ingenious system of checks and balances that orders

our Constitution, establishes a neutral arbiter with the power both to affirm the appropriate exercise of Secretarial enforcement power and to check its abuse.

Put another way, the Commission's role is not limited to sitting back, "calling the balls and strikes."

The Commission also has the duty to interpret the rules and to see that they are fairly applied. That duty is not one that the Commission has arbitrarily assigned to itself. Rather, it derives from the Commission's own Congressional charter as delineated in Section 113 of the Mine Act, wherein Congress charged the Commission with the responsibility to decide issues of law and policy.

The Commission historically has taken its policy-making role seriously and, in my view, has acquitted itself well. In the *National Gypsum* and *Mathies* cases, the Commission set forth a rational framework for analyzing whether a violation of a mandatory standard is "significant and substantial" in nature. The result was a means for both operators and inspectors to distinguish violations on the basis of their relative seriousness.

In the *Emery* and *Y&O* cases, the Commission adopted a standard for determining whether an operator has "unwarrantably failed" to comply with a mandatory standard. The result was a means for determining the level of operator culpability in order to determine the ap-

propriate sanction to apply. In the *Pasula-Robinette* line of cases, the Commission has fine-tuned a method for deciding miner discrimination complaints where an adverse personnel action is motivated both by safety activity protected by the Act and other activity not so protected.

Although the Commission is a creature of the Mine Act, it also has an inherent duty to uphold the general rules of fairness that govern all federal regulatory activity, the Administrative Procedures Act (APA). Thus, in the recent *Drummond* case, the Commission reviewed the Secretary's policy of increasing civil penalties on the basis of an operator's "excessive history" of previous violations. The Commission held that because the policy was based upon a program policy letter that did not comply with the APA's rulemaking requirements of notice to, and comment by, the affected public, all penalties proposed pursuant to the letter were returned to the Secretary for reassessment. The Secretary has not sought reconsideration of the *Drummond* decision by the Commission, nor has she sought judicial review of the decision pursuant to the Congressionally mandated appeal procedures of the Act.

In sum, Congress' theoretical rationale for creating an independent Commission has been vindicated in practice.

Reprinted from the September 1992 issue of the American Mining Congress' Journal.

Results of West Virginia mine rescue contest

The West Virginia Mine Rescue, First Aid, and Bench Contest was held on September 17 and 18, 1992, at the National Mine Health and Safety Academy in Beckley, West Virginia. The contest was sponsored by the West Virginia Office of Miners' Health, Safety and Training.

Listed below are the results of the Mine Rescue, First Aid, and Bench contest(s).

Mine Rescue

1st Place Governor's Award (WV State Champion 1992)	Consolidation Coal Co. Rowland Complex Team, Beckley, WV
1st Place Award	Consolidation Coal Co. Rowland Complex Team, Beckley, WV
2nd Place Award	U. S. Steel Mining Co. Pinnacle - Blue Team, Pineville, WV
3rd Place Award	Eastern Associated Coal Corp. Pond Fork Team, Kopperston, WV
4th Place Award	Eastern Associated Coal Corp. Harris Team, Bald Knob, WV
5th Place Award	Marrowbone Development Co. Marrowbone Team, Naugatuck, WV
6th Place Award	Consolidation Coal Co. Dilworth Team, Landing, PA
7th Place Award	A. E. P. Windsor Coal Windsor Coal, West Liberty, WV
8th Place Award	So. Ohio Coal Company Meigs No. 31 Team, Athens, OH
9th Place Award	Eastern Associated Coal Corp. Federal No. 2 Team, Fairview, WV

First-Aid

1st Place Governor's Award (WV State Champion 1992)	Eastern Associated Coal Corp. Colony Bay Team, Wharton, WV
1st Place Award	Eastern Associated Coal Corp. Colony Bay Team, Wharton, WV
2nd Place Award	Eastern Associated Coal Corp. Harris Team, Bald Knob, WV
3rd Place Award	Island Creek Coal Company Potomac Division Team, Mt. Storm, WV
4th Place Award	Amax/Cannelton Industries Maple Meadow Mine, Fairdale, WV

Combination Mine Rescue and First Aid

1st Place Governor's Award	Eastern Associated Coal Corp. Harris Team, Bald Knob, WV
1st Place Award	Eastern Associated Coal Corp. Harris Team, Bald Knob, WV
2nd Place Award	Island Creek Coal Co. Potomac Division Team, Mt. Storm, WV
3rd Place Award	Eastern Associated Coal Corp. Coal River Team, Montcoal, WV
4th Place Award	Island Creek Coal Co. Island Creek Team, Holden, WV

Bench

1st Place Governor's Award	Roger Carpenter, Eastern Associated Coal Corp. Federal No. 2 Team, Fairview, WV
1st Place Award	Roger Carpenter, Eastern Associated Coal Corp. Federal No. 2 Team, Fairview, WV
2nd Place Award	Stanley Lewis, Eastern Associated Coal Corp. Coal River Team, Montcoal, WV
3rd Place Award	Joe Oziemblowsky, Consolidation Coal Co. Dilworth Team, Landing, PA
4th Place Award	John Click, Consolidation Coal Co. Rowland Complex Team, Beckley, WV
5th Place Award	David Shinn, So. Ohio Coal Co. Meigs No. 2 Mine, Athens, Ohio

Secretary's Message...

Many exciting events are happening in the Holmes Safety Association (HSA). Since my last report, we have added a new state council. We heartily welcome another representative from the far West—the State of Nevada—as our newest state council.

The HSA Executive Committee's next scheduled meeting takes place on January 28, 1993. We will convene in Columbus, Ohio, to discuss new business about the HSA and its members.

T. J. Ward, the HSA President, formed a committee to address stockpile safety problems. The committee is submitting a report to the HSA Executive Committee for ap-

proval in January. This information, if accepted by the Executive Committee will become available sometime in March.

During the past few months we received a great response to our 1993 student art calendar campaign. The first place winner of the Holmes Safety Calendar Contest for 1993 is Daniel S. Andrascik—please note his artwork and photo below. He submitted his calendar poster in response to our request for entries in the September *Bulletin*.

If you have any ideas or want to discuss the HSA, please contact me at (703) 235-8264.

Robert A. Glatter, Secretary



Winning poster entry submitted by Daniel Andrascik, age 8, United Elementary School, Indiana County, Pennsylvania



The last word...

"Few things are harder to put up with than a good example."

"We must believe in luck. For how else can we explain the success of those we don't like."

"Happiness is good health and a bad memory."

"Never keep up with the Joneses. Drag them down to your level."

"When the going gets tough, the smart get lost."

"Friends may come and go, but enemies accumulate."

"There are two kinds of pedestrians... the quick and the dead."

"If you live to the age of a hundred you have it made because very few people die past the age of a hundred."

"Nothing is more conducive to peace of mind than not having any opinions at all."

"If it weren't for the last minute, nothing would get done."

"You are no bigger than the things that annoy you."

"You can get more with a kind word and a gun than you can with a kind word alone."

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 1993 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

