BULLETIN

HOLMES SAFETY ASSOCIATION

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MINERAL INDUSTRIES

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HOLMES SAFETY ASSOCIATION OPEN-PIT PETE

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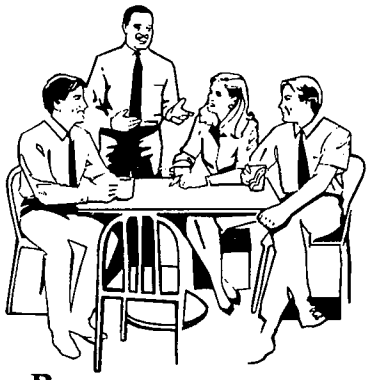

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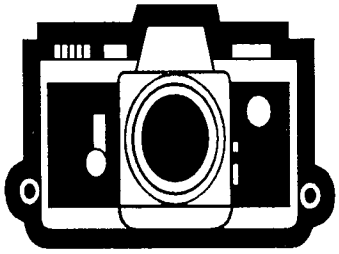

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Please note: The views and conclusions expressed in HSA Bulletin articles are those of the authors and should not be interpreted as representing official policy of the Mine Safety and Health Administration.

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.

Welcome new members

NAME	CHAPTER NO.	LOCATION
Stussy Construction	10244	Mantorville, MN
Yancey Sand & Gravel Co.	10245	Burnsville, NC
Mayland Stone Co., Inc.	10246	Badersville, NC
B&W Stone Co.	10247	Micaville, NC
Just Makin' It	10248	Meridian, ID
Ultra Coals, Inc.	10249	Elkhorn City, KY
Jackal Mining Company	10250	Pikeville, KY
Stark Manufacturing, Inc.	10251	Ozark, AR
Cowark's Construction Co., Inc.	10252	Salem, AR
Spirit Ridge	10253	Summersville, WV
J.J. Coal Co., Inc.	10254	Grundy, VA
The Hurricanes	10255	Avon, NY
Bittner Trucking & Sand, Inc.	10256	Highlands, TX
TCG Safety Program	10257	Oaks Corners, NY
Spencer Quarries, Inc.	10258	Spencer, SD
Keystone Cleaning Plant	10259	Indiana, PA
Lucerne #1 Truck Dumping Facility	10260	Indiana, PA
Chemlime-Burnet Company	10261	Clifton, TX
Chemlime-Clifton	10262	Clifton, TX
Blizzards, Inc.	10263	Sidney, KY
Black Gem Mining, Inc.	10264	Pikeville, KY
Toms Creek	10265	Marion, NC
Cumberland	10266	Marion, NC
Associated General Contractors	10267	Las Vegas, NV
Austin Powder	10268	Garfield, AR
Costain Coal, Inc.	10269	Pikeville, KY
Texas Hill Country	10270	Austin, TX
Acme Brick Co.	10271	Sealy, TX
S&S Auger	10272	Salineville, OH
Winnebago County Highway Dept.	10273	Rockford, IL
Local Union 750	10274	Montgomery, WV
B&B Gravel Co.	10275	Columbus, TX
Pioneer Sand Safety Association	10276	Phoenix, AZ
Low Places, Inc.	10277	Mt. Carbon, WV
Carbon Processors, Inc.	10278	Kenova, WV
Flambeau Mine	10279	Ladysmith, WI
Ucat Division	10280	Richland, WA
Northeast Locomotive Service	10281	Troy, NY
Escapa, Inc.	10282	Albany, NY
Becker Construction Co.	10283	Willington, CT
Treasure State Construction	10284	Missoula, MT
Patterson Materials Corp.	10285	Patterson, NY
MSHA Of Albany	10286	Albany, OR
D.B.L. Coal	10287	Whitesburg, KY
Arkansas Calcine Mill	10288	Little Rock, AR
Stockton Mine	10289	Given, WV
Petersen Sand and Gravel, Inc.	10290	Mchenry, IL
American Waste Services	10291	Warren, OH
Heckathorn Construction Co.	10292	Fayetteville, AR
Harlan Field Office Of MSHA	10293	Harlan, KY

REAP—Roof Evaluation and Accident Prevention

Tony Turyn, MSHA REAP Coordinator

Falls of roof and rib are among the most serious of all the safety hazards facing the coal industry. Since the turn of the century, over 44,000 coal miners have lost their lives in roof and rib fall accidents.

Since April of 1984, the REAP Program has worked to reduce these accidents within our industry. Despite improvements in injury rates in coal mines, falls of roof and rib continue as the major cause of death in underground coal mines.

The number of deaths related to roof falls has decreased to 10 in 1992 from 32 in 1980. Although significant improvements have been made, much work has to be done to obtain our goal of ZERO fatalities.

Likewise, the incidence rate for roof and rib injuries shows quite an improvement since the enactment of the 1969 Mine Act. The rate has fallen from 0.10 in 1969 to 0.03 for 1992, a significant drop.

The Agency believes that regulatory programs have definitely played a role in reducing roof fall accidents. However, if more substantial reductions are to be seen in this area, we must explore and emphasize other "non-regulatory" areas, such as the Small Mine Training Initiative and Job Safety Analysis Programs.

Since the enactment of the 1969 Mine Act there have been 845 (1970-1992) roof and rib related fatalities, while the total number of underground fatalities was 1,935. Roof and rib fall fatalities accounted for 43.6 percent of all underground fatalities. In 1992 there were 10 deaths from falls of roof and rib, which was 29.4 percent of the underground fatalities.

A key to the success of the REAP Program is awareness. An alarmingly high number of roof fall deaths occur because the victim went under permanent roof supports or did not comply with the approved roof control plan for the mine. We must do everything we can to impress upon our miners that "INBY IS OUT!" This message is aimed at keeping miners safe from roof and rib related injuries by making them aware of the hazards in their working environment. The theory is that once miners are aware of the hazards, they will be able to perform their assigned tasks in such a manner as to avoid potential accidents.

As an industry, we need to adjust our focus and start taking the human element into consideration. We need to take a look at programs which successfully identify the causes of accidents and work to eliminate those which can be avoided by action on the part of the victim. We need to continue with our emphasis on education and training, and to develop new and specialized training programs to deal with specific issues when they arise.

In summary, we see the need for increased roof control safety. The fact that miners have died this year in roof and rib related accidents means that we all have work to do. We are on the right track, and, as an industry, we can and will do better. The fact that we went from February 20, to August 25, 1992, without a roof or rib related fatality indicates we are on the right track. More than anything, this lull in fatality was the best since the beginning of coal mining.

Our major objective is to make miners aware of the hazards and to identify ways they can perform their job in a safer manner.

Remember:

Thinking Safety and REAP is a big plus!

Practicing Safety and REAP is a big must!

Holmes Safety Association Monthly safety topic

Fatal falling/sliding of material accident

GENERAL INFORMATION: A 20-year-old alternate kiln burner, with four and a half months mining experience, was fatally injured when he fell into a surge hopper and was engulfed by coal.

The operation was an aggregate and lime producing mine and mill. The plant was normally operated three 8-hour shifts a day, 7 days a week. A total of 86 persons was employed.

The limestone deposit was mined by drilling and blasting multiple benches. Broken stone was loaded by front-end loaders into haulage trucks which transported the material to a crushing and screening plant outside the quarry. Aggregates were stockpiled and lime was stored in silos and bins for sale to customers.

DESCRIPTION OF THE ACCIDENT: On the day of the accident, the victim reported for work at his normal starting time of 3:30 p.m. He performed various jobs until about 8:30 p.m. when he went to the coal storage shed to free a hang-up. Apparently, he did so without unusual incident. Coworkers later observed him outside the surge tunnel removing clumps of snow from the coal conveyor belt.

About 9:50 p.m., the relief burner operator saw the victim park his car near the steps leading to the kiln burner floor at the lime plant. This was the last time he was seen alive. Evidentally, he later returned to the coal storage shed and fell into the surge hopper while attempting to free another hang-up.

About 10:45 p.m. a front-end loader operator noticed that the surge hopper appeared to be empty so he filled it with coal and left the area.

About 11:30 p.m., the victim did not show up on the burner floor, which he normally did at the end of the shift, so the kiln burner operator began searching for him. A short time later he was found him in the surge tunnel. The lower half of his body was on the conveyor belt and the upper half of his body was in the feeder buried in coal. The kiln burner operator shut off the belt and the feeder which were running. He checked the victim for vital signs and found none. The rescue squad and local authorities were summoned. The victim was removed from the feeder and transported to a local hospital where he was pronounced dead.

CONCLUSION: The accident occurred because there were no means provided at the shed to use a safety belt and line properly, nor were there any belts and lines available at the site.

The coal storage shed was somewhat isolated from the plant and was an open-sided structure. The single dusk-to-dawn light, mounted in the ceiling 31 feet above, was not sufficient to provide illumination

Metal and Nonmetal mine fatalities to date — thru 03-09-93

Type	1989		1990		1991		1992		1993	
	UG	S	UG	S	UG	S	UG	S	UG	S
Eiectrical	0	0	0	0	0	3	0	0	0	0
Fall of roof/back	2	0	1	0	0	0	0	0	2	0
Haulage	0	1	0	3	0	0	1	1	0	0
Machinery	0	1	0	1	0	0	0	2	0	3
Other	1	6	1	1	1	3	0	1	0	1
Total	3	8	2	5	1	6	1	4	2	4

to safely walk or work near the opening to the surge hopper at night. Further, the coal had a tendency to hang-up in the surge hopper when wet. When this occurred, the alternate kiln burner operator would free the material from the top of the hole with a hand-held steel bar. Following the accident, the bar was found in a pile of coal near the top of the hole, which indicated that it was not used by the victim prior to falling into the hopper. At the time of the accident, the coal in the storage shed was wet and mixed with frozen clumps of snow. The area around the surge hopper was slippery and sloped toward the hole. Employees were required to manually free hang-ups in the surge hopper and could not be seen or heard by others while doing so.

Deere employees take the reins

John Deere's Ted Wire has discovered that employee involvement is the key to a good safety program.

As the manager of product and occupational safety, how have you developed a safety culture at John Deere?

First of all, the company has had a concern for employee safety for a number of years. When I first took over my responsibilities in the early '70s, management felt that it was very difficult to manage safety in an effective manner. If the injury and illness incidence rates went up, we didn't know why. If they went down, we didn't know why.

I have an engineering background so that really frustrated me. I determined very quickly that if I was going to establish credibility with management and also be credible for my recommended changes, then I was going to have to have effective data to document why injuries and illnesses either went up or down.

So we started a pretty comprehensive injury and illness analysis program in the early '70s. First, we did it manually, with lost-time cases. Then we concluded that we also needed to expand our base of injuries to include OSHA-recordable and first aid cases. We developed our own in-house computerized OSHA-recordable and first aid injury/illness analysis program. This analysis enabled us to identify where injuries/illnesses were occurring by job classification, body part, nature of injury, accident type, hazardous condition, unsafe practice and the agency involved in the accident. We could also identify the shift, the time of day, the department and time on the current job.

Coupled with that information, we were able to show that 80 percent of our injuries in those days were incurred by employees who had been working two years or less time in their specific jobs. This clearly showed us that we were not properly introducing our new and transferred employees to their new work assignments.

As we investigated injuries, we discovered that some of our experienced employees had acquired unsafe practices over the years and were training new and transferred employees in those unsafe methods.

What did you do with your findings?

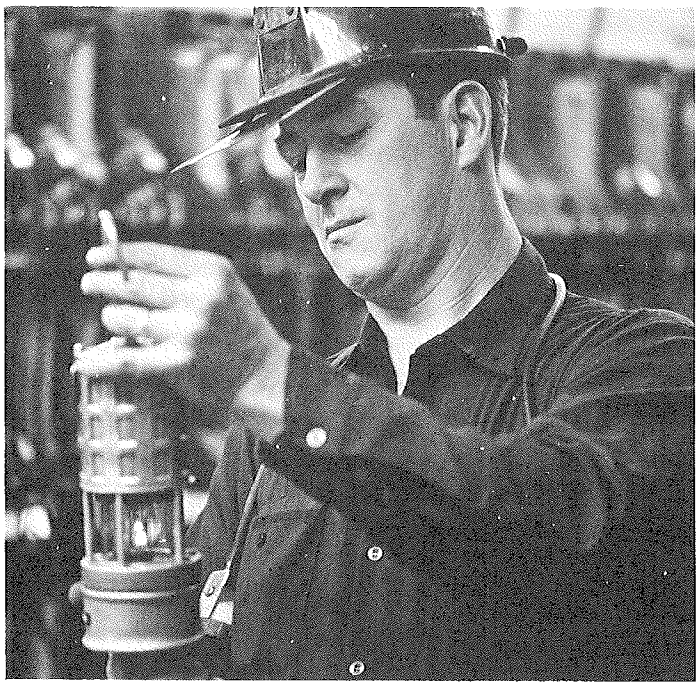
With that information, I was able to go to management with the recommendation that we needed to establish a better training program, both for supervisors and employees alike. We reviewed a number of programs and recommended the Job Safety Analysis Program to management. Basically, it's a program in which you identify the major steps in performing a job and the hazards associated with it. Then you outline specific cautions and steps that employees should follow to avoid injury to themselves or to fellow employees. Also, you determine what personal protective equipment must be worn and the additional

safeguards that must be used.

We also adopted our "Management by Objectives" program in which we required each unit to set injury and illness incidence rate goals and to outline specific injury/illness-prevention programs that would enable them to achieve these goals. The injury analysis program enabled us to recommend a number of specific injury-prevention programs.

What are some of the specific problems you addressed?

We had a mandatory safety glasses program at the time, but our injury analysis showed that we still had a large problem with employees getting foreign bodies in their eyes. So I recommended to management that we add cup-type side shields to the safety glasses to prevent the foreign bodies from getting into the employees' eyes from the sides, underneath and top of their glasses. This was very successful, as we achieved a significant reduction in eye injuries.



The analysis also showed that in our foundry cleaning room operations, specifically chipping and grinding castings, employees were incurring a very high number of foreign bodies in their eyes. Our foundries continued to identify the cause

and found that even though the employees were wearing cup-type goggles over their safety glasses and face shields, approximately 33 percent of our employees had foreign bodies washed from their hair and foreheads into their eyes while showering. So we recognized that we were going to have to keep the employees' hair and facial features clean of the casting and grinding wheel grit to solve this problem. We initiated an air-supplied hood program for our foundry chip and grinders, which proved to be very successful.

The analysis also showed that our employees' feet and toes were being injured at a fairly high rate from dropped or falling material. So I made a recommendation that we go to metatarsal foot protection to prevent those cases from occurring. The only other recourse we had would have been to eliminate the manual material handling that was causing the problem. Since that wasn't feasible, the next logical

step was to go to metatarsal foot protection. It didn't prevent the incident from occurring, but it prevented the incident from resulting in a serious or disabling injury to the employee when it did occur.

We also investigated the causes of overexertion cases. We identified the job classifications in which a majority of the overexertion cases were occurring and the specific tasks within those operations. In 1984, we initiated a formal ergonomics program that has been very successful for our company.

So our approach has been management by objectives, coupled with good problem identification that shows where the injuries/illnesses are occurring and what's causing them.

What about employee involvement?

In the early '80s we started to involve our employees very actively in our safety and health program. We found that to be quite successful. When you empower employees in your safety and health program, they buy into the program and achieve great results. So it's been a combination of things which has evolved over the years that has enabled us to reduce our total injury and illness incidence rate by 94 percent within our corporation since 1975.

What are some examples of the ways employees are involved?

We have safety and health committees in each of our units. For example, a general supervisor may have responsibility for six, seven, or eight departments. They will ask for wage employee volunteers and a supervisor from each of their departments to form safety committees for their areas. They investigate their own accidents, and plan and conduct their own safety awareness meetings with some assistance from the safety department. We give them the benchmarking data on their own lost time and OSHA-recordable and first aid cases. We

share information on what's causing the injury/illness cases and ask for their input to reduce them. We've found that involving employees and empowering them to make changes for a safer work environment has been a very, very successful approach. Our employees have a lot of ingenuity. When they recognize that this is their program, they make amazing progress.

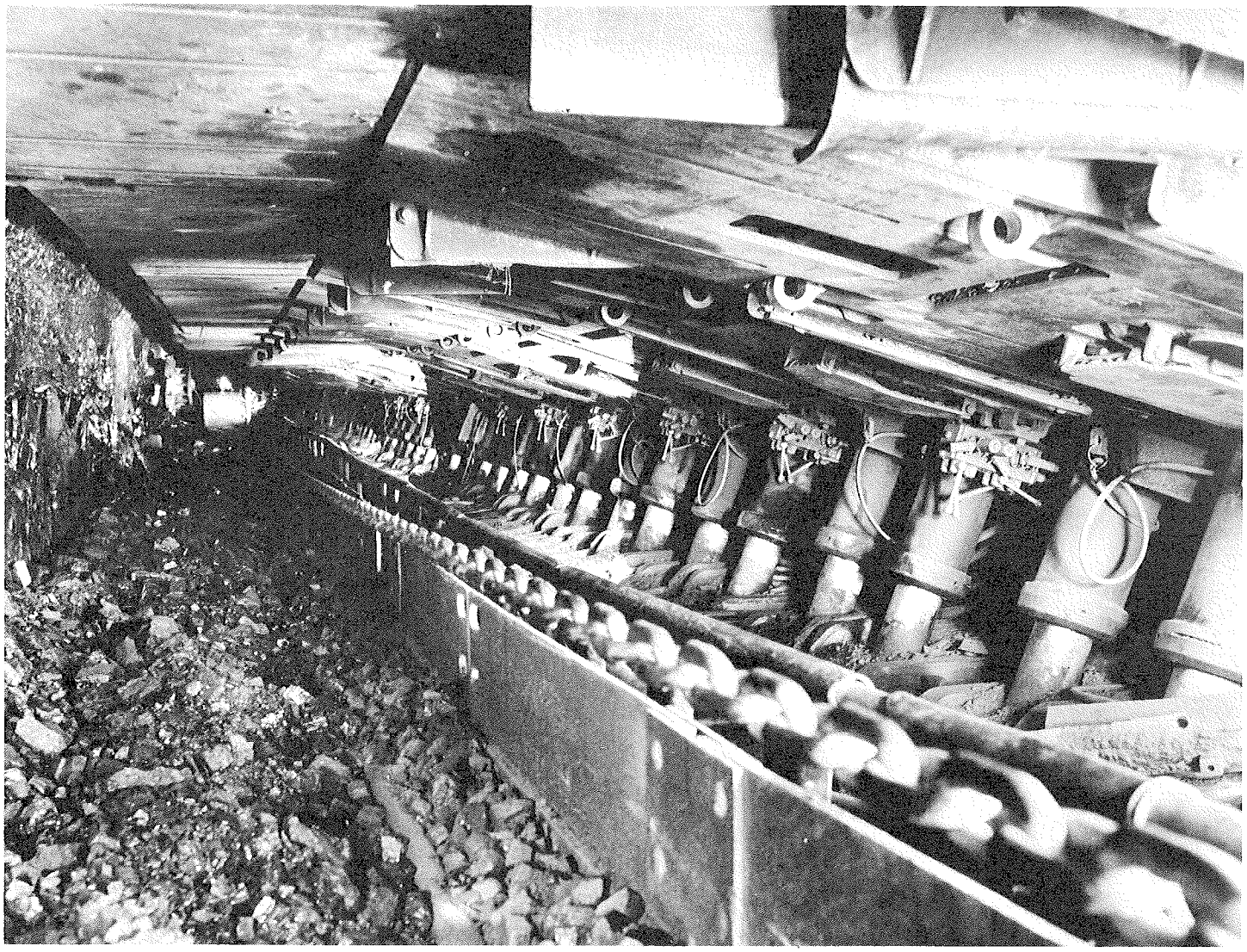
How large is your work force?

Our domestic manufacturing operations total about 22,000. Worldwide, we're close to 40,000.

You've talked about the importance of information...

Benchmarking. If you're familiar with the Malcolm Baldridge Award that the industry is using now, benchmarking is one of the keys. You have to identify through benchmarking means where you're at and identify what your problems are. If you provide that information to employees, they can go about making changes for a safer and healthier work environment.

Safety awareness training was another program that was initiated in the early 1970s to improve our safety performance. We knew that we had to increase the safety



awareness of both our supervisors and our employees. To accomplish this, we put our supervisors through the old key man safety development program, now called supervisory development. We requested that they hold monthly safety meetings with their employees to maintain an acceptable safety awareness level.

With employee involvement safety committees, members now put together their own safety meeting agendas and conduct their own safety awareness programs. This is the power of employee involvement. Employees are provided with the benchmarking information in their own areas. Our safety directors conduct surveys and summarize information for them so that they can see trends.

Employees might find that hands or fingers are a specific problem. They'll establish as one of their goals: to reduce finger injuries within their section by a certain percent for the next year. They may try different gloves, determine that additional pinch guarding is needed, or pinpoint sharp-edged hazards from handling certain parts. This is the power of information.

So employees set their own goals?

Yes. We ask them to set their own safety goals. Safety is a responsibility of the line or production organization. Our safety departments now function as a staff-service department by providing benchmarking information and the results of our injury/illness analysis so that employees can determine what their own problems are. Knowing their own operations better than anyone else, they can determine what corrections they need to make to reduce the injuries and illnesses that they are incurring.

You've talked about long-term problems. What problems do you wrestle with today?

Overexertion-type injuries, including cumulative trauma disorders, remain our No. 1 problem. Overexertion injuries include back strain, tendonitis, carpal tunnel [syndrome] and injured shoulder muscles. If your employees have to reach over their heads on a regular basis, you're going to have shoulder and arm problems. This is where our ergonomics program has been very effective.

We recognized that our cumulative trauma disorders were on the increase in the early' 80s, whereas our traumatic-type injuries—cuts, lacerations, punctures, contusions, bruises, foreign bodies, and so forth—had been reduced substantially. Yet our workers' compensation costs were not going down in relation. We found that most soft tissue-type injuries were due to overexertion. We've taken corrective measures to help us continue to reduce our injury/illness incidence rates up to the current time. Through the first three months of this year, we are achieving another 30 percent reduction in our lost-time, OSHA-recordable, and first aid cases.

There's a lot of talk in business circles about an emphasis on quality. How does that relate to a safety program?

We basically initiated the quality-management process in the safety area in the early '80s. Now the same process is being initiated to improve the quality of our product. It's easier for our company to do that because we already empowered employees in safety and now we're involved in the continuous quality improvement process in all areas of our operations.

What is the best way to get support from both top management and line management?

To show management that safety can be managed effectively and that it pays. Improvements within our safety program now come from our line production, employees and supervisors, with full support of management. We've achieved outstanding results over the years because of the credibility that the safety program has built with management. We have top management support, but the driving force no longer comes from the top.

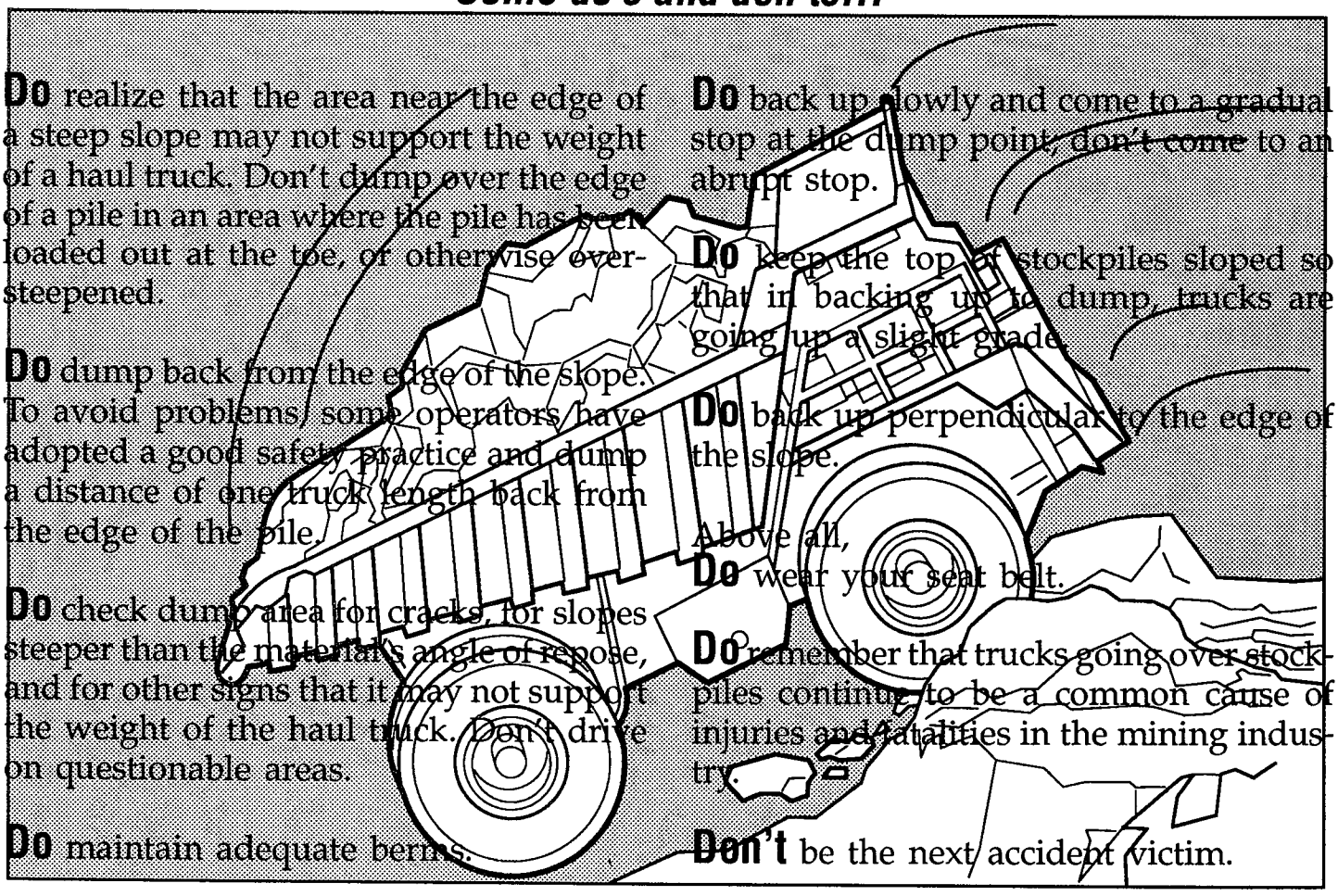
Reprinted from the June 1992 issue of the the National Safety Council's magazine ***Safety & Health.***

Truck-built stockpiles
Think danger!

Trucks going over stockpiles continue to be a common occurrence.

The main cause of this type of accident is that the area near the edge of a slope, especially near a steepened slope, is not strong enough to support the weight of the haul truck.

Some do's and don'ts...



Do realize that the area near the edge of a steep slope may not support the weight of a haul truck. Don't dump over the edge of a pile in an area where the pile has been loaded out at the toe, or otherwise over-steepened.

Do dump back from the edge of the slope. To avoid problems, some operators have adopted a good safety practice and dump a distance of one truck length back from the edge of the pile.

Do check dump area for cracks, for slopes steeper than the material's angle of repose, and for other signs that it may not support the weight of the haul truck. Don't drive on questionable areas.

Do maintain adequate berms.

Do back up slowly and come to a gradual stop at the dump point; don't come to an abrupt stop.

Do keep the top of stockpiles sloped so that in backing up to dump, trucks are going up a slight grade.

Do back up perpendicular to the edge of the slope.

Above all,

Do wear your seat belt.

Do remember that trucks going over stockpiles continue to be a common cause of injuries and fatalities in the mining industry.

Don't be the next accident victim.

Bruceton Safety Technology Center, Mine Safety and Health Administration

Who knows what *HAZARDS* lurk under the kitchen sink?

Everyday household cleaners can trash the environment.

By Mick Hans

Garbage just isn't what it used to be. The growing trend is that glass, cans, and newspapers have to be separated for recycling. Coffee grounds and orange peels get banished to the backyard compost pile. Plastics come in more varieties than you can count on your fingers, which makes it easy to separate them by those little numbers on the bottom of containers.

Don't look now. Here comes household hazardous waste.

The bad news is that your home is probably loaded with it. The good news is that instead of making your life more complicated, you can reduce household hazardous waste and properly dispose of it very simply.

Every home contributes

What are we talking about here? Chemicals, mostly. Hazardous materials are commonly components of household cleansers, paint thinners, automotive fluids, and hobby supplies. When used properly, these products are rarely a problem unless you swallow them or use them in an area with poor ventilation. But when they are discarded improperly they become hazardous waste. If they go down the drain or into the trash can, the hazards can be very damaging.

En route from the alley to the landfill, hazardous materials can cause injuries to sanitation workers and damage to equipment. Chemicals that should never be combined can get mixed haphazardly, causing fires and explosions on garbage trucks and at waste-handling facilities.

At less than state-of-the-art landfills, toxins from household products can mix with rainwater, forming a poisonous leachate which can seep through soil and contaminate groundwater. It's the same story when you pour hazardous fluids down the drain. Many municipal sewage-treatment plants and septic systems simply aren't equipped to handle the miracles of modern science that get dumped into them.

Household hazardous wastes typically include:

•*Cleaners* (drain, oven and upholstery cleaners; spot removers; furniture and silver polishes)

•*Paints and preservatives* (solvent-based paints, solvents and thinners; wood preservatives, strippers)

•*Pesticides* (mothballs, bug sprays, garden insecticides, rodent poisons)

•*Automotive products* (motor oil, antifreeze, car batteries, engine degreasers)

•*Medicines and cosmetics* (nail polish remover, hair sprays and dyes, old prescription medicines)

•*Home hobby supplies* (darkroom chemicals, art supplies, batteries, ammunition)

Not every brand of each of these products is dangerous, of course. But when words like *poison, warning,* or *caution* appear on the label, there's a good chance there's something classified as toxic inside.

Still too small to regulate

Household hazardous waste isn't aggressively regulated because it's nearly impossible to do so. Statistically, it accounts for less than 1 percent of the total solid waste stream in the United States. But that fraction adds up. "Household hazardous waste is estimated at 20 pounds per person, per year," says Michael Frishman, managing editor of *Household Hazardous Waste Management News,* a publication of the Waste Watch Center in Andover, Massachusetts. "If you take 250 million Americans and multiply by 20, that's a lot of potentially harmful materials going into the ground, water, and air."

"It's really a legal definition, not a chemical or physical one," says Andrew Tschampa, solid waste section chief at the U.S. Environmental Protection Agency's regional office in Chicago, "What you and I throw away in our garbage, an industrial

facility cannot. Gasoline's a great example. I have a 5-gallon container in my garage for the lawn mower, but if my home were an industrial setting, I'd have to store that gasoline (according to federal, state or municipal regulations)."

Collection days on the rise

Those cans and bottles under the sink, in the basement, and in the garage aren't getting any safer. That wood stripper and lavender paint left over from redecorating your daughter's bedroom have to go somewhere, right? Increasingly, these hazardous materials are winding up in the responsible hands of community collection programs.

Household hazardous waste collection days, frequently co-sponsored by community groups in conjunction with state or local governments, are held periodically at school parking lots or local recycling centers. There, a wide range of hazardous materials is collected and then turned over to a licensed hazardous materials hauler, who delivers it to a specialized incinerator or hazardous materials landfill.

If collected in sufficient quantities, a few materials, such as used motor oil and automotive and watch batteries, can be marketed to recyclers. Paint can be detoured from the landfill by redistributing it to schools, hospitals, or theater groups, or blending it into an "institutional beige" for use as graffiti cover.

The League of Women Voters of Massachusetts, which has sponsored an annual program in Lexington since 1982, has been a pioneer in this collection-day movement. "We've sent videotapes and program starter kits to groups and government agencies all over the country," says Myrna Hewitt, the league's waste-recycling specialist.

Business takes notice

Corporate America is also beginning to participate more in household hazardous waste programs. Obviously, it's a good public relations move. But it's also a way to assume some responsibility for what happens to a company's products after the sale is completed.

Monsanto, the St. Louis-based herbicide and chemical products manufacturer, recently sponsored a collection day at its Nitro, West Virginia, plant. "It's our responsibility to safely dispose of our chemicals in an environmentally sound manner. And it's your responsibility to safely dispose of

yours," says company spokeswoman Diane Bartolanzo. "We have the knowledge and expertise to help a community do that responsibly."

Collecting used motor oil from do-it-yourselfers is also on the rise. "Ten different oil companies have officially announced collection programs," says Chuck Kranbuhl,

The natural cleansers debate

Many people try to reduce household hazardous waste by re-examining their use of cleaning products. But, as with most environmental issues, there is little agreement on the right path to take.

Green consciousness in the past few years has led to an explosive growth of commercial alternatives to the major brand-name cleansers. Health food stores have been flooded with the new choices: Earth Wise, Life Tree, Ecover, and Allens Naturally, to name just a few. Many of them use non-toxic citrus oils, are packaged in recycled materials, and boast feel-good appeals about animal-free safety testing.

But is there a real difference? Do these products do the job as well?

"A lot of the [mass market] chemical cleansers are overkill," says *Nontoxic, Natural & Earthwise* author Deborah Lynn Dadd. "They're designed to be super heavy-duty cleansers, and we don't always need that.

"I commend companies for coming out with more natural cleansers," she says. "But at the same time, I personally don't buy them. The very best cleansers are the ones that are simplest and right on hand in your kitchen. For the last 11 years, I've used baking soda and vinegar, Murphy's Oil Soap, 20 Mule Team Borax for disinfecting, and Bon Ami polishing cleanser. They're all in the supermarket."

The major chemical companies, not surprisingly, see the issue differently.

At Cincinnati-based Procter & Gamble, the home of Mr. Clean, Spic & Span, Top Job, and Comet, every product undergoes thorough testing for compatibility with wastewater treatment systems and the environment in general, says spokeswoman Kris Burbank. In addition, she warns, "In some cases, mixing chemicals at home, such as bleach and ammonia, can release toxic vapors."

Dow Brands in Indianapolis also stands confidently by its products, which include Fantastik, Glass Plus, Grease Relief, and Spray 'n' Wash. "Currently, we do not label our products as 'environmentally friendly' because there are no uniform national guidelines established as standardized labeling terms," says spokesperson Jamie Fryrear. Nonetheless, customers are clearly beginning to ask more questions. Dow's consumer affairs department fielded over 1,000 inquiries on environmental issues via the company's toll-free phone number last year.

Myrna Hewitt, of the League of Women Voters of Massachusetts, takes a pragmatic approach. "You can't get rid of everything and stay in the modern world. But I've learned that a lot of the things I used to think I had to have in my home—like the heavy-duty cleansers—I really don't need in many cases."

used oil coordinator for the American Petroleum Institute in Washington, D.C. "Two of these—Mobil and Exxon—are already doing it on a national basis." By late 1991, 4,300 service stations in 32 states were collecting used motor oil, up from just 800 in 1981.

Chris Klasing, Amoco's manager of environmental affairs and safety, puts the used oil volume in perspective. Klasing says if U.S. utilities burned a year's supply of used oil they could produce enough electricity for 900,000 homes for a year.

Think before you toss

As with the larger recycling issue, household hazardous waste watchers advocate source reduction (buying and using less) and more responsible decision making on the part of the consumer. Most people aren't going to start shopping for household cleaners at health food stores or give up bug spray, but there are a number of simple things the average person can do to ease the problem.

"Try to do things with less extravagance," says Hewitt. "You're not going to be able to do away with paint thinner or turpentine, but when you finish cleaning your paint brush, don't just pour the thinner down the sink." Instead, she suggests, find a glass bottle and let the thinner sit until it settles out. Then pour the now-clear liquid into another container and reuse the cleaner. The leftover material can be stored until you have an opportunity to get rid of it properly.

"Or with oven cleaners, don't use a little bit and then throw it away to be carted off to the landfill. Use it up or give it away." The same concept applies to the pesticides and other garden supplies homeowners load up on every spring. Talk to the folks next door about participating in a group purchase. It's neighborly, socially responsible, and economical.

For many routine chores, it's easy to find less hazardous alternatives (see sidebar). "Most household chemicals can be replaced by five common, inexpensive substances to sanitize, wash laundry, bleach, disinfect, and repel insects," says Hewitt, who lists plain soap, borax, baking soda, vinegar, and ammonia as alternatives.

Labeling programs on horizon

Smart consumer decision making should get even easier in the near future. Denis Hayes, who organized the 1990 International Earth Day effort, is developing a Green Seal variation on the Good Housekeeping concept for environmentally responsible products.

"The forerunner was the Blue Angel seal in Germany," says Deborah Lynn Dadd, author of *Nontoxic, Natural & Earthwise.* "There are probably 25 different seals like these around the world. Each one has a slightly different meaning."

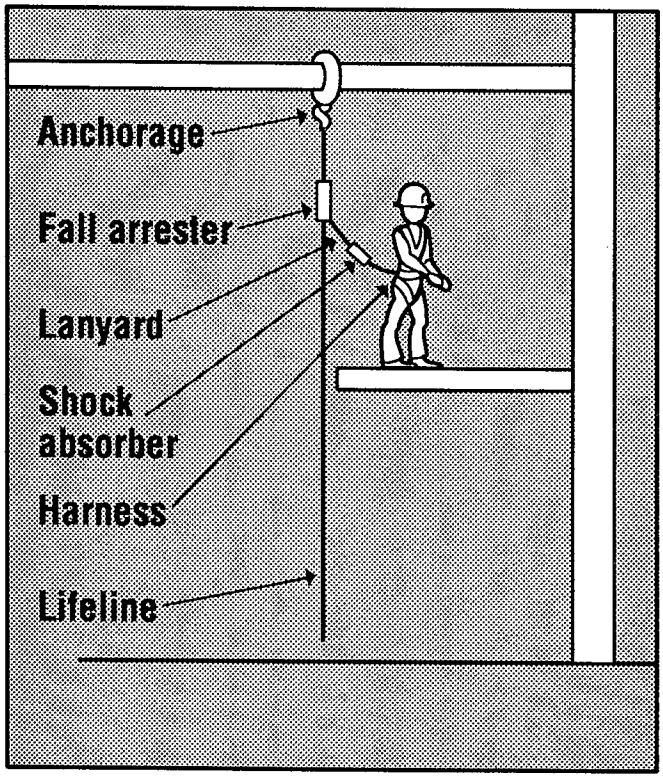
Household Hazardous Waste Management News' Frishman is optimistic about the trend suggested by all of this activity. "As the public becomes increasingly aware of the potential problems of consumer products, they are buying more intelligently and creating fewer hazardous wastes. At the same time, more people recognize that some wastes will always be hazardous, and as a result they are being more careful."

Reprinted from the National Safety Council's May 1992 issue of ***Safety & Health*** *magazine.*

The science of fall protection

Falls from elevation are the third leading cause of accidental death in the Ontario, Canada, mining industry. Yet how up-to-date are we on recent advances in the science of fall protection?

Modern fall protection goes far beyond using a belt and lanyard when the regulations tell us to. It involves the careful design of systems that take into account the geometry and ergonomics of each individual situation, as well as an understanding of the medical effects of an arrested fall and a consideration of post-fall rescue. Much thought and research is required to design adequate fall protection systems.



Fall protection can be broken down into two categories: preventing the fall by means of a travel restriction system; and minimizing the effects of a fall by means of a fall arrest system. Obviously, prevention is preferable and should be considered before fall arrest.

Travel restriction systems are of two types. Passive systems (such as guard rails, coverings on open holes and other types of barriers) require no effort on the part of workers. Active systems require worker action, such as tying off so that you are prevented from reaching a location where there is a risk of falling. Passive systems are obviously preferable.

Fall arrest systems can also be passive or active. Passive systems include personnel nets frequently used during bridge construction (and at the circus). Active systems include that old standby, the safety belt and lanyard. But as the illustration shows, there can be several additional components to a complete fall arrest system, including vertical or horizontal lifelines, fall arrestors, shock absorbers and harnesses instead of belts. (Belts deliver the entire shock load of an arrested fall to the unprotected abdomen and can cause severe internal injuries. For this and other reasons, they have been banned or restricted in several European countries.)

This *Safety Reminder* barely scratches the surface of a topic that is far more complicated than many of us might think. If you would like additional information on fall protection systems or to borrow our new video *Personal Fall Protection* for your next safety meeting, please contact our Resource Center.

Reprinted from the Canadian Mines Accident Prevention Association's November 1992 ***Safety Reminder.***

BEWARE OF SLIPS and FALLS

Empowerment of the safety committee

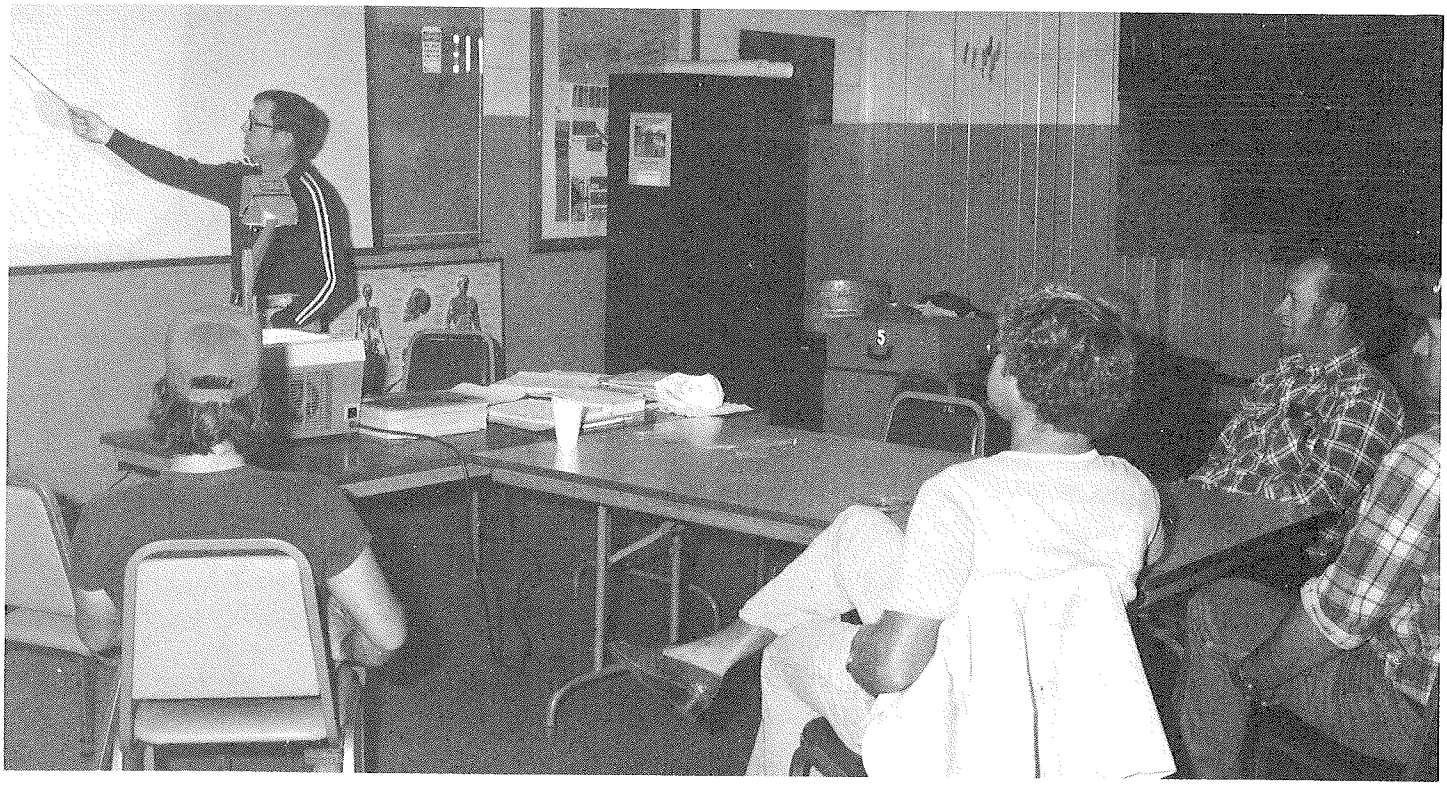
Safety committees, designed by experts and honed by committee members, wield clout in the company.

By Patricia Senecal

Top management often hopes that if they offer members of a safety committee/team a place and time to meet, they will be off and running to enhance safety statistics in their industry. But the decision by top management to establish a committee is not always complemented with a practical understanding on [management's] part of what is really needed to support the effort.

While employees appreciate the recognition of being chosen to sit on a committee/team, their enthusiasm and willingness to take on an extra task does not prepare them for accomplishing what they want without specific management steps, committee guidelines, and personal skills development.

"Employee involvement" continues to be a popular catch phrase. The prevalent belief is that without contribution from employees, there is no buy-in to plans and demands of the marketplace. Committees or teams have become a popular fixture in most companies. Much is expected of employee committees: Write a mission! Plan a strategy! Make goals! Assess results! Report back to management and the rest of the employees! Oh yes, and by the way, do your regular job, too. How can employee committees or teams do it all?



Since the 1960s, companies have used employee involvement to stimulate growth and attain an excellent safety record. Proper planning and help in the creation and early life of the committees/teams make a significant difference in their effectiveness and consequently in improved safety results and cost savings. If you want to leverage the enthusiasm of the safety committee into bottom-line results, develop the following elements in your company.

I. Management steps:
- Forming the committee.
- Meeting consistently with the committee.
- Establishing a budget for the committee.
- Sponsoring and communicating committee actions.

II. Committee guidelines:
- Determining the committee's purpose.
- Establishing respect/roles.
- Committing to meetings
- Communicating to coworkers.

III. Personal skills development:
- Teaching interpersonal skills including, but not limited to, knowledge of individual styles and their impact on the group; knowledge of each other's team strengths and weaknesses; listening skills; presentation skills for best communications with coworkers; formation of company rules; and methods by which the company communicates within the corporate structure.
- Enhancing planning skills by: discovering personal reasons to be a committee member; writing an agenda for action; and making a commitment to accomplish a change.
- Learning financial skills that: use tools by which their company makes financial decisions; and measure progress.

Let's go to the top of the outline and fill in some specifics:

How management selects committee members is critical. They influence the perception by the total population, as to whether this is a genuine management effort to represent employees' concerns or just a new mouthpiece of management's—a wolf clothed in sheep's clothing, if you will.

When deciding who might be members, management could guess from the most vocal of employees who might most want to be on a committee/team. But preselecting representatives from various departments closes out important voices—quieter voices who influence coworkers, too.

Therefore, first select a few representatives, then make a call for others who wish to join. Be sure to leave the meeting open and public for three months so others can decide to join. In this way, a group will form that employees believe is representative. If the committee is not perceived as fair, other employees cannot accept information or direction from the committee.

Here are two examples from our case files corroborating that assertion:

In an international plastics manufacturing plant, safety committee members were initially selected by first-line supervisors. The members knew they would get out of work and be paid for attending meetings, so they were enthusiastic. Because the members were "picked" by first-line supervisors, loyalty to a particular supervisor's position and protection of his idea were pronounced.

Yet, very little was accomplished in the committee besides griping about hazards, training, or other frustrations of the job. The leader of the committee was the official

safety manager for the plant. Whenever deadlocks or disruptive commentary occurred, final decisions were made by him. Employees were only nominally empowered. The committee made no decisions that actually changed a procedure or approach in the plant. Therefore, the safety manager did not get supported in his efforts in the plant when a decision was made out of the committee, because those decisions did not reflect a consensus.

In the second year, the committee was reformed, facilitated by the author, an outside consultant. The old committee members were invited to join again, if they wished. The first meeting was spent in a mission statement workshop exploring individual, then shared, goals and values of safety. Before the second meeting, invitations went out, inviting anyone who wished to join the safety committee to the next meeting. The next meeting doubled in size. This was a first in the plant.

In addition, within a few months, the work order forms were altered by the committee and put in place so that when a job repair was also a safety hazard, it was easy for the maintenance people to spot the form and raise the priority. The committee felt it had the power to get things done and showed that to other employees, too.

Meet consistently

Next, management must show the committee members that they are important enough to influence the company.

Management must make a commitment to convene and attend at least six months of meetings—perhaps more if the company is unfamiliar with employee involvement. In every meeting, questions are asked by employees that only management can answer. If the committee must wait for an answer, the drive for action is slowed to a crawl. To create an action plan, the committee needs knowledge that is lacking at first. They only have interest and enthusiasm. Management assures, by attending meetings, that interest and ideas get turned into action as soon as possible.

Establish a budget

Third, authority comes with financial power. The committee immediately feels management's trust when it has a budget. Initially, it might be to decide something that management has previously determined, i.e. performance awards, or a New Year's breakfast budget. However, a budget and administrative details need explanation and training. Management must provide both.

Sponsor and communicate

The validity of the committee is a function of how enthusiastically management

supports committee members' efforts and publicly gives them credit for what they do on the committee. When employees are supported in making changes that a majority of employees see as needed, management's sponsorship is obvious. Employees freely give "credit" back to management and begin to close the we/they gap, present in so many companies, where the committee has sponsorship and a budget.

Committee guidelines

Committee guidelines influence the pace at which the committee can take action. Without them, it is difficult to arrive at consensus, make plans, or accept feedback. In the first two meetings, make the following decisions: purpose of the group; roles various people will play; norms, such as methods for listening respectfully to each other and commitment of time/money to attending meetings; and continual feedback to employees.

Personal skills

Concern, willingness, reasonable intelligence, and loyalty are essential personal traits that will help a committee or team succeed, but even those are not enough. There are certain interpersonal, financial, and planning skills that must be acquired by individuals for whole group success.

Interpersonal skills

During the first three meetings of the committee, as management builds trust in the team process, members should learn about their own "styles" of interaction, and, in the process, evaluate how they influence and affect the other committee members. In so doing, they come to understand theirs and other's strengths and weaknesses.

When a committee member discusses the value of the committee with another member, he or she reveals styles and biases. The forces for collaboration and conflict reveal themselves in the group.

There are many "instruments" to evaluate personalities, but discussing a real problem reveals more through analysis of the interactions in the meeting than any instrument used in a vacuum. In addition, workers wonder what they have gotten into if the committee immediately turns "psychological." In this case, we have found, a consultant is valuable in the first meetings during the feedback portion of the meeting. He or she can steer individuals to make observations about their behavior without it becoming accusatory.

To help members become comfortable with self-evaluation and the group process, first plan a 20-30 minute session offering specific "content" on group process and communication skills; use materials from previous and current meetings to analyze.

Enhance planning skills

Initially, management structures the committee's agenda. Committee members should be provided a method for writing an agenda as early as possible. Otherwise, much time is wasted, frustration occurs in committee interactions, and often, even after long hours, no action plan emerges. People should be taught simple steps for creating common agreement on when to continue talking and when to create a subcommittee for further research and later discussion. Members then feel each meeting produces results.

Financial skills

Management should share methods by which financial decisions get made for capi-

tal expenditures. This allows the committee to share intelligently with coworkers and to make better committee recommendations.

Hidden information breeds suspicions that management is just using "financial restrictions" as a way of limiting action proposed by the committee. Financial understanding of systems and numbers will also give confidence to members when communicating reasons for slowdowns to their coworkers.

Wrap-up

Committees/teams need management support during their formative, first several months. Management must offer verbal and financial sponsorship. Committee members must understand their purpose and be ready to commit to meetings as well as specific skills training needed to achieve success.

With support and skills, a committee will feel truly empowered to make the changes it thinks are in order, and the committee will become a live force for improving safety in any company.

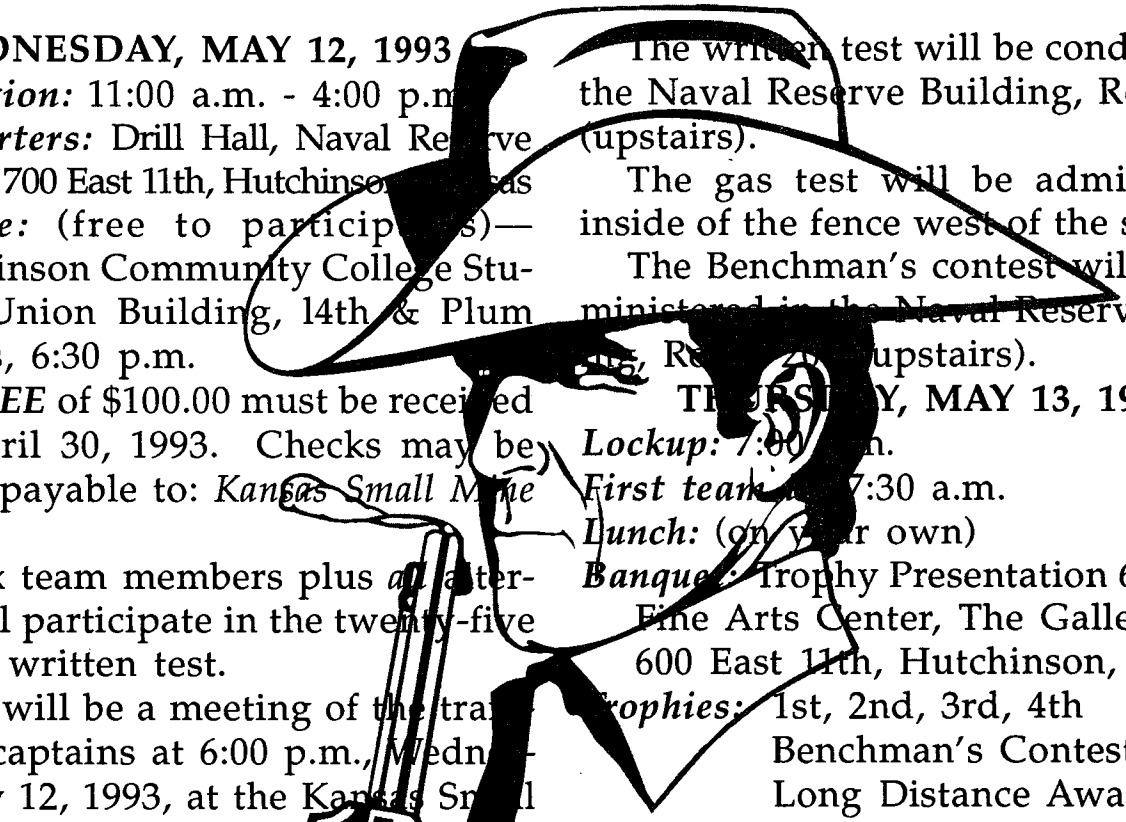
Reprinted from the January 1992 issue of ***Occupational Hazards***

An appeal to our readers...

As you may have noticed, our [illegible] photographs are [illegible] are in desperat[illegible] and white or colo[illegible] photographs prefe[illegible] 8" x 10"—although 5" x 7" will also w[illegible] you can spar[illegible] to print a cre[illegible] cost of maki[illegible] happy to ma[illegible] your nega[illegible] you upo[illegible] of any m[illegible] face—close[illegible] shots. All we[illegible] take a separate piece of paper and write a description of what the photo depicts, [illegible] of the photo. *If you write a[illegible] the photo with a ball point p[illegible] face of the photo to distort proportionately. If[illegible] use a felt-tipped pen directly[illegible] to, over a period [illegible] photo eventu-[illegible] can help us in [illegible] ever be in your [illegible] graphic mate-[illegible] mes Safety [illegible] 15 Wilson Blvd., Room 535A, Ar[illegible], Virginia

The Kansas Shoot-out

Kansas Small Mine Safety Regional Mine Rescue Contest
May 12-13, 1993



WEDNESDAY, MAY 12, 1993

Registration: 11:00 a.m. - 4:00 p.m.

Headquarters: Drill Hall, Naval Reserve Center, 700 East 11th, Hutchinson, Kansas

Barbecue: (free to participants)—Hutchinson Community College Student Union Building, 14th & Plum Streets, 6:30 p.m.

ENTRY FEE of $100.00 must be received by April 30, 1993. Checks may be made payable to: *Kansas Small Mine Safety.*

All six team members plus all alternates will participate in the twenty-five question written test.

There will be a meeting of the trainers and captains at 6:00 p.m., Wednesday, May 12, 1993, at the Kansas Small Mine Safety Office, 431 East 11th. Team positions will be drawn at this meeting.

Isolation is in the Naval Reserve Building Drill Hall. Equipment may be placed there from 1:00 to 6:00 p.m. on Wednesday, May 12. Teams need to be in lockup by 7:00 a.m., Thursday, May 13, 1993. The first team will be going on the field at 7:30 a.m.

The written test, gas test, and Benchman's contest will commence on Wednesday, May 12, at 11:00 a.m. All tests must be completed by 6:00 p.m.

The written test will be conducted in the Naval Reserve Building, Room 217 (upstairs).

The gas test will be administered inside of the fence west of the stadium.

The Benchman's contest will be Administered in the Naval Reserve Building, Room 217 (upstairs).

THURSDAY, MAY 13, 1993

Lockup: 7:00 a.m.

First team out: 7:30 a.m.

Lunch: (on your own)

Banquet: Trophy Presentation 6:30 p.m.
Fine Arts Center, The Gallery,
600 East 11th, Hutchinson, Kansas

Trophies: 1st, 2nd, 3rd, 4th
Benchman's Contest
Long Distance Award
Best Kansas Team

As you can see, registration, written test, gas test, Benchman's contest, barbecue, and captains/trainers drawing for positions will be on May 12. Everything else will be on May 13.

Bob Koenig, MSHA Office, Denver, is in charge of the problem as well as the test. Kansas and Colorado Inspectors will be judges.

Please remember this is a state college facility. There will be ***no alcohol*** *on the premises. After the banquet, there are several bars in town you may frequent.*

Holmes Safety Association Monthly safety topic

Fatal roof fall accident

GENERAL INFORMATION: A continuous miner operator was fatally injured when a section of the mine roof fell without warning.

The mine is opened by four drifts into the coal seam which averages 38 inches in height. Employment is provided for ten people. There are nine employees working underground on one production shift daily, five days a week.

There is one continuous mining machine section that produces a daily average of 700 tons of coal.

Coal is transported by belt conveyor and track haulage is used for the conveyance of persons and supplies.

DESCRIPTION OF ACCIDENT: The day shift crew entered the mine at 7:00 a.m. and arrived on the 001 Section at about 7:15 a.m. Work assignments were given to the crew and mining activities began and progressed normally.

At about 12:15 p.m., the victim trammed the mining machine into the No. 1 Entry and started the mining cycle on the left side of the face. He encountered a roll and moved the machine to the right side. A full sump, approximately ten shuttlecars of coal, was mined. He repositioned the machine to the left side with the ripperhead angled slightly to the left.

Adverse roof conditions such as mud seams, vertical cracks and abrupt changes in the mining height were present from the last open crosscut inby in the No. 1 Entry. Similar adverse roof conditions had been encountered in an entry to the left of this entry which had been stopped approximately 100 feet outby this point.

The same roof bolt pattern (36 to 40 inches versus the Plan minimum of 48 inches) was being used in all entries of the section. Thirty-six inch mechanically anchored roof bolts were being used as the primary roof support throughout the section and 60-inch mechanically anchored roof bolts were installed in test holes. The test holes were drilled in every other row of bolts and were always the second bolt from the left rib.

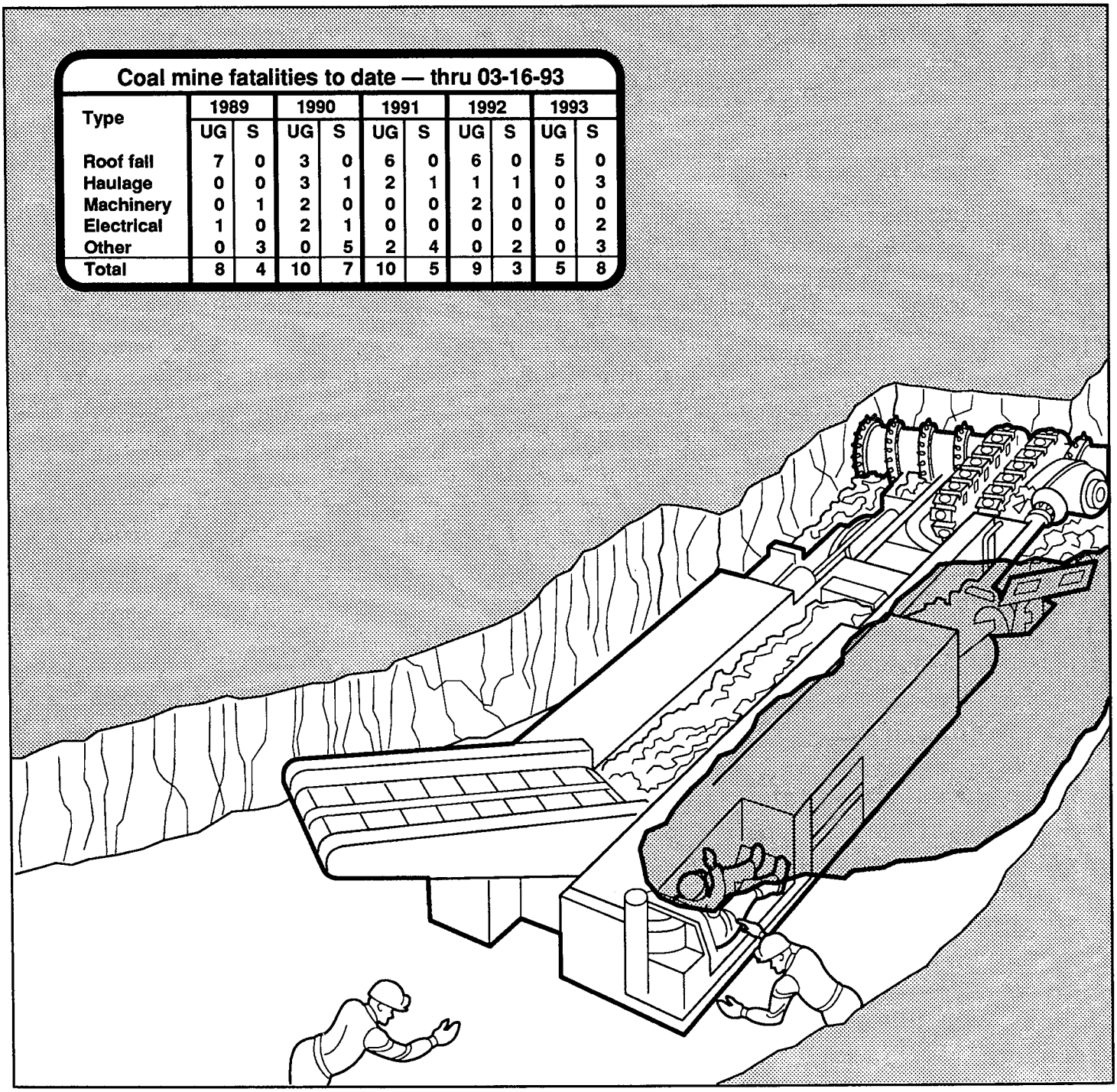
The right side of the face had been cut all the way up and the machine had been repositioned to the left side.

At 12:30 p.m., after loading one and one-half shuttlecar loads of coal from the left side, a roof fall, 15 feet long by 8 feet wide by 7 feet thick, occurred without warning causing fatal injuries to continuous miner operator. The fall started in the unsupported face and extended outby through the third row of permanent roof support.

The victim was taken by battery-powered scoop to the surface at 2:15 p.m. He was transported by ambulance to the hospital where he was pronounced dead.

Coal mine fatalities to date — thru 03-16-93

Type	1989		1990		1991		1992		1993	
	UG	S	UG	S	UG	S	UG	S	UG	S
Roof fall	7	0	3	0	6	0	6	0	5	0
Haulage	0	0	3	1	2	1	1	1	0	3
Machinery	0	1	2	0	0	0	2	0	0	0
Electrical	1	0	2	1	0	0	0	0	0	2
Other	0	3	0	5	2	4	0	2	0	3
Total	8	4	10	7	10	5	9	3	5	8



CONCLUSION: The accident occurred because the mine operator failed to implement additional measures to adequately support the mine roof when adverse conditions were encountered. The continuous mining machine was operated from an onboard position and was not equipped with a cab or canopy. The mining height in all entries averaged 40 inches.

Deep cuts present some new challenges to avoiding unsupported roof

By Arnold C. Love[1] and Robert H. Peters[2]

The use of radio remote control continuous miners is growing rapidly. MSHA records indicate that 23% of all continuous mining sections are currently operating with extended cut variances. The use of remote control miners has significantly improved productivity, and, under normal circumstances, helps reduce the miner operator's exposure to unsupported roof. However, when changes occur in the operation of complex and powerful equipment, such as continuous miners, you need to make sure that the change has not introduced any new threats to employee safety. A recent U.S. Bureau of Mines study suggests that deep cuts may present some new challenges to avoiding unsupported roof. The study suggests that taking deep cuts *can* increase the chances that various face crew workers will be exposed to unsupported roof, especially when certain nonroutine situations arise.

It is important to know what motivates miners to go under unsupported roof because approximately half of the miners killed by roof falls are inby the last row of bolts at the time of the accident. In order to find out more about why miners go under unsupported roof, Bureau of Mines' researchers interviewed 297 face crew workers employed at six underground coal mines.[3] Each miner was asked 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?* Miners cited several tasks related to extended cut mining which might increase the likelihood of people going under unsupported roof. Whenever a task was identified, the miner was also asked, *What could be done to make it less likely that people would go under unsupported roof while performing that task?* The employees who thought that extended cuts present new challenges to avoiding roof falls were primarily miner operators and helpers, roof bolters and haulage workers. The concerns and suggestions of each of these categories of employees are listed below.

Continuous miner operators and helpers

Restoring power to a remotely operated continuous miner was frequently mentioned as an activity likely to tempt miner operators and helpers to go under unsupported roof. Fourteen of the 53 miner operators and helpers who were interviewed mentioned this problem, as did nine other face crew workers. Power to the miner can be disrupted for several different reasons. If the continuous miner has been advanced under unsupported roof miners are supposed to install temporary supports before working on it. Erecting temporary supports is time consuming and places workers in very close proximity to unsupported roof. Several miner operators said that it is sometimes very tempting for miners to go under unsupported roof to restore power to the miner because it can often be done in a small fraction of the

time it takes to set temporary roof supports. Although it may be unlikely that someone will be caught under a roof fall on any single occasion, it is probably only a matter of time until a miner is killed while dashing out under unsupported roof to reset the breaker on a continuous miner.

The most commonly suggested remedy for this problem was to either:
(1) place the circuit breaker at the power center instead of on the miner, or
(2) place a remote reset on the radio remote controller.

Bureau researchers have even witnessed miners attempting to restore power by throwing stones or bolts at the reset button when the miner was still within range. Obviously, miners should have some better options for dealing with this dilemma.

Continuous miners break down under unsupported roof for a variety of reasons. Several miner operators and mechanics identified this as a situation which may sometimes tempt people to go under unsupported roof. The most commonly mentioned suggestions for preventing people from going under unsupported roof to repair the continuous miner were:
(1) having a good preventive maintenance program, and
(2) keeping an adequate supply of temporary supports near the face.

Roof bolter operators

Roof bolter operators at some of the mines in our study said they thought that the increase in length of cuts was causing an increase in the frequency of high roof falls. Some of these roof falls were exceeding the height of the automated temporary roof support (ATRS) system. Although the bolter operators were still under the ATRS they felt unprotected since the top was not being supported. When asked what could be done to eliminate this situation, they suggested:
(1) increasing the maximum height which the ATRS can reach, and
(2) shortening the length of cuts in areas prone to high roof falls.

Haulage operators

Interviews with the operators of shuttle cars, ram cars, and mobile bridge conveyors suggest that deeper cuts may put them at greater risk of exposure to unsupported roof. Twenty-two of the 57 haulage operators interviewed cited this as a potential problem. In continuous miners without remote control, it is the miner operator who is exposed to unsupported roof if he/she cuts too deep. With remote operation of the continuous miner, it is now the haulage operator who faces that risk. The cabs of haulage equipment sometimes limit the operator's ability to see the last row of bolts. Therefore, the haulage operator must rely on the continuous miner operator to keep the haulage cab away from unsupported roof. When asked what could be done about this problem, haulage operators suggested:
(1) marking the last row of bolts by painting a line on the rib, and
(2) increasing the length of ribbons used to mark the last row of bolts so miner operators have a better way to gauge the edge of supported roof.

This article is the third of a series of four articles that are 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 groundfall accidents contact Robert H. Peters at (412) 892-6895.

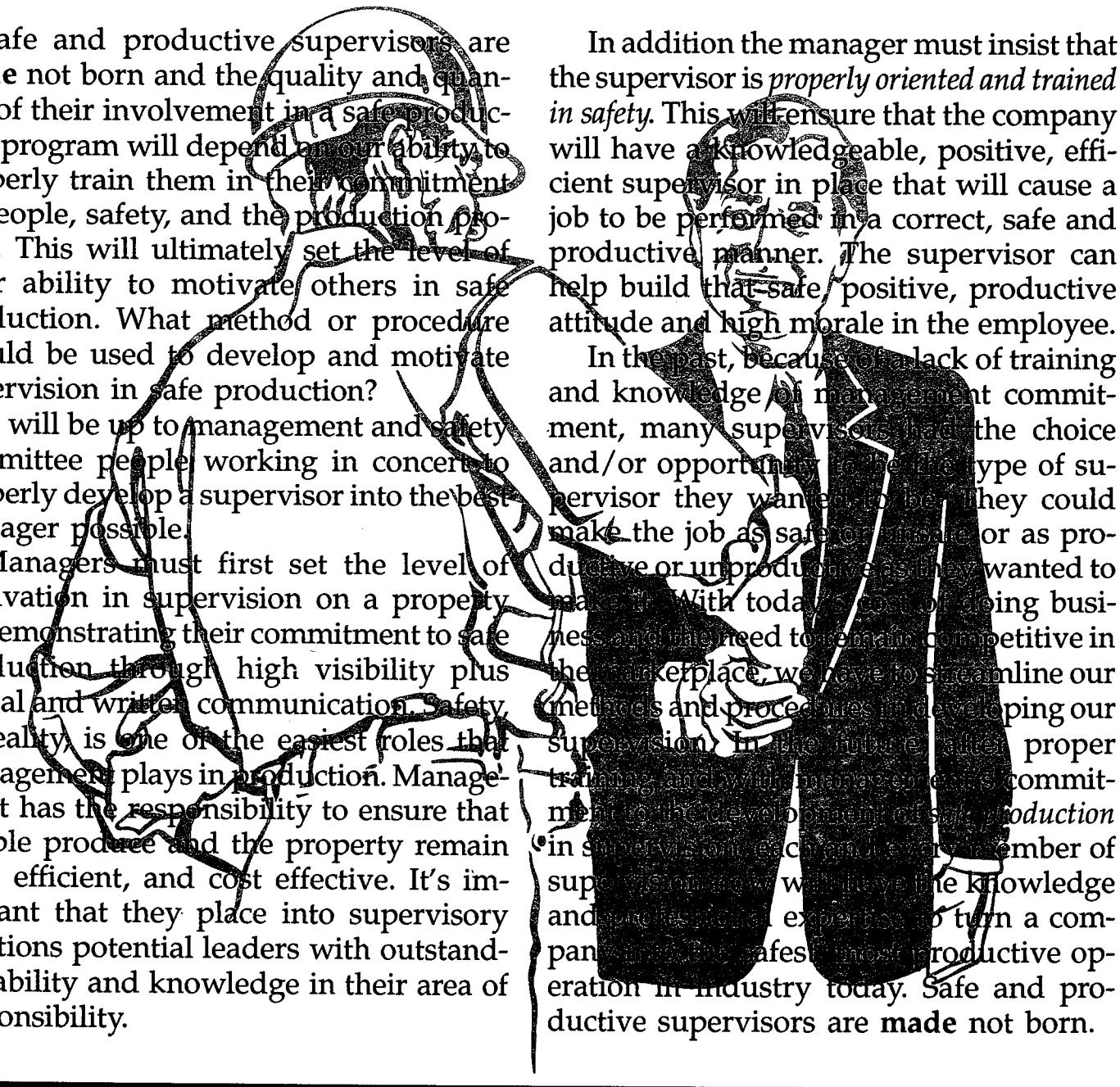
[1]*Industrial Engineer, Pittsburgh Research Center, U.S. Bureau of Mines, Pittsburgh, PA.*

[2]*Research Psychologist, Pittsburgh Research Center, U.S. Bureau of Mines, Pittsburgh PA.*

[3]*Radio remote control continuous miners were being used at all the mines in our sample. See the January 1993 issue of the Holmes Safety Bulletin for a more complete description of the mines included in the sample.*

Developing a safe and productive supervisor

By Harold L. Boling, Safety and Hygiene Supervisor, Phelps Dodge Morenci, Inc.



Safe and productive supervisors are **made** not born and the quality and quantity of their involvement in a safe production program will depend on our ability to properly train them in their commitment to people, safety, and the production process. This will ultimately set the level of their ability to motivate others in safe production. What method or procedure should be used to develop and motivate supervision in safe production?

It will be up to management and safety committee people working in concert to properly develop a supervisor into the best manager possible.

Managers must first set the level of motivation in supervision on a property by demonstrating their commitment to safe production through high visibility plus verbal and written communication. Safety, in reality, is one of the easiest roles that management plays in production. Management has the responsibility to ensure that people produce and the property remain safe, efficient, and cost effective. It's important that they place into supervisory positions potential leaders with outstanding ability and knowledge in their area of responsibility.

In addition the manager must insist that the supervisor is *properly oriented and trained in safety.* This will ensure that the company will have a knowledgeable, positive, efficient supervisor in place that will cause a job to be performed in a correct, safe and productive manner. The supervisor can help build that safe, positive, productive attitude and high morale in the employee.

In the past, because of a lack of training and knowledge of management commitment, many supervisors had the choice and/or opportunity to be the type of supervisor they wanted to be. They could make the job as safe or unsafe or as productive or unproductive as they wanted to make it. With today's cost of doing business and the need to remain competitive in the marketplace, we have to streamline our methods and procedures in developing our supervision. In the future, after proper training and with management's commitment to the development of safe production in supervision, each and every member of supervision will have the knowledge and practical experience to turn a company into the safest most productive operation in industry today. Safe and productive supervisors are **made** not born.

Seat belts save lives

In MSHA's South Central District during 1992, five accidents involving mobile haulage equipment resulted in five miners receiving zero to moderate injuries where death was certainly probable. These lives were saved or serious injury prevented BECAUSE THE DRIVERS **WERE** WEARING SEAT BELTS.

1. At a quarry near Waco, Texas, a 35-ton haul truck went off a 35-foot highwall backwards. The truck had backed up to the highwall to dump a load of overburden when the wall collapsed. The driver, who wore a seat belt, received a broken collar bone and a bump on the head along with bruises. He has since returned to work.

2. At a Quarry close to Bridgeport, Texas, a haul truck driver lost power on a 50-ton haul truck just as the truck reached the top of the quarry haul road. The grade of the haul road was in excess of 10% and about 100 yards long. The driver controlled the truck around the curve at the top of the grade while descending down the haul road backwards. There was a 90 degree curve at the bottom of the grade and while rounding the corner the tires caught some loose material and flipped 180 degrees. The roll over was so quick that the side of the truck received minimal damage. The haul truck driver, who wore a seat belt, received a cut requiring stitches on the right ankle. The accident did not result in a lost-time injury.

3. In central Missouri, a 50-ton haul truck driver received minor injuries when he ran his truck under a bridge while the bed was raised. The truck was moving at 30 miles per hour and came to an abrupt stop. The seat belt prevented the driver from being thrown through the windshield. The investigator stated that without question the seat belt saved the driver's life.

4. At a crushed stone operation north of Austin, Texas, a 50-ton haul truck driver received rib injuries when the truck backed over a berm at a pit back-fill site. The haul truck was traveling in reverse towards the dump site and the operator failed to stop the vehicle at the established berm. Instead, the loaded truck went over the berm and down a 75 degree waste pile to the bottom of the 75 foot deep pit. When the truck hit the bottom the unit rolled over on its left side. The driver, who wore a seat belt, sustained rib injuries while being removed through the windshield area of the truck.

5. The last incident occurred in south Texas and involved a 3-wheeled golf cart. The golf carts did not have a cab to protect the drivers from collisions with other vehicles but did have seat belts installed. The incident occurred when a crane with its boom down crossed an intersection. The golf cart, after seeing the crane pass by, proceeded into the intersection and collided with the boom. The driver, who was belted in, was not injured.

Narratives of the above described accidents have been forwarded to the Holmes Safety Association for consideration in the Buckle Up Program. This program recognizes those miners who were protected by the use of a seat belt when involved in a mobile equipment accident. Qualified individuals will receive a certificate of recognition and a special decal identifying them as members of the Buckle Up Program.

Nationally, during 1992, there were 5 fatals involving mobile equipment where miners were killed and were not wearing seat belts.

In one such incident, a maintenance vehicle rolled over when the brakes failed on a 6% grade and the vehicle could not make a curve. Of the three men aboard, two were tossed out of the vehicle killing one and seriously injuring the other. The employee remaining in the cab was also killed. Seat belts could have prevented the fatals and serious injury.

Two videotapes were made as the result of the first 2 incidents described above. The scene of the accident was visited and the equipment videotaped. The responsible person, safety director, and injured person were interviewed. The tapes were edited and in one case a 23-minute tape in both English and Spanish was made and in the other a 14-minute tape was made. In both tapes, the drivers stated their lives were saved by the seat belts.

An additional tape was made of the truck being removed from under the bridge (see item 3 above). These tapes can be loaned to companies for training and safety meetings upon request. To obtain one of these tapes call Dan Haupt or Whitey Jacobson of the Dallas District Office at (214) 767-8401. Copies of the tapes can also be requested from the Dallas District Field Offices.

Protect your hands

While stripping electrical cable, worker cut his hand with a knife.

In Canada last year, over one-half of hand injuries were cuts or punctures. In the vast majority of these accidents, the injured were not wearing gloves. Using knives or other sharp tools and handling scrap, wire rope, or other sharp objects are activities that require wearing cut-resistant gloves. No rocket science involved here; it's just common sense.

Worker developed dermatitis on hands due to exposure to various chemicals in the workplace.

Gloves also protect the hands from hazardous chemicals. But it is **essential** that the correct gloves are selected. The MSDS (Material Safety Data Sheets) for each hazardous substance will list the appropriate choices. Safety products suppliers are also a good source of information as there are frequent innovations in glove materials.

While skimming furnace, a piece of molten slag splashed on worker's arm and rolled into his glove, burning his hand.

Pulling a flatbar from bottom of stack, metal spur cut through cotton glove slashing hand

In both of these accidents, gloves were worn; but not necessarily the correct gloves. Cotton offers little cut-resistance and gloves with gauntlets are available to protect the arm and prevent material from entering the glove. As with protection from chemicals, the glove selected must suit the hazards of the task.

Worker was cleaning a tank when his glove got caught in an electric drill

Yes, there are times when gloves should not be worn—e.g., around moving machine parts where they could become entangled.

Work gloves are available in literally hundreds of combinations of materials and styles—enough to suit almost every need. Careful selection is important, including the proper fit. But no glove will protect your hands if they're in your pocket or back at the workbench; they must be worn to be effective.

Reprinted from the Canadian Mines Accident Prevention Association's January 1993 ***Safety Reminder.***

1993 Pennsylvania Joint Coal Health and Safety Conference

April 15, 1993, Washington, Pennsylvania

The Pennsylvania Bureau of Deep Mine Safety, in cooperation with the Pennsylvania Coal Association, Mine Safety and Health Administration, and United Mine Workers of America, is conducting a Joint Coal Health and Safety Conference. The conference is scheduled for Thursday, April 15, 1993, at the Holiday Inn Meadowlands in Washington, Pennsylvania. Planned topics include: *Job Safety Analysis, Accident Prevention and Investigations, Stockpile Safety, Substance Abuse Awareness, Hazard Communications* and others. Information on the conference can be obtained by contacting Matthew A. Bertovich at (412) 439-7469.

Toxfile

MSHA has a **Toxic Substance Data Base (Toxfile)** available on computer disk. This file provides a quick and easy way to obtain information on 692 chemical substances. The computerized file, based on the list of substances in the ACGIH "Threshold Limit Values" booklet, is updated annually. The data on each substance consists of:

- Chemical name,
- Chemical abstract and registry of toxic effects reference numbers,
- Synonyms,
- Toxicological and hazard information,
- Physical and chemical properties (listing of occurrences which indicates where the substance is usually found or its common usage in the mining industry),
- References for every entry which can be accessed by the main menu.

The synonym category includes trade names and manufacturers. A new file has been created which is accessible by "MSDS Search" (Material Safety Data Sheets) in the main menu which contains a listing of all MSDS's in MSHA's Tech Support possession (about 2,000) alphabetically by trade/product name and also lists the manufacturer and chemical constituents.

The computer will search the file under chemical name, trade name, synonym, or name fragment.

The Toxfile will run on any IBM-compatible computer using DOS. Copies of the program can be obtained **free-of-charge** by sending four (4) high-density diskettes to: Estelle Eleftheriou; MSHA; Physical and Toxic Agents Division; 4800 Forbes Avenue; Pittsburgh, PA; 15213; (412) 578-3763.

Reprinted from the December 1992 issue of ***Southeast News: Major and Miner.***

The West Virginia State Council of the Holmes Safety Association to meet

The Tenth Annual State Council Meeting of the Holmes Safety Association will convene at the Wisp Resort in western Maryland on May 14, 1993. The agenda follows:

FRIDAY—MAY 14, 1993

6:00 p.m. **Registration and Reception**
Dogwood Room

7:00 p.m. **Session I**
Industry recognitions
Coal Safety Leader Nominations
Door prize drawing

SATURDAY—MAY 15, 1993

7:00 a.m. **Continental Breakfast** for Golfers

8:00 a.m. **Golf Tournament** with prizes. If you are interested, call Cannelton Industries (304-934-5301) and ask for Rick Hickman, Supervisor–Safety and Health.

8:00 a.m. **Registration**

9:00 a.m. **Activities for non-golfers** (Training programs)

11:30 a.m. –1:30 p.m. **Picnic buffet** (weather permitting)

2:00 p.m. **Session II**
Dogwood Room
Keynote Speaker: Marvin Nichols
Administrator for Coal Mine Safety and Health
Business Meeting
Doug Conaway, President
West Virginia HSA Council
1992 Coal Safety Leader Address
Pacesetter Awards
Ron Keaton, District Manager
MSHA-CMSH District 3
Morgantown, West Virginia
L. D. Phillips, District Manager
MSHA-CMSH District 4
Mt. Hope, West Virginia
Door prize drawing

5:30 P.M. **Session III**
McHenry House Banquet
Banquet Speaker: Bill Raney, President, West Virginia Coal Association
State Mining Safety Awards
Local Council Attendance Award
District Council Attendance Award
Presentation of Coal Safety Leaders for 1993
Door prize drawing

Lodging is at the Wisp Resort—Reservations must be made directly with Wisp. The rate is $60 plus tax for single or double.

Seventy-five rooms have been reserved until April 14, 1993. Major credit cards or first night's lodging fee is required for reservations. Cancellations received 48 hours prior to the first night's lodging can be refunded. Telephone 1-800-462-WISP.

Be sure to mention the West Virginia Holmes Safety Meeting.

The registration fee is $32 each per person. For further information contact:

Irmadell Pugh
MSHA District 3
5012 Mountaineer Mall
Morgantown, WV 26505
(304-291-4277)

Registration fee must be received no later than May 8, 1993. No refunds will be made after May 1, 1993.

Secretary's message...

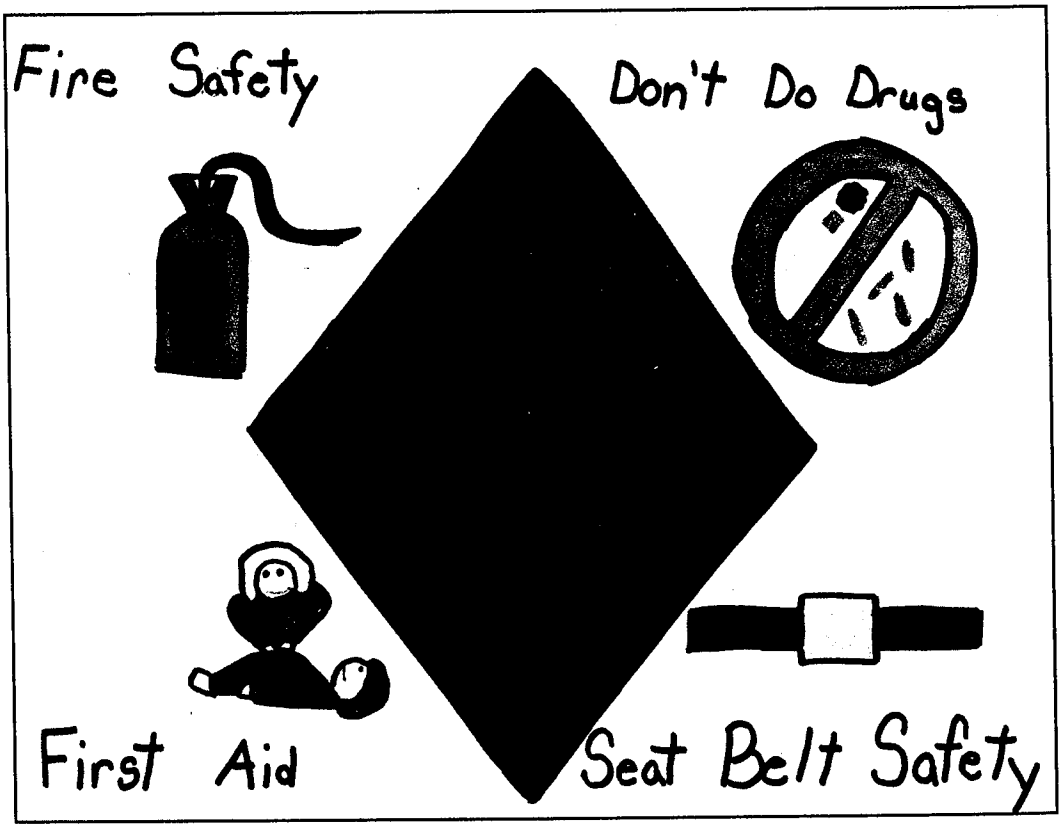
The Executive Committee met in Columbus, Ohio, on January 28, and discussed the Western State Council's (WSC) development of the Ival Van Horne award for presentation at the national meeting in San Antonio, Texas, on June 3. This will be an annual award presented by the Western States and District Councils at each of the upcoming National Meetings. The WSC selected a committee to establish criteria for the Ival Van Horne Award. This information will be listed in a future HSA Bulletin.

The Executive Committee also expanded the criteria for awarding a Seatbelt Safety Certificate to mining people and their families who are involved in an accident on or off mine property when they were wearing a seatbelt. This program is designed to reduce the number of fatalities and serious injuries by recognizing the proper use of seat belts.

The third winner of the Holmes Safety Calendar Contest for 1993 is Windy Ann Phillips, whose photo and artwork appear below. She submitted her poster following our request for entries in the September Bulletin.

Robert A. Glatter, Secretary-Treasurer

Windy Phillips
Pikeville Elementary School
5th grade
Pikeville, Kentucky



The last word...

"The only reason some people get lost in thought is because it's unfamiliar territory."

"Only the mediocre are always at their best."

"The intelligent man finds almost everything ridiculous, the sensible man hardly anything."

"Life is what happens while you are making other plans."

"Good teaching is one-fourth preparation and three-fourths theater."

"Save a little money each month and at the end of the year you'll be surprised at how little you have."

"The trouble with life in the fast lane is that you get to the other end in an awful hurry."

"The human race is faced with a cruel choice: work or daytime television."

"New York now leads the world's great cities in the number of people around whom you shouldn't make a sudden move."

"Most writers regard the truth as their most valuable possession, and therefore are most economical in its use."

"A critic is a man who knows the way but can't drive the car."

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