BULLETIN

HOLMES SAFETY ASSOCIATION

E PLURIBUS UNUM

SAFETY EFFICIENCY

MINERAL INDUSTRIES

October 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 NO.	LOCATION
Bear Safety Consulting, Inc.	10519	Oakland, MD
Stone Coal Tipple	10520	Pikeville, KY
Transcontinental Plant	10521	Pikeville, KY
Constain Reclamation	10522	Pikeville, KY
Loss Prevention Department	10523	Pikeville, KY
Chapperal Prep. Plant	10524	Pikeville, KY
Miller Creek Mine #1	10525	Pikeville, KY
Prater Creek Mine #2	10526	Pikeville, KY
Red Cedar Mine #3	10527	Pikeville, KY
Red Cedar Mine #5	10528	Pikeville, KY
Western States Drilling & Blasting	10529	Las Vegas, NV
Sandex, Inc.	10530	Las Vegas, NV
Sanders Construction, Inc.	10531	Las Vegas, NV
Garrett Community College	10532	McHenry, MD
Walters Ready Mix	10533	Rexburg, ID
Maryland Aggregates Assoc., Inc.	10534	Annapolis, MD
North American Slate, Inc.	10535	Granville, NY
Powley	10536	Crestwood, IL
Duriez Excavating	10537	Barnesboro, PA
R.J.C. Kohl, Inc.	10538	Nicktown, PA
Zemerex Corporation	10539	Flatwood, KY
Fmc Dry Valley Mine	10540	Soda Springs, ID
Fishers Gravel	10541	Big Lake, AK
Aggregate Products, Inc.	10542	Anchorage, AK
Aggregate Products, Inc.	10543	Anchorage, AK

NAME	CHAPTER NO.	LOCATION
AAA Valley Gravel	10544	Wasilla, AK
Ugadaga Quarry	10545	Anchorage, AK
West Dowling Road	10546	Anchorage, AK
Columbia River Carbonates	10547	Woodland, WA
Anchorage Sand & Gravel	10548	Anchorage, AK
Johnstown Industrial Education	10549	Johnstown, PA
Moore's Gravel	10550	Callahan, CA
#1 Portable Crusher	10551	Anchorage, AK
Conrock North	10552	Anchorage, AK
Chugiak Pit	10553	Anchorage, AK
Wasilla Aggregates Pit	10554	Wasilla, AK
#2 Portable Crusher	10555	Anchorage, AK
Smokey Point Concrete	10556	Arlington, WA
Combined Districts Crushing	10557	Caldwell, ID
Van Buren County Road Dept.	10558	Clinton, AR
W.M.I. Lexington R.D.F.	10559	Lexington, KY
Vaughn Smith Construction Co.	10560	Soda Springs, ID
Gallaghen And Burk, Inc.	10561	Oakland, CA
D.O. And W. Coal Co., Inc., No 12	10562	Clinton, VA
Nicky Coal Corp., No. 3	10563	Grundy, VA
Board of Trade, Inc.	10564	Nome, AK
Columbia River Sand & Gravel	10565	Vancouren, WA
Buford Mine	10566	Hartford, KY
Goshen Mine	10567	Hartford, KY
No. 2 Mine	10568	Danville, WV

History of roof bolting

Cribs, timbers, roof bolts, and trusses—these were the supports of the miners of the 1920s. That's right, the 1920s. In fact, the earliest recorded use of suspension supports (roof bolts) in U.S. coal mines is 1905. During the 1920s, St. Joseph Lead Company used a precursor to the modern truss. The truss consisted of a 4-inch channel with six roof bolts of varying lengths installed on angles so that the anchorage horizon of each bolt formed an arch. The roof bolts used were 1-inch-diameter slotted rods which were anchored by driving the slotted end onto a wedge. In the late 1940s, the first experiments with roof bolts in place of timbering were conducted at Consolidated Coal Company, No. 7 Mine in Staunton, Illinois. The roof bolts used were 1-inch-diameter rods threaded at both ends. Anchorage was attained by means of a specially designed expansion shell. The expansion anchor became the predominant anchor through the early 50s, eventually forcing the split rod and wedge system from the market.

Expansion anchors were used exclusively until the arrival of polyester resins in the late 60s and early 70s. Experimentation with fully grouted resin bolts began in the late 60s. Continuing development of the polyester resins led to faster mixing and set times. The faster installation time for resin bolts allowed for in-cycle bolting which increased their marketability as a primary support. More important though was the capability of resin to provide excellent anchorage in almost any strata conditions that had the greatest effect on the mining industry. Fully grouted resin bolts enabled operators to safely mine in roof conditions once thought to be unsupportable or not economical to mine. New support systems continue to be developed which combine the anchorage characteristics of resin with the clamping ability and installation speed of expansion anchors, e.g., point-anchored and mechanically resin-assisted bolts.

The state-of-the-art of roof bolting in the United States is ever changing as new bolting systems and adaptations to existing technologies are continually introduced to the mining industry. While a wide variety of support types are currently available, the actual usage of each system says much about the effectiveness and cost efficiency of a particular design. Obviously, bolt types used most often have widespread applications to general ground conditions. Those used less frequently have more specialized applications, and are often used where the severity of ground conditions justifies the expense of such systems. Changes in the relative usage of the various bolt types are often indicative of significant improvement in performance or cost effectiveness that have been recognized by the industry.

Holmes Safety Association Monthly safety topic

Fatal falling/sliding material accident

GENERAL INFORMATION: A 37-year-old ready-mix driver, with two weeks of mining experience—two days as wash plant operator, suffocated when he was engulfed by material in the wash plant feed hopper.

The operation was a multiple pit sand and gravel mine. Sand and gravel was mined, using front-end loaders, crushed, sized, washed, and stockpiled for customer delivery or use in the ready-mix batch plant.

DESCRIPTION OF ACCIDENT: The victim reported to work at his normal starting time of 7 a.m., and was assigned to operate the wash plant. A truck driver was assigned to assist the victim with the plant start-up tasks and to refresh him in his duties. The wash plant operator, who had many years of experience, noticed the excessive dampness of the stockpile material due to recent rainfalls. He told the victim to anticipate frequent hangups. He instructed the victim to probe and loosen the hangups from behind the catwalk railings only.

When satisfied with the victim's apparent ability to continue unassisted, he left the victim to perform other duties.

The foreman arrived at the wash plant about 8 a.m. to check on operations.

The loader operator was tramming pit bank material to a stockpile area near the wash plant at about 9:25 a.m., when he observed the victim park the loader and walk toward the ramp.

About 9:30 a.m., the wash plant operator returned and drove past the victim's unattended loader. He parked his empty truck near the finished material stockpiles south of the wash plant. He assumed the victim was elsewhere so he began loading his truck for the next delivery.

About the same time, the foreman left the pit and drove to where the wash plant operator was loading his truck. Both men soon realized the victim's whereabouts were unknown.

The foreman began searching the ramp area and noticed the long pipe probe laying across the material at the top of the feed hopper and the damaged handrailing along the catwalk. He then observed the victim's feet sticking out of the discharge chute at the bottom of the hopper.

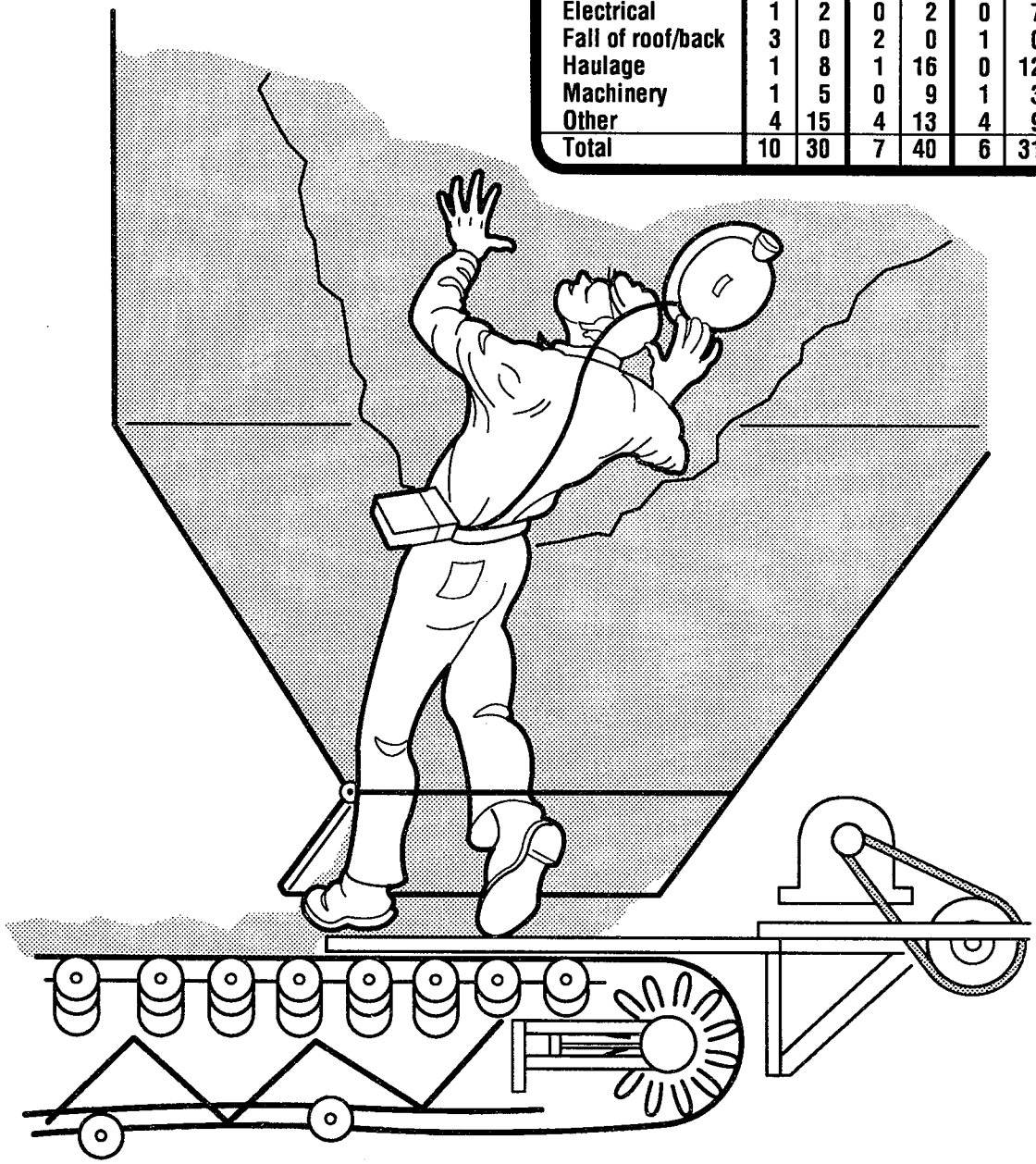
He immediately called for the wash plant operator to come to the site, then summoned the loader operator to assist in freeing the victim. The foreman de-energized all power to the wash plant and the three men began a rescue attempt by removing material from the hopper.

Emergency services were called at 9:37 a.m.

The foreman summoned additional employees to assist in the recovery effort. One of the rescue employees manually opened the chute gate as wide as possible and they began pulling on and digging around the

Metal and Nonmetal mine fatalities to date—thru 10-19-93

Type	1989		1990		1991		1992		1993	
	UG	S	UG	S	UG	S	UG	S	UG	S
Electrical	1	2	0	2	0	7	0	3	0	2
Fall of roof/back	3	0	2	0	1	0	4	0	4	0
Haulage	1	8	1	16	0	12	1	12	1	6
Machinery	1	5	0	9	1	3	0	5	1	6
Other	4	15	4	13	4	9	0	6	8	10
Total	10	30	7	40	6	31	5	26	14	24



victim. After energizing and "jogging" the reciprocating feeder, they removed the victim from the chute and checked for vital signs. Discovering none, they began CPR.

The ambulance arrived and transported the victim to the hospital. Medical authorities pronounced the victim dead at about 10:30 a.m. The preliminary cause of death was reported to be "traumatic asphyxiation."

CONCLUSION: The accident occurred because the employee entered the hopper, on top of bridged material, without benefit of proper safety equipment. This assumption is based on the location of the bar used to free hangups.

Fire protection for mobile mining equipment

Part I—An introduction and background to mobile equipment fires

by William H. Pomroy, U.S. Bureau of Mines,
Twin Cities Research Center, Minneapolis, MN

This article is the first in a three-part series which covers mobile equipment fire protection at mining operations. Part I discusses the seriousness of the mobile equipment fire problem in mining, describes the causes of typical fires on mobile equipment, includes tips on effective fire prevention practices, and identifies current industry consensus standards and MSHA regulations addressing mobile equipment fire protection. Part II will cover manually operated and automatic fire suppression systems for electric or diesel-powered rubber-tired and tracked vehicles such as haulage trucks and dozers in surface mines and load-haul-dumps and scoops in underground mines. Part III will cover fire suppression systems for large electrically-powered enclosed surface mining machines such as shovels and draglines.

At most mines, a mobile equipment fire is a rare event. Several years usually pass between major fire incidents. However, the potential for an extremely destructive fire is ever-present. Therefore, mobile equipment fire protection should be a priority at every mine.

Mobile equipment fires can cause personal injuries, substantial and costly property damage, and significant production losses. It is also important to remember that mobile equipment fires occur in every type of mining operation coal, metal, nonmetal, stone, sand and gravel, and that serious fires can occur at both surface and underground mines. At surface mines and in underground metal and nonmetal mines, for example, more than one-half of all reportable fires involve mobile equipment. Even dredging operations are at risk. Several years ago, a serious fire involving multiple fatalities occurred on a mining dredge in Malaysia.

As mining equipment has become larger to take advantage of the economies of large scale production efficiency, the consequences of a mobile equipment fire have worsened. With increases in size, the operator's view of fire hazard areas has diminished. Thus, fires can grow larger before they are noticed, and larger fires are more hazardous, cause more equipment damage, and are more difficult to extinguish.

For surface mining equipment, the distance from the cab to the ground has steadily increased as larger and larger machines have been introduced. The cab-to-ground distance for some haulage trucks is 18 feet, and egress routes on many equipment models pass by potential fire hazard areas. Although improvements have been made in equipment access ladders, the increased height of the cabs and resulting longer egress times have made emergency egress more difficult.

The cost of a fire is also greater for larger equipment. Property damage increases because larger equipment is more costly to repair or replace. Production losses are greater because larger equipment is more productive than the smaller equipment it

replaces. In some cases, overall mine production may depend to a very large extent on a few, large machines. At a strip coal mine, for example, production could be crippled by the loss of a blasthole drill or dragline.

Causes of fires on mobile equipment

On diesel-powered mobile equipment such as surface mine haulage trucks or underground load-haul-dumps, a typical fire usually occurs in the engine area, and involves various combustible liquids. Such fires often start when a high-pressure hydraulic line fails, spraying an atomized mist of hydraulic oil on an ignition source such as a hot exhaust manifold or turbocharger. If the fire is not extinguished quickly, other lines carrying combustible liquids burn through, providing additional fuel to the fire. In a matter of minutes, the fire can significantly damage or destroy the cab, engine, suspension, cooling system, most electrical and mechanical equipment, and often the frame.

Fires on underground electrically-powered machines such as shuttle cars, scoops, and roof bolters usually involve an electrical fault in a motor, battery, cable reel, control panel, or junction box. Such fires can quickly spread to other electrical components and to combustible hydraulic fluids. Fires on underground equipment, both diesel and electric, are doubly hazardous because the fire itself can threaten personnel in the immediate vicinity, plus the smoke and toxic fire gasses can threaten personnel that may be working a great distance away from the burning machine.

On large enclosed electrically-powered surface mining mobile equipment such as power shovels, draglines, and blasthole drills, fires usually result from an electrical fault in a transformer, circuit breaker, control panel, motor, or collector ring. Such fires can grow quickly, and are usually difficult to fight because they often occur in enclosed rooms or spaces without easy access for fire fighters.

Fire prevention

Fire prevention is the first priority when dealing with any fire hazard. Since many fires result from simple mechanical failures, an effective maintenance program for mobile equipment can reduce the likelihood of a fire occurring. A good preventive maintenance program can correct most problems before a hazardous condition is created. However the harsh mine environment and rugged operating conditions in most mines can cause mechanical failures between regularly scheduled maintenance checks.

Combustible liquid lines and electrical components are particularly critical. Equipment operators and maintenance personnel should routinely watch for frayed, damaged, kinked, or leaking lines, fittings, and connections, and for damaged or loose electrical cables and connectors. If a problem is noticed, it should be reported and repaired without delay.

Good housekeeping practices are also very important. Good housekeeping can prevent the hazardous accumulations of fuel materials such as combustible liquids, coal and coal dust, or other combustible debris. This material contributes to rapid fire growth, which increases fire hazards and makes fire fighting more difficult.

Training for operators and servicing personnel can help eliminate the conditions which lead to fires, as well as improve emergency response in the event of a fire. Fi-

nally, mine equipment manufacturers have attempted to "design out" as many hazardous conditions as possible, by reducing ignition sources, decreasing fuel sources, and minimizing the possibility of fuel and ignition source contact.

Mine personnel can also look for ways to reduce fire hazards, such as the rerouting of lines and cables or the installation of spray shields to separate fuel and ignition sources. However the equipment manufacturer or dealer should be consulted before any modifications are made to a mine vehicle to insure that other hazards are not created, or that a warranty or equipment approval is not voided.

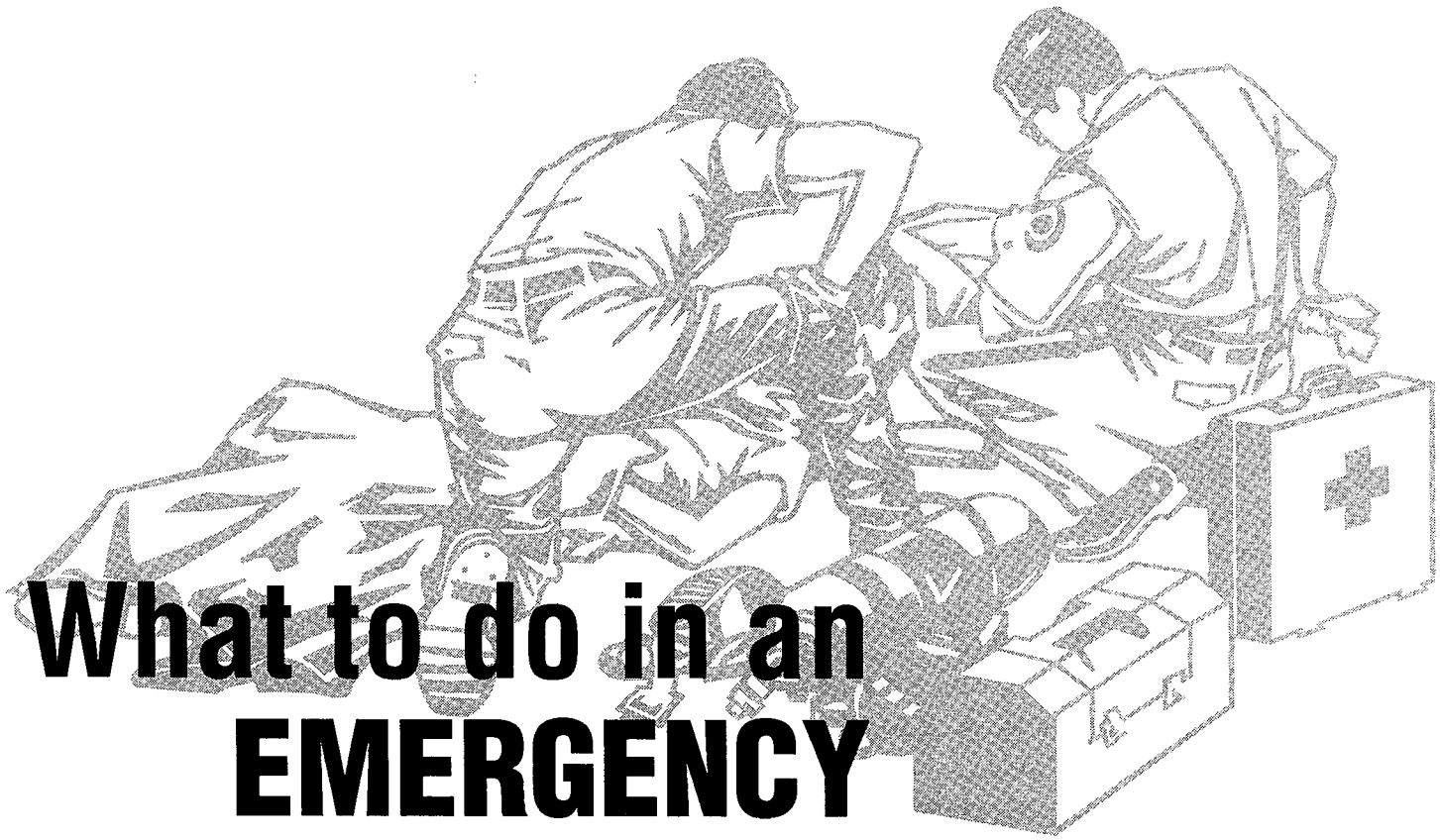
Mobile equipment fire protection standards and regulations

Mobile mine equipment fire protection is addressed in both industry consensus standards and in mandatory federal mine safety regulations. The National Fire Protection Association (NFPA) is the principal industry consensus fire standards organization in the United States. NFPA standards are developed by over 200 technical committees, each of whose membership represents a balance of affected interest groups. The development of NFPA standards is an open process, with public access at each step. The goal is the development, publication, and dissemination of timely consensus standards intended to minimize the possibility and effects of fire in all aspects of contemporary activity.

In 1978, NFPA established the Mining Facilities Technical Committee to develop fire standards which cover requirements for safeguarding life and property against fire, explosion, and related hazards associated with underground and surface coal, metal, and nonmetal mining facilities and equipment. Fire suppression systems for mobile mining equipment are covered in two standards developed by this committee: NFPA 121 Fire Protection for Self-Propelled and Mobile Surface Mining Equipment, and NFPA 124 Fire Protection for Diesel Fuel and Diesel Equipment in Underground Mines.

The NFPA Mining Facilities Technical Committee is currently in the process of eliminating NFPA 124 by including its contents in two other standards. The portions of NFPA 124 relating to underground metal and nonmetal mines will be added to NFPA 122 Storage of Flammable and Combustible Liquids Within Underground Metal and Nonmetal Mines. NFPA 122 will eventually be expanded to become a comprehensive occupancy standard covering all aspects of underground metal and nonmetal mine fire protection. The portions of NFPA 124 relating to underground coal mines will be added to NFPA 123 Fire Prevention and Control in Underground Bituminous Coal Mines.

Various mandatory MSHA regulations cover aspects of mobile mining equipment fire suppression, but the regulations which explicitly deal with mobile equipment fire suppression systems are 30 CFR 56.4230 (b) and (c) for surface metal and nonmetal mines, 30 CFR 57.4260 (b) and (c) for underground metal and nonmetal mines, and 30 CFR 75.1107 and 30 CFR 75.380 (f)(2) for underground coal mines. Fire suppression systems are not specifically addressed in federal regulations for surface coal mines, however 30 CFR 77.1109 (c)(1)-(3) does delineate requirements for hand portable fire extinguishers for mobile equipment used in surface coal mines.



What to do in an EMERGENCY

Emergency phone numbers:

Ambulance: Call 911. If you can't get through, try your local rescue squad or police department.

Police: 911 or _____

Fire department: 911 or _____

Poison Control Center: _____

Hospital emergency department: _____

_____

Physicians: _____

Neighbors: _____

_____

Cut out, fill in required information, and place near telephone

When calling 911

Give the dispatcher the following information:

1. Your name
2. Your location (including address, apartment number, and neighborhood)
3. Your telephone number
4. Type of emergency

Before the ambulance arrives

Gather any insurance and medical information you'll need to register. (It is best if you keep an old electrocardiogram tracing and any allergy records in an accessible place.)

Collect any medicine the victim takes regularly or may have taken recently. If you can't bring the medicine, bring a list of names and dosages.

Let the victim's doctor know he or she is going to the hospital. The doctor may want to contact the emergency room.

Remove victim's jewelry and loosen clothing to ease breathing and circulation.

Leave valuables at home

While waiting for an ambulance, try to keep the victim calm and comfortable. If you are unsure of any treatments, don't do anything.

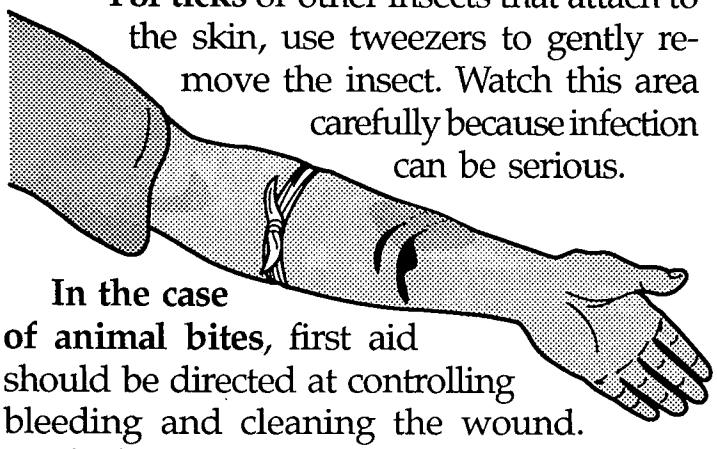
The following suggestions can't cover every instance. Treatments may vary according to age, medical condition, or a specific situation. Multiple injuries may require you to judge which takes priority. Always seek medical aid if you are uncertain.

Bites or stings

Most bites and stings can be treated with ice or a paste of baking soda to ease the itching or pain. **If you suspect a more severe reaction,** often characterized by breathing difficulty within minutes after the bite, call an ambulance.

If the stinger is still in the skin, remove it with care in case the venom sac is still attached.

For ticks or other insects that attach to the skin, use tweezers to gently remove the insect. Watch this area carefully because infection can be serious.



In the case of animal bites, first aid should be directed at controlling bleeding and cleaning the wound. Wash the area with mild soap and cover it with a sterile dressing. If you think the animal might be rabid, contact the Poison Control Center or your emergency department for advice.

Bleeding

Rinse the wound. Warm water and mild soap will wash away most germs.

Apply direct pressure to the cut using a sterile dressing or clean washcloth.

Don't use a tourniquet (which could cause nerve and tissue damage), don't use ice (which may cause frostbite), and don't dab at the cut. Pressure should be constant.

Elevate the bleeding part.

For a nosebleed: Pinch the nose at the nostrils and hold it for ten minutes. Pinching the bridge of the nose won't help, nor will ice on the nose or back of the neck.

Broken bone or sprain

Do not move the victim if there is a chance of neck or spine injury.

For simple fractures, immobilize the broken bone in the position in which it was found. Try to make a splint, even if it is made of

rolled-up newspapers and tied on.

Apply ice wrapped in towels to reduce swelling.

If a bone is sticking out of the skin, do not try to push it back in. Cover it with a dry, sterile dressing.

Burns

Do not apply butter, ointments, or other home remedies. For minor burns, apply a cold compress or cold water.

Do not pop blisters. Cover the blister with a sterile pad and loose bandage.

Cover larger burn areas with a clean cloth to keep out air and keep in heat and fluid.

Have the person lie or sit down.

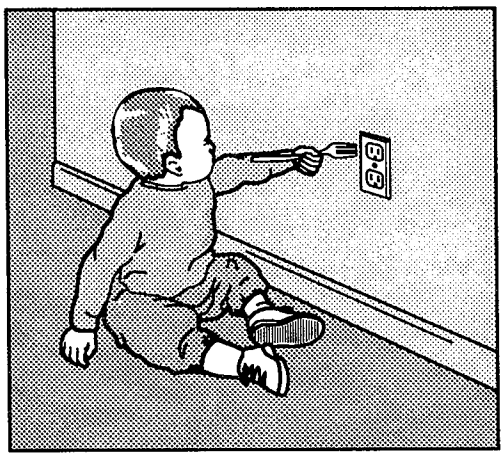
Have victim drink plenty of nonalcoholic fluids to replenish fluids in the body.

Chest pain

Do nothing, but try to calm the victim and see that he is comfortable. The level of pain doesn't necessarily correspond to the severity of the problem. Sitting up is usually the best position for the victim.

Choking

Use the Heimlich maneuver. Stand behind the victim with your arms around his abdomen. Place one fist just below the ribs and cup your other hand on top of the first. In a quick motion, pull your hands up and back, as if pushing the air back up the windpipe. This may need to be repeated.



Electrocution

Be careful not to touch the same equipment or the injured person.

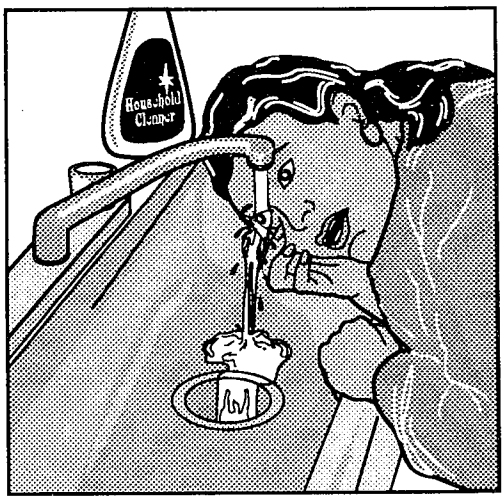
Disconnect the plug from the socket, or cut off all electricity at the main switch, if necessary.

To separate the victim from the electrical source, use a long, dry rope, cloth, or pole. Make sure you are standing on a dry surface. You are not at risk in touching a person struck by lightning.

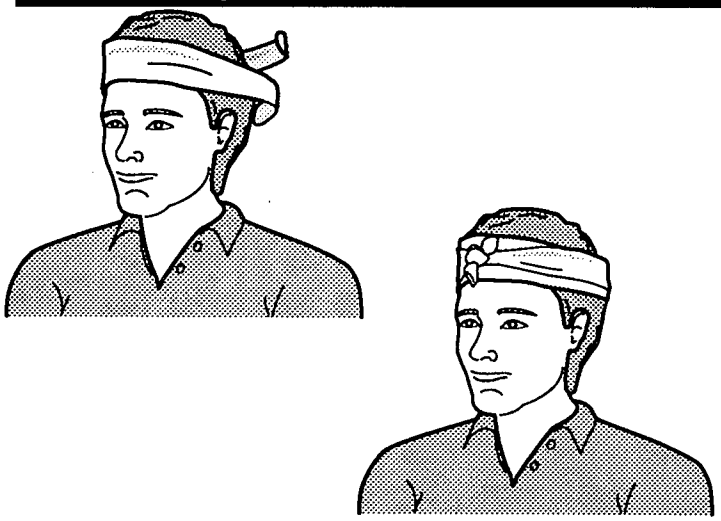
If his/her breathing has stopped, begin mouth-to-mouth resuscitation immediately. If heart has stopped, begin CPR immediately, but only if you are trained.

Eyes

If a chemical or irritant gets into the eye, flush it immediately by letting the water from a faucet flow gently into the eye. Rinse the eye for at least ten minutes.



If an object gets into the eye, do not try to rub it out. You could scratch the eye. Have the victim close the eye and cover it.

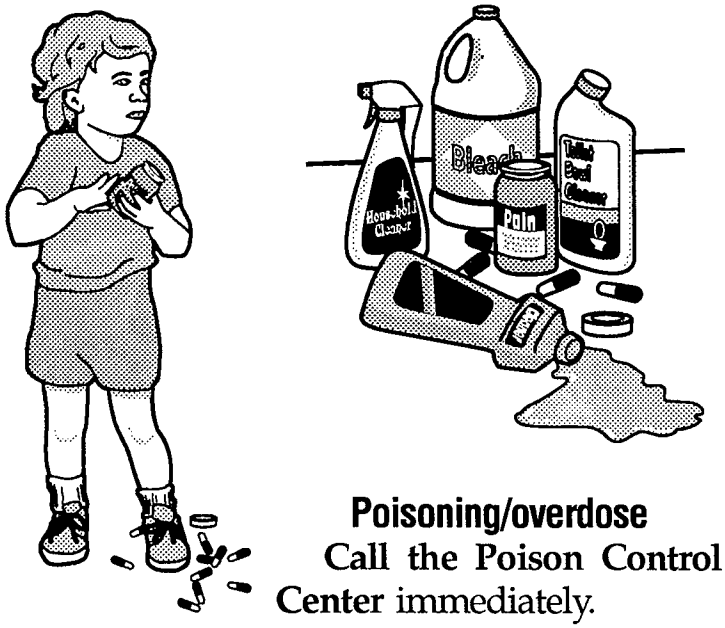


Head injury

Do not move the victim if neck or spine injury is suspected.

Apply a sterile dressing to the wound, and secure it.

Do not clean or rinse severe or deep cuts.



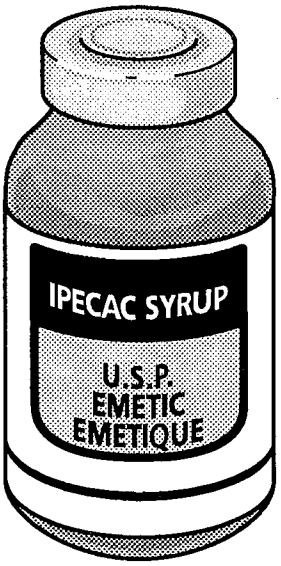
Poisoning/overdose

Call the Poison Control Center immediately.

Do not go to emergency room first. This could delay treatment or be unnecessary .

Don't follow antidote directions on product labels. These are often outdated or incorrect, and they don't take into account the victim's age, weight, or condition.

Don't induce vomiting unless told to do so by the Poison Control Center.



Keep syrup of ipecac on hand. If vomiting is the advised treatment, syrup of ipecac is the only safe, effective method of emptying the stomach. Do not put finger or instrument down the throat. Do not drink salt water to induce vomiting. Too much sodium can increase the risk of seizures and can be harmful to children.

Do not take vinegar, lemon juice, or baking soda to neutralize poison. These could cause a chemical reaction. Milk may settle the stomach, but wait until directed by a specialist to administer.

Seizures

Don't put your hand or other object into the victim's mouth. It is impossible to swallow the tongue, and injuries may result.

If the tongue falls back and blocks the airway, pull the jaw forward and use CPR to open the airway.

Do not restrain convulsive movements, but keep the area clear so the victim doesn't hurt himself.

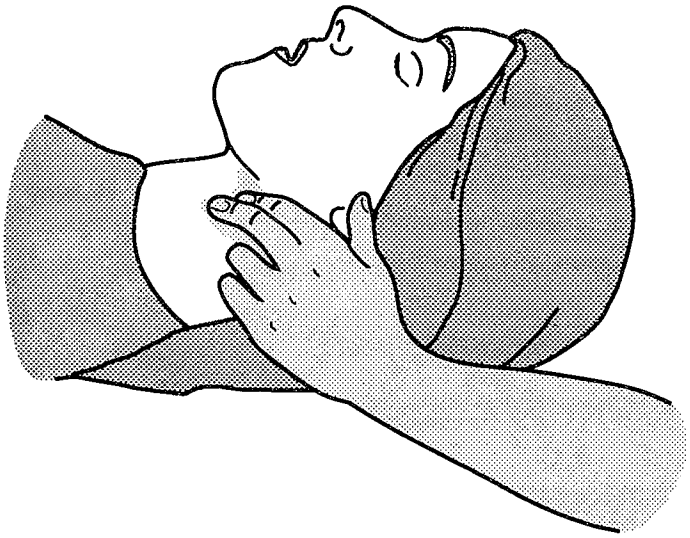
Turn the person onto one side (unless he shows signs of neck or back injury from a fall) so that saliva drains and is not inhaled into the lungs.

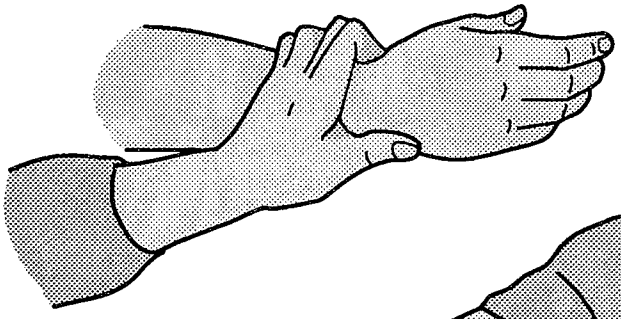
Severed limb or finger

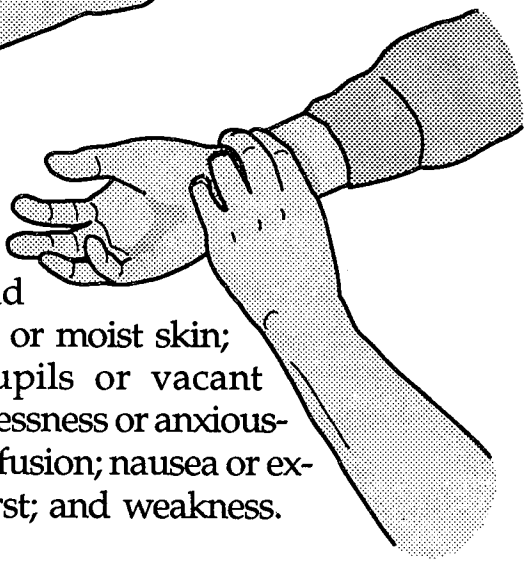
Wrap the severed part in gauze, seal it in a plastic bag, and put it in ice water or on ice. Do not put the severed part directly on ice. It may get frostbitten, which destroys tissue. With the proper care, a severed part may be sewn back on, even several hours later.

Shock

Shock, when blood circulation is inadequate, can be caused by all kinds of injuries, including hemorrhage or excessive loss of body fluids; heart attack or stroke; poisoning; and lack of oxygen.







Look for signs of shock: a faint, rapid pulse; cold or moist skin; dilated pupils or vacant stares; restlessness or anxiousness or confusion; nausea or excessive thirst; and weakness.

Cover the victim only enough to keep in body heat. Do not add extra heat.

Do not move the victim if neck or spine injury is suspected. Otherwise, a person who is having trouble breathing should be sitting up.

Unconsciousness

Is the victim's heart beating? Is he/she breathing? If necessary, begin CPR.

If the person cannot be roused but is breathing well and has a good pulse:

Place him on one side so that any stomach contents will not be inhaled if vomiting occurs.

Creating a safe workplace pays off

During the Annual Holmes Safety Association Meeting in San Antonio, June 1-3, 1993, several attendees commented on the high cost of Workers' Compensation insurance. It's important to know persons can become proactive and control the cost of insurance or they can just react to the high cost and pay the cost of high accident rates.

There are four components to a successful proactive program. First, the organization must be committed to safety. This commitment is the responsibility of both management and labor. Both must create an environment where safety is the most important aspect of the job. When correctly implemented, safety will affect both the quality and quantity of goods or services produced.

The second component of being proactive is setting up a process of hazard identification at the work site. A powerful technique used to identify hazards is the implementation of a job safety analysis (JSA). The JSA process breaks each job or task down into individual steps to eliminate unsafe work procedures and to train employees the safe way to accomplish a task. This is an excellent tool to correct unsafe acts.

The third component is implementing a hazard-abatement system. This can be accomplished by using accident-prevention techniques. Reviewing the facts surrounding accidents can produce information identifying the root cause of the accident. Accidents don't just happen. Organizations must implement techniques to discover causes of accidents and work to abate or reduce the occurrence of those accidents.

MSHA provides Fatalgrams for the mining community to alert organizations of hazards that have taken the life of a mine worker. Reviewing Fatalgrams is just one method of hazard abatement. The effective use of accident review teams and safety committees are other methods that can also reduce and abate hazards at the work site.

The final component of a proactive organization is having an effective safety training program. Part 48 of the Code of Federal Regulations 30 (CFR 30) defines the training requirements for the mining environment. Organizations with effective training plans establish a program of how they are addressing the safety and health issues of their employees. This document will formalize a program to inform and educate all employees concerning safety at the work site.

Organizations have options. They can react to accident rates and pay the related high insurance rates or they can choose to be proactive and control costs. Organizations that have reduced their accident rates are seeing a reduction in the cost of Workers' Compensation insurance.

The Texas Mine Safety and Health Program (TMSHP) can assist organizations in controlling the costs associated with accidents by training labor and management. Don't keep paying for accidents. Creating a safe workplace for employees pays off. Get involved and improve safety.

Reprinted from the Oct-Dec issue of the University of Texas's Mine Safety and Health bulletin ***'Nformation Letter***

You never know...

On February 2, 1993, an eight-hour Mine Safety and Health Administration (MSHA) Refresher Safety Training Class was conducted by Tom Maxwell at the Engelhard Mining Operation in Aberdeen, Mississippi. During the lunch break, R.W. Cantrell and eight other employees, including Robert Colburn, went to a local restaurant to have a pizza. While eating, Cantrell noticed that Colburn appeared to be choking, when he started to slump forward, Cantrell began performing the Heimlich Maneuver. In just 4 to 5 thrusts the food that Cantrell was choking on was dislodged.

Cantrell and Colburn were extremely grateful for the first aid training and, especially, the Heimlich Maneuver training they had received just two hours previously in their MSHA Refresher Safety Training Class. Cantrell's training and responsiveness are credited with saving the life of Robert Colburn.

Mississippi Department of Education

Hazards associated with high pressure hydraulic systems

The use of pressurized hydraulic systems is common throughout the mining industry. Operating pressure of these systems vary, ranging from 0 to 5,000 PSI. These pressures are capable of propelling hydraulic fluids and objects at high velocities and have resulted in serious and fatal injuries.

Extreme caution should be taken while working on or around hydraulic systems.

The potential for serious injury is always present around any high pressure hydraulic system. Proper maintenance of hydraulic systems is critical to reduce the risks of system failure and potentially serious or fatal injuries.

Safety precautions:

- Frequent visual examinations of hydraulic hoses and fittings for deterioration should be conducted.
- Damaged or frayed hoses should be replaced promptly.
- Hydraulic repairs should be made by properly trained personnel only.
- All employees should be made aware of the harmful potential of hydraulic pressures.
- Personnel conducting hydraulic repairs should wear eye and hand protection.
- Hydraulic systems should always be de-pressurized prior to repairs.
- All hydraulic hoses used on equipment in and around a coal mine shall have the rated pressure permanently affixed on the outer surface of the hose.

Reprinted from the September issue of the Virginia Department of Mines, Minerals, and Energy's ***Mine Safety Alert!***

HUMAN ERROR LED TO BUTTE MINE DISASTER IN 1917

*By Al Hooper, Contributing Columnist, **The Montana Standard***

Though reporters 76 years ago offered dramatic speculation as to the cause of Butte's worst mine disaster on June 8, 1917, one sure cause survives today—human error.

The bitter irony of the disaster is that in 1916, the U.S. Bureau of Mines tested all of the Butte mines and rated the North Butte Mining Company's Granite Mountain and Speculator the best ventilated mines in Butte. The two mines had a great safety record.

In 1917 the North Butte Mining Company was spending much money in upgrading mine safety, including installing a sprinkling system in the Granite Mountain mine shaft.

To prevent the buildup of enormous water pressure in the deep shafts, water tanks were built in the mine shaft stations, usually about 800 feet apart.

An electrical substation had been installed at the station on the 2,600 foot level. The company removed the electrical substation to another room (blasted out of solid rock) a short distance from the station.

A wooden water tank was installed in its place to complete the emergency sprinkling system.

It was necessary to lower a big electrical cable into the shaft to supply power to the new substation. This Granite Mountain mine shaft, like all big Butte mines, had several electrical cables in the shafts.

Since the introduction of electrical power into the Butte mines, the big lead-covered cables were lowered into all the mine shafts in the same manner. It was considered a routine task that had never failed.

For this job, the North Butte Mining Company asked the unions to send experienced electricians and ropemen. These men would later make serious errors.

The crew consisted of 4 electricians, 3 ropemen, and 2 shaftmen. The cable was 1,200 feet long and weighed 3 tons.

The first 200 feet was to be lashed with 4 feet of manila rope at every 10 feet. The remainder was to be lashed to the steel hoisting cable every 5 feet.

The sloppy work began when the men removed some of the lashings on the lower 200 feet of cable to remove a twist. Removing these lashings caused the cable to slip through most lashings and tear others.

The cable fell, and the electricians barely escaped to the 2,600 foot level The falling cable burst the main water pipeline and tore off most of the lead sheathing in its fall.

The incident set the scene for the big disaster.

Two-thirds of the lead sheathing was torn off, exposing the frayed, oil-impregnated cambric and jute insulation.

The fire started when Ernest Sullau, the graveyard shift assistant foreman, held his carbide lamp too close to its oil-soaked insulation while trying to locate the end of the broken cable.

He and other workers tried unsuccessfully to extinguish the fire. Because the new sprinkling system had not yet been completed, the fire quickly spread, causing 163 miners to die from flame, smoke, and poisonous gas.

This was to be the nation's worst metal mine disaster.

At least 80 cables had been lowered into this and similar shafts at all the other big mines in Butte—all with no trouble.

What follows is all the "ifs:"

•If the North Butte boss had checked the work at the start, he could have prevented this disaster by sending the unqualified men home.

•If the men had taken more precautions by checking the cable before removing lashings, the cable wouldn't have fallen.

•If the falling cable had not broken the main water line pipe, the fire could have been put out.

•If the man with the carbide light had been more careful, the fire wouldn't have started.

•If the ventilation of the North Butte mines had not been so good, the gases from the burning cable would not have spread through the mine workings so rapidly.

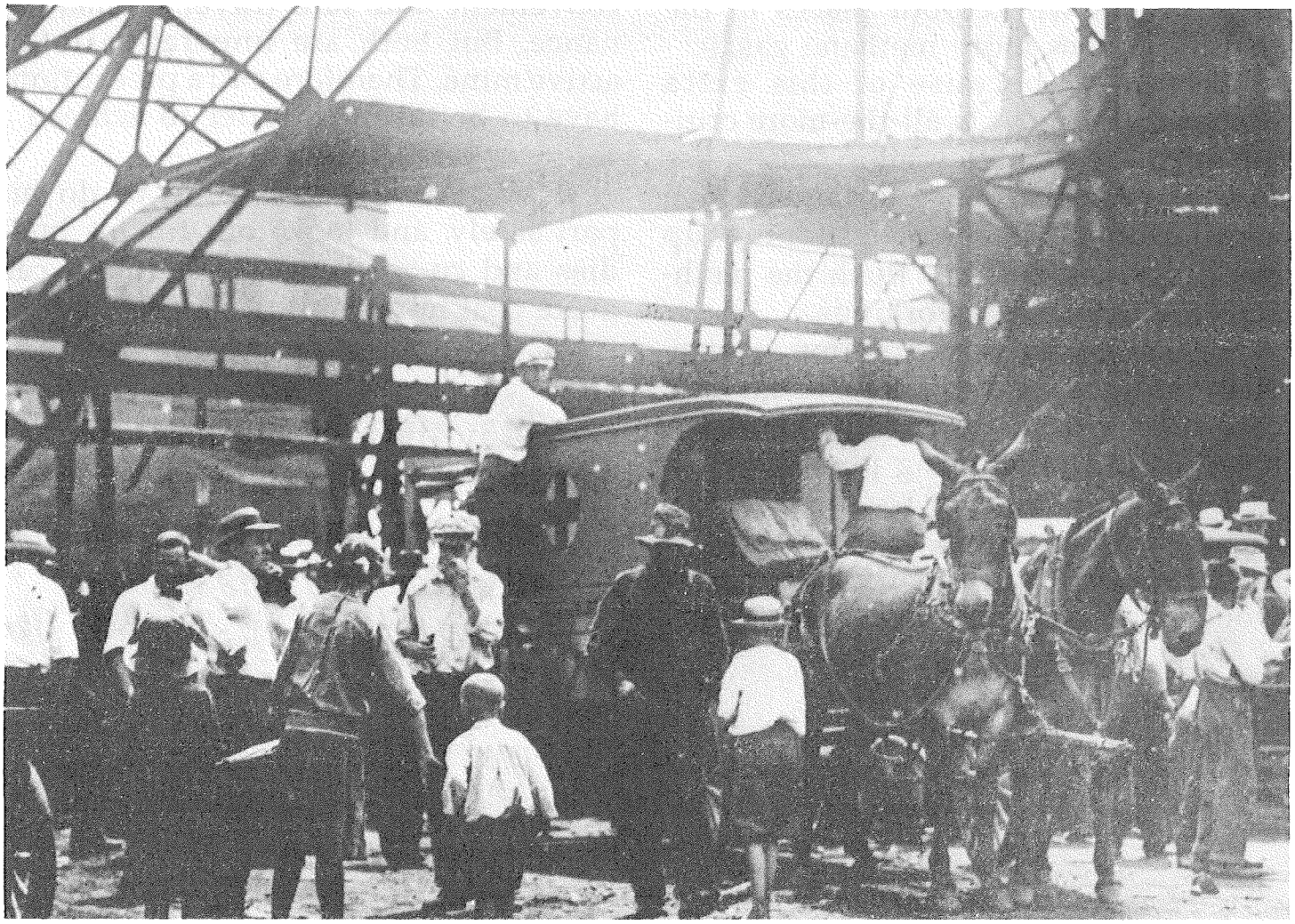
•If the 410 miners scattered through about 18 miles of workings and on various levels could have been warned in time, so many lives could have been spared.

The doctors that examined the dead men were able to prove that they died from inhaling poisonous fumes that were high in carbon monoxide from the cable insulation, and not from the burning shaft timbers.

After any big accident, everyone can point out the mistakes that caused the accident. At that time, mine accidents were among the leading causes of death and injury in mining towns.

Mine safety quickly improved, making such disasters uncommon.

Reprinted from the August 1993 issue of the ***Rocky Mountain Paydirt.***



Winter Alert 1993:

In life, little things can mean a lot—and for the miner at the workplace, safety can mean a life. In the past, coal mine explosions have taken the lives of many hard working miners and have brought tragedy to many a family. More often than not, a fatal explosion would occur during the Fall and Winter season, due to nature's low atmospheric air pressure systems that lets the coal seam or the worked-out places in the coal mine vent more methane gas.

Therefore, because of this extra vented methane, it is all-the-more critical during the cold winter season for additional maintenance for an effective ventilation system by tightening up stoppings and seals to flush the methane from all active workings.

With an effective ventilation system, methane and any dryer-than usual float coal dust would effectively be eliminated from the working places.

A few extra bags of rockdust for the rockdusting crew to render inert any of the accumulated coal dust, can also do wonders during this time of the year.

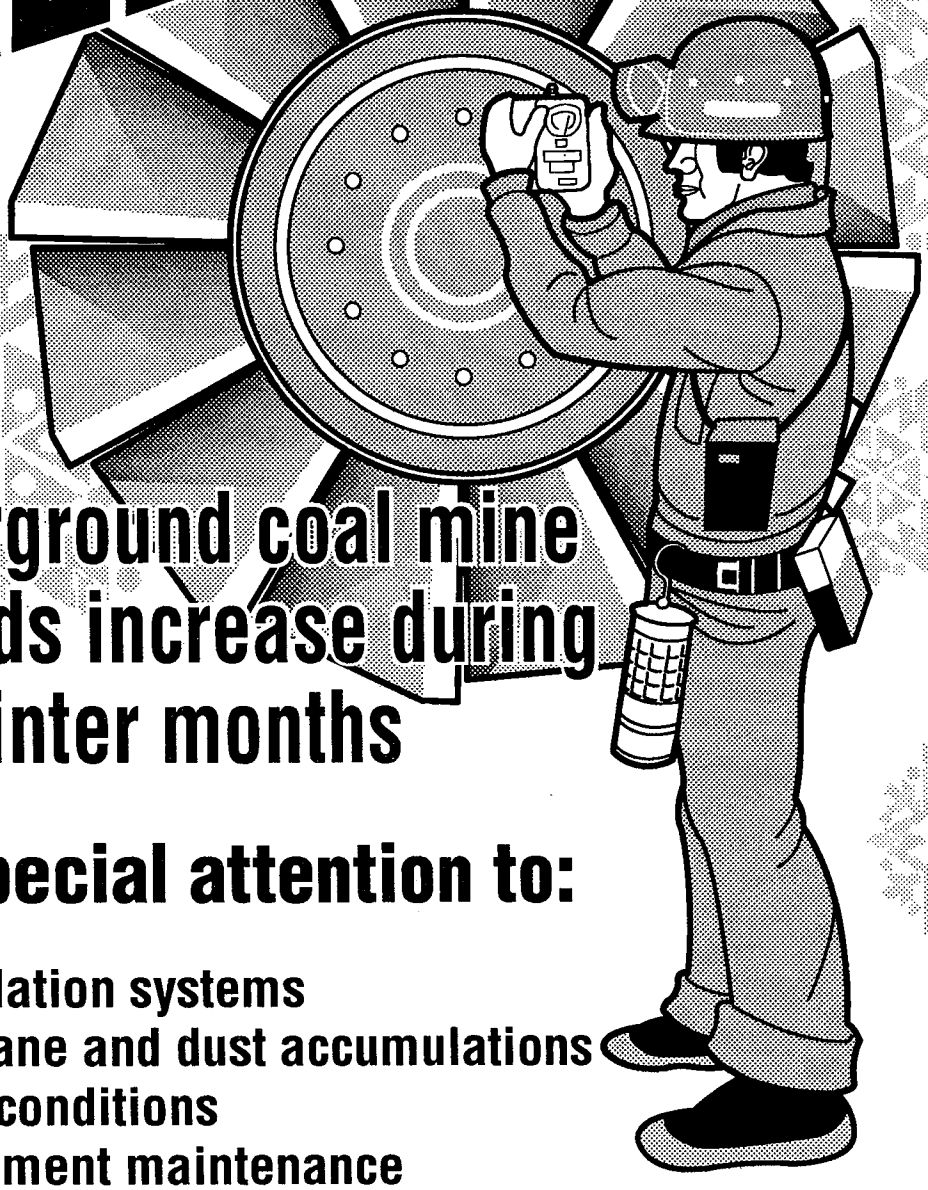
Due to the freezing and thawing that occurs during this season especially in the vicinity of mine entries, the expanding ice that forms where water usually drips or flows, will deteriorate the ribs and roof, and an extra set of experienced eyes to inspect such areas can help to avert an injury or fatality.

It is well known that cold and icy conditions do not lend themselves to convenient and safe travel or maintenance. But both are imperative in an active mine. Therefore extra precautions have to be taken in order to achieve a safe work environment.

If every miner is willing to do his part safely, and looks out for his buddies and co-workers, the industry can make coal mine fatalities a thing of the past.

Stay alert, be more safety conscious, and recognize inherent dangers while performing *all* work—*in a safe manner.*

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

Stress management

The following exercises can be done when you are working around other people. When done with discretion, you can keep your stress reduction exercises a secret.

Dr. Herbert Benson says, "If we would just do these types of stress reduction exercises, 10 times a day, it would undo all the stress we get. And, two minutes, 10 times a day, is just 20 minutes! Your increased efficiency would more than make up the time and you would not go home so exhausted."

You could also consider using a deep relaxation tape at your desk during your lunch hour. Generally, a 20-minute tape is considered the ideal length of time to bring your body to a healthier balance.

1. Thinking your hands warm

Because your hands are so accessible, and because hand temperature is so volatile, becoming sensitive to what is happening to your hands can be a very effective way to "take your pulse on stress." Situational or cumulative stress drives your hand temperature down, as blood goes to the large muscles when you are stressed. (Damp palms mean additional stress) 92° F = relaxed; 74° F = tense.

When you become aware that your hands are cold or damp, relax. Take a few minutes or up to 20 minutes to mentally:

a. Picture holding your hands in front of a warm fire;

b. Put your hands in warm dishwater;

c. Sit in a warm, relaxing hot tub or bath.

Migraine headaches can be prevented if you start "warming" your hands at the first sign of the headache—let's practice now.

2. The "let go" response

Herbert Benson, M.D., said it in his book *The Relaxation Response*, "Whenever you feel yourself uptight, say to yourself slowly, 'Let go. Let go.'" Put a lyrical note to it in your mind and make it into a chant.

3. String around your waist technique

Take a deep breath, holding it into the top of the body, mentally tie a pretend string around your waist to hold the air in the top. Hold your breath—as long as is comfortable. Mentally untie the string ; letting your breath out of your NOSE and MOUTH, picturing the breath like water, flowing into your stomach—OK, let's try it. (Breathing into your stomach on purpose, diaphragmatic breathing is relaxing in itself).

4. Mental step-back technique

Right now, fantasize leaving your body and go above this group and look down on everyone. Ask yourself some cosmic questions:

a. How important in the cosmic scheme of things is this?

b. A month from now, will I consider what is going on here of significance?

Stay up there awhile and relax.

This is a good exercise to do when you are in a group where there is bickering or senseless arguing, where your ego has perhaps gotten ridiculously involved.

Oh yes, come back down now, and reenter your body.

5. Closing your eyes technique

Some expert said that 25 percent of the energy we use is through our eyes.

I don't know how this figure was arrived at, but closing the eyes **is** relaxing. Start taking anytime during your busy day that you can to close your eyes for a few minutes. Possibilities are while you are on the phone, riding with someone else in a car, watching television, or just sitting at your desk.

Here, now, close your eyes. Now start talking to someone you know as if you are on the phone—See! The point is, there **are** times you could close your eyes.

6. Instant calming—sitting (1 to 3 minutes)

With your arms on chair rest or hands in lap, tighten the muscles in your legs back, and arms (hold for 3-5 seconds)... release the tension... relax... breathe in slowly through the nose...exhale through the mouth... as you breathe out, silently repeat the word "one"...breathe in... breathe out with "one"...maintain a passive attitude... allow your body to go completely limp... deeply relax your entire body.

7. Instant calming—standing (1 to 3 minutes)

With your arms hanging freely at your sides, slightly arch your back... bring your shoulders back to tighten the muscles in your back (hold for 3-5 seconds)... release. the arch... relax... breathe in slowly through the nose... exhale through the mouth... as you breathe out with "one"...maintain a passive attitude. While maintaining a standing position, relax your body... completely relax your upper body.

8. Longer calming (10 to 12 minutes)

Slide slightly toward the front of your seat... lean back in your chair with legs outstretched... your arms supported comfortably on the arm rests or lying on your lap... with eyes open or closed... relax. Stretch your feet out from your body as far as possible... rotate both feet from the center position outward toward the small toe... gently stretching... relax. Breathe in slowly through the nose... exhale through the mouth... as you breathe out, silently repeat the word "one"...breathe in... breathe out with "one"...maintain a passive attitude. Slowly make an arch on your back (hold for 5 to 6 seconds)... release the arch... relax. Make a fist with each hand (hold for 5 or 6 seconds)... maintain a passive attitude. Continue to breathe—slowly in through your nose... be aware of your breathing... deeply relax your entire body as you breathe-out silently, say the word "one"...breathe in slowly... breathe out with "one"...completely relax your entire body (continue this practice for 8 to 10 minutes, if time permits). Open your eyes if they were closed... notice you possess a feeling of well-being... notice that you have achieved a state of calm.

9. Longest calming—sitting or laying down (20 minutes)

If possible, have some calming music playing such as a harp or Tibetan bells. Starting with your toes, point them up toward your face. Hold them up until the tension is slightly uncomfortable. Release them and notice the pleasant sensation. Point your toes away from you. Hold them until again the tension is slightly uncomfortable. Release them and notice the pleasant sensation.

SLOWLY work up your body, tightening one muscle at a time, releasing it, and enjoying the pleasant sensation. Finish with grimaces of different parts of the face.

10. Walnut football

While seated, take your shoes off and simply roll a walnut or golf ball under your foot, including heels and toes, for a minute. Then repeat the exercise with the other foot. This

exercise will relax your foot, leg, and calf muscles and provide a sense of general well being.

11. Bali Hai sigh

Deeply inhale through your nose, then purse your lips and exhale slowly through your mouth while letting out an audible sigh. Do the exercise 10 times, visualizing your cares blowing away with each breath.

12. Diamond Head head roll

Lower your chin to your chest. Slowly rotate your head up the right shoulder and continue around and down the left shoulder in a complete wide and easy circle. Do this 5 times. Then straighten up, shrug, and wiggle your shoulders. Then do 5 more head rolls, this time reversing direction.

13. Surfer's shoulder stretch

Sit down, close your eyes, relax and slowly rotate your shoulders forward, upward, backward, and down. Do four complete rotations one way and four the other way. Good for a stiff upper back.

14. Maui sunset head rest

Sit down. Let your chin clump to your chest. Close your eyes and picture the most beautiful sunset you have ever seen. Now, massage your temples and the corners of your jawbone under each earlobe. Using the tips of all 10 fingers, tap rapidly and gently all over your head and the back of your neck for several minutes. This entire exercise should take between 5 and 10 minutes.

15. 10-finger dance

Place your arms at your sides and shake your hands vigorously. Blend your elbows, bring your hands up to shoulder height and shake your hands once more. Keeping your elbows bent, make a tight fist with each hand and hold for a minute or two. Now, you extend your fingers, stretching them into a wide span. Relax and then repeat the entire exercise about 5 times.

16. Waterfall wrist roll

Sit with your elbows propped on a desk or table. Keeping your hands limp, slowly rotate your wrists—one at a time—in a wide circle. Do this 5 times in one direction, 5 times in the other. Then, get up and shake your hands as if you are shaking water from them. Imagine you are shaking off whatever has been causing you to feel stressed. The complete exercise should take around 2 minutes.

17. Palm tree press

You rub your palms together briskly until they feel warm. Then quickly cup the palms of your hands over both eyes. With eyes closed, begin to breathe deeply and quietly. Imagine the sound of your breath as a light wind rustling through palm trees. When you feel completely relaxed, you can stop.

18. Hula slap

After a bath or shower, use both hands to slap the skin all over your body for a few minutes. It will invigorate you.

19. Polynesian lagoon dip

Fill your bathtub with warm water, get in, lean back and relax. Begin breathing very deeply. Each time you exhale, chant the word "ALOHA" in as low a tone as you can, dragging out each syllable as long as you can. Repeat at least 10 times. It's the next best thing to a Hawaiian vacation.

Fresh air . . . everywhere

Home respiratory protection tips

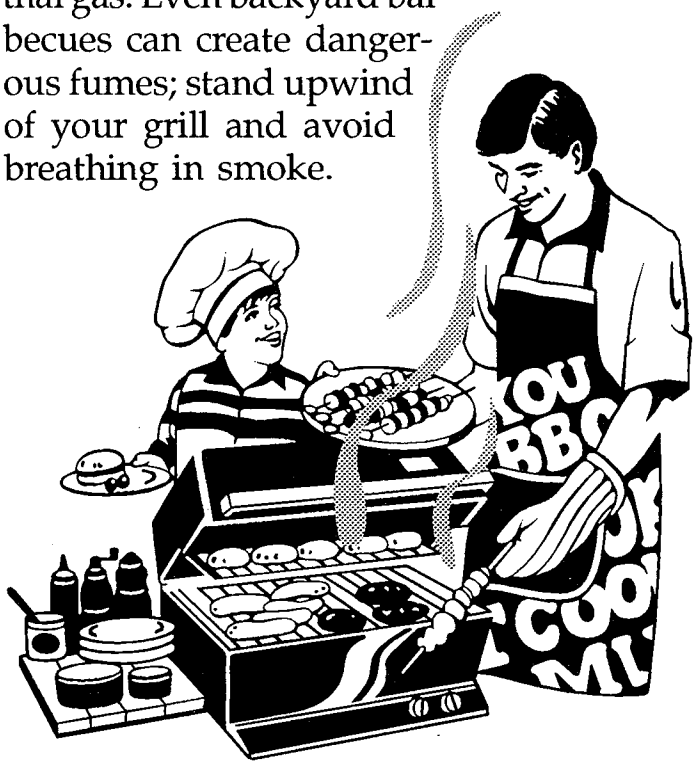
Respiratory or breathing hazards are just as common in the home as they are in the workplace. While your employer can help you protect your breathing on the job, only you can protect your breathing the rest of the day. The best way to protect your breathing off the job, is to recognize potential hazards and learn what you can do to protect against them.

Home respiratory hazards

Read labels of all household chemicals you use; some can create poisonous gases when combined with other products. Always keep rooms well-ventilated (open windows or doors, turn on exhaust fans) when using any chemical in the home. Never burn magazines or trash in home fireplaces—they can give off noxious fumes. Wear a disposable mask when vacuuming, dusting, sawing, or sanding, to avoid breathing in irritating particles. Wear a respirator when painting, spraying insecticides, or fertilizing to neutralize harmful vapors. (If you are unsure about the particular type of respirator to use for home activities, ask your safety representative at work or your personal physician for advice. [Look for article on respirators in the *November Bulletin*])

Recreational respiratory hazards

Hobbies like model-building and painting can create breathing hazards such as vapors and mists. When performing these activities, be sure to keep your work area well ventilated. (Artists who use "airbrushes" should also wear a respirator.) Carpenters should wear dust masks to filter out airborne particles. When working on cars or motorized vehicles, keep garage doors open whenever the engine is running to avoid breathing carbon monoxide, a lethal gas. Even backyard barbecues can create dangerous fumes; stand upwind of your grill and avoid breathing in smoke.



Breathing Freely

Once you recognize potential breathing hazards, you can begin to guard against them. Keep work and recreational areas well-ventilated, and when necessary, use a respirator designed to guard against the specific breathing hazards you encounter. Then breathe freely, and make every breath a breath of fresh air.

Reprinted from the Second Quarter FY 1993 issue of the U.S. Department of Interior's Bureau of Reclamation ***Safety News***

Holmes Safety Association Monthly safety topic

Fatal powered haulage accident

GENERAL INFORMATION: A 50-year-old coal truck driver, with 7 years of mining experience, was killed when his truck lost its brakes on a 14 percent grade. The operation is a surface coal facility and employs five people who maintain and monitor coal-haulage roads from two underground mines. The company employs nine coal truckdrivers. Coal is loaded at two underground mines and transported to the preparation plant via a surface haulage road. Daily tonnage hauled at the facility is 5,000 tons.

DESCRIPTION OF ACCIDENT: The victim began his shift at the trucking company shop about 4 a.m.

The victim's assignment was to transport coal from the mine to the preparation plant, about a 30-minute round trip. He had transported six loads of coal to the preparation plant without incident.

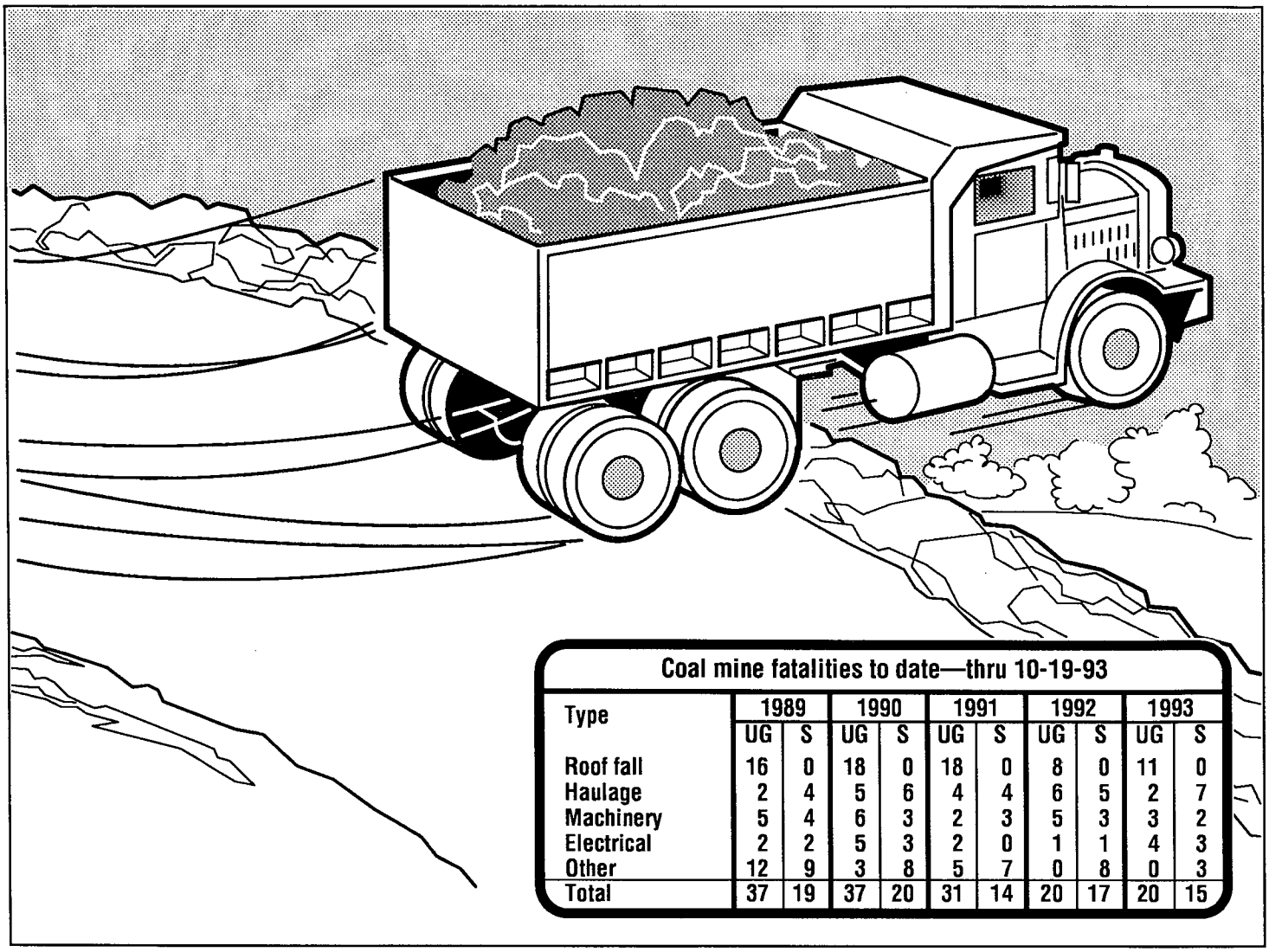
About 6:30 a.m., the victim arrived at the mine where the end-loader operator loaded his truck. He departed the mine after his truck was loaded. About 6:50 a.m., he started the descent of the coal haulage road. He slowed down about 2,600 feet from the bottom and gave his signal to allow a pickup truck driven by a maintenance man to go around his truck. About 2,360 feet from the bottom, he passed an oncoming coal truck.

The oncoming driver stated that at 6:58 a.m., he heard the victim on the CB radio say that he had lost his brakes.

Another truckdriver heard the victim state twice on the CB radio that he had lost his brakes. This truck driver immediately looked up the haulage road and saw the truck about 1,000 feet from the bottom. He yelled at the owner of the trucking company and another employee to get out of the way of the runaway truck. The two were parked in the middle of the road at the bottom of the hill near the intersection where the stockpile was located. They were in their pickup trucks, headed toward the stockpile. The other employee drove his truck to the right road, and the owner drove to the left road, to avoid being hit by the oncoming truck.

At 6:59 a.m., the victim's truck was seen traveling at a high rate of speed, passing through the intersection at the bottom of the hill and into the coal stockpile directly across the intersection.

The cab of the truck was virtually buried in the coal stockpile. The owner and the property supervisor proceeded toward the truck to attempt to aid the driver. No one knew if the victim had left the truck; therefore, a search was conducted along the haulage road by some of the miners, while others tried to dig the coal from around the truck cab. An attempt was made to connect a metal cable between the truck and an end loader. The first cable broke, and another, thicker metal cable was used. About 7:30 a.m., the truck was pulled from the stockpile, and the victim was found in the driver's seat with his seat belt fastened. Upon ex-



Coal mine fatalities to date—thru 10-19-93

Type	1989		1990		1991		1992		1993	
	UG	S	UG	S	UG	S	UG	S	UG	S
Roof fall	16	0	18	0	18	0	8	0	11	0
Haulage	2	4	5	6	4	4	6	5	2	7
Machinery	5	4	6	3	2	3	5	3	3	2
Electrical	2	2	5	3	2	0	1	1	4	3
Other	12	9	3	8	5	7	0	8	0	3
Total	37	19	37	20	31	14	20	17	20	15

amination of the victim, no vital signs were found. The front axles and wheels were separated from the truck. The cab and motor area were crushed, with the cab being jammed into the front of the truck bed. The truck frame was broken and bent.

About 8:30 a.m., the victim was transported by ambulance the hospital, where he was pronounced dead on arrival.

CONCLUSION: The accident and resultant fatality occurred when the truck apparently came out of gear and the brakes failed to slow the truck as speed increased. Possible contributing factors were that the haulage road was not provided with a safe means to stop a runaway truck: Type-30 brake chambers were provided for the tandem wheels rather than Type-36 brake chambers, as specified by the manufacturer; and traffic rules, signals, and warning signs were not standardized and posted along the roadway.

National Mine Rescue and First-Aid Contest

Louisville, Kentucky September 16, 1993

Final mine rescue contest results:

Overall

Rank	Company name	Team name	Address
1	Interstate Coal Company, Inc.,	Interstate Team,	London, KY
2	Wolf Creek Collieries,	Wolf Creek #1 Team,	Lovely, KY
3	Jim Walter Resources, Inc.,	No. 3 Team,	Brookwood, AL

Combination

Rank	Company name	Team name	Address
1	Eastern Associated Coal Corp.,	Harris Team,	Bald Knob, WV
2	Energy West Mining Company,	"C" Team,	Huntington, UT
3	Peabody Coal Company,	Coal River Team,	Montcoal, WV

First Aid Competition

Rank	Company name	Team name	Address
1	Jim Walter Resources, Inc.,	JWR #I Team,	Brookwood, AL
2	Eastern Associated Coal Corp.,	Harris Team,	Bald Knob, WV
3	Peabody Coal Company,	Coal River Team,	Montcoal, WV

Bench

Rank	Company name	Team name	Address	Bench contestant
1	Southern Ohio Coal Company,	Meigs No. 31 Team,	Athens, Ohio	Eric Gryszka
2	Drummond Company, Inc.,	Mary Lee No. 1 Team,	Jasper, AL	Gary Kilgore
3	Twentymile Coal Company,	Red Team,	Oak Creek, CO	Harry Lovely

Pennsylvania's T.J. Ward selected to receive award

The Pittsburgh Coal Mining Institute of America (PCMIA) has selected Thomas J. Ward to receive the Donald S. Kingery Memorial Award for 1993. This award is presented to a member of the mining community considered to have made significant contributions to mine safety and health. The Award consists of the public presentation of an appropriately inscribed commemorative gift. T.J. Ward will be publicly honored at the PCMIA luncheon which will be held at the Holiday Inn-Meadowlands, Washington, Pennsylvania, on October 28, 1993.

The award recipient will be a featured speaker following the luncheon. PCMIA officials expect 200 people to be present at the luncheon—most of the attendees will

be from the eastern coal mining industry, mining engineering students, and government personnel.

T.J. Ward will join a distinguished group of past recipients of the Memorial Award: Woods Talman, David Zegeer, William S. Parks, David Burgess, Robert Stefanko, Frank H. Zimmerman, Edward Onuscheck, William Parisi, Walter Vicinelly, J. Richard Lucas, Ralph W. Hatch, Robert L. Vines, William H. Hoover, Dr. Lorin Kerr, James L. Adkins, John Nagy, and Louis Hunter. The Memorial also grants a stipend to a deserving mining engineering student selected by the PCMIA Grants Committee. The recipient of the scholarship award will also be invited to, and recognized at, the luncheon.

Reprinted, in part, from a letter by John N. Murphy, Chairman, Grants Committee of the PCMIA.

Tailgate topic welding

To be a good welder is to be a craftsman. Most of us aren't at this level but we have fun trying to be good. One thing a good welder will always do is to protect themselves and those around them. Welding produces arc flashes, metal fumes and very hot metal. All of these by-products are harmful.

MSHA RULE: 56.15007 Protective Equipment or Clothing for Welding, Cutting or Working with Molten Metal.

Protective clothing or equipment and face shields or goggles shall be worn when welding, cutting, or working with molten metal.

MSHA RULE: 56.14213 Ventilation and Shielding for Welding.

(a) Welding operations shall be shielded when performed at locations where arc flashes could be hazardous to persons.

(b) All welding operations shall be well ventilated.

On a safety inspection in Mexico, a man was observed welding. He was holding a 2-inch by 4-inch welding lens to shield his eyes from the arc. That was all the safety equipment he owned but he was using it.

Do you use all of your safety equipment when welding? You should. Remember the three by-products: arc flash, metal fumes, and hot metal.

Use the correct number or shade of welding lens in your welding helmet for the size of rod you are burning. Check any welding handbook for the correct shade. Your arc flash can affect others so place a screen up for extended welding. The ultraviolet rays produced from welding can harm you and others. Wear clothing which will protect you from the hot sparks and the ultraviolet rays. These rays can cause a painful sunburn to exposed skin. Always use welding gloves to protect your hands from the heat and hot metal. Regular leather gloves are not enough protection.

Make sure that there is adequate ventilation to blow away the smoke and fumes. Some areas may require a respirator with proper cartridges to stop metal fumes.

If the man in Mexico had had these basic safety precautions, he would have used them. You and I don't have any excuses not to protect ourselves and others while becoming craftsmen.

SAFETY IS QUALITY PRODUCTION

Safety seminars to be held in Virginia

The Virginia Aggregates Association (VAA) in cooperation with DMME—Division of Mineral Mining and MSHA presents safety seminars December 7, 1993, in Roanoke, and December 8, 1993, in Charlottesville, Virginia.

Seminar objective:

The objective of this seminar is to introduce new safety management tools to the supervisor and refresh other safety procedures. The supervisor's role in safety has progressed beyond the daily plant inspections for hazards. Now supervisors need the tools to deal with the people and situations that can lead to accidents.

Who should attend:

Plant superintendents to first line supervisors.

Registration:

To guarantee your registration(s), return a completed registration form (call Robin Powell at the VAA—see below) with payment ($50.00) to the VAA offices. The registration fee includes breaks, lunch, and all handouts. Please note the price reduction for firms sending three or more individuals ($40.00). No refunds will be issued if cancellation is received less than three (3) working days prior to the meeting. The number of Non-VAA member registrants ($75.00) will be limited to available space.

Dates and location:

December 7 Sheraton Inn—Roanoke
December 8 Sheraton Inn—Charlottesville

For additional information:

Call: Robin Powell, VAA at (804) 282-9401.

For lodging:

Call: Sheraton Inn—Roanoke: 703/362-4500
Sheraton Inn—Charlottesville: 804/973/2121

Be sure to mention you are with the VAA to obtain the conference rate.

Seminar outline:

8:00 am *Registration*

8:30 am *Welcome/Introduction*

8:35 am *Emergency Preparation & Response*
Randy DeVaul, Technical Instruction Supvr., DMME, Division of Mineral Mining

9:35 am *Break*

9:45 am *Mobile Equipment Safety*
William Reinholtz, Training Manager, Carter Machinery

10:45 am *Break*

11:00 am *Noise Exposure/Control Inspection of Work Areas*
Carl Metzgar, Safety & Health Manager, Vulcan Materials Company

12:00 *Lunch (provided)*

1:00 pm *Ergonomics—Injury Prevention*
Ellen Hudgins, Occupational Therapist, Southside Orthopedic
Debbie Stewart, Physical Therapist, Virginia Rehabilitation Services, Inc.

2:00 pm *Break*

2:15 pm *MSHA Assessments*
Vern Weaver, Assistant Director for Policy and Systems, MSHA

3:00 pm *Meeting Wrap-up*

Thanks for your support!

Virginia Aggregates Association, 1993 Safety Committee

Well workplace bronze award to Arch of West Virginia

Arch of West Virginia was designated as a "Well Workplace—Bronze" on August 11, 1993. The Awards Ceremony was scheduled for September 30 during the luncheon at the Governor's Conference. Congratulations to everyone on the Arch Team for their contribution to this achievement. Your commitment to Worksite Wellness Programming will continue to benefit both employees and the organization.

The designation of Well Workplace is effective for a period of three years, at which time recertification is mandatory. Criteria includes senior management support, employee needs assessment, a written annual operating plan, and written policies. A complete list of criteria is available from the state wellness coordinator in West Virginia.

The achievement of Well Workplace is a significant event for the entire organization and represents accomplishments in health standards. Few West Virginia Companies have attained this achievement.

Again, congratulations to all!

Reprinted from theSeptember 10, 1993, issue of ***Team Talk****— the employee newsletter of Arch of West Virginia.*

Hazards associated with overhead high voltage transmission lines

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

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

Safety precautions:

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

Reprinted from the September 1993 issue of the Virginia Dept. of Mines, Minerals, and Energy's ***Mine Safety Alert!***

Green River Safety Council

The Green River Safety Council held its 3rd quarter meeting on August 24, 1993, at Owensboro, Kentucky. One of the events of the evening was the presentation of "Certificates of Achievement in Safety" to three mining operations for working the year of 1992 without a lost workday injury. The Certificates were awarded by the Mine Safety and Health Administration and the American Mining Congress. The certificates were presented by Richard Reynolds, Assistant District Manager District 10, located at Madisonville, Kentucky.

The three mines awarded are located ln Western Kentucky and are the following:

- Gatewood Mine, Winn Construction Co., Inc., worked 32,678 employee-hours with zero lost workday injuries .
- Weirs Creek Mine, Island Creek Coal Co., worked 91,296 employee-hours with zero lost workday injuries .
- Colonial Mine, The Pittsburg & Midway Coal Mining Co., worked 77,392 employee-hours with zero lost workday injuries.

Hazard alert—backstops

A mine operator incorrectly installed a backstop in a conveyor belt drive gear reducer by aligning the slip direction opposite to the input shaft normal rotation direction. When the belt was initially started, the drive motor overcame the backstop, causing the backstop to fail. At a later date, the conveyor belt was shut down for maintenance. A miner performing maintenance was fatally entangled in the head pulley when a sudden rollback occurred. The head pulley had not been blocked to prevent movement because it was mistakenly believed there was a functional backstop in the drive gear reducer.

The following steps should be taken when installing backstops:

1. Instruct all personnel in correct backstop installation procedures in accordance with the manufacturer's instructions. Furnish a copy of these instructions to the installer.

2. Mark the reducer housing on the backstop side for the proper shaft rotation direction.

3. Compare the rotation of the shaft to the slip direction indicated on the backstop. A representative from mine management should check to see that these directions match.

4. If the parts of the backstop assembly become inadvertently dislodged, return the backstop to the manufacturer for reassembly.

5. If the speed reducer direction of rotation is changed, remark the reducer for correct shaft rotation direction.

6. Contact the product manufacturer or a qualified engineer when power transmission problems occur.

For questions concerning this hazard alert, contact Mike Sheridan, Denver Safety and Health Technology Center, at (303) 231-5430.

"Buckle Up For Safety" awards two in South Central District

The South Central District adds two more to the Buckle-Up Program. So far there have been a total of seven incidents in this district where seat belts have prevented serious injury or death to an equipment operator. The latest incidents and new members of the program are listed below:

Incident 6. At a quarry operation northwest of Austin, Texas, a dozer operator was pushing over burden over a pit wall with a Caterpillar D8L Dozer. The dozer operator was in training. The training instructor, who also worked as regular dozer operator, and the trainee, had preshift inspected the dozer and found no discrepancies prior to operating. The trainee indicated he had a total of 9 hours operating experience prior to the accident.

About 30 minutes into the operation the dozer transmission slipped out of 3rd gear. The trainee blamed it on the fact he had not properly engaged the transmission. He indicated the transmission slipped out of gear one additional time before the accident. He stated he did not report the incident to the trainer—the regular dozer operator.

The dozer over traveled the stopping point when the unit failed to respond when he attempted to place it into reverse gear. The dozer continued to the edge of the quarry wall and fell 28 feet to the top of the overburden pile, rolled over, and fell 9 more feet landing upright on the quarry floor.

The trainer had instructed the trainee to leave one pile of overburden along the edge of the quarry wall to prevent over travel of the machine. The trainee stated that he was confident he could push the material over the edge and still stop the dozer. He admitted he failed to try using the brakes when he realized the dozer was still moving toward the edge of the wall.

The trainee was taken to a local hospital and checked. He sustained minor contusions and abrasions to the head, hands, scalp, and back. He was released for light duty and returned to his regular job three days after the accident.

To prevent further accidents of this type, the trainee recommended that training should be conducted away from the quarry walls or high traffic areas until trainees become competent with the machine.

The roll-over protection system received minimal damage in the accident. Undoubtedly the seat belt prevented the death of this operator.

Incident 7. At an operation in central Missouri, a haul truck driver lost control of the unit when the steering became inoperable.

On the day of the accident the truck driver started work at his regular starting time of 10 a.m. He was driving a Caterpillar 773 B, 50-ton haul truck. A preshift inspection of the unit indicated nothing wrong with the truck. He was hauling from the underground mine to the mill and at the time of the accident was completing his 25th trip. He had driven about 250 miles since the start of the shift.

There was a slight curve to the left as the vehicle was heading down the last hill before the dump site. He entered the curve at about 35 miles per hour. When the driver turned the wheel to negotiate the curve the vehicle failed to respond. He thought however that he may have been loaded a little extra heavy on one side of the vehicle or that he had a low tire.

Frantically he turned the steering wheel but the vehicle still failed to respond. An O-ring in the steering had failed on the truck and the steering was inoperable. The unit took out 80 feet of guard rail while overturning and traveling down a 65-foot 2 to 1 slope. The operator stated that the only thing he could remember after going through the guard rail, was hanging up side down with dirt coming into the cab.

An examination by a doctor found the driver to be in good condition. He returned to work the next day and was photographed standing in front of the haul truck. Once again, a seat belt prevented a serious injury or death.

This program recognizes those miners who were protected by a seat belt while being involved in a mobile equipment accident. Qualified individuals received a certificate of recognition and a special decal identifying them as members of the buckle up program. The operators of the vehicles involved in the accidents listed above are now members of the buckle up program.

M.R. Jacobson, Safety Specialist, MSHA South Central District

Heraclio Flores, Fordyce employee awarded Joseph A. Holmes Association Heroism Award

Heraclio Flores, a haul-truck driver at the Fordyce Company in Sullivan City, Texas, received the Joseph A. Holmes Association Heroism Award at the National Holmes Safety Association, June 2, 1993. Heraclio received the award for courageously helping save a coworker's life.

On October 20,1992, at approximately 12:50 p.m., Rene Salinas was moving brush when he ran into a tree. When he hit the tree, a large swarm of Africanized bees engulfed the open cab of the dozer. Rene backed up the dozer and tried to ward off the bees which were stinging his head, face, and upper torso.

Heraclio saw what was happening and jumped from his truck with his ice-water bucket. Heraclio threw the ice water on Rene and pulled him off the dozer. Heraclio then ran with Rene to a nearby body of water where they both jumped in to escape the swarming bees.

Rene was treated at a local hospital for over 300 bee stings to his head, face, and torso. He lost three days of work. Heraclio was treated at the hospital for five to ten stings to his upper body. Heraclio lost no work time.

The staff of the Texas Mine Safety and Health Program commends Heraclio for his quick thinking, bravery, and concern for his co-worker.

Reprinted from the Oct-Dec 1993 issue of the University of Texas's Mine Safety and Health Program bulletin ***'Nformation Letter***

Health tip

Is it okay to stop taking your blood pressure medicine if your blood pressure is normal or you feel perfectly fine? Absolutely not. Blood pressure treatment is lifelong. Once you are on high blood pressure medicine, it is usually necessary for as long as you live. It can, in fact, be dangerous to stop taking it. Never discontinue or adjust your medication yourself without checking with your doctor first.

Blood pressure savvy

What you need to know to help keep your blood pressure under control.

People with high blood pressure are at risk for stroke, heart attacks and kidney failure. Because these diseases are so common in our society, major educational efforts have been launched by national health organizations to increase awareness about high blood pressure and what Americans can do to help control it. The goal is to:

- Get undiagnosed patient into treatment,
- Promote healthier lifestyles to reduce the risk of stroke,
- And reach those at highest risk for high blood pressure.

For most people, a blood pressure less than 140/90 is considered healthy When blood pressure is high, it means that your heart is working harder than normal to pump blood through your body. This condition is called *hypertension*.

You can help control or prevent high blood pressure altogether with these healthy lifestyle adjustments:

- Lose excess weight.
- Keep your weight within the recommended guidelines.
- Don't smoke.
- Exercise regularly.
- Limit alcohol intake.
- Take time off for relaxation.
- Have regular, professional blood pressure checks.

"The Stroke Belt"

- Americans in the southeastern part of the U. S. are at highest risk for stroke. This region is called "the stroke belt."
- It includes 11 states: Alabama, Arkansas, Florida, Georgia, Indiana, Kentucky, Louisiana, Mississippi, North Carolina, Tennessee, and Virginia.
- Many scientists believe diet and overweight play a role.
- The fact that many of these populations contain large numbers of African-Americans may also be a factor.
- African-Americans have more high blood pressure than any other ethnic group.
- If you live in the stroke belt" or are African-American, it is important for you to be especially careful.
- Do all you can to prevent high blood pressure.
- Seek regular check-ups.
- If you are under treatment, follow your doctor's orders.

Reprinted from the Summer 1993 issue of ***Rx LIVE WELL*** *the quarterly newsletter of the Federal Occupational Health Administration, Region III, Department of Health and Human Services, Washington, D.C. 20002.*

Proposed changes in the Holmes Safety Association's Bylaws

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

SECTION 3. EXECUTIVE COMMITTEE (REPRESENTATIVES)

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

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

Supporting Rationale

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

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

SECTION 6. VACANCIES AND MEETING ABSENCES

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

(b) Except for the protocol of Officers as specified in Section 9., an Executive Committee member absent from an Executive Committee meeting called by the President may name an alternate from their respective interest group to serve in their absence. An alternate so named shall be given in writing to the Secretary/Treasurer in advance of each meeting of anticipated absence. Given the absence of an Executive Committee member or named alternate for a period of consecutive meetings, such member will be advised by the Secretary/Treasurer of such absence and that their absence or that of an alternate from the next meeting called will subject

such member to review by the Executive Committee for continued Executive Committee member standing.

Supporting Rationale

This proposal is submitted on the basis that there are a few given members on the Executive Committee who are inordinately absent from meetings. It is believed that such members should have an opportunity within the bylaws to have an alternate serve in their place. Short of their attendance or that of an alternate for a given number of meetings should, at some point in time, subject such member's standing on the Executive Committee to review.

In accordance with Section 15. of the Holmes Safety Association Bylaws, Section 9. is herein proposed to be amended as follows:

SECTION 9. VICE PRESIDENTS

The four Vice Presidents shall represent each of the interest groups as specified in Section 11(a) other than that interest group represented by the President. Except for resignations or death, the Vice Presidents shall rotate from Fourth Vice President to President, one position each year. Persons elected to fill a vacancy as Vice President shall be assigned the Fourth Vice President's position regardless of the position vacated. The Fourth Vice President elected or otherwise appointed shall be filled by a person from a different state than that of the current Presidential and Vice Presidential officers. The Vice Presidents shall assist the President and other officers and committees in conducting the work of the National Council. In the absence of the President the highest ranking Vice President who is present at a meeting shall assume the duties of the President.

Supporting Rationale

Based on the expanse of our membership across these United States, it simply seems appropriate that the election and/or appointment of our Presidential and Vice Presidential officers should reflect such expanse by not having more than one given officer serve from any given state. It is further believed that the full committee would appreciate such diversity.

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

SECTION 12. NOMINATING COMMITTEE

(a) **FORMATION.** The nominating committee shall consist of five members from the Executive Committee, one of whom shall serve as chairman: 1 from industry labor; 1 from industry management; 1 from a state enforcement agency; 1 from a federal agency; and 1 from manufacturers, suppliers or insurance groups. **With each being selected from respectively different states,** the President shall appoint the committee members and designate the Chairman. Membership on this committee shall be for one year.

Supporting Rationale

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

Harry Tuggle, 1st Vice President, Holmes Safety Association

Send your comments to:

Mr. Joseph Sbaffoni
%Pennsylvania Deep Mine Safety
100 New Salem Road, Room 167
Uniontown, PA 15401

The last word...

"A practical nurse is one who falls in love with a wealthy old patient."

"I suppose," the tough old sergeant snarled to the private, "that when you're discharged from the army, you'll wait for me to die, just so you can spit on my grave."
"Not me," observed the private. "When I get out of the army, I never want to stand in line again."

"Status quo. Latin for the mess we're in."

"Never put off until tomorrow what you can do the day after tomorrow."

"Nobody can make you feel inferior without your consent."

"An intellectual is a person whose mind watches itself."

"No man can think clearly when his fists are clenched."

"Propaganda is the art of persuading others what you don't believe yourself."

"There is only one thing about which one can be certain, and that is that there is very little about which one can be certain."

"There are only two ways of telling the complete truth—anonymously and posthumously."

"Never believe anything until it has been officially denied."

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