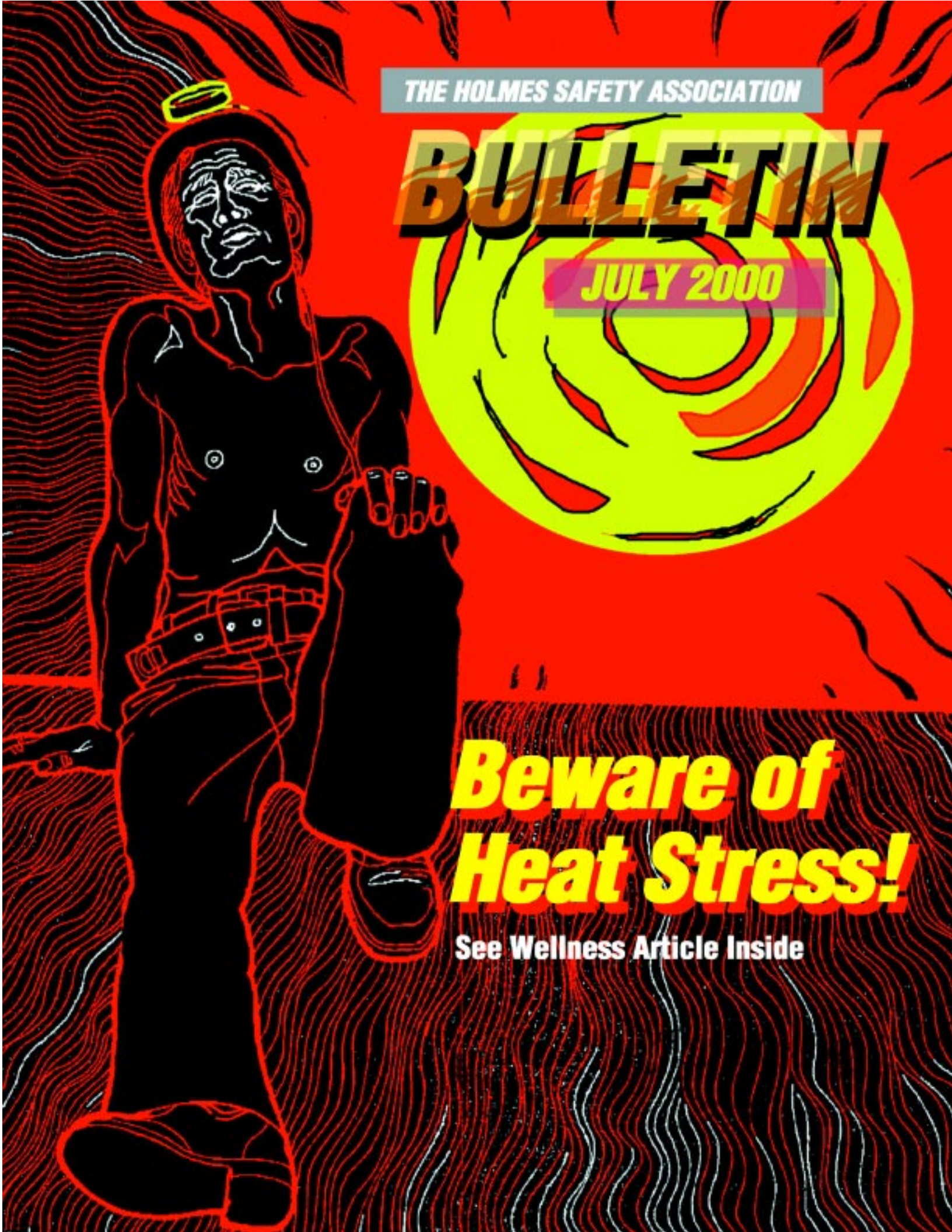
THE HOLMES SAFETY ASSOCIATION
BULLETIN
JULY 2000
Beware of Heat Stress!
See Wellness Article Inside

CONTENTS:

The Holmes Safety Association Bulletin contains safety articles on a variety of subjects: fatal accident abstracts, studies, posters, and other health- and safety-related topics. This information is provided free of charge and is designed to assist in presentations of groups of mine and plant workers during on-the-job safety meetings. For more information visit the MSHA Home Page at www.msha.gov.

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

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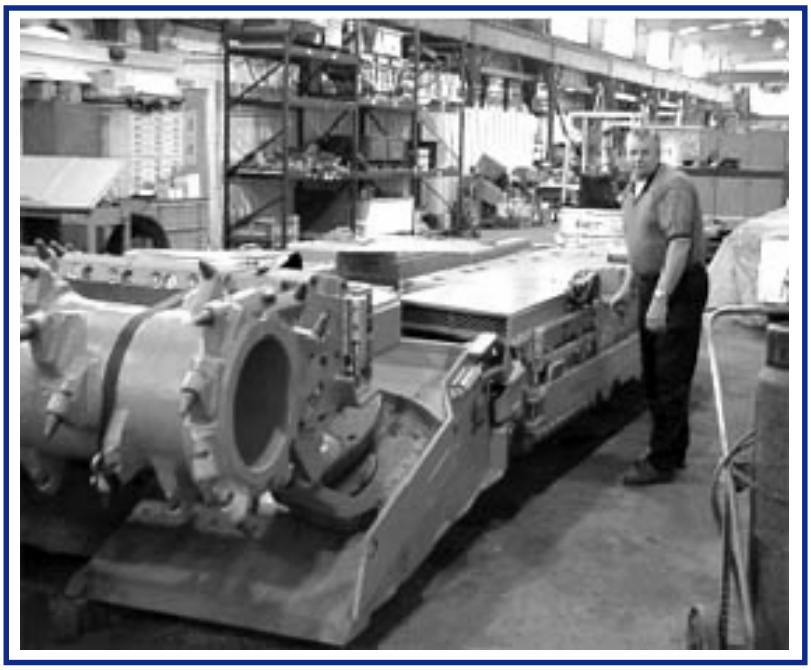
Keep Us in Circulation--Pass Us Along

One Good Turn

Article taken from the MSHA Post Accident Investigation Remedies



Are your crews opening the main breaker when changing the bits on a cutterhead? Are you sure? Recently, a continuous mining machine operator was fatally injured when he came in contact with the cutterhead of a continuous mining machine while it was in motion. There were no eyewitnesses to the accident, but it was reported that the victim had been positioned in front of the continuous miner in order to change cutterhead bits. The victim had possession of the machine's remote control transmitter at the time of the accident.

A review of accidents has shown the most hazardous method of changing bits is to use the remote control transmitter to "jog" the cutterhead into position. The practice of the operator being positioned near the cutterhead while it is rotating is very hazardous and should be avoided.

To ensure that this type of accident does not occur, it is recommended that machine power be removed by turning off the machine's main circuit breaker and manually rotating the cutterhead into position for bit replacement. This would eliminate the need for energizing the machine and jogging the cutterhead into position.

The following is one method suggested to manually rotate the cutterhead to safely change the cutter bits:

1. The cutterhead should be positioned at a convenient height and the cutterhead boom blocked.
2. De-energize the continuous miner's circuit breaker at the power center.
3. Unplug, lock out and tag the plug.
4. Mount a bracket or shoe to which a ratchet-type hand crank can be mounted on the frame of the continuous miner behind the cutterhead. (The winch can then be removed to protect it during mining operations and stored with the bits, the bit wrench, and hammer.)
5. Wrap the nylon strap around the cutterhead and secure it to a bit block.
6. The hand crank should "crank up" a reinforced nylon strap. This is similar to the hand cranks used to pull boats out of the water onto boat trailers or to secure cargo on flatbed trucks.
7. By cranking the handle the cutterhead can be rotated safely to the desired position to change the cutter bits.

(See next page)

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

Performing maintenance on energized equipment increases your potential for injury. Manually rotating the cutterhead to change bits is a method to minimize your chances for injury. Mine operators need to ensure their employees de-energize equipment before performing maintenance according to 30 CFR Part 75.1725(c) and 57.12016. The possibility of an injury or fatality during this procedure strongly advocates this additional safety measure, such as locking out and tagging.

Pinch-Point Protection for Mobile Bridge Conveyor Operators

Article taken from MSHA Post Accident Investigation Remedies

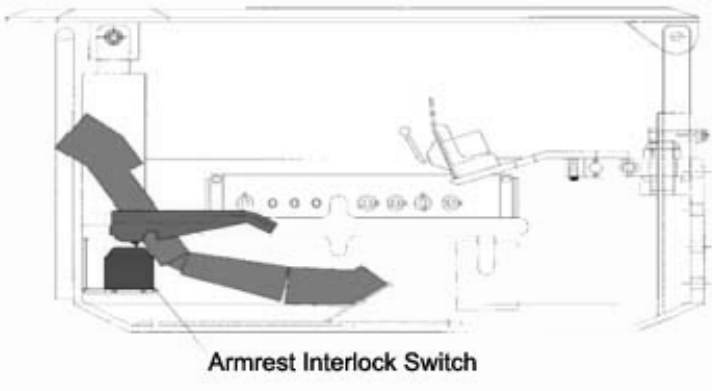
In the past decade, 35 mobile bridge conveyor (MBC) operators have been crushed, pinched, or injured when operating an underground mobile bridge conveyor system. Most often, these accidents occurred when the miner was out of the protection of the equipment cab, and the continuous miner or at least one of the other conveyors were trammed, causing his conveyor section to move. These accidents can occur suddenly, because sections of the MBC and the continuous miner have the power to push or pull other sections of the system.

Although a panic bar provides safety to the operator, the best method, incorporated after a 1994 fatality, is the installation of a position occupied (dead man) switch. This switch de-energizes the tramming circuit of the entire system, not just a single section, when an operator is out of the cab. Common places to install dead man switches include the seat, armrest, or cab door where the entire system's tramming circuit remains de-energized until the dead man switch is reactivated upon the return of the operator to the cab.

If a mechanical interlock is used, no modification is necessary to the machine approval. If an electrical interlock is chosen, the mine operator must obtain from MSHA a modification of the machine approval by way of the Field Modification Program by the mine operator or the conveyor manufacturer must seek a revision of the approval. For assistance in obtaining MSHA approval, please contact Ken Porter at (304) 547-2030.

Proper training is important to minimize accidents. *However, a fail-safe system, especially one already available, gives obvious safety advantages.*

For further information, contact Joe Judeikis at MSHA at (304) 547-2039 or your MBC manufacturer.



Pictured is a sample Armrest Interlock Switch. When the operator leaves the chair, he must lift the armrest. This in turn de-energizes the conveyor. The conveyor remains de-energized until the operator resets the circuit by turning a reset button.

JULY 2000

Who Ya' Gonna Call???

To notify MSHA of a mine accident or emergency, call your local MSHA office. If you are unable to contact your local MSHA Office, call (800) 746-1553.

To report a hazardous condition at a mine to MSHA, call (800) 746-1554. You do not need to identify yourself.

For general information about MSHA, call MSHA's Office of Information and Public Affairs at (703) 235-1452.

Quick Thinking, Rescue Devices Save Two Miners' Lives

Article taken from MSHA News Release No. 2000-0511

A pair of miners used oxygen-supplying self-rescue devices to save two of their co-workers who were in danger of suffocation at the Ohio Valley Coal Company's Powhatan No. 6 mine near St. Clairsville, Ohio, in April of this year.

"These miners deserve the highest praise for their quick thinking and courage," said Davitt McAteer, Assistant Secretary of Labor for Mine Safety and Health. "We hope that everyone in underground coal mining will pay attention to the message that properly maintained self-rescue devices and proper training save lives.

About 11 a.m. on April 10, a foreman and three other miners were working to rehabilitate a deteriorated area of Powhatan No. 6 mine when the foreman, who had walked ahead of the others, entered an area with very low oxygen and collapsed.

As the foreman's gas detector sounded an alarm, roof bolter Jim Shapley and continuous miner operator Ted Holland went to his assistance. When Holland, in the lead, tried to reach the foreman, Holland's detector alarm sounded and he also collapsed.

Kevin Roe, also a roof bolter, joined Shapley and they pulled Holland quickly to safety but could not easily move the foreman and began feeling effects of low oxygen.

They retreated to don self-contained self-rescuers (SCSRs) that supply oxygen, then returned to pull out the foreman. They then held one of the oxygen-supplying devices to the foreman's nose and mouth to help him breathe. Holland meanwhile had recovered and telephoned for help.

The foreman was taken by ambulance to a local hospital and then by air to a Pittsburgh medical facility. He was expected to recover after a brief hospitalization.

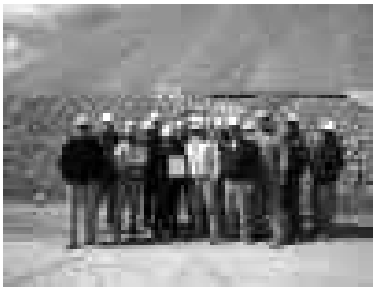
Federal law requires all underground coal mine operators to provide self-contained self-rescuers to each underground miner for use in an emergency. The respirators are designed primarily to provide one hour of oxygen against toxic or unbreathable atmospheres in case of a mine fire or explosion. The devices may be worn on the belt or stored in an easily accessible place under a plan approved by MSHA. Each underground coal miner is required to receive hands-on training in the use of SCSRs.

"Thanks to these miners, no lives were lost," McAteer said. "If they had made the wrong decision — tried to continue their rescue efforts without the oxygen devices — there could have been four deaths. We hope others will learn from what happened in this incident."

MSHA is continuing its investigation into the emergency. McAteer said, "Incidents like this can so easily end in tragedy that we need to do all we can to prevent similar emergencies in the future."

The Wagner Quarries Company Wins Prestigious Safety Award From the Ohio Division of Mining and Reclamation

Story submitted by Jim Myer



Sandusky, Ohio—The hourly workforce of the Wagner Quarries Company, members of the International Brotherhood of Boilermakers, Local Lodge D337, have received a special award from the Ohio Division of Mines acknowledging their outstanding achievements in safety. This award is given as a result of working the entire year of 1999 without any injuries of any type. While mining operations fairly routinely attain a no-lost-time injury status for a year or more, what is truly unique is having completed a full year with no injuries of any kind at all.

"This safety record reflects the very hard work and attention of every single employee of the Company. Safe work records such as this are not achieved very often and I feel the employees themselves, who are in charge of their own safety program, deserve special recognition for their accomplishments," says Martin Jones, President of Wagner Quarries Company. "These guys are really pros and they should be very proud of their accomplishment. By the way, their record continues into its 16th month."

Jim Myer, Manager of Mines for the Ohio Division of Mines and Reclamation and by Mel Byers, Jr., State Mine Inspector with the Division, presented the award on March 29 to Local Lodge D337 officers, Jeff Orticari, Mike McCormick and Roger Rogers.

Western Kentucky Mines Worked the Year 1999 Below the National Average

Story submitted by Leland Payne

These companies had mines in Western Kentucky that worked the entire year of 1999 below the incidence rate of the National Average. The companies were recognized for their achievements at a March 30, 2000, meeting for the Green River Safety Council.

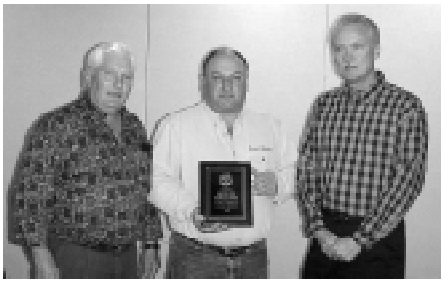
Hopkins County Coal Corp.

Peabody Camp Complex Preparation Plant

Lodestar Mining, Inc.

Grand Eagle Mining Inc.

Peabody Martwick Mine



Peabody Gilbartar Mine

Colorado Aggregate Producers District Council/Colorado Rock Products Association

Co-Sponsor Safety Roundtable in Denver and Grand Junction

Story submitted by Bill York-Feirn

The Colorado Aggregate Producers (CAP) District Council of the Holmes Safety Association for the first time co-sponsored the Annual Safety Roundtable which was organized by the Colorado Rock Products Association/Colorado Ready Mix Concrete Association. The CAP arranged for speakers from MSHA's Mine Safety and Health Academy in West Virginia to speak at both 1-day sessions held in Denver on April 26, 2000, and in Grand Junction on April 28, 2000. Thirty-five industry representatives attended the Denver session and 20 attended the Grand Junction session. The attendance was significantly higher than the participant list in 1999's roundtable. Since the CAP was formed in June 1999, one objective of the district council is to increase the participation in these types of seminars and to bring MSHA expertise and MSHA policy/enforcement discussions together with the mining community in a nonthreatening atmosphere.

The 2000 Safety Roundtable highlighted and explored four timely topics which are of critical importance to aggregate producers in Colorado and the nation. Mr. Wayne Lively, mine instructor at the MSHA Academy, provided a nicely illustrated presentation on Powered Haulage Safety. Mr. Lively provided an overview of on- and off-site haulage safety requirements, an illustrated checklist for tire and rim safety inspection, and presented MSHA's focus on surface haulage equipment inspections. Mr. Rocky McKinney, mine instructor at the MSHA Academy, discussed the New MSHA Noise Standard and Noise and Dust Compliance issues. Mr. McKinney took the audience through an overview of the new noise rule requirements, discussed methods for complying with these requirements, and outlined the elements of an effective hearing conservation plan. Participants took this opportunity to ask questions regarding how the noise and dust standards will be enforced and what ideas for compliance were out there that they could take advantage of. MSHA continues to modify their

Wayne Lively giving presentation

Presenter at the Safety Roundtable

enforcement strategy as difficult compliance situations are brought to light and discussed with MSHA.

Mr. Leon Hake, with O'Brien Concrete Pumping, conducted an excellent, hard-hitting presentation on Pump Safety for Ready Mix Drivers. Mr. Hake used local and national incidents where drivers were injured or killed using pumps to effectively lay out a set of safety tips for ready mix drivers. Mr. Richard Holmes, Safety Manager with Aggregate Industries - North, presented an illustrated program he developed on Train-the-Trainer Program on Mixer Rollover Protection. Mr. Holmes has used this program extensively within his company and presented this program at a number of safety meetings for the aggregate industry. His program accentuates the basic safety precautions that should be taken when operating mixer trucks to prevent rollovers.

Attendees provided very positive feedback regarding these presentations. If you are interested in any information concerning these topics, please contact Bill York-Feirn, President, Colorado Aggregate Producers District Council of the Holmes Safety Association at (303) 866-3650 or by email, bill.york-feirn@state.co.us on weekdays.■

Wellness

Preventing Heat stress

Heat is a serious physical hazard that threatens workers from late spring to early fall. The potential for exposure to this workplace hazard is reflected in a 1979 survey of workers' compensation cases. Agriculture led all other industries, including construction and mining, in the incidence of heat-related illnesses. When anyone's ability to respond to heat stress is exceeded, exposure can lead to reduced ability to perform good-quality work, increased accidents on the job, or heat-related illnesses. This fact sheet provides some basic knowledge about heat stress, first-aid treatment, and prevention.

HOW THE BODY RESPONDS TO HEAT

The body temperature for a human must be maintained within a very narrow range (98.6 + 1.8°F), regardless of work load or adverse environmental conditions. An increase in body temperature of 6.5°F above normal can result in death from hyperthermia. Maintaining an acceptable body temperature is critical to the well-being of anyone working in a hot environment. To achieve this goal, a balance must be struck between heat produced by a body at work and heat lost to or gained from the environment. The body initially responds to heat by sweating and by circulating blood closer to the skin's surface to lower the main body temperature.

When exposure to heat takes place over an extended period, a process of physiological adaptation called acclimatization occurs. Acclimatization may take weeks, although significant adaptation occurs within a few days of the first exposure. Once acclimatization is achieved, working in the heat results in increased production of a more dilute sweat (lower salt content) and less of an increase in heart rate and body temperature.

The body's ability to respond adequately to heat stress decreases with age and obesity. Older workers and obese workers are more vulnerable to heat-related illnesses and less capable of working in the heat. Pregnancy increases a woman's metabolic demands and may make her more sensitive to

(See next page)

heat and humidity.

METHODS OF HEAT GAIN OR LOSS

The major physical processes by which the body gains or loses heat in a hot environment are: heat production by normal body functioning (metabolism), heat loss by evaporation, and heat loss or gain by convection and radiation. Metabolic heat gain is a by-product of both resting and physical exertion.

Evaporation is the cooling (heat loss) of the body that takes place when sweat evaporates from the skin's surface. The rate of this evaporative cooling is usually greatly increased by air movement across the skin. During strenuous workouts in very hot environments, sweat production may equal one quart per hour; this is usually sufficient to prevent overheating. Problems arise in warm humid environments because humidity and still air interfere with the body's ability to dissipate heat. Sweat that cannot be evaporated from the body, but drips from the skin, will not result in heat loss.

Convective heat loss or gain is the transfer of heat between the skin and surrounding air. When air temperature is higher than skin temperature, the body gains heat through convection. If air temperature is lower than skin temperature, the body loses heat. The rate of heat gain or loss depends upon the difference between air and skin temperatures and the presence of air movement (wind velocity). The use of fans to continually move cool air next to the skin and move away the air already warmed by the skin is a common method of cooling the body.

Radiation is the direct transfer of heat from a hot object (the sun, hot equipment, a furnace, or a warm wall) to another cooler object, such as a human body, without heating the air in between. The greater the temperature of an object the more radiation it emits and the warmer the person will feel.

HEAT STRESS

Heat stress occurs when the body builds up more heat than it can handle. High temperatures, high humidity, sunlight, and heavy workloads increase the likelihood of heat stress. Too much heat can also make workers lose their concentration or become fatigued or irritable and thus increases the chance of accidents and injuries. Understanding how to deal with heat stress can help to prevent or reduce accidents and is important to workers' health and well-being.

Heat Rash

Heat rash is an early signal of potential heat stress. It is commonly associated with hot, humid conditions in which skin and clothing remain damp due to unevaporated sweat. Heat rash may involve small areas of the skin or the entire torso. If large areas of skin are involved, sweat production is compromised, resulting in a decreased capacity to do work in the heat. Even after the affected area of skin is healed, sweat production will not return to normal for another 4 to 6 weeks.

Preventive measures are aimed at reducing exposure to hot and humid conditions each day. If heat rash does occur, precautions must be taken to avoid skin infections. Treatments include cleaning the affected area and applying mild lotions to it. Keeping the skin clean and dry for at least 12 hours each day will prevent severe heat rash.

Heat Syncope

Heat syncope is characterized by dizziness or fainting while standing still in the heat for an extended period. The condition results from blood pooling in the skin and lower part of the body and the consequent decrease in blood flow to the brain. Heat syncope is the least serious of heat-induced disorders. Its most serious aspect is that it may cause people to fall or injure themselves while operating machinery. Treatment consists of resting in a cooler environment. Prevention is based on acclimatization and avoiding long periods of immobility while at wait.

Heat Cramps

Symptoms include painful cramps or spasms in the legs, arms, or abdomen. The victim will probably sweat heavily. Spasms may occur during work or in the evening after work. Heat cramps are often caused by a temporary fluid and salt imbalance during hard physical work in hot environments. First-aid treatments for heat cramps include: applying firm pressure or gently massaging the affected muscle, resting in the shade or a cool place, and taking small sips of salt water (one teaspoon of salt per quart of cool water; plain water should be used for those with heart or blood pressure problems).

Heat Exhaustion

Heat exhaustion results from the reduction of body water content or blood volume. The condition occurs when the amount of water lost as sweat exceeds the volume of water drunk during the heat exposure. Heat exhaustion usually develops after several days of exposure to high temperatures. The victim of heat exhaustion may have some or all of these signs or symptoms: heavy sweating; clammy, flushed, or pale skin; weakness; dizziness; nausea; rapid and shallow breathing; headache; vomiting; or fainting.

First-aid treatments for heat exhaustion consist of the following:

Move the victims to a cool area.

Place them on their backs with their feet raised.

Loosen clothing and apply cool, moist cloths to the body, or fan the victim.

Slowly administer sips of salt water (plain water for those with heart or blood pressure problems).

Call a doctor, especially if victims faint or vomit.

Heat Stroke

Heat stroke is a life-threatening, heat-related disorder associated with working under very hot and humid conditions. The body may either lose its ability to regulate temperature, due to a failure of the central nervous system to regulate sweat control, or its normal heat-regulating mechanism may simply be overwhelmed. Heat stroke can result in coma or death. The early signs and symptoms of heat stroke include: **a high body temperature (104^{0}F or over) hot, dry skin that appears bluish or red; absence of sweat in 50 to 75 percent of victims; rapid heart rate; dizziness, shivering, nausea, irritability, and severe headache progressing to mental confusion, convulsions, and unconsciousness.**

A worker who becomes irrational or confused or collapses on the job should be considered a heat stroke victim, and medical help should be called immediately. Early recognition of symptoms and prompt emergency treatment is the key to aiding someone with heat stroke. While awaiting the ambulance, begin efforts to cool the victim down by performing the following:

- Move the victim to a cooler environment and remove outer clothing.
- Wet the skin with water and fan vigorously or repeatedly apply cold packs, or immerse the victim in a tub of cool (not ice) water.
- If no water is available, fanning will help promote cooling.

Factors that may increase the risk of heat stress include sleep distress, obesity, poor physical condition, lack of acclimatization, dehydration, and alcohol use. Many commonly used drugs may also interfere with the body's response to heat stress. Preexisting medical conditions, such as cardiovascular disease, diabetes, certain skin disorders, and some diseases of the central and peripheral nervous systems, can impair people's normal physiological response to heat stress. Consult your physician for more information concerning the above conditions.

PREVENTING HEAT STRESS

(See next page)

Enhancing Heat Tolerance

Acclimatization (to heat) is a process of adaptation that involves a stepwise adjustment to heat over a week or sometimes longer. An acceptable schedule for achieving acclimatization is to limit occupational heat exposure to one-third of the workday during the first and second days, one-half of the workday during the third and fourth days, and two-thirds of the workday during the fifth and sixth days. The acclimatization procedure must be repeated after days off due to illness or a vacation of one week or more. To achieve acclimation, a person must work in the heat at the activity level required by the job. If the risk of heat stress is increased, additional acclimatization will be required.

Fluid replacement: Always drink plenty of water when in the heat. Simply relying on feeling thirsty will not ensure adequate hydration. To replace the four to eight quarts of sweat that may be produced in hot environments, people require one-half to one cup of water every 20 minutes of the workday. Water at 55^0F is preferable to ice water or warm water.

Physical fitness is extremely important. The rate of acclimatization is a function of how physically fit the individual is. The unfit worker takes 50 percent longer to acclimate than one who is fit.

Increasing Safe Work Practices

Limit exposure time. Schedule as many hot activities as practical for the coolest part of the day (early morning or late afternoon). Employ additional help or increase mechanical assistance if possible.

Minimize heat exposure by taking advantage of natural or mechanical ventilation (increased air velocities up to 5 mph increase the rate of evaporation and thus the rate of heat loss from the body) and heat shields when applicable.

Take rest breaks at frequent, regular intervals, preferably in a cool environment sheltered from direct sunlight. Anyone experiencing extreme heat discomfort should rest immediately.

Wear clothing that is permeable to air and loose fitting. Generally less clothing is desirable in hot environments, except when the air temperature is greater than 95^0F or a person is standing next to a radiant heat source. Then covering exposed skin is

beneficial to reducing heat stress.

A buddy system may also be helpful. It depends on a fellow worker's ability to spot the early signs of heat stress, such as irritability, confusion, or clumsiness. A ready means of cooling should be available at work areas where heat illness might occur.

Worker Health and Education

Periodic medical examinations may help identify workers who are at greater risk for heat-related illnesses. This is particularly important for those with preexisting health problems or older workers.

Drugs may alter the body's ability to deal with heat stress effectively. Health-care providers can provide important information about possible problems and make recommendations about safe work practices.

Alcohol use should be avoided when working in a hot environment.

Worker Health and Safety Education

All workers who are exposed to hot environments should receive basic instruction on the causes, recognition, and prevention of the various heat illnesses.

This article is adapted from one written by Wei Zhao and Ann L. Kersting, and published as Fact Sheet FS747 by Rutgers Cooperative Extension, The State University of New Jersey.✲

National and International Metal and Nonmetal Mine Rescue Conference/ Training/Competition July 18-20, 2000 Las Vegas, Nevada

The Department of Labor, Mine Safety and Health Adminstration will be hosed the National and International Metal and Nonmetal Mine Rescue Conference Competition July 18-20, 2000, in Las Vegas, Nevada, at the Las Vegas Convention Center.

The purpose of the event is to provide a training exercise at the international level which would broaden participants' knowledge of mining techniques, rescue techniques and concepts, and various apparatus and gas detecting equipment. The goal was to have better prepared mine rescue teams, to operate at a superior level of safety for themselves and those who are being rescued.

On July 18 there were seminars addressing safety issues in the mining industry. The competition was on July 19.

National and international teams were isolated in a central location.

This arrangement provided an opportunity for the participants to engage in a professional dialogue with others who share their dedication to mine rescue.

The conference closed with a banquet and award ceremony for the national and international participants and guests on the evening of July 20.

JULY 2000

Part II
"One Spark of Time"
The Winter Quarters Mine Disaster

By Kymberly Mele

"Ellen, darling, goodbye for us both. Elbert said the Lord has saved him. We are all praying for air to support us, but it is getting so bad without any air.

"Ellen, I want you to live right and come to heaven. Raise the children the best you can. Oh how I wish to be with you, goodbye. Bury me and Elbert in the same grave by little Eddy. Goodbye Ellen, goodby Lily, goodbye Jemmie good Horace. Is 25 minutes after two. There is a few of us alive yet."

Jake and Elbert

"Oh God for one more breath Ellen remember me for as long as you live. Goodbye darling."

(Memorial to Miners, Sun Advocate, Price, Utah; Oct. 29, 1987, used by permission.)

This message was written by one of the miners who lost his life in the May Day 1900, mine explosion in which 200 miners were killed. One Salt Lake City newspaper described the tragic events of that fateful day as "death's awful harvest at Winter Quarters," which left behind in it's wake 107 widows and 268 fatherless children.

The world was horrified as the terrible news spread and the first reports began to circulate of the mine explosion that had occurred near Scofield, Utah. "Fifteen men were killed" was serious enough, but when later reports came telling of the awful fate that had overtaken the unfortunate miners working there it was beyond belief. The country was shocked when it learned that the explosion had killed two hundred miners.

Dilley, in his book *The History of the Scofield Mine Disaster*, stated, "The scene around the mine as the dead were brought out cannot be described, hundreds of women and children stood awestricken, waiting for husband, father, or brother to be brought out a mangled corpse and strong men broke down with grief as someone dear to them was carried out and placed among the dead, and hundreds of women and children were weeping aloud as they discovered some of their dear ones who had left home only a few hours before in the full vigor of life, now cold in death; how miserable and gloomy were the surroundings."

Early Wednesday morning as rescue crews resumed work, was when newspaper readers around the country first learned of the terrible mine accident. The *Deseret Evening News* reported a perceptible change in the mood surrounding the communities, as so many of the houses prepared to receive their dead. "The awful scene of yesterday had passed away

when the day dawned this morning, and the awful calm of despair had taken its place," the news account said. "The agonized shrieks of the widows and the moans of the fatherless were no longer heard. The stricken ones were beyond that, and their grief could find no utterance."

Everyone was so appalled by the disaster that it seemed as if the magnitude of the calamity could not be taken in, and the work of attending to the dead was an overwhelming task.

A large force of men worked for two or three days to get the majority of the dead from the mine as the bodies were taken care of and burial preparations were being made. Salt Lake City was able to furnish only 125 coffins and a shipment of 75 additional coffins was expressed from Denver.

As the recovery work continued, the dead miners were brought out of the mine in coal cars with as many as twelve bodies in a car. The bodies, which were mutilated and burned by the explosion, were brought out in sacks. The *Salt Lake Tribune* described the process once the bodies were out of the mines:

Then a corpse is brought out is usually carried from the mouth of each tunnel at the respective entrances to the place of deposit. Here there is a corps of men from four to ten in number, with sponges, hot and cold water in tubs and other receptacles. The clothing is first removed, the soot, smoke and powder burns washed from their faces and the bodies prepared and laid out in long robes, where they are identified by a tag with name and address attached to them, to await identification of relatives or friends.

After the bodies were washed and dressed in underclothes, white shirt and collar, necktie, and black suit, they were taken to the Scofield School. When the coffins arrived, the bodies were placed inside and then taken to the dead miners' homes.

The task was overwhelming. One of the Evans brothers stated as he gazed over the mangled bodies in the boarding house, "I went through the Abercarn horror in Wales in 1878, when 268 were killed. It was a gas explosion in a coal mine, but the scenes were tame compared with these."

The *Salt Lake Tribune* told of one amazing story of how one miner, Roderick Davis, managed to escape from the mine after the explosion and joined one of the rescue parties. While inside the mine he fell unconscious after being overcome by the gas. Believed to be dead by other rescuers, he was thrown into one of the cars being filled with dead bodies. Taken from the mine, he was placed in a row of corpses waiting to be washed. Davis regained consciousness when the men began to wash him and got up and walked out of the room.

After the explosion, many felt the Finnish miners in

(see next page)

Scofield were responsible for the devastating explosion. It was believed that the Finns had taken large quantities of powder into the mine to earn more money by dislodging greater quantities of coal since they were paid by the ton. Was it this powder that was touched off and ignited the dust inside the mine? This was later proved not to be the case. The Finns were also criticized for not helping in the rescue effort and the miners of other nationalities recovered the bodies of their countrymen, having sixty-one of their own numbered among the dead. Some of the miners felt it was on account of their superstitions, and they were not surprised or angry at their refusal to give aid although reporters portrayed their actions in a very unfavorable light.

Expressions of sympathy and offers of help came from many people and in a variety of ways. Women went to Scofield to comfort the mourners and to help with the housework and to care for the children. Food, clothes, and other needed items were sent from all around. Messages of condolence were sent by many, including President William McKinley. The tragedy received national and international attention. London's *Daily Telegraph* reported, "there will be deeper sympathy with America in this awful catastrophe than has been evoked by any event on the other side of the Atlantic since the loss of the *Maine*."

Telegram sent to Governor Heber M. Wells, May 3, 1900.

"I desire to express my intense sorrow upon learning of the terrible calamity which has occurred at Scofield, and my deep sympathy with the wives, children and friends of the unfortunate victims of the explosion."

Signed: William McKinley, Washington.

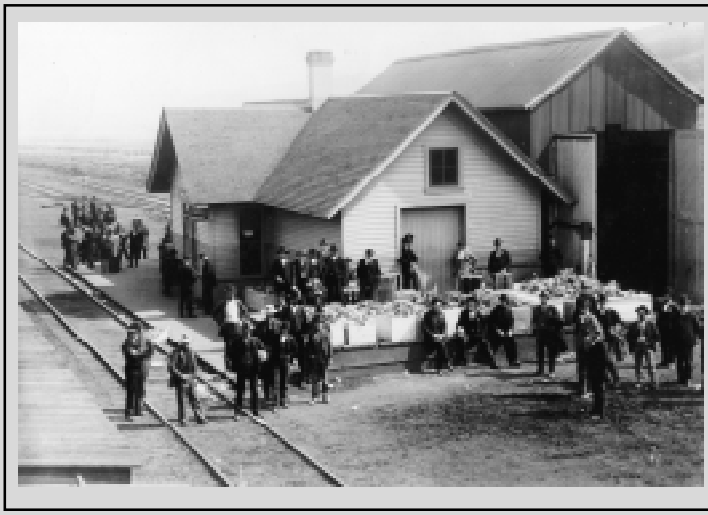
Almost three railroad cars were furnished at different times with flowers by citizens and the school children from Salt Lake City and from other towns along the line to Scofield as spring flowers were in short supply at Scofield as it was located in the mountain country. The *Herald of Salt Lake* related the following:

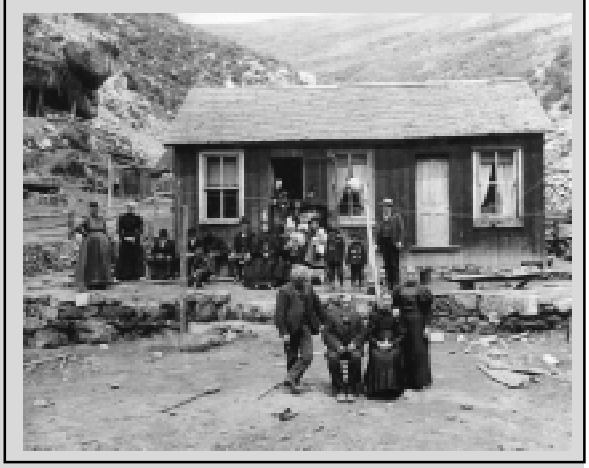
"One of the prettiest things that is being done to bring the sunshine back to the blighted homes in Scofield, was the shipping of almost a carload of flowers yesterday to the mining camp. The consignment went down with the regular train at 2:30 and occupied the whole of the baggage compartment and were spread out on the seats two and three feet high throughout the rest of the car. There were all varieties of floral offerings. The predominating kind were lilacs and they made a beautiful

sight, stacked up in the car and tied into large-sized bouquets. Then there were small bunches of pansies and violets, that looked all the more pretty on account of the contrast with the larger flowers. Mingled with these were cut flowers from the floral establishments laid in long boxes. Everything seemed to be there that might help to cheer those who have lived out in the hills, far away from the flowers and who are now experiencing the most dreadful calamity that has ever occurred in the western country. This gift was not the donation of any one individual or clique of men or women. It was the gift of the city of Salt Lake. It was gotten up in such short time that its magnitude was most surprising. It was not until after nine o'clock yesterday morning that the idea was conceived.... Superintendent Welby quickly acquiesced in the proposition and made its execution possible by offering a special car for the flowers.... A notice requesting all those wishing to contribute flowers was posted with the *Herald* bulletins, and communication was established with the public schools. The principals of most of the schools announced to their scholars what was asked of them, and long before the time for the train to leave, the flowers began to come in. They were brought by all kinds of people. Little tots came with big bunches of lilacs that almost smothered them and asked in lisping voices where they were to be taken. Aged women came with loads of floral offerings that almost bore their feeble bodies down, and with tears in their eyes deposited them in the car and walked slowly away... Even up to the last moment for the train to wait they kept coming and placing their offerings with the others... Had longer notice been given, the floral contributions would have been much larger. At every station along the line, great crowds were gathered to watch the train as it passed through.... The train bearing the car of flowers from Colton to Scofield was an especially large one, comprising nine coaches and was run as a special but did not succeed in getting to Scofield until evening, when it was too late for the distribution of the flowers. The *Herald's* relief car, with lilacs and cut flowers, was switched into a sidetrack near the cemetery early in the morning. The car was next to the roadway over which the long train of wagons passed as they bore the bodies to their last resting place. The doors of the car were thrown open, and as each wagon came by, it halted while Captain Barrett and his aids... buried the coffins under lilacs and handed each driver a bunch of cut flowers for the widows and children who accompanied the coffins. At the forward end of the car, the boys in charge were almost overwhelmed by requests for flowers. Working as fast as they could, the mournful little groups of women and children, in significant black, were still there awaiting their turn for the blossoms. If the donors of the flowers and the people who helped collect them could have seen the gratitude and appreciation of Scofield, they would have been repaid an hundred fold for their work. The procession of the dead passing the car seemed almost endless. From the rear vestibule, one commanded a view of the canyon and valley down which the wagons came, and the heartbreaking tragedy of the place was borne in on the distributors with each succeeding wagon until the iteration of grief became almost unbearable. One could understand why these people who have heard the sobs of the bereft and the cries of distress for days, have reached the point where emotion makes no response in outward expression. It was as though the constant strain on the heartstrings had left them incapable of vibrating to touch either joy or sorrow. One of the first groups to pass was in a carriage. Three women in weeds, four little children in black, two men whose drawn faces and weary eyes told their own story. Next came the wagon with the inevitable coffin.

(See next page)

JULY 2000





On the seat with the driver was a mother and son-the man's arms around the mother, who sat limp with her eyes closed, preserving consciousness with evident effort. The little ones came in for special care and tenderness from Captain Barrett. They stood around in the car doors in groups, some of them too shy to ask for the flowers; but there was no need of words, their eyes made their own plea. As fast as he could find time during the long procession, the Captain would step down from the car, lift a tot up into the car to fill their arms with lilacs and their hands with pansies, lilies and violets. Just before noon came a plea from the Finns. Their spokesman came aboard the car and said they had sixty-one dead, none of whom had a friend in the country, aside from the people of their nationality. He asked as a favor that flowers be reserved for them until their train came down the canyon. There was an abundance for all, and the man's face lighted with evident pleasure when he was assured that all the coffins would be decorated and the graves covered with flowers. The distribution alone took nearly all the time from nine o'clock in the morning until the heavy rain late in the afternoon stopped the melancholy procession."

Special funeral trains were scheduled on Friday to leave Scofield with fifty-one of the bodies of the dead miners that were to be buried elsewhere. There was hardly a dry eye among the crowds that had gathered upon the different platforms that day as the train arrived at each one of the stops along the sad route. It was observed that "one hardy workman, standing near the express office at one of the train stations, wiped his eyes with the back of his grimy hand and then turned his face away and vainly tried to hide his emotion." The grief was overwhelming for all present. The miners were being brought home forever to their final resting place.

Passengers on the northbound Rio Grande Western that morning were murmuring among themselves about the state's dreadful news when their train slowed for its scheduled stop. Many craned their necks to watch the five coffins that were loaded on and the grieving woman who also boarded the train at the station. She seemed to be no more than 18 years old. A nervous quiet settled over the passengers, but when the train stopped and the coffins were taken from the train for the last leg of their journey homeward, the woman became hysterical. She had sufficient reason. Four of those five coffins carried the bodies of her father, John Muir, her two brothers, George and Dan Muir, and her husband of only three months, Gunner Bjornson.

One of the saddest stories was that of the Hunter family who lost all of the male members except two. Ten in all perished that fateful May Day, as well as two brothers-in-law. As the family was from Ogden, just north of Salt Lake City, the bodies made the sad journey home. Among those who accompanied the train was J. A. Lambert of Ogden, who was a member of the Hunter family. In the course of a brief conversation he said: "There are nine of our family on this train who met their death in the mine; the other still lies under the debris down there. My God it is awful. No tongue or pen can describe the horror of the situation down there. I have been through the entire war of the rebellion, but I can tell you it was nothing to what it is down in Scofield, from the fact that the women were not present on the battlefield. Whole families are wiped out and the women do nothing but shriek and wring their hands day and night. There are pitiful sights and cases there that would stir the hearts of the most callous. Take one instance-that of Mrs. Williams, who came from Tennessee with her husband and a family of seven children a few days

(See next page)

before the explosion. Her husband went to working the mine and the next day met his death there."

While preparations were being made in Scofield to bury the dead on Saturday, it was feared there would not be enough men to dig the graves. Fifty Provo men volunteered to go to Scofield as gravediggers to aid a group of others. The 125 graves in the northwest corner of the cemetery were nothing more than trenches where the coffins would be placed three feet apart. The remainder of the graves were dug in other parts of the cemetery where family members had been previously buried.

The local sawmill operator filled an order for 200 headboards and the inscriptions were made with a lead pencil. The *Salt Lake Tribune* claimed that fifty percent of the names were misspelled and that the spelling of many of the names had to be changed by friends and relatives.

On the day of the burial in Scofield, the weather suited the dismal occasion. Two services were held. Reverend A. Granholm, a Finnish Lutheran minister who had arrived by train from Rock Springs, Wyoming, conducted the first—in memory of the sixty-one Finnish miners. Pastor Granholm conducted funeral services in Finnish and at the end of the service he consecrated each grave individually and spoke with every widow and relative. It was commented on later how Pastor Granholm had a profound impact on all of the Finns as he comforted the mourners as he spoke to them in their native tongue.

The *Salt Lake Herald* told of the great suffering of one Finnish family: "There were stories of deep tragedy but none so touching as that of the Louma family. Seven sons and three grandsons of Abe Louma and his wife had left their home in Finland and come to America, eventually arriving at the Winter Quarters mine. They wanted their father and mother, ages seventy and sixty-five, to come live the rest of their days with them. The sons told their parents they were earning more money than they had ever made in Finland and that it would be unnecessary for the old people to work any longer. Abe Louma and his wife arrived in Scofield three months before the explosion. Six sons and three grandsons were killed in the disaster. Five of the sons and two of the grandsons were married. Only one son, Matako Louma, survived."

Everything looked promising for the Loumas as they enjoyed the prosperity of the "new" country with their family until the day of the explosion. Fate had arranged that Abe Louma and his wife be there in person to experience the horror and agony when the mine exploded. In an instant they lost six sons, three grandsons, and one son-in-law. One granddaughter related years later: "Oh, it was terrible for them. I remember my grandmother explaining how my grandfather had told her that, "If I don't live any longer than a cat, I am not dying in America." And he and his wife went back to Finland."

The second service that day in Scofield was held by the Latter-day Saints. Its scope was broadened to take in all who mourned, and at one o'clock the hall was crowded with people of all denominations.

One speaker stated that he "desired that the words he might utter would comfort the hearts of all who mourned and strengthen their faith. On occasions of this kind, we realize that words fail and that we have not the power to express the full sentiments of our hearts and the sympathy we have for those who mourn." Another of the speakers told the widows, "All that made you love them lives and will live forever."

The Pleasant Valley Coal Company provided each of the dead men with burial clothes and a coffin, and gave each man's family $500. The company also erased $8,000 in debt that the dead miners had accumulated at the company

store. The emotional shock was great for those who lost the family breadwinner. At that time industrial insurance was unheard of and the grief-stricken families were left to the mercy of private relief. Other private donations came from a number of communities within and outside the state as a massive relief drive was organized, and the funds taken in proved to be quite generous.

As the company prepared to reopen the mines, many of the miners at Winter Quarters said they would never work underground again. "No, I do not want any coal mining here or anywhere else, in fact, for sometime to come," one man told a reporter, "I have just shipped my partner, Peter Sutherland, whom I came west with to his home in Canyon City, Colorado, and when that last act was completed, I threw up the hunt for the victims for fear that I would become mentally unbalanced. It was an experience that I would not care to go through again, even if death was the penalty for a refusal to do so."

Eventually, as life slowly returned to normal in the affected communities, and despite the scars that would last for years, many of the miners who had sworn that they would give up mining forever returned to the Winter Quarters mine. "That is a peculiarity of coal miners the world over" said one miner who had survived an explosion five years earlier in Almy, Wyoming. "Every man who survived that explosion vowed he would never go into that mine again. I was one of the loudest, and yet, after the shock had worn off, I was about the first to accept work and return to the mine." On May 28, 1900, the Winter Quarter mines reopened.

As the new century, 1900, barely unfolded, the Winter Quarter's mine disaster was just an inkling of what was to unfold in terms of devastation in the mining industry. Throughout the past 100 years, many other just as tragic mine disasters were to be chronicled in the pages of U.S. mining history. Although disasters such as this taught tragic lessons, changes have been brought about with improvements and innovations continuing each year in the hopes of lessening the hazards in the mining industry. As we witness the beginning of a new millennium, it affords us a time to reflect back and learn of the struggles and sacrifices of those who have gone before and the costly contributions made to the quality of life we enjoy today.

The mining industry has always had a rich legacy in shaping this great nation. Through the past century, the mining industry has touched all aspects of life in America and has contributed greatly to its history. It is an industry that has sustained a unique blend of cultures and contributed to the fabric of our great American culture.✺

Sources:

Dilley, J.W., The History of the Scofield Mine Disaster, Utah, Knights of Pythias, 1900.

A native of Utah, Kymberly Mele is a freelance writer. A mother of six children, she lives on a small farm in Vernal, Utah, with her husband and the three youngest children. Her husband, Greg Mele, P.M.S.C., is a Safety Manager at the Deserado Coal Mine, Blue Mountain Energy, Inc., near Rangely, Colorado. Mrs. Mele enjoys a rich legacy in the mining industry and is a descendant of one of the survivors of the Winter Quarters mine disaster.

What's happening at the… National Mine Health and Safety Academy

Courses, Seminars/Workshops for MSHA and the Mining Industry

Mine Elevator Inspection Program Training Module I
Technical Coordinator: Harold E. Newcomb
August 8-10, 2000

Surface Haulage Safety Seminar
Technical Coordinator: John Tyler
August 22-24, 2000

Intermediate Toxicology
Instructor: Michelle Schaper
August 29-31, 2000

Introduction to Mining
Technical Coordinator: Jimmy L. Shumate
September 12-14, 2000

Instructor Training Workshop
Technical Coordinator: Kenneth M. Scott
September 25-28, 2000

Mining Our History...

An Overview of Disaster Anniversaries

Written by Melody Bragg, Bulletin Staff Writer

85 Years Ago
Ignition of Gas
United Coal No. 1
Christopher, IL

July 27, 1915

A full shift of 415 men was underground on this morning when a body of gas was ignited by an open light. The blast ignited coal dust and spread through one section of the mine. Three men were killed by violence, five by flame and hot gases, and one by suffocation. Eight others were injured.

80 Years Ago
Explosion
Renton No. 3 Mine
Renton, PA

July 19, 1920

Over the weekend, the fan was shut down for repairs. After the fan was restarted on Monday morning, the foreman, six maintenance men, and two firebosses entered the mine. One hour later, there was a violent explosion, wrecking the mine workings and blowing the cages into the headframes. The entire crew of men underground was killed in the blast. Ignition was evidently caused by an arc from a trolley locomotive moved into an entry that was not yet cleared of gas.

80 Years Ago
Explosion
No. 6 Mine
Sublet, WY

July 26, 1920

At approximately 4:45 p.m., an explosion occurred in this mine and took the lives of eight miners working underground. The explosion occurred as the powderman struck a keg of powder with a mallet in the act of opening the keg. The men who were killed were three or four men waiting their turn to get powder, the powderman, and other men who were walking down the manway some distance from the magazine.

70 Years Ago
Fire
Capital Glenn Mine
Lost Chance, CA

July 14, 1930

At 10:00 a.m., a fire originated in some unknown manner in the wooden surface structures near the portal of the mine. When the fire started, five men were at the faces. These men tried to escape by going down the incline and out the Moss exit but were overcome and died in the attempt. The fire burned all the structures on the surface near the portal and about 70 feet of timbered adit inside the porter.

65 Years Ago
Explosion
No. 155 Mine
Van Lear, KY

July 17, 1935

An ignition of gas took the lives of nine miners at 8:40 a.m. on this morning. The gas was ignited by an arc from the wiring or motor of a pump. Electric cap lights were used but the mine was not considered gassy.

50 Years Ago
Fire
U. S. and Lark Mine
Lark, UT

July 16, 1950

Five men perished from fire gases originating in a battery-charging station on the 1400 level, 5728 incline shaft. The fire was detected by a pumpman who returned by cage to the 2500 level to notify the hoistman. However, he died some time later. The other four men died while attempting to rescue him.

JULY 2000

Words to think about…

Long stormy springtime, wet contentious April, winter chilling the lap of very May; but at length the season of summer does come.
Thomas Carlyle 1839

I should like to enjoy this summer flower by flower, as if it were to be the last one for me.
Andre Gide 1930

Summer is when we believe, all of a sudden, that if we just walked out the back door and kept on going long enough and far enough we would reach the Rocky Mountains.
Edward Hoagland 1982

Press on: nothing in the world can take the place of perseverance. Talent will not; nothing is more common than unsuccessful men with talent. Genius will not; unrewarded genius is almost a proverb. Education will not; the world is full of educated derelicts. Persistence and determination alone are omnipotent.
Calvin Coolidge

NOTICE: We welcome any materials that you submit to the Holmes Safety Association Bulletin. For more information visit the MSHA Home Page at www.msha.gov. If you have any color and black/white photographs that you feel are suitable for use on the front cover of the Bulletin, please submit them to the editor. 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.***

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Fax us at 304/256-3524

Reminder: The District Council Safety Competition for 2000 is underway - please remember that if you are participating this year, you need to mail your quarterly report to:

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Holmes Safety Association Bulletin
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Falls Church, Virginia 22044-0187

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1999-2001

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- *Alabama Coal Association*
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  August 16-17, 2000

- *20th Annual International*
  Surface Mine Rescue Competition
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  September 8-9, 2000

- *Informational Seminar on*
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  Bevill State Community College
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