

MAR 1979



# BULLETIN



United States Department of Labor

# MSHA

Mine Safety and Health Administration

CONTENTS

Articles

1. Safety Topic, "On-The-Job Safety"
2. Safety Topic, "Barricading"
3. Safety Topic, "Home Safety"
4. Safety Topic, "Belt Conveyors"
5. Safety Topic, "Fire Prevention"
6. Abstract, "Roof-Fall Accident (Loading-Machine Operator)"
7. Abstract, "Electrical Accident"
8. Abstract, "Electrocution Accident"
9. Safety Topic, "MSHA Requires New Self-Rescuer in Underground Coal Mines"
10. Safety Topic, "Don't Let Temporary Become Permanent"
11. Safety Topic, "The Last Word"
12. Meeting Report Form

March 1979



## HOLMES SAFETY ASSOCIATION MONTHLY SAFETY TOPIC

### On-The-Job Safety

We have been talking about safety on the job for several months now. Hopefully, the uppermost thing in our minds every day should be the prevention of accidents and injuries. Try as we will, someone will slip up and get hurt, or possibly become severely ill at the plant. This is where the second most important thing comes into play--first aid.

When was the last time you saw someone injured or ill and everyone stood around waiting for the first-aid attendants to arrive? It takes time for medical personnel to get to the scene, and what is done for an injured or ill person immediately can make all the difference between life and death.

Let us get away from the job for just a minute or two. Do you go camping, boating, water skiing, or hunting? Most all of us have a hobby or two. Have you ever thought about what you would do if you were in a boating or water skiing accident? Maybe it could be your own son or daughter. Maybe you could have a fire in your camper, and serious burns could result. What would you do if you were 50 miles from a doctor and such a thing happened? Can you say that you would be able to give the injured or ill person the help they would need?

What I am getting at is this. When first-aid training is available, have you considered taking the course? How about signing up for the training? Some of you will say that you had first-aid training several years ago, and there is no need to take it again. We all went to school several years ago too, but have you tried to help your kids with their homework lately? We all grow rusty in time and need a little refresher.

Get together with some of your friends and form a team, or contact the first-aid instructor, and let us see if we can get first-aid teams started at our operation.

Remember: "You can save a life; or, the life you save may be your own. Sign up for first-aid training and learn how."

Distribution: Underground and surface mining operations -  
coal and noncoal

March 1979



## HOLMES SAFETY ASSOCIATION MONTHLY SAFETY TOPIC

### Barricading

Today we will be concerned with erecting a barricade as a life-saving measure against deadly gases that follow most mine fires and explosions. A barricade must be gastight, and the barricaded place must not have been contaminated with gases before put into use as a refuse.

When a fire or an explosion occurs in a mine, undoubtedly the first impulse of the survivors is to dash for the nearest exit from the mine. Persons naturally try to get out as quickly as possible, but frequently in making their way to the surface they rush into deadly accumulations of gas. For this reason I would like to discuss a few pointers on constructing barricades.

1. When entrapped by gases from mine fires or explosions, keep uppermost the thought of building a barricade or bulkhead and collect tools, timbers, canvas, water, dinner buckets, and anything that might be useful.
2. As soon as possible, a suitable place should be chosen for erecting a barricade and its construction should be started without delay, since deadly gases often travel quickly. An efficient barricade can be erected in 30 minutes to 2 hours, depending upon conditions.
3. The ventilation should be short circuited as soon as possible by opening doors or destroying stoppings, and temporary barricades should be erected by hanging brattice cloth or moving a door to a new place across an entry. The permanent barricade should be started about 50 feet from the temporary construction.
4. As much territory as possible, such as entries, rooms, or crosscuts should be included in the barricaded area to provide a maximum quantity of air.

Distribution: Underground mining operations - coal and noncoal

5. Before constructing barricades, make sure that there are no other openings or connections with other workings through which deadly gases could enter.

6. The stoppings must be airtight. Board stoppings covered by canvas or damp brattice cloth can be made tight enough to exclude dangerous gases.

7. All holes in the barricade should be stopped with rags, cloth, or other similar material.

8. After a barricade has been built, the persons should keep as quiet as possible since a person uses several times as much oxygen when exerted as when he keeps absolutely quiet. However, one person should walk around occasionally to mix the air. The persons should not congregate in one place.

9. All flame lamps should be extinguished to conserve oxygen.

10. Food and water should be conserved as long as possible.

11. A sign should be placed outside the first stopping, if more than one is built indicating that persons are behind it.

12. If anyone has a chance, the oxygen tank should be picked up from the welding station to replenish the oxygen inside the barricade.

13. All of us should familiarize ourselves with the entries, rooms, and escapeways from the mine. Many miners have lost their lives by not knowing the location of the intake and return entries.

THE ABOVE ARE JUST A FEW OF THE THINGS TO CONSIDER IN SAVING LIVES IN MINING EMERGENCIES.

March 1979



## HOLMES SAFETY ASSOCIATION MONTHLY SAFETY TOPIC

### Home Safety

All of us are concerned about safety at work, and trying to protect ourselves from being injured; however, are you aware of the thousands of persons killed from being involved in accidents in the home? We all have the idea that when we are at home, we are safe. That is far from being true. We can only be safe at home if we exercise the same care that we do on the highways and at work.

One of the main causes of these deaths is by poisoning, chiefly from carbon monoxide. When the frost is on the pumpkin, the human animal starts looking for warmth. Car windows go up, home windows go down, and furnaces go on. All too often the search for warmth leads--quite literally--to a dead end: DEADLY CARBON MONOXIDE.

Carbon monoxide is created by combustion. When carbon-containing substances; such as wood, gasoline, coal, and utility gas are burned, under home conditions, they produce carbon monoxide. Improperly installed or maintained stoves, furnaces, and space heaters are common causes of carbon monoxide poisoning in the home. Leakage of carbon monoxide in the confined area of a room, car, or tent may cause only a headache, but as the gas accumulates, it can sicken or kill. Annual

Distribution: Underground and surface mining operations -  
coal and noncoal

checkups and periodic cleaning of all combustion appliances are your best assurance against this hazard. All fuel-burning heaters should be vented to the outside, with pipes properly fitted and in good repair.

CHECK YOUR FUEL-BURNING APPLIANCES--OR HAVE IT DONE BY A PROFESSIONAL. IT COULD SAVE YOUR LIFE.

March 1979



## HOLMES SAFETY ASSOCIATION MONTHLY SAFETY TOPIC

### Belt Conveyors

In previous safety meetings we discussed some of the safe practices necessary when working around belt conveyors, and today I think a review of these safeguards is in order.

Safeguards to be taken when performing maintenance cleaning duties around belts:

1. Wear tight-fitting clothing, pant legs and shirt sleeves should be tied and snug-fitting, and jackets and coveralls should be buttoned or fastened.
2. Never use your hands or even a cap wedge for cleaning or other purposes unless the power is shut off and the switch is locked out.
3. When cleaning a belt conveyor with a shovel, always shovel facing the belt head or in the direction that the belt travels. Never attempt to hold a shovel once it has been caught by a belt or roller.
4. Always use a grease gun with a fixed nozzle when greasing belt rollers.
5. When changing rollers with the belt in motion, always use the special tool designed for this purpose. Preferably, someone should help you with this duty.
6. Frozen or defective rollers should be reported so that they can be changed as soon as possible to eliminate a fire hazard and possible damage to the belt.
7. When making repairs to a belt and there is a possibility that some person may unwittingly start the conveyor, you should lockout or tag, or tag and lockout the power to the conveyor.
8. Never leave a belt drive in the manual position if the automatic "start" and "stop" controls are not working properly. Stay with the controls until the situation has been corrected.

Distribution: Underground and surface mining operations -  
coal and noncoal



9. Use extreme caution when crossing a belt conveyor. The stopping of a belt does not necessarily mean the power has been removed from the controls. Most conveyor belts are electrically interlocked to start and stop automatically, and all conveyors inby the affected one will stop to prevent spillage. A conveyor stopped under these conditions is subject to start moving at any minute and creates a hazard to any one who attempts to cross over the conveyor. You should cross a conveyor only at the regular provided crossing points.

Safeguards to be taken when traveling on belts:

1. Ride facing the direction of travel and with your body stretched out its full length.
2. Maintain a spacing of about 15 feet between you and and next person on the belt.
3. Always be aware of your surroundings, and if trouble develops, stop the belt with the remote control wires or a switch if one is nearby.
4. When getting off a belt, raise your body enough to clear the structure, step off with one foot, and move your body with arms and legs away from the belt, always maintaining your balance.

THE BEST ADVICE I CAN GIVE YOU IS TO STAY CLEAR OF BELTS, UNLESS YOUR DUTIES REQUIRE OTHERWISE.

March 1979



## HOLMES SAFETY ASSOCIATION MONTHLY SAFETY TOPIC

### Fire Prevention

Once again we approach the time of year when, due to surface climatic conditions, our mines begin to "dry out." Fire hazards are ever present even in wet mines and the seasonal change in weather make the dry areas of a mine a pronounced hazard. The major causes of mine fires are electricity, explosives, lubricants, friction, and spontaneous combustion. It is incumbent on everyone to recognize these hazards and to review operating and work practices with a view of preventing fires.

Good clean ups of loose coal, coal dust, and removal of discarded timbers, ties, explosive boxes, and other combustible debris, also ample applications of rock dust and good house-keeping practices will help materially toward eliminating fires and will retard them if they do occur. Well-maintained electrical systems and electrical equipment, proper blasting procedures, and handling and use of lubricants; also, proper maintenance of frictional drives and other sources of ignitions by friction are a must.

Similarly, all supervisors and workers should learn barricading procedures and determine also the procedures they will follow in event of fire and the escape routes from their sections.

"IT IS EASIER TO PREVENT A FIRE THAN EXTINGUISH ONE"

Distribution: Underground coal-mining operations

March 1979

# ABSTRACT FROM FATAL ACCIDENT

HOLMES SAFETY ASSOCIATION  
MONTHLY SAFETY TOPIC



## Roof-Fall Accident (Loading-Machine Operator)

In today's safety meeting, we will be concerned with discussing the fatal roof-fall accident to a loading-machine operator, who was 36 years of age and had 10 years experience as the operator of a loading machine.

Mining in the accident area consisted of advancing a set of two rooms with a conventional loading machine and conveyors.

The immediate roof consisted of thin layers of sandstone with cracks and thin mud partings, which usually sounded "heavy" when tested. The support plan required three rows of permanent posts on 4-foot centers, to within 8 feet of the faces, maintaining 14-foot-wide roadways. Safety posts were to be set close to the faces during each cycle of operation.

The victim, after mining about two-thirds of loose coal in a routine manner (right to left), changed from the regular loading pattern by leaving prepared coal to the right of the loading machine. This action prevented the installation of temporary support in the vicinity of the operator. The loading machine was positioned to remove the loose coal from the left side of the working place and a portion of the unsupported roof fell, catching the operator.

Two points that we must consider concerning this accident are:

1. Temporary roof support must be installed. Even though we have discussed this particular safe-job procedure on other occasions, I believe that it cannot be overemphasized. Never neglect this necessary safety practice, regardless of the situation.
2. Always perform your duties in the safe, accepted and normal manner; do not short-cut one single step. The job procedures that we use in our daily routine were adapted only after considerable study and research proved these methods to be safe and efficient. Our job procedures must be followed in detail if they are to be effective in eliminating the potential for injuries.

Distribution: Underground coal-mining operations

# ABSTRACT FROM FATAL ACCIDENT

March 1979

HOLMES SAFETY ASSOCIATION  
MONTHLY SAFETY TOPIC



## Electrical Accident

General Information: A truck driver was electrocuted when he attempted to release a tailgate on a dump trailer bed that had made contact with a 4,160-volt powerline.

The sand-and-gravel operation employed a total of nine persons, working two 8-hour shifts a day, 5 days a week.

A 3-phase overhead transmission line fed the delta-connected primary windings of a transformer at 33,000 volts. The secondary windings were delta-connected, solid grounded, to produce 4,160 volts, 3-phase with a capacity of 333 KVA.

A 1974 Kenworth tractor, owned and operated by the victim, pulling a 30-foot dump-type trailer was involved in the accident.

Coal was transported from Kentucky to Ohio, and sand was hauled back to Kentucky. Upon arrival at the plant and pit, the truck drivers would raise the beds of their trailers to clear them of any remaining coal so as not to contaminate the sand. The truck drivers had selected an area located along a level roadway and parallel to an overhead powerline carrying 4,160 volts to clean their trailers.

The weather was raining with gusting winds and the temperature in the low 50's. Visibility was adequate to see the overhead powerlines.

Description of Accident: The victim had entered the plant about 1:30 p.m. and, after weighing his tractor-trailer unit, he pulled his unit parallel to the powerlines and raised the trailer bed to clean it of coal. The powerlines were installed at a height of 28-1/2 feet above the ground surface. The trailer bed, when fully raised, reached a height of 28-1/2 feet. Gusting winds caused the powerlines to sway into the raised trailer bed.

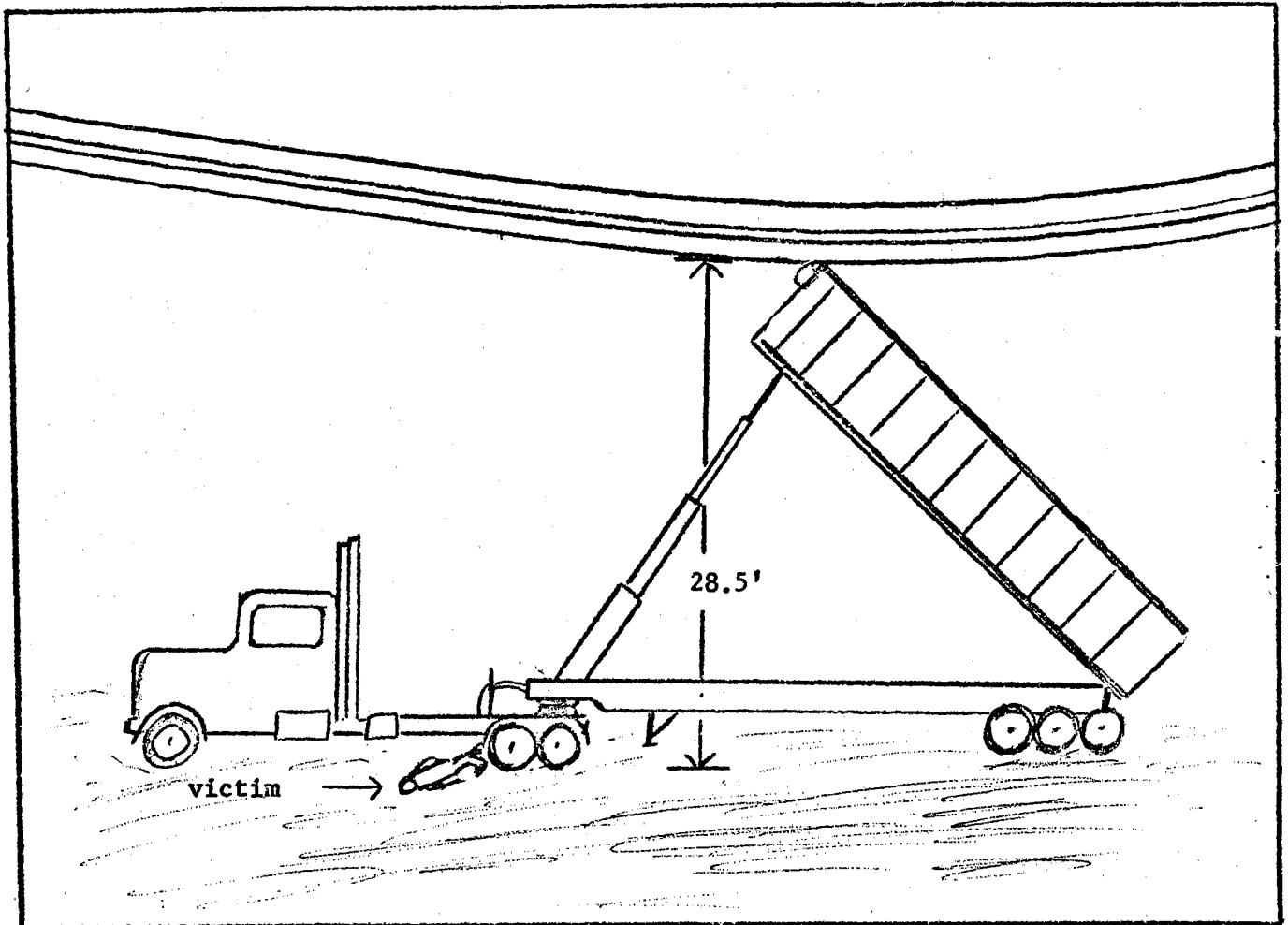
The victim was electrocuted while standing on the wet ground, operating the lever to release the tailgate on the trailer. The tailgate was spring-closed and air released with a lever-type valve installed at the front of the trailer near the service connections.

Distribution: Surface mining operations - noncoal

An engineer, assistant safety director, and superintendent of the plant found the victim about 1:47 p.m. The superintendent summoned a rescue unit as the engineer and assistant safety director proceeded to administer cardio-pulmonary resuscitation. The rescue unit arrived at the scene at 2:03 p.m. and continued full CPR until the arrival of the doctor who pronounced the victim dead of electrocution at 2:29 p.m.

Cause of Accident: The cause of the accident was the failure to recognize the 4,160-volt powerline and raising the trailer bed into the area of the powerlines. Contributing factors were the gusting winds and the very wet-ground conditions and the lack of cab controls for the tailgate.

Scetch of Electrocution Accident



March 1979

**ABSTRACT  
FROM  
FATAL ACCIDENT**

HOLMES SAFETY ASSOCIATION  
MONTHLY SAFETY TOPIC  
ELECTROCUTION ACCIDENT



General Information: A mine foreman was fatally electrocuted when he grasped a damaged trailing cable to a loading machine. He had 6 years, 4 months experience at this mine; 3 years, 4 months of which were as a mine foreman.

Electrical power for the mine is generated at a company-owned and operated generating plant. Power enters the mine and is transmitted to the load center (portable transformer) at the D-1-7 panel at 13,800-volts a.c. It is reduced by the transformer to 480-volts a.c. for use in the mining machinery. The transformer is a Delta Y System. The electrical power is distributed to mining machines through a portable distribution box (circuit center). The circuit center is resistance grounded, using an 100-ohm current-limiting resistor and is equipped with a ground-fault ground-trip system.

The power cable, which the victim grasped, was a flat, No. 2, 3 conductor cable with ground and two conductor pilot ground check, type G-GC approval No. P-125 and was rated at 2,000 volts. The total cable length was 547 feet, and the distance from the attachment of the cable to the loading machine, to the point where the victim contacted the damaged spot on the cable was 157 feet. The loading machine was a Model 14 BU Joy loading machine. The haulageway on which the victim was standing was damp due to the haulageway being wet-down to allay dust.

Description of Accident: The victim and the shuttle-car operator were preparing to move the loading machine into the No. 3 room of the panel to load out the round which had just been blasted. The victim reportedly had moved the loading machine about 5 feet forward, shut off the pump motor switch, turned, and picked up the cable to throw it off from the post on the loading machine used to pull the cable while tramping from room to room.

As the victim grasped the cable, he received an electrical shock. The shuttle-car operator, who was helping to move the cable and was about 21 feet from the victim, saw that the victim was being shocked. He called to the driller to turn off the power. The driller ran to the circuit center, about 150 feet from the victim, and turned off the switch. It was

Distribution: Underground mining operations - noncoal

reported that the victim was unconscious but was breathing. The victim was removed to the lunchroom to await the mine ambulance. Soon after arriving at the lunchroom, the victim's breathing stopped, and cardiopulmonary resuscitation was begun immediately by members of the panel crew. Reportedly, the victim did have a pulse for a short time after arriving at the lunchroom, but it also stopped. CPR was continued until the mine ambulance and emergency medical technicians arrived and took over the CPR. Work continued to revive the victim; however, there was no response from the victim, and the decision was made to transport him to the surface and to the hospital. Transportation from the mine surface to the hospital was by company ambulance. CPR was administered continually during the transportation. The victim was pronounced dead on arrival at the hospital.

A small hole was observed in the trailing cable outer jacket at the point where the victim grasped the cable. When the outer jacket of the trailing cable was opened up, an area about 1/2-inch in diameter in the phase conductor insulation had been burned away, and approximately 1/4 of the copper wires had been separated by the burn action, indicating that considerable arcing had taken place, probably to the ground on the roadway prior to the accident. Although the cable was relatively new, three other such damaged areas were found in the trailing cable which were taped with one layer of rubber tape and one or two layers of plastic electrical tape on the outer jacket. Reportedly, operators frequently taped damaged places in the cable.

The ground-fault trip system in the circuit center (distribution box), when tested, would not trip each time a test was made, but worked intermittently. The ground-fault trip system was not designed to protect persons from this type of hazard and due to the resistances involved, would not likely trip the power, consequently, would not have prevented the accident or reduced its severity.

Cause of Accident: The direct cause of the accident was the victim's grasping of a damaged, energized trailing cable without suitable protection.

Contributing to the cause of the accident was the failure of management to provide and enforce the use of insulated hooks, tongs, ropes, or slings, or other suitable protection for persons when power cables energized to potentials in excess of 150-volts are moved manually.

Recommendations: Electrical equipment and wiring should be inspected by a competent person as often as necessary to assure safe operating conditions.



March 1979

## HOLMES SAFETY ASSOCIATION MONTHLY SAFETY TOPIC

### MSHA REQUIRES NEW SELF-RESCUER IN UNDERGROUND COAL MINES

The Labor Department's Mine Safety and Health Administration (MSHA) has mandated that after a 2-year phase-in period, filter-type self-rescuers presently used in underground coal mines must be replaced with self-contained self-rescuers which generate oxygen.

The new regulations, published in the Federal Register of November 21, 1978, add a significant new dimension to mine safety and to rescue operations in underground coal mines.

Under the regulations, operators must make available to miners and to authorized visitors an approved, 1-hour, self-contained self-rescue device. The operator may meet the requirements by providing a 1-hour self-rescuer, a 10-minute self rescuer combined with an approved 1-hour canister, any other self-contained self-rescuer that provides at least 1 hour's protection or, in exceptional circumstances, a filter-type self-rescuer combined with an approved self-contained self-rescuer.

The currently used self-rescuers in underground coal mines convert deadly carbon monoxide into carbon dioxide. They give limited protection to the miner in a mine fire situation but have two serious limitations: They provide no oxygen and, if the oxygen has been consumed by fire, the self-rescuer is virtually useless. Additionally, the chemical conversion process generates heat which may reach 125 to 130 degrees F; in an atmosphere that is 1 percent carbon monoxide and 200 degrees F; just below the boiling point of water with a 2-percent concentration of carbon monoxide.

The heat may cause the miner to remove the device and, at a concentration greater than one and one-half percent carbon monoxide, one or two breaths of the contaminated air could kill.

The new devices will provide oxygen, will generate no unbearable heat and, because they are self-contained, will permit no carbon monoxide from the mine atmosphere to enter the breathing cycle. The devices are demand responsive, providing greater amounts of oxygen as the miner may face greater exertions in an escape attempt. The time of each device is rated on the use of the self-rescuer at greatest exertion. Under resting conditions, when a miner might be waiting for a rescue party to arrive, the devices will give four to five times the rated protection.

Distribution: Underground coal-mining operations



March 1979

THE TIME RATED  
ON THE USE IS  
AT GREATEST  
EXERTION.

WILL PROVIDE "O2," GENERATE  
NO UNBEARABLE HEAT,  
BEING SELF-CONTAINED  
PERMITS NO "CO" TO  
ENTER BREATHING  
CYCLE.

MEASURES 9 1/2" X 9 1/2" X 4"

TOTAL WEIGHT  
8 1/2 LBS.

OXYGEN - O2  
CLOSED-LOOP  
SYSTEM

ABSORBS CO2

GENERATES O2

I- SEAL



MSA 1-HOUR SELF-CONTAINED SELF-RESCUER.



March 1979

## HOLMES SAFETY ASSOCIATION MONTHLY SAFETY TOPIC

### DON'T LET TEMPORARY BECOME PERMANENT

When production demands soar and process changes must be rushed to completion and when work schedules are being met on a "crash" basis, temporary plans are often used to fill the gap. Despite the fact they are unsafe, as everyone knows, the attitude most frequently voiced is, "Let's live with it for a little while until things get squared away."

All too often, the result is that the "temporary" plan becomes permanent by default, because there "isn't enough time" to properly train employees, or to work out the wrinkles in a new procedure. Gradually, it becomes a dangerous part of an established operation.

As time goes by, the hazard is generally forgotten. Inspection committees either ignore or remain totally unaware of its existence. But the longer the "temporary" plan is allowed to exist, by rule of thumb, the law of averages will catch up (an accident).

The resultant loss in time, money, and morale connected with a serious lost-time injury or fatal accident, more than offsets the cost of an original shutdown to correct a dangerous condition.

Ignored temporary plans can create serious and permanent damage. Put an end to this practice . . . . NOW!

TAKE YOUR TIME-----DO THE JOB SAFELY!

Distribution: Underground and surface mining operations -  
coal and noncoal

# The Last Word

March 1979

## HOLMES SAFETY ASSOCIATION MONTHLY SAFETY TOPIC

THINK--SAFETY!

MARCH

It isn't the number of guards you  
put on,  
Or the stairs with the well-kept  
rails,  
It isn't the lights that they  
install,  
Or the lack of rusty nails;  
It's true that these do help a bit,  
But when all has been done and said,  
The things that prevents the  
accidents  
IS THE WAY YOU USE YOUR HEAD!

\*\*\*\*\*

Think lucky. If you fall in a mud  
puddle, check your pockets for fish.

Economically, there used to be two  
categories of people; now there are  
three: Haves, Have-Nots, Charge-Its.

\*\*\*\*\*

### Random Thoughts

The right angle to solve a diffi-  
cult problem is the "try-angle."

Meeting the other person halfway  
would be much more satisfactory if he  
had a better idea of distances.

There are times when "progress"  
means coming back to the place where  
I detoured for a short cut.

One sure way to avoid the dis-  
advantages of old age is to ignore  
the safety rules.

\*\*\*\*\*

Middle age is when your memory is  
shorter, your experience longer,  
your stamina lower, your forehead  
higher.

---

About the time you learn to make  
the most of life, the most of it is  
gone.

---

The trouble with good advice is  
that it usually interferes with our  
plans.

---

Before January and February were introduced  
into the calendar, the Roman year had only  
10 months, and March, named in honor of the God  
Mars, was the first instead of the third month.  
In the Middle Ages the year was usually reckoned  
as beginning March 25, and England did not  
abandon this practice until 1752. The vernal  
equinox falls on March 21, so the month is part  
winter and part spring.

Since life began on this old world, people  
have been persecuted for their beliefs.  
Centuries ago men of the cloth, like Saint  
Patrick, brought the teachings of the Lord to  
the heathens in all lands. For following such  
teachings, many people were driven from their  
homes. While millions believe in the "Supreme  
Being," there are those among us who are still  
heathens. Recent episodes throughout the world  
bring forcibly to our attention what a terrible  
situation exists.

The heathens are not all confined to religious  
beliefs but include those among us who ignore  
the teachings in safety. The type of employment  
or social position of individuals have little  
bearing on the acceptance of the need for  
accident prevention. Undoubtedly, such people  
care very little for their fellowmen or perhaps  
believe they are immune to accidents because of  
their own ability. Not unlike Saint Patrick's  
shamrocks which are a symbol of faith, so too  
are the green crosses of universal safety a  
symbol of the teachings and expression for a  
cooperative effort necessary to preserve life  
and limb.

\*\*\*\*\*

Always be polite to people who disagree  
with you. After all, they have a right to  
their ridiculous opinions.

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A sure sign you're getting older is  
when the children tell you about their history  
lesson, and you realize that when you went to  
school the same items were called "current  
events."