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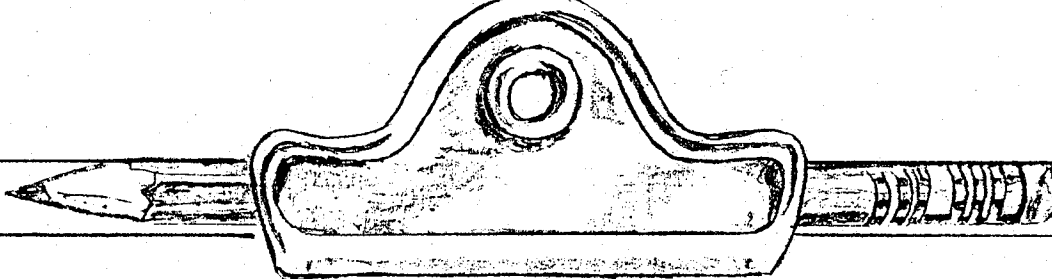
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# BULLETIN

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THIS SAFETY BULLETIN CONTAINING SAFETY ARTICLES ON A VARIETY OF SUBJECT, FATAL ACCIDENT ABSTRACTS, STUDIES, POSTERS AND OTHER SAFETY INFORMATION FOR PRESENTATION TO GROUPS OF MINE AND PLANT WORKERS IS PROVIDED FREE AS A BASIS FOR DISCUSSION AT ON-THE-JOB SAFETY MEETINGS.

PLEASE USE THE POSTAGE-PAID ENCLOSED GREEN MEETING REPORT FORM AND RETURN TO THE HOLMES SAFETY ASSOCIATION.



<u>COMPANY</u>	<u>CHAPTER NO.</u>	<u>LOCATION</u>
Tanner Co.	7699	Lake Havasu, AZ
Whatcom County Public Works	7700	Bellingham, WA
Hoffman Queery	7701	Savanna, IL
Southern Ohio Explosives	7702	Oak Hill, OH
Double J Coal Co., Inc.	7703	Hurley, VA
Brute Coal Co.	7704	Big Rock, VA
Dusty Trucking Co.	7705	Dixie, WV
Erwin Industries Inc.	7706	Fairmont, WV
Elk District Ambulance Service	7707	Elk Garden, WV
J. R. Gold Mining Co.	7708	Winter Haven, CA
Cravat Coal Co.	7709	Greenup, KY
Maverick Mining Inc.	7710	Isonville, KY
Halliday	7711	Houghton Lake, MI
Mason Excavating Inc.	7712	Gaylord, MI
Amherst Industries Inc.	7713	Charleston, WV
Walter R. Jones Trucking Inc.	7714	Bridgeport, WV
Larosa Fuel Co., Inc.	7715	Lumberport, WV
KMF Corporation	7716	Clothier, WV
Michigan Gypsum Co.	7717	Whittemore, MI
Elmhurst Chicago Stone Co.	7718	Kaneville, IL
Martinsville Sand & Gravel Inc.	7719	Martinsville, IN
Ingram Enterprises Inc.	7720	Brownwood, TX
Diamond J. Mining Inc.	7721	Summersville, WV
Frank Belcastro Trucking Co.	7722	Hepzibah, WV
Prosperity Energy Inc., Pax Surface	7723	Fayette, WV
Prosperity Energy Inc., Long Branch	7724	Fayette, WV
Azusa Rock Inc.	7725	Azusa, CA
Scarab Energy Corp.	7726	Petros, TN
Green Branch Mining #2	7727	Oneida, TN
Clear Creek Coal Co., Inc.	7728	Oliver Springs, TN
Rymac Inc.	7729	Cannelton, WV
Appalachian Mining Inc.	7730	Boomer, WV
Addington Inc.	7731	Boomer, WV

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## "Council News"

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Following are some of the meetings and activities of active Holmes Safety Association councils throughout the Nation. If you would like your council's activities listed, please be sure to send the National Council a meeting and attendance form for all your meetings.

**COUNCIL:** Kiski Tri-County District Council **Meeting Location and Date:** Kittanning, PA; April 21, 1988 **Subject:** Back Injuries and Proper Lifting **Total Attendance:** 15

**COUNCIL:** New River Valley/Winding Gulf District Council **Meeting Location and Date:** MSHA Academy, Beckley, WV; September 13, 1988 **Subject:** Permissibility **Total Attendance:** 12

**COUNCIL:** Richard Maize District Council **Meeting Location and Date:** Somerset, PA; June 17, 1988 **Subject:** Reactivation of Council and History of HSA **Total Attendance:** 27

**COUNCIL:** Indiana District Council **Meeting Location and Date:** Omni Civic Center, Indiana, PA; June 17, 1988 **Subject:** Injury Reports, Oxygen and Acetylene Tanks **Total Attendance:** 55

**COUNCIL:** John E. Jones District Council **Meeting Location and Date:** Marion, IL; July 28, 1988 **Subject:** Fire and Emergency Plans **Total Attendance:** 72

**COUNCIL:** Windber District Council **Meeting Location and Date:** Windber, PA; May 28, 1988 **Subject:** Lifting **Total Attendance:** 5

**COUNCIL:** Eastern Buckeye District Council **Meeting Location and Date:** St. Clairsville, OH; May 25, 1988 **Subject:** Quality Control **Total Attendance:** 18

**COUNCIL:** John O. Miller District Council **Meeting Location and Date:** Barnesboro, PA; May 26, 1988 **Subject:** Dust Suppression **Total Attendance:** 31

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**COUNCIL: Gauley District Council Meeting Location and Date:** Summersville, WV; July 21, 1988 **Subject:** Mine Fires **Total Attendance:** 18

**COUNCIL: Southeastern Ohio District Council Meeting Location and Date:** New Lexington, OH; June 23, 1988 **Subject:** Proper Grounding **Total Attendance:** 30

**COUNCIL: Great Lakes District Council Meeting Location and Date:** Mackinaw City, MI; August 16, 1988 **Subjects:** AIDS, How To Get Injured Employees Back to Work, Ambient Dust Control, Dust Control/MSHA Regulations **Total Attendance:** 12

**COUNCIL: Southern Illinois Open-Pit District Council Meeting Location and Date:** Scuttle Inn, Willisville, IL; July 18, 1988 **Subject:** General Safety **Total Attendance:** 41

**COUNCIL: Central Illinois Open-Pit District Council Meeting Location and Date:** McComb, IL; July 20, 1988 **Subject:** 1986-87 Fatalities in Illinois **Total Attendance:** 63

**COUNCIL: Northern Indiana Joint Safety & HSA District Council Meeting Location and Date:** Terre Haute, IN; July 12, 1988 **Subject:** EMS System **Total Attendance:** 13

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## **ATTENTION READERS:**

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In our constant attempt to offer our readers a better Bulletin, we have converted to a Laser Desk Top Publishing System. Please bear with us while we work out any snags or glitches. Also, let us know what you think of our new format; we are always happy to have suggestions or comments from our readers.



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## Shuttle-Car Operators

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**S**huttle-car operation accounts for a number of lost-time accidents in the coal industry.

There are three main causes of injuries: haulage, sprains and strains and roof and rib falls.

*Haulage* - The first requirement for the safe and efficient performance of your job is that your shuttle car be in good mechanical condition. You should check your car thoroughly before making the first trip.

This inspection should include the brakes, steering, lights, signal alarm and cable. If repairs are needed, let the section supervisor know so the conditions can be corrected. Operating a defective shuttle car not only endangers yourself, but the other people on the section, as well.

In your travels over the section, you must be constantly alert and always have your shuttle car under control. Always face in the direction of travel except when you are maneuvering under the boom of the loading machine. Always keep your entire body within the confines of the seating compartment. Many incidents are recorded where operators of shuttle cars have been dragged from their equipment because some part of their bodies were either above or outside the car. The possibility of being bounced against the roof will be lessened if you keep your head down when in low coal, and also if you keep the roadways free of all fallen material (roof, posts, large lumps of coal, et cetera).

*Sprains and strains* - Most of these injuries have resulted from improper lifting. Don't attempt to lift anything that is too heavy or bulky for you to handle safely. Ask for help. Always when you are lifting heavy objects, lift with your legs, not your back.

*Roof and rib falls* - Many shuttle-car operators have been injured by roof falls caused by the accidental dislodgement of roof supports. When operating your car in closely timbered areas, your speed will

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need to be reduced. One careless or thoughtless moment and your car can be in the timberline. Reduce your speed and keep your car in the runway.

Finally, if you see any loose roof, ribs, or brows along the roadway, let the section supervisor know so that the situation can be corrected.

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## **"NEWS YOU CAN USE"**

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The National Secretary addressed the Board of Directors of the Southwest Safety Congress on September 21, 1988, at the MetroCenter in Phoenix, Arizona, and will address the Arizona Association of Mine Safety Engineers on September 30 at the Uptown Arizona Club in Phoenix.

The Department of Labor's Beckley Academy's Satellite Teleconference to the Metro Center was a complete success with approximately 30 individuals and mineral extractive engineers and directors in attendance. Instrumental in putting this program together, which was opened by David O'Neal, Acting Assistant Secretary for MSHA, were James McCutchan and William Fellows from the State of Arizona, Office of Mine Inspection.

Both the Southwest Congress and the Safety Engineers strongly support having the Holmes Safety National Council hold its 1990 annual meeting in Arizona.

HOLMES SAFETY ASSOCIATION  
SORTED BY STANDING  
COAL-UNDERGROUND  
SAFETY COMPETITION REPORT

YEAR-TO-DATE: JANUARY THRU JUNE 1988

QUARTER 2

COUNCIL NAME	CNCL NUM	WORK HOURS	ACC	FLLS	RATES	MTGS	CHAP	STD	ST	LOST TIME	INCIDENTS	TOT	AVERAGE	
GROUP I														
JOHN E. JONES	IL02	2,528,390	135	0	10.68	1	13	1	5,200,508	270	0	10.38	2	6.5
INDIANA COUNCIL	PA07	1,548,362	176	0	22.73	3	18	2	3,130,172	376	0	24.02	5	9.0
TOTAL		4,076,752	311	0	15.26	4	31		8,330,680	646	0	15.51	7	15.5
GROUP II														
SOUTHEAST OHIO COUNCIL	OH02	844,802	18	0	4.26	3	5	1	1,772,970	49	0	5.53	6	2.5
WALTER W. KINGFISH, KESSLER	IL07	731,334	43	0	11.76	1	4	2	1,515,711	92	0	12.14	2	2.0
WILLIAM SCOTTY GROVES COUNCIL	PA06	1,368,959	98	0	14.32	2	15	3	2,902,993	188	0	12.95	4	7.5
COAL RIVER COUNCIL	WV02	937,808	80	0	17.06	2	40	4	1,911,074	146	0	15.28	4	20.5
NEW RIVER VALLEY/WINDING GULF COUNCIL	WV10	1,236,390	114	0	18.44	3	30	5	2,669,971	232	0	17.38	5	16.5
TOTAL		5,119,293	353	0	13.79	11	94		10,772,719	707	0	13.13	21	49.0
GROUP III														
WINDBER COUNCIL	PA11	38,572	1	0	5.19	1	8	1	75,750	3	0	7.92	2	4.3
N COLO/S WYOMING HSA DISTRICT COUNCIL	WY02	261,722	9	0	6.88	1	5	2	490,724	20	0	8.15	2	2.5
RISKI - TRI-COUNTY COUNCIL	PA08	87,214	5	0	11.47	3	6	4	175,283	9	0	10.27	6	3.0
POTOMAC VALLEY	MD01	612,339	33	0	10.78	0	9	3	1,173,515	70	0	11.93	100	4.3
JOHN O MILLER COUNCIL	PA09	215,072	20	0	18.60	2	2	5	451,413	45	0	19.94	5	1.0
TOTAL		1,214,919	68	0	11.19	7	30		2,366,685	147	0	12.42	115	15.0

HOLMES SAFETY ASSOCIATION  
SORTED BY STANDING  
METAL-UNDERGROUND  
SAFETY COMPETITION REPORT

YEAR-TO-DATE: JANUARY THRU JUNE 1988

QUARTER 2

COUNCIL NAME	CNCL NUM	WORK HOURS	ACC	FLLS	RATES	MTGS	CHAP	STD	ST	LOST TIME	INCIDENTS	TOT	AVERAGE	
GROUP II														
N COLO/S WYOMING HSA DISTRICT COUNCIL	WY02	1,403,404	18	0	2.57	1	5	1	2,847,959	30	0	2.11	2	2.5
TOTAL		1,403,404	18	0	2.57	1	5		2,847,959	30	0	2.11	2	2.5



HOLMES SAFETY ASSOCIATION  
 SORTED BY STANDING  
 COAL-SURFACE  
 SAFETY COMPETITION REPORT

QUARTER 2 YEAR-TO-DATE: JANUARY THRU JUNE 1988

COUNCIL NAME	CNCL NUM	WORK HOURS	LOST TIME ACC	INCI-			LOST TIME ACC	INCIDENT RATES	TOT NO	AVG NO
				FILS	MTGS	CHAP				

GROUP I															
N COLO/S WYOMING HSA DISTRICT COUNCIL	WY02	1,172,754	10	0	1.71	1	17	1	2,330,361	16	0	1.37	2	8.5	1
SOUTHERN ILLINOIS OPEN-PIT	IL06	1,234,481	28	0	4.54	1	14	2	2,458,246	50	0	4.07	2	7.0	2
TOTAL		2,407,235	38	0	3.16	2	31		4,788,607	66	0	2.76	4	15.5	

GROUP II															
SOUTHERN INDIANA JT SAFETY COM & HSA	IN02	720,734	8	0	2.22	2	6	1	1,535,623	19	0	2.47	3	3.0	1
SOUTHEAST OHIO COUNCIL	OH02	633,396	11	0	3.47	3	14	2	1,311,668	25	0	3.81	6	7.0	2
COAL RIVER COUNCIL	WV02	615,282	21	0	6.83	2	34	3	1,230,403	55	0	8.94	4	16.0	3
TOTAL		1,969,412	40	0	4.06	7	54		4,077,694	99	0	4.86	13	26.0	

GROUP III															
MINNER COUNCIL	PA11	87,827	0	0	.00	1	2	2	176,186	0	0	.00	2	1.0	1
KISKI - TRI-COUNTY COUNCIL	PA08	26,632	0	0	.00	3	2	3	57,101	0	0	.00	6	1.0	2
N. INDIANA JT. COMM. FOR COAL MINE SAF	IN01	432,772	0	0	.00	0	4	1	838,400	4	0	.95	1	2.0	3
GROVE CITY/CLARION COUNTY COUNCIL	PA05	381,791	3	0	1.57	0	12	4	795,863	9	0	2.26	0	6.0	4
WESTERN MARYLAND	MD02	234,037	5	0	4.27	1	15	7	489,803	7	0	2.86	2	10.8	5
NEW RIVER VALLEY/WINDING GULF COUNCIL	WV10	263,477	3	0	2.28	3	25	5	533,760	8	0	3.00	5	12.0	6
INDIANA COUNCIL	PA07	140,895	3	0	4.26	3	5	6	296,180	7	0	6.08	5	2.5	7
JOHN O MILLER COUNCIL	PA09	29,437	1	0	6.79	2	1	8	64,929	4	0	12.32	5	.5	8
TOTAL		1,596,868	15	0	1.88	13	66		3,252,222	41	0	2.52	26	35.8	

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**ABSTRACT  
FROM  
FATAL  
ACCIDENT**

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**FALL OF FACE  
ACCIDENT**

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**GENERAL INFORMATION:** A fatal fall-of-face accident occurred in an underground, room and pillar silica mine. The victim was a 29 year old miner with seven months of underground mining experience.

**DESCRIPTION OF ACCIDENT:** On Monday, the victim and two co-workers reported for work and proceeded to the face area which had been shot going off shift on the preceding Friday. A visual examination of the ribs and face area was made by the lead miner. The co-workers each took their turn at picking down any loose ground that was detected at the face area. The victim was directed to continue picking loose rock from the face area. After the victim had picked at the face for approximately five minutes, he turned to check on the area away from the face. The loose rock, located at the upper rib and back of the face, fell striking the victim at the upper back and shoulder area.

**CAUSE OF THE ACCIDENT:** The direct cause of the accident was the failure to detect and take down or adequately support loose ground at this location.

**RECOMMENDATIONS:**

1. Scaling should be started from the drift leading to the face so miners do not have to work under areas which have not been scaled.
2. Scaling should be performed with proper scaling bars.

**ABSTRACT  
FROM  
FATAL  
ACCIDENT**

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**SLIDE OF SPOIL  
MATERIAL ACCIDENT**

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**GENERAL INFORMATION:** A slide of material accident occurred at an open pit mine resulting in an oiler laborer being fatally injured. The victim had a total of 12 years mining experience.

**DESCRIPTION OF ACCIDENT:** The victim was assisting two equipment operators, using hand-held shovels, clean loose material that had fallen along the tow of the highwall onto the coalbed. Afterward, the foreman instructed one equipment operator and the victim to use the front-end loader to cleanup loose material and to locate the edge of the coal seam on the spoil bank side of the pit. The victim directed the operator of the front-end loader where the machine should be positioned in order to remove material on top of the coal bed. The operator trammed the machine across the top of the coal to the toe of the spoil, partially filled the bucket and then dumped the material in the fill area of the pit. He returned to the area and was directed by the victim to load the second bucket about 23 feet to the left where the first bucket was loaded. As the front-end loader was being positioned, the victim was standing about 8 feet to the right of the machine and about 3 feet from the edge of the spoil bank. He partially filled the bucket, rolled the bucket back, placed the machine in reverse gear, glanced over his left shoulder and back to the front of the machine. At this time, he observed a portion of the spoil bank to the right front of the machine sliding down knocking the victim forward and covering him to his head.

**CONCLUSION:** Failure of mine management and the victim to recognize the potential hazards of working near the toe of the spoil bank, particularly after a heavy rainfall, was the cause of this accident. A contributing factor was the employee working in the vicinity of equipment removing material at the toe of the spoil bank.



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## .....MINE RESCUE.....

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The 25th Annual Pennsylvania Bituminous Mine Rescue contest was held Saturday, August 20, 1988.

Nineteen teams from the Bituminous Region of Pennsylvania participated in the contest. In addition, the benchman's contest was held with one member from each team participating.

First place was won by *Cumberland Mine*, U.S. Steel Mining Company. *Mathies Mine Team*, National Mines Corporation, won second place. *Bailey Mine Team*, Consolidation Coal Company and *Emerald Mine Team*, Cyprus Emerald Resources Corporation, won third and fourth place, respectively.

In the benchman's contest:

*Philbert Jobe*, Helvetia rescue team, Helvetia Coal Co., won first place. *Ed Houser*, Florence team 2, Florence Mining Co., won second place. *David Larsen*, Keystone team 2, Keystone Mining Co., won third place. *Ed Hutton, Jr.*, Rushton mine team, Rushton Mining Co., won fourth place.

Opening remarks were made by Joseph J. Garcia, President of Pennsylvania Bituminous Mining Association. Harry Thompson, Chaplain, conducted the invocation.

Robert D. Anderson, Assistant Vice President of Operations, Rochester and Pittsburgh Coal Co., was Master of Ceremonies.

Carson Green, President of the Indiana Chamber Commerce welcomed the teams, support personnel and spectators to Indiana, Pennsylvania. Thomas J. Ward, Director, Pennsylvania DER, Bureau of Deep Mine Safety, was the speaker.

Catherine Kunkle, Indiana County's 25th Queen Evergreen, presented awards and free Christmas trees to guests.

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Catherine Poydoc, Rochester and Pittsburgh Coal Co., received a Certificate of Appreciation for her many years of service and dedication to the Association.

Steve McCann received a Certificate of Appreciation for his many years of service and dedication in making the Pennsylvania Mine Rescue teams and Pennsylvania Mine Rescue contest the best in the nation.

Donald C. Conrad, MSHA, assisted by A. J. Paciga, PA Department of Environmental Resources, and the UMWA were in charge of setting up the field.

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### MINE RESCUE IN METAL/NONMETAL MINES

The Mine Safety and Health Administration held its seventh National Metal and Nonmetal Mine Rescue and contest at the Las Vegas Convention Center in Las Vegas, Nevada, August 24, 1988. The contest tested the ability of the 34 teams entered to respond to unexpected situations that might develop in an underground metal/nonmetal mine emergency. Simulated mine rescue problems were solved under the watchful eyes of experienced judges.

Scoring of the teams in the mine rescue contest was computed from the care and accuracy of the mine map constructed during the problem and the proper use and care of the apparatus carried by each team member.

David C. O'Neal, Assistant Secretary for MSHA, presented the awards to the top six winning mine rescue teams and the top four teams in the Benchman Contest at the banquet held at the Riviera Hotel Sky Room, Moncico Tower. There were 560 people in attendance.

# HOLMES SAFETY ASSOCIATION

## 1988 TEAM STANDINGS NATIONAL CHAMPIONS - METAL AND NONMETAL MINE RESCUE CONTEST WINNERS

**First Place** Homestake Mining Co. Gold Team, Homestake Mine, Lead, SD

**Second Place** Cargill Salt, Inc. Cargill Team, Cayuga Mine, Lansing, NY

**Third Place** Dravo Lime Co. Raiders Team, Cabin Creek Mine, Maysville, KY

**Fourth Place** International Salt Co. Kooler Team, Cleveland Mine, Whiskey Island, OH

**Fifth Place** Cominco American, Inc. Magmont Mine Team, Magmont Mine, Bixby, MO.

**SIXTH PLACE** International Salt Co. Retsof Team #2, Retsof, NY

### BENCHMAN CONTEST WINNERS

**First Place** Carl Saver, Homestake Silver Team, Homestake Mine, Lead, SD

**Second Place** Art Davis, AMEX, Henderson, Empire, CO.

**Third Place** Tom Regan, Homestake Gold Team, Homestake Mine, Lead, SD

**FOURTH PLACE** Bruce Dryden, Stoffer Chemical Wyoming, Green River, WY

### FIRST AID CONTEST WINNERS

**First Place** Metal and Nonmetal does not have first-aid Contests

**Second Place** \_\_\_\_\_

**Third Place** \_\_\_\_\_

### COMBINATION WINNERS

**First Place** \_\_\_\_\_

**Second Place** \_\_\_\_\_

**Third Place** \_\_\_\_\_

## CONGRATULATIONS!

October 1988

# Typical Mining of the Era Gone By



## DOUBLE JACKING

*Long before the development of the rock drill, the old timers used the hand held steel with the double jack. The large hammer or double jack, was swung by one miner while his partner held the drill steel. In drilling upper holes, the job was slow and arduous.*



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## **OIL-STORAGE ROOMS**

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Quite often, due to various reasons, we do not give enough attention to the maintenance of our oil house, but it's just as important to keep a clean oil house as it is to keep our preparation plant and shops clean. Every person that uses the oil house is responsible for its condition.

Sometimes, no matter how carefully, there will be some spillage, but you must make an extra effort to keep this spillage to a minimum. Let us review some of the basic rules for maintaining our oil house in a safe condition as well as agreeable appearance.

The greatest amount of spillage is caused by the improper filling of oil cans. This can be caused by opening the valve or spout before the oil can is properly positioned or the oil can is allowed to overflow.

Still another reason for spillage is removing the oil can before the valve is completely closed. Spillage of oil is not only expensive and adds to our cost of production, but it also increases your injury potential due to poor footing. It is also a fire hazard.

Everyone can make a special effort to reduce oil spillage by positioning the oil can properly, not overfilling the cans, and making certain the valve is closed before removing the can.

Still another feature we can use to reduce oil spillage is to empty the drip pans beneath the drum spouts at frequent intervals. This action will minimize the oil that will cling to the bottom and exterior of the cans when they are placed in the pans prior to refilling.

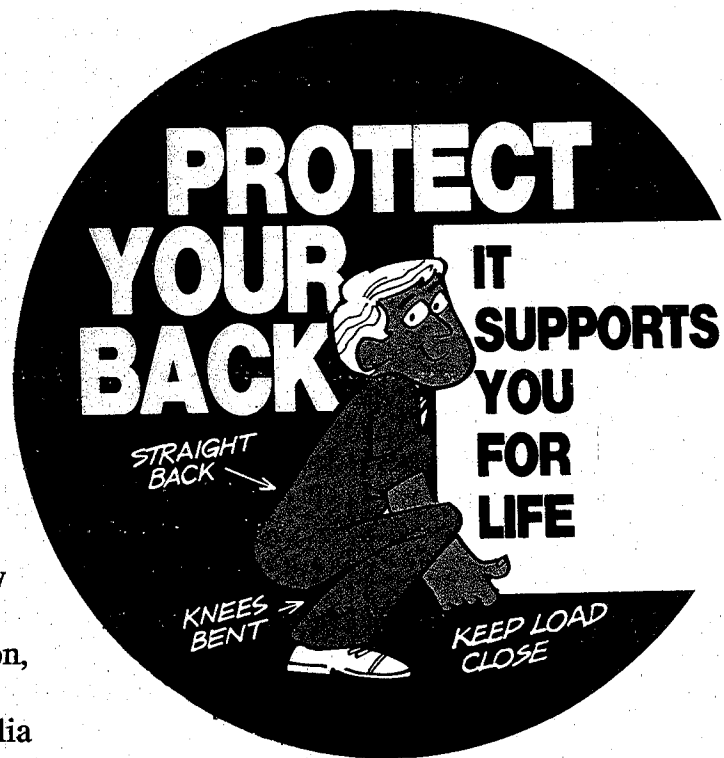
Naturally, the floors in our oil house won't be kept as clean as the floors in your home; but, with a little extra effort on everyone's part, they can be maintained in a safe and acceptable condition so that we can walk in our oil house without the danger of slipping and falling.



The sand that is spread on the floors to absorb the excess oil will also need to be removed and replaced at periodic intervals.

Fire and explosion hazards are always present where oil is stored, and any lighting in the building will need to be the vapor-proof type with switches located on the outside of the building, unless they are explosion proof.

In the event the protective glass of the fixture is damaged, there is a possibility that the light bulb might be accidentally broken and the oil vapors might be ignited. The flash point of oil is high enough to be safe under normal use and conditions, but we must recognize the potential fire hazards and take certain precautions.



Courtesy: New  
South Wales  
Coal Association,  
New South  
Wales, Australia



October 1988

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## **EXPLOSIVES - A SERIOUS BUSINESS**<sup>1/</sup>

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### *INTRODUCTION*

The following pages contain illustrated abstracts of blasting accidents selected to represent specific unsafe practices in the metal and nonmetal mining industry.

The intent of this information, along with the illustrations, is to assist safety directors and safety specialists in recognizing the conditions and practices which allow these accidents to occur. Reference to applicable metal and nonmetal regulations are also included.

<sup>1/</sup>Health and Safety Analysis Center, Mine Safety and Health Administration, Denver, Colorado

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The quarry superintendent and the plant man were fatally injured when a dynamite primer exploded while testing the continuity of the leg wires of a blasting cap. Four other miners, who were eyewitnesses to the accident, were seriously injured.

The crew was charging 32 blast holes that had been drilled the day before. Before loading the holes with ANFO, the superintendent, one of the victims, obtained a conventional volt/ohmmeter from his truck to test the continuity of the blasting cap leg wires. The primer exploded the instant the detonator leg wires were inserted into the meter probe terminals. The superintendent and the plant man were standing directly over the hole, while the four injured men were standing a short distance away.

A volt/ohmmeter, not specifically designed for testing continuity of blasting circuits, had been used. A meter designed for this task produces 50 milliamperes maximum when used as an ohmmeter. The meter used in this accident produced approximately 250 milliamperes of current, which was sufficient to detonate an electric blasting cap.

#### **RECOMMENDATIONS:**

All persons who use electric blasting caps should be reminded of the potential hazard of using instruments not specifically designed for testing blasting circuits. Recent industry self-imposed standards require new instrumentation suitable for testing blasting circuits containing electric detonators to be yellow in color (1984). Because the standard has not been fully implemented and many old instruments are still being used, MSHA does not recommend the use of every yellow instrument for testing circuits containing electric detonators.

All persons involved in blasting operations should be properly trained in the use of explosives. This training should include the use of proper testing devices and the hazards of using improper test meters.

*56.6121 Mandatory.* When blasting electrically, a blasting galvanometer or any other instrument that is specifically designed for testing blasting circuits, shall be used to test:

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(a) In-surface operations:

(1) Continuity of each electric blasting cap in the borehole prior to the addition of stemming.

(2) Resistance of individual series or the resistance of multiple balanced series to be connected in parallel prior to their connection to the blasting line.

(3) Continuity of blasting lines prior to the connection of electric blasting cap series.

(4) Total blasting circuit resistance prior to connection to the power source.

A 42-year old blaster, with 10 years mining experience, was fatally injured when a blast hole he had loaded with a primer and blasting agent was drilled into and prematurely detonated. The blaster and the driller had been instructed by the mine foreman to drill and blast alternate faces at different sequences of time. The victim and the driller had discussed the procedure, but neither checked what the other was doing. The victim did not properly check the entire area before loading the face, and disregarded the fact that the drill was operating in the opposite face. The foreman, who instructed the miners on the sequence of drilling and blasting, failed to inspect the faces being worked and take steps to check whether or not a hazard existed. The foreman also neglected to follow-up on whether his instructions were being followed.

**RECOMMENDATIONS:**

Mine supervisors should not automatically assume that their instructions have been understood and carried out. They should inspect blasting areas frequently to insure that mandatory blasting standards are complied with.

*57.6107 Mandatory.* Holes shall not be drilled where there is danger of intersecting a charged or misfired hole.

October 1988

Two underground miners in their early twenties, with approximately six weeks mining experience, died of multiple injuries when a round they were wiring was detonated by lightning. A third miner who arrived at the scene to warn the victims of the lightning strikes on the surface, was also injured by fly rock. The inexperienced miners were using electric caps.

**RECOMMENDATIONS:**

All persons using explosives should be trained to recognize the hazards associated with their use. In particular, when using electrically activated initiation systems, miners and supervisors should remain alert for changes in environmental conditions that increase the risk of premature detonations.

*57.6090 Mandatory.* Persons who use or handle explosives or detonators shall be experienced who understand the hazards involved; trainees shall do such work only under the supervision of and in the immediate presence of experienced persons.

*57.6124 Mandatory.* When electric detonators are used, charging shall be suspended in surface mining, shaft sinking, and tunneling, and persons withdrawn to a safe location upon the approach of an electrical storm.

October 1988

A quarry superintendent, with 30 years mining experience, was injured and died three months later, when he was struck by fly rock while observing a blast. The victim had been standing in the area often used as an observation point to view blasts. The victim and two core drillers reportedly watched pieces of fly rock falling in their direction. The two core drillers did not move, but the victim moved backwards into the path of the fly rock.

**RECOMMENDATIONS:**

Persons observing, controlling, or waiting for a blasting event, should be in an area away from the blasting zone which will provide protection from fly rock.

*57.6160 Mandatory.* Ample warning shall be given before blasts are fired. All persons shall be cleared and removed from the blasting area unless suitable blasting shelters are provided to protect persons endangered by concussion or fly rock from blasting.

A miner, with four years underground experience, was fatally injured when the blastholes he had electrically detonated apparently initiated a secondary explosion of crude oil mist and particulates. The victim had been inside the portal where the blasting machine was located, approximately 900 feet away from the loaded round. The victim's mining partner, who was not in the immediate area, stated that he heard an extra loud explosion and saw a fireball exit the portal.

**RECOMMENDATIONS:**

When unusual conditions are encountered, such as presence of oil, combustible gas, or combustible dust, specific safeguards should be initiated.

In a mining operation where known unusual environmental conditions exist, blasting should occur only after all personnel have exited the blasting area and are accounted for at a designated location.

October 1988

A miner, with 17 years experience, was fatally injured and two others seriously injured in a blasting accident. The victim was hand mucking at the working face when a misfire exploded. One of the injured miners, who witnessed the accident, stated that the victim had discovered the misfire and trimmed and relit the fuse without first talking to his supervisor.

The three men retreated from the area into the drift approximately 80 feet from the face. They waited about three minutes and the victim stated that he heard the cap go off. When they arrived at the face, the witness told the victim that the hole was still smoking. The victim then pulled out the burned fuse and threw it back from the face. A few minutes later while hand mucking the bench, the misfire exploded.

**RECOMMENDATIONS:**

Supervisors should insure that miners are aware of the mandatory safety procedures for handling and working around explosives.

*57.6104 Mandatory.* When blasting with fuses, miners should not return to the blast area for at least 30 minutes.

*57.6106 Mandatory.* Faces and muck piles shall be examined by a competent person for undetonated explosives or blasting agents and any undetonated explosive or blasting agents found shall be disposed of safely.

*57.6177 Mandatory.* Misfires shall be reported to the proper supervisor. The blast area shall be dangered off until misfired holes are disposed of. Where explosives other than black powder have been used, misfired holes shall be disposed of as soon as possible by one of the following methods:

- (a) Washing the stemming and charge from the borehole with water.
- (b) Reattempting to fire the hole if leg wires are exposed.
- (c) Inserting new primers after the stemming has been washed out.

A miner with 44 years mining experience and his partner with no mining experience, were fatally injured when the drift round they were spitting detonated. According to the co-owner of the mine, it was a practice for one miner to spit the round with a Benz-o-matic type propane torch while the other miner held a flashlight. No cap lamps were worn by either miner. The miners apparently did not use any timing method to determine a safe time to leave the drift face. An unknown incident occurred which caused delay in the regular routine.

**RECOMMENDATIONS:**

Persons igniting explosives by fuse should insure that the path is clear, visible and unobstructed to the safety point, and that they allow sufficient fuse to reach that point.

*57.6112 Mandatory.* The burning rate of the safety fuse in use at any time shall be measured, posted in conspicuous locations, and brought to the attention of all persons concerned with blasting.

*57.6113 Mandatory.* When firing from 1 to 15 blastholes with safety fuse ignited, individually using hand-held lighters, the fuses shall be of such lengths to provide the minimum burning time specified. In no case shall any 40-second-per-foot safety fuse less than 36 inches long, or any 30-second-per-foot safety fuse less than 48 inches long, be used.



October 1988

A mine superintendent, with nearly 20 years mining experience, was fatally injured when he failed to leave a development drift after a 38 hole blast was ignited. Two other miners who witnessed the accident were also injured when the round went off. The two witnesses stated that the superintendent, who was also the operator, was probably attempting to light some fuses that had already burned. He had also cut another fuse ahead of where it was burning and was unable to relight it with a cigarette lighter. The victim made no attempt to leave the face, as the other miners pleaded with him to leave. There were no explanations for the victim's actions. The victim established correct safety procedures and practices, but failed to follow them.

**RECOMMENDATIONS:**

Mine supervisors are responsible for mine safety and should set an example of safe work habits.

Safety programs set forth by company policy should be adhered to by all employees regardless of level of authority.

*57.6114 Mandatory.* At least two miners shall be present when lighting fuses and no person shall light more than 15 individual fuses. If more than 15 holes per person are to be fired, igniter cord and connectors or electrical blasting shall be used.

*57.6116 Mandatory.* Fuse shall be ignited with hotwire lighters, lead spitters, igniter cord, or other such devices designed for this purpose.

October 1988

A shift foreman, with 30 years mining experience, was fatally injured by fly rock from an explosion which occurred when the driller drilled into a misfired hole.

The miners had mucked out the face, but did not wash it down. They stated it was company policy to wash the face down, but the hose was being used in another area. The miners stated that they had observed the high place on the bench, but were not concerned with it. The shift foreman (victim) had visited the stope twice that morning and both times the drill was down for repairs. When he returned for a third time, he and the driller had decided to straighten the bench by drilling a one foot hole on the high side. The driller began drilling while the foreman was standing in front of the jumbo drill directing the driller with his cap lamp. When the drill penetrated the misfired hole, the explosion occurred.

**RECOMMENDATIONS:**

In addition to requiring persons under their supervision to comply with all company, state, and federal regulations, supervisors should also comply with applicable safety regulations.

*57.6106 Mandatory.* Faces and muck piles shall be examined by a competent person for undetonated explosives or blasting agents and any undetonated explosives or blasting agents found shall be disposed of safely.

*57.6107 Mandatory.* Holes shall not be drilled where there is danger of intersecting a charged or misfired hole.

# THE LAST WORD

## TWO KINDS OF SAFETY

There are two ways to be 90 percent safe from accidents.

**ONE WAY.** Spend your lifetime in a danger proof house -- one that is perfectly protected against lightning, earthquake, flood and fire. Keep very close to the floor to avoid falls. Trust no one but yourself and yourself very little. Use no gas or coal or other substance that might generate gas. Use only natural light. Have no stairs, no bathtub and no soap.

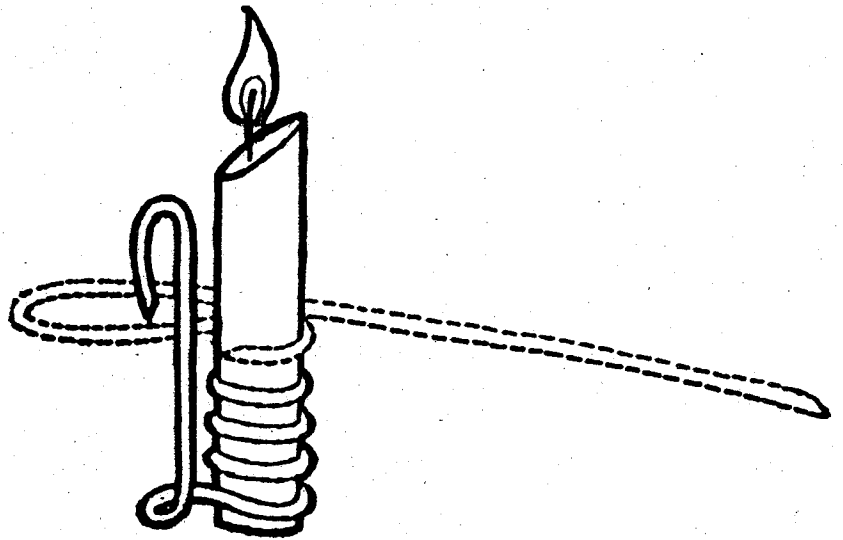
If you do all this and keep sane, your chances of living a life free from accidents would be about 90 percent perfect, but you will probably die at 30 or so from overeating, lack of sunshine and good air, lack of exercise, or general boredom with life.

**THE OTHER WAY.** Live a full life of doing skillfully those things that can be done safely and well, such as flying, swimming, hunting, deep sea diving, even mountain climbing.

But avoid risks which no amount of skill can make safe such as driving cars at high speeds with worn-out tires. If such is your program, then your chance of living a full and happy life and coming to a natural end at a ripe age is very high. Which do you prefer?

## GLOW LITTLE LUMBRICIA

Does anyone know what a lumbricia is? Colloquially translated in the Southwest and Mexico, lumbricia means glow worm. Miners in this area at one time used this ingenious candle stick holder device. It requires only a length of Number 9 iron wire. The wire is wrapped around a jig, forged, immersed in an oil bath, and presto, a very serviceable candleholder.



*Not to know is bad; not to wish to know is worse.*





## GRANDMA WOOD

Mary Ramsey was born in Tennessee May 20, 1787. She married at seventeen, had four children, and moved to Georgia where her husband died in 1839.

A decade later Mary moved her family to Missouri and then brought them across the Plains in a covered wagon to Oregon. She rode the entire distance on a mare she named Martha Washington Pioneer.

At the age of 67 she married John Wood in Washington County. John had built the first frame hotel in the town of Hillsboro. Mary outlived John.

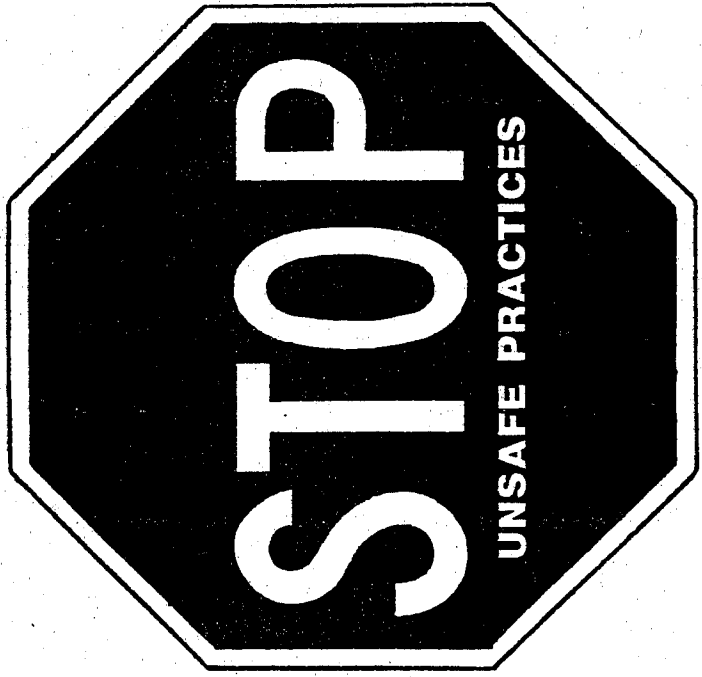
She was known as Grandma Wood and when she became a centenarian, friends and relatives threw a party for her. That day she reminisced, told about seeing General George Washington and Thomas Jefferson. She claimed that the highlight of her life had been "the time Andy Jackson asked me to dance. He was the best president this country ever had. He knew how to make laws and how to enforce them. He was a fighter for what he believed in."

In 1907 Grandma Wood celebrated her 120th birthday. But that fall her health failed and she began planning her funeral. "Whatever you do," she told her family, "don't convey my remains in no hearse. Load my coffin in a hack. I've lived as a Democrat and I'll go out in a Democratic wagon."

Grandma died the first day of 1908. Her funeral went just as she had planned, even down to the quilt she had picked to cover her coffin in the back of the hack.

**Mine Safety and Health Administration  
Metal and Nonmetal  
Southeastern District**

**ONLY YOU CAN PREVENT ACCIDENTS AND INJURIES**



**ELIMINATE UNSAFE CONDITIONS**

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**MSHA, Office of Holmes  
Safety Association**  
**Educational Policy & Development**  
4800 Forbes Avenue, Room A268  
Pittsburgh, PA 15213

5000-22

(Rev. 12-78)



**HOLMES SAFETY ASSOCIATION  
MEETING REPORT FORM**

For the month of \_\_\_\_\_

TOTAL meetings held this month \_\_\_\_\_

TOTAL attendance this month \_\_\_\_\_

Chapter Number \_\_\_\_\_ (See address label, if incorrect, please indicate change.)

\_\_\_\_\_  
(Telephone No.)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Title)

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If you do not care to receive this Bulletin, please check here  and return this form.

Please include any change of address below:

# Joseph A. Holmes Safety Association

## Awards Criteria--Outline

### Type "A" Awards - For Acts of Heroism

The awards are medals with Medal of Honor Certificate.

### Type "A" - For Acts of Heroic Assistance

The awards are Certificates of Honor.

### Type B-1 Awards - For Individual Workers

(40 years continuous work experience without injury that resulted in lost workdays)

The awards are Certificate of Honor, Gold Pins and Gold Decal.

### Type B-2 Awards - For Individual Officials

(For record of group working under their supervision)

The awards are Certificate of Honor.

### Type C Awards - For Safety Records

(For all segments of the mineral extractive industries, meeting adopted criteria)

The awards are Certificate of Honor.

### Other Awards - For Individual Workers

(For 10, 20, or 30 years without injury resulting in lost workdays)

The awards are 30 years - Silver Pin and Decal, 20 years - Bronze Pin and Decal, 10 years - Decal bearing insignia.

### Special Awards - For Small Operators

(Mine operators with 25 employees or less with outstanding safety records)

The awards are Certificate of Honor:

Contact: HSA Office



Department of Labor  
MSHA, Holmes Safety Association  
4800 Forbes Avenue  
Pittsburgh, PA 15213

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