



HOLMES SAFETY ASSOCIATION

BULLETIN

MARCH 2001

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- Safety Alert: Fire Extinguishers***
- Mine Fire Control Seminar***
- The Crater - July 30, 1864***



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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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Safety Alert Fire Extinguishers

Department of Energy recently posted action notices on the fire extinguisher manufactured by ANSUL-Belgium.

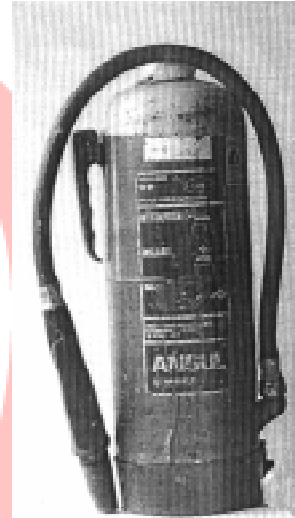
Booted extinguishers may be at risk for the failure mechanism described in the alert notices. The Alert notice states: "This Agency action notice is issued to alert participants of the danger of fire extinguishers with plastic or rubber bases. **An employee was using a fire extinguisher to put out a small fire when the extinguisher suddenly exploded resulting in the employee's death from flying debris.** This fire extinguisher has a plastic or rubber base that resulted in moisture being trapped inside the base that may have prevented corrosion on the bottom of the extinguisher from being detected during inspections. Following the incident, a number of other extinguishers of the same make and type were checked and

found to be seriously corroded."

The unit mentioned in this article is an ANSUL dry chemical fire extinguisher, widely used in industrial, shipboard, aviation, electrical, and commercial applications. They are too big and expensive for widespread use in homes, though they would likely be in apartment buildings, boiler rooms, or commercial kitchens. They are normally depressurized until used. Then a gas cartridge (usually Carbon Dioxide, but sometimes Nitrogen) is discharged to pressurize the unit to spray dry powder.

It is possible that extinguishers from other manufacturers have a similar design.

If your fire extinguishers have plastic or rubber bases, it is recommended they be removed and each fire extinguisher carefully inspected by a competent person immediately.



This is the rubber base.



Look at the bottom of the extinguisher for corrosion. Moisture can be trapped inside the rubber base. BE CAREFUL!!!



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Mechanics are exposed to more conveyor hazards than most mine employees and are involved in more accidents.

Conveyors can be Deadly

Between 1990 and 1997, conveyors were involved in 40 mining deaths, injuring repair or maintenance workers more often than those engaged in any other work activity. Four mechanics died and 23 were permanently disabled as a result of conveyor accidents. You can help yourself work safer and live longer. When near this machinery, watch for conveyor hazards and work safely.

Conveyors can grab you ...don't get caught up.

Working smart

- **Lock out** the conveyor power switch and tag it before you work on that conveyor.
- **Align the belt** from a safe place and only after you're sure the conveyor can't grab you.
- **Return idlers look safe, but they can hurt you.** Never try to repair or adjust them while the conveyor is running.
- **Stay clear of suspended loads** when installing or repairing a conveyor.
- Conveyor **stop cords** are

for your safety. Check them periodically to make sure they actually work.

- Use a **harness or safety belt and line** when working where you can fall from a conveyor.

Safe maintenance

- If the belt's in motion, **don't manually apply belt dressing.** Only pressurized dressings can be put on while the conveyor is running.
- Put the **guard back in place** when you're done working on the machine.
- Don't try to **dislodge rocks** from pulleys while the conveyor is running.
- **Block conveyors** against *hazardous* motion before repairing or doing maintenance on the machine.

If you have any questions about any mine health and safety matter, please contact your local MSHA office or visit the MSHA home page at www.msha.gov.



illustration by Cottle



MSHA - POST ACCIDENT INVESTIGATION REMEDIES

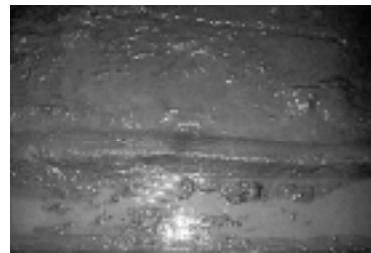
“Brake Cars : Taking Up the Slack” (A Sequel to “Wire Rope Safety : Don’t be a Slacker”)

Any condition that can result in the shock loading of a wire rope is a serious matter, whether on a portable crane, elevator, skip hoist, overhead crane, or even a set of come-a-longs. The coal mine slope hoist is definitely a hoist of a different color when it comes to hazards. Almost every slope hoist in deep mines is set up to transport personnel, if not as the primary, then as a secondary man hoist. When a slope hoist is used to transport persons, the regulations require that the cage, car, or mantrip be equipped with safety catches or other no less effective devices that

act quickly and effectively in an emergency (30 CFR Part 75.1400(c)) . Meeting this requirement is usually done by the use of a brake car. The brake car is equipped with a battery powered electro-magnetic braking system that is designed to stop the car if activated by an overspeed sensor or manual switch. Brake cars should be maintained with the following standards:

- The car overspeed switch must be set at the correct activation speed setting. Maintain and periodically test the car overspeed switches.
- Maintain the communication systems on the car and at the hoist and bottom locations. Test daily.
- Hoist operator must take slack out of rope before the brake is released.
- Batteries must always be fully charged to prevent unintentional setting of the brakes that can result in slack rope conditions. (Requires a good battery maintenance program)
- Train personnel in procedures for proper methods of signaling the hoistman, how to release and set brakes, and how to remove the slack from the rope before releasing the brakes. Also, post these procedures on the brake car.

Some states and some mines require a “bottom man” to check the car before each trip for proper brake setting, to ensure that safety chains are secured,



and to signal the hoistman.

The best maintained brake car is still a hazard if the track and road bed are not maintained properly. Enough dirt, mud or debris on the rails will make the braking system ineffective. If enough dirt, mud or debris is present to slow the car’s decent, a slack rope situation can develop. If the dirt or mud is allowed to accumulate on the cable rollers to the point where they won’t turn, excessive wear on the cable itself can



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occur.

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.

The implementation of this remedy should not increase costs and is likely to reduce hoist and wire rope repair costs. ■

MSHA - POST ACCIDENT INVESTIGATION REMEDIES

“Skirt the Problem”



Miners are injured each year by material falling from belt conveyors.

An average of forty miners are injured each year by material falling from belt conveyors. Although these injuries generally are not serious, almost half result in lost time. Over a five-year period, the average number of lost-work days per injury was 12 at metal and nonmetal mines and 23 at coal mines.

The use of skirt boards can help to limit the amount of material that falls from conveyors and exposes

miners to injuries. The cost for skirt boards with rubber bottom seals, fabricated and installed on a new conveyor, is about \$75 per foot. The investment can be optimized by placing the skirt boards at “high-risk” areas along the belt line, where these accidents are more likely to occur.

To reduce such accidents, mine operators should do the following:

- 1) Install skirt boards on conveyors at locations that have a higher



Skirt boards

likelihood of material falling off the belt, or a higher chance for miners to be exposed to this hazard, such as:

- ❑ Loading and transfer areas (it is recommended that the skirt boards be at least 2-1/2 times longer than the belt is wide, to allow the material to ‘settle down’); areas that have unusual features, such as magnets, crushers, and grizzlies; places where persons regularly travel along or cross under the belt; and areas where maintenance, clean-up, or inspection activities are frequently performed.

2) At your periodic safety meetings, emphasize the following.

- ❑ In the ‘high-risk’ areas mentioned above, miners need to keep aware of the potential for falling material while doing clean-up, maintenance, or inspection work.

- ❑ Under certain operating conditions, such as when a belt is not fully loaded, material may be more likely to bounce off a belt.

- ❑ When traveling along conveyors (even in a vehicle), miners should keep as far away from the conveyor as possible, without exposing themselves to other hazards.

- ❑ Even small material can cause injury if it falls from a height or from a fast moving belt.

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

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HOLMES SAFETY ASSOCIATION

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NIOSH/MSHA
National Mine Health and Safety Academy

Mine Fire Control Seminar



A 1-day Mine Fire Control Seminar, conducted jointly by the National Institute for Occupational Safety and Health (NIOSH), Pittsburgh Research Laboratory and the National Mine Health and Safety Academy, will be held on June 14. This seminar is designed to enhance your awareness of the dangers of underground mine fires. The presentations will focus on detecting, controlling, responding to, and extinguishing mine fires.

This seminar is for miners; safety, training, and ventilation personnel; mine rescue and fire brigade members; supervisors; and representatives from labor unions, academia, and Federal, State, and local government agencies.

For technical information on the workshop, please contact Ron Conti, NIOSH, Pittsburgh Research Laboratory at 412-386-4918, by fax at 412-386-4919, or e-mail at rkc4@cdc.gov, or Dave Friley, National Mine Health and Safety Academy at 304-256-3343.



JUNE 14, 2001

WASH THAT TRUCK!



The practice at this mine is to wash their trucks and equipment before they go into the repair shop. This keeps chunks of mud and debris from falling on the repairman while working in, around, and underneath equipment. This method is one additional way of preventing injuries from falling matter.



This safety tip was submitted by Lynn Carr, MSHA Audiovisual Material Development Branch. This procedure was observed by Ms. Carr, while she was producing a video at a mine site in Tyrone, New Mexico.

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The Air Was Filled With Earth, Cannon, Caissons, Sand-Bags, and Living Men: The Crater - July 30, 1864

By Stephen J. Hoyle,
Bulletin Staff Writer



HOLMES SAFETY ASSOCIATION

By mid-June 1864, the Army of the Potomac faced Robert E. Lee's Army of Northern Virginia at Petersburg, Virginia, a railroad hub just south of the Confederate capitol, Richmond. The prospects were promising, even though the Federal offensive had slowed. If the rail lines to Petersburg could be cut and the town captured, supplies to Lee's army and Richmond would be disrupted, the city would fall, the Confederates would have to retreat, and the war would be just about over.

The arithmetic favored the Federals as they outnumbered the Confederates almost two-to-one. The difficulty lay in the fact that the Confederates occupied heavily fortified lines around Petersburg. Lt. Gen. U.S. Grant, commander of all Union forces, reluctantly decided on a siege. At the same time, however, he would try to stretch the Confederate lines thin enough so that maybe, just maybe, his forces could break through somewhere. By June 22, this plan was shelved after an attack on the Union II Corps by Lt. Gen. A.P. Hill's Confederates had

bagged 1700 Federal prisoners.

In the Federal line was the 48th Pennsylvania Regiment, commanded by 31-year-old Lt. Col. Henry Pleasants, a short, slender man from Pottsville, Pennsylvania. Pleasants, a civil engineer by training, before the war had worked for the Pennsylvania Railroad doing construction and tunneling, and had been an engineer in anthracite mines. The 48th had been recruited in Schuylkill County, started their service in the west, and had come east in time to fight at Second Bull Run, Antietam, Fredericksburg, and in the Wilderness. About 25 percent of the men in the 48th Pennsylvania were coal miners. Now they sat in hot dusty trenches at Petersburg, looking at enemy fortifications barely an eighth of a mile away. They, along with the rest of the Union army, knew from bitter experience that an attack against fortified positions would almost always fail.

Pleasants frequently checked on his men. On one trip, they told him it appeared that if they could dig a mine under the Confederate works and blow it up, then the way would be

clear for the Federal army to take Petersburg. Pleasants listened thoughtfully, agreed with what they said, and sent the idea forward to his division commander, Brig. Gen. Robert B. Potter.

Potter, a New Yorker, was the son of an Episcopal bishop. He had become a division commander in the Federal IX Corps at the age of 34. He sent a staff officer to meet with Pleasants and take a look at the Rebel positions. The staffer stuck his head up above the trench to see what was out there, and was immediately shot dead by a Confederate sniper. Pleasants went ahead anyway and sent a sketch of his idea to Potter, who liked what he saw and summoned Pleasants to go with him to IX Corps headquarters to see Maj. Gen. Ambrose E. Burnside.

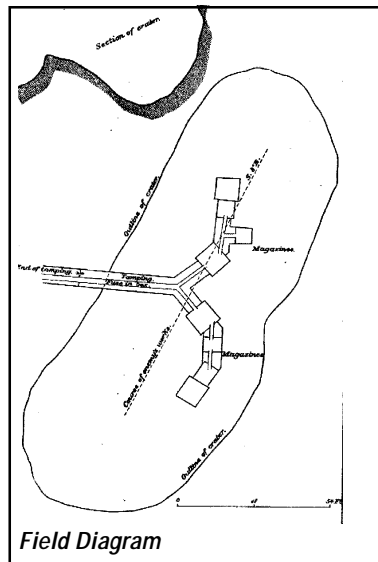
Burnside, a likable (although somewhat naive) man who freely admitted his inadequacies and shortcomings, had enjoyed what could at best be called an uneven career with the Union army. A former commander of the Army of the Potomac, who had led it to slaughter at Fredericksburg and



then nearly drowned it in the infamous "Mud March" of January 1863, he presently commanded the IX Corps.

On the hot, sticky night of June 24, 1864, Burnside sat in his tent, smoking a cigar and mopping his face with a handkerchief, as he listened to Potter and Pleasants. Their plan, they told Burnside, was to dig a 500-foot tunnel from behind the Federal lines to a point under the Confederate fortifications. They would fill the tunnel with powder, fire it, and the Federal forces would attack through the resulting gap in the Rebel lines. Burnside had a lot of questions which Pleasants answered to his satisfaction. Pleasants believed that the project could be completed in about three weeks. Impressed, Burnside told them to get started while he took the plan to Maj. Gen. George G. Meade, commander of the Army of the Potomac.

Meade, baggy eyed, hook-nosed, and noted for his temper, had been an engineering officer for most of his prewar career, but he had been in the thick of the fighting since 1862, first in charge of a division and later a corps. In June 1863, after Joe Hooker was relieved and Lee's Army of Northern Virginia swept north through Maryland and into Pennsylvania to the awful showdown at Gettysburg, Meade had been named to command the Army of the Potomac. He had led the Army of the



Potomac through the Gettysburg campaign and had followed Lee back into Virginia.

Now, however, the 49-year-old Pennsylvanian found himself in an awkward situation as Lt. Gen. Ulysses S. Grant had his headquarters in the field with Meade's army. Grant had done this for two reasons. First, he had doubts about the Army of the Potomac, and second, because he did not want to become entangled in the bureaucratic and political snares of Washington. Not only that, Burnside outranked Meade, and his IX Corps was an independent command that reported to Grant rather than to Meade. Nonetheless, Burnside understood that he would have to rely on Meade's help and assistance to see the mine become a reality. Neither Meade nor his engineers gave the project much chance for success, and they gave it even less material support. Grant supported it to some extent, if only because it seemed a way

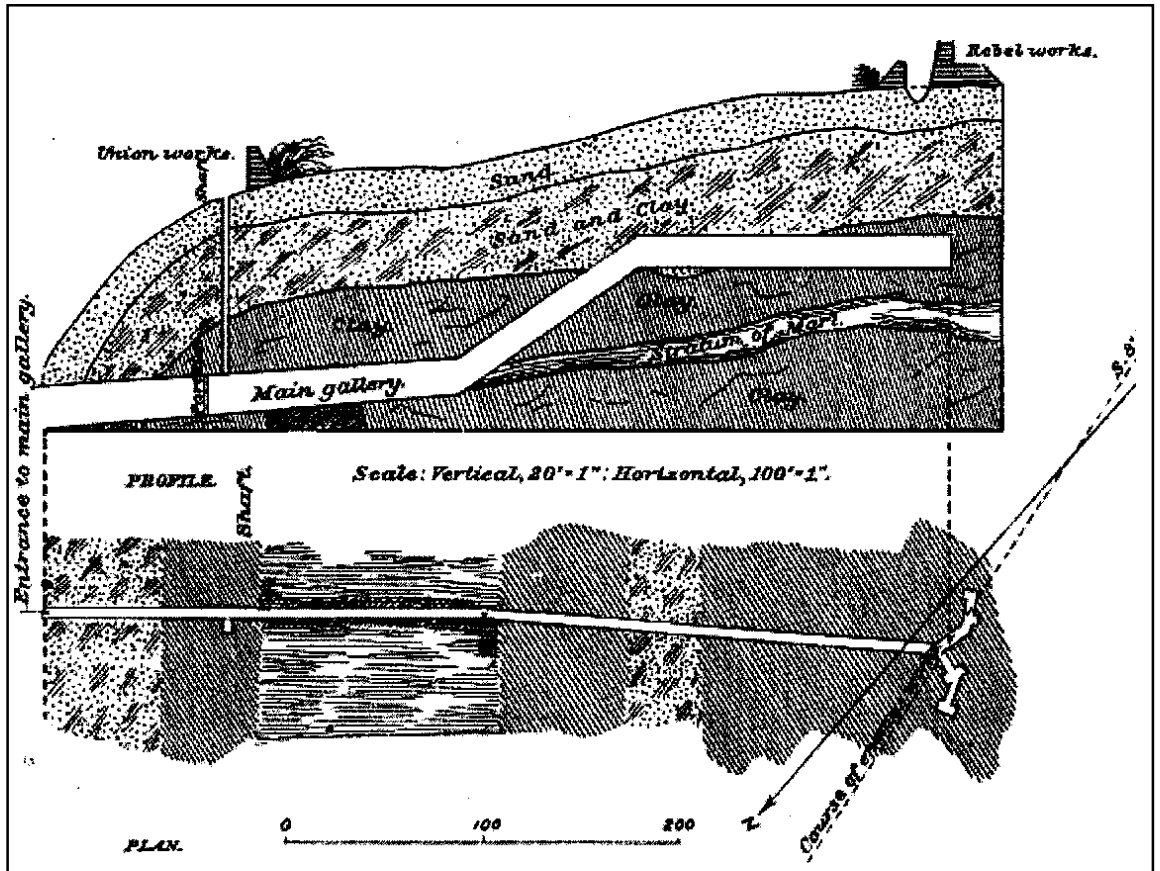
to keep from having to conduct a long, costly siege at Petersburg.

Digging began at midnight on June 25. Pleasants took all of the men from the 48th Pennsylvania who had mining experience and put them to work in shifts under the command of Sgt. Henry Reese, who proved to be well suited for his new job as mine boss. The miners worked in shifts 24 hours a day, their reward a shot of whiskey at the end of their time. The men did not have the proper tools, but the ground was soft, and bayonets were enough to get them started.

They had plenty of shovels, but no picks. IX Corps artillery blacksmiths took army picks and straightened them so they could be used in the mine.

Pleasants recalled later that his biggest problem was to '...dispose of the material I got out of the mine....I had to remove all of the earth in old cracker boxes: I got pieces of hickory and nailed on the boxes in which we received our crackers, and then iron-clad them with hoops of iron taken from old pork and beef barrels.' The miners needed lumber and timbers for their work, but, he said, 'I could get no boards or lumber supplied to me for my operations.' He had to '...get a pass and send two companies of my

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own regiment, with wagons, outside of our lines to rebel saw-mills, and get lumber that way, after having previously got what lumber I could by tearing down an old bridge.” After about a week of digging in sandy soil, the men ran into a vein of clay. The top sagged and timbers snapped like matchsticks. The 48th Pennsylvania’s miners dug some more, set additional props, and kept going. In time they struck a layer of marl (clay mixed with sand and lime) that hardened as soon as it was exposed to air. The marl was so hard that the miners carved tobacco pipes from it. This

was tough digging, and Pleasants increased the angle of the tunnel to get over the marl and into softer ground. The tunnel was starting to take shape; five feet high, four feet wide at the bottom, two and one-half feet wide at the top and completely timbered. Ventilation was a problem, so Pleasants constructed a ventilation shaft, a furnace, and a chimney which pulled bad air out and good air into the mine. He used borrowed instruments because Meade’s engineers refused to help him, and made “five separate triangulations” to determine the “exact distance from the entrance of the mine

to the enemy’s works. These triangulations were made in our most advanced line, and within 133 yards of the enemy’s line of sharpshooters.”¹

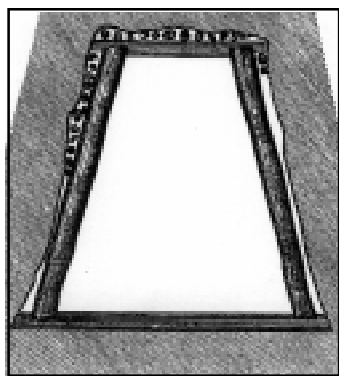
On July 3, Brig. Gen. J.G. Barnard, Chief Engineer, wrote to Pleasants requesting an update on progress of the mine. Pleasants replied three days later. The mine was progressing steadily toward the Confederate works. His miners were working 24 hours a day. There were 210 men assigned to the job, and the rest of the regiment was involved in the work in one way or another, but only two men at a time could work underground at the



extremity of the work.” They were digging in sandy soil and supporting the top with props “at a distance from each other ranging from three to thirty feet.”²

At midnight, July 4, Meade wrote a dispatch to his boss. He told Grant that the mine was moving ahead and that he was starting to plan an attack on the Confederate lines to be delivered when the mine was finished. Meade estimated that the attack could take place in about two weeks when the mine was ready and the attacking troops in position.³ The main tunnel was finished on July 17 and the miners of the 48th began driving “galleries” to the right and left of the main entry to hold the powder charges to be exploded under the Confederate strong point. The 48th Pennsylvania’s miners finished their digging on July 23. All was in readiness for the mine to be charged, except for some final timbering and cleanup work.

On July 26 Burnside requested 8,000 sandbags “as soon as possible to be used in tamping the mine.” The same day, in reply to another question from Army Headquarters, he said his men needed 2,400 feet of fuse, “enough to make four lines of 600 feet each.”⁴ Powder was a concern, too. Writing for Grant, Maj. Gen. A.A. Humphreys, Chief of Staff, told Burnside that Grant desired that “the charge of the mine should be determined by the



Section of Main Gallery

usual rules governing such subjects.”⁵ In another dispatch written on July 26, Meade admonished Burnside that he had “better...look for some secure place in the woods where the powder required can be brought in wagons and kept under guard, thus saving the time it will take to unload it...and haul it to your camp. Whenever you...designate a point I will order the powder brought up.”⁶

Fear of discovery by the enemy was a constant concern. Grant to Burnside: “Is there any reason to suppose the enemy have found your mine?” Burnside to Grant: “There are no indications that the enemy has discovered the location of the mine, but I am satisfied that they know we are mining, and have sunk shafts with a view to ascertaining where our galleries run, because they were heard at work there day before yesterday.” Recent heavy rains had stopped this Confederate activity. Burnside went on to say that charging the mine would “not require us to make any noise so that I hope we

will escape discovery until such time as it may be deemed advisable to use the mine.”⁷ On July 26 Burnside sent another long message to Humphreys. He tried to set Humphreys mind at ease, even though he believed that it was “probable that the enemy” knew about the mine as it had been “mentioned in their newspapers and they have been heard to work on what are supposed to be shafts in close proximity to our galleries....”

Burnside then went on to review his plan to use infantry regiments, supported by artillery to their right and left, to attack and exploit the gap in the Confederate line that would be created after the mine was exploded.

He closed his note to Humphreys by explaining the layout of the mine. Two “galleries,” each about 40 feet long branched off the main gallery (tunnel) which ran 522 feet from the Union lines to a point beneath the Confederate works. Smaller workings (“magazines”) were at right angles to the left and right galleries. Burnside told Humphreys he proposed to put 1,200 to 1,400 pounds of powder in each magazine. The powder was to be fired by fuse and a powder train.⁸ All was in readiness.

Time was wasting, as Brig. Gen. Potter said in a note to

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one of Burnside's staff. Potter, like the other commanders was afraid that the mine would be discovered by the enemy who could be "heard at work" trying to find it.⁹ The Confederates had been digging "countermines" in an effort to find the Federal mine, but they were to the right and left and at least 20 feet above where the Pennsylvanians were working.

A little before 8:00 p.m. on July 26, Humphreys told Burnside that 8,000 pounds of powder and fuse were on their way to him along with the sandbags he had requested. Burnside had suggested that the powder train be parked in the woods about a mile behind his headquarters.¹⁰ On July 27, 180 men were detailed to carry powder to the mine site. They were to be equipped with "sticks from four to six feet long, capable of sustaining a keg of powder of 100 pounds...."¹¹ The Pennsylvanians carried the powder into the mine and loaded it into the magazines during the afternoon and early evening of July 27. Pleasants spliced the fuses together and ran them from the powder charges back through the tunnel. The shot was stemmed with dirt which filled the main shaft back for about 38 feet from where the galleries broke off.

Burnside had planned his attack as Pleasants' miners dug their way underground toward the Confederate fortifications. The IX Corps had four divi-

sions; three divisions of white troops and one division (the 4th) of African-American soldiers.

The corps commander's plan called for the men from the 4th Division of IX Corps to lead the Union advance after the mine was fired, and to attack the breach in the Confederate line. The men of 4th Division had little combat experience. Their time in the army had been spent in digging trenches, building fortifications, and guarding wagon trains. The 1st Brigade of the 4th Division (27th, 30th, 39th, and 43rd USCT) was selected to lead the attack. They received special training in how to advance on a narrow front and deploy their lines to both sides of the crater left by the mine explosion. The division commander, Brig. Gen. Edward Ferrero, a New Yorker, was confident that his inexperienced infantry could get the job done.

It was not to be, however, as Burnside's plan was overruled at the last minute. Now, the white troops would go in first, and the African-Americans would follow. Enormous changes had to be made, and quickly.

Burnside had to choose from among three commanders to lead the assault. The first of these was Robert Potter. Second was Brig. Gen. Orlando B. Willcox, a proven division commander from Michigan, and third was Brig. Gen. James H. Ledlie, another New Yorker,

who had been a division commander in IX Corps for about two months.

Burnside, always unwilling to make a decision, sent for the three generals. He recalled that, "after some discussion...I decided that taking everything into consideration, it would be fair that these gentlemen should cast lots for the advance..." They did so, and Ledlie "drew the advance." It was about 3:00 p.m. on July 29 when Ledlie left Burnside's tent. The mine was scheduled to be fired in less than twelve hours.¹² In the meantime, orders were issued for additional artillery and infantry support for the advance against the Confederate works.

It would take about 15 minutes, if all went as planned, for the fuse to burn to the powder charges. Pleasants lit the fuse at 3:15 a.m. on July 30. At 3:30 a.m. - nothing happened. At 3:45 a.m. - nothing happened. Pleasants, at 4:00 a.m., sent Sgt. Reese, the mine boss, into the tunnel to see what had gone wrong. While a nervous George G. Meade peppered Burnside with questions,¹³ Reese groped through the darkness inside the mine, checking the fuse; fully aware that at any second the powder charge could explode. The problem was in a splice, and Reese started back out to get more fuse when he met Lt. Jacob Douty who had been sent into the mine to find him. The two men fixed the splice,



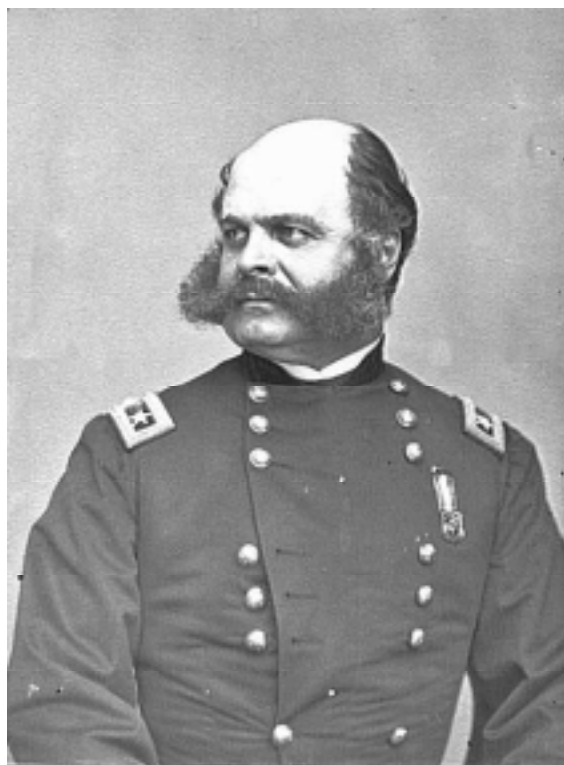
relit the fuse, and scampered out of the mine as fast as they could.

It was 4:45 a.m., and the sky was getting lighter, when the mine exploded. One man remembered it as a “dull, heavy thud, not at all startling; ...a heavy, smothered sound, not nearly so distinct as a musket-shot.” A “mass of earth went up into the air,” another witness recalled, “carrying with it men, guns, carriages, and timbers.” An officer in the 14th New York Heavy Artillery wrote, the “earth around us trembled and heaved so violently that I was lifted to my feet...fire and smoke shot upward seventy-five or one hundred feet. The air was filled with earth, cannon, caissons, sand-bags, and living men.”¹⁴

What had been a fortified line was now a crater 60 feet wide, 30 feet deep, and about 117 feet long. Many of the bluecoats waiting to attack thought it all was going to fall on them and they moved back out of the way. It took them a few minutes to reform their ranks.

The mine had blown up a portion of the line held by troops from the 19th and 22nd South Carolina regiments. Most of the debris from the explo-

sion “fell immediately around the crater, mingled with the debris of 2 guns, 22 cannon-eers, and perhaps 250 infantry” who had “been carried up in the air.” Some men were buried, but many were quickly extricated.¹⁵ Despite the shock of the explosion the Confederates recovered rapidly, and



Ambrose E. Burnside

were waiting for the Union attack when it came.

The battle was over before it began. Although the Union generals had ordered the ground to be prepared for the assault it had not been done. Some of the Federal infantry scrambled out of their trenches by climbing up ladders of bayonets stuck into logs in the trench, while others piled up

sandbags and clambered up over them. Ledlie’s men stopped when they got to the crater, apparently amazed by its size and horrified by the wreckage and the bodies of those dead and buried alive at the bottom of the crater.

Ledlie was not there to urge them forward. He was well behind the front line in a bombproof (bunker), quickly getting drunk on medicinal rum he had scrounged from a surgeon. Burnside, who knew nothing of the situation, kept ordering troops forward to exploit the break in the Rebel line. Potter’s and Willcox’s men advanced as best they could as Federal artillery shells whistled over their heads. The Confederates meanwhile began shelling the Federal infantry with artillery and with mortars. Meade’s famous temper boiled over. Burnside took exception to the tone of Meade’s questions and replied,

were “it not insubordinate I would say that...your note was unofficerlike and ungentlemanly.”¹⁶ The offense stalled while the generals bickered. It was starting to look like another Fredericksburg, as unable to advance, the Union

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forces lay down and took what cover they could.

Now came the African-American infantry. They could not advance through the crater as it was filled with their white comrades, so they moved into the rat's nest of Confederate trenches where the fighting became hand-to-hand. General Fererro, (well to the rear like Ledlie) kept sending orders for the infantry to advance. They did their best, but were driven back by Confederate rifle and artillery fire and by a sudden counterattack by a Confederate brigade commanded by Brig. Gen. William Mahone who had been pulled out of the Confederate line and sent to the crater. The African-American troops retreated to the crater where they were trapped with the remains of the attacking force. It was now 11:00 a.m., and for the next three hours the Federal forces, black and white alike, endured a terrible pounding from the enemy. Pinned in the crater they could move neither forward nor back. The combat became savage in the afternoon. Those who could, escaped, others were captured, and in the case of the African-American soldiers, paraded through Petersburg before being sent to Confederate prison camps. The battle was over, Petersburg was still in Confederate hands.

Approximately 15,000 men from IX Corps had been in the fight; about 3,500 of them were killed, wounded, or missing.

The casualty rate in the black regiments was almost 25 percent.¹⁷

All that remained was for a court of inquiry to assess blame. Burnside was relieved of command and eventually resigned from the service. Ledlie, also relieved of command, resigned his commission in January 1865. Potter, Willcox, and Fererro were reprimanded. Writing after the fact, Grant caustically remarked that the mine had been "...a stupendous failure. It cost us about four thousand men...all due to inefficiency on the part of the corps commander and the incompetency of the division commander who was sent to lead the assault."¹⁸

What then, of Pleasants and his miners? They fared better. The following was issued on August 3, 1864. "The commanding general takes great pleasure in acknowledging the valuable services rendered by Lt. Col. Henry Pleasants...and the officers and men of his command, in the excavation of the mine which was exploded...under one of the enemy's batteries in front of the Second Division of the Ninth Army Corps. "The skill displayed in the laying out and construction of the mine reflects great credit upon Lt. Col. Pleasants...and the willing endurance by the officers and men of the regiment of the extraordinary labor and fatigue involved in the prosecution of the work to completion is

worthy of the highest praise."¹⁹

Notes

1. The War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies, Series I, Vol. 40, Part I, pp. 556-557, (hereafter cited as OR, and Henry Pleasants quoted in William H. Powell, "Battle of the Petersburg Crater," *Battles and Leaders of the Civil War*, Vol IV, pp. 545-546.

2. OR, Series I, Vol. 40, Part I, p. 558, and OR, Series I, Vol. 40, Part III, pp. 610-611.

3. OR, Series I, Vol. 40, Part III, pp. 619-620.

4. OR, Series I, Vol. 40, Part III, pp. 473-474.

5. OR, Series I, Vol. 40, Part III, p. 474-475.

6. OR, Series I, Vol. 40, Part III, p. 475.

7. OR, Series I, Vol. 40, Part III, p. 474.

8. OR, Series I, Vol. 40, Part III, pp. 476-477.

9. OR, Series I, Vol. 40, Part III, pp. 476-477.

10. OR, Series I, Vol. 40, Part III, p. 479.

11. OR, Series I, Vol. 40, Part III, pp. 529-530.

12. OR, Series I, Vol. 40, Part I, p. 61.

13. OR, Series I, Vol. 40, Part III, p. 657.

14. William H. Powell, "Battle of the Petersburg Crater," Charles H. Houghton, "In the Crater," and Henry Goddard Thomas, "With the Colored Troops at Petersburg," *Battles and Leaders of the Civil War*, Vol. IV, pp. 545-565.



15. Edward Porter Alexander, Military Memoirs of a Confederate: A Critical Narrative, p. 569.

16. OR, Series I, Vol. 40, Part I, p. 660.

17. Noah Andre Trudeau, Like Men of War, pp. 234-251.

18. Ulysses S. Grant, Personal Memoirs, p. 613.

19. OR, Series I, Vol. 40, Part I, p. 558.

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APRIL



Wellness

**WALKING/RUNNING
EXERCISE FOR CARDIOVAS-
CULAR FITNESS**

Whether you are a beginner or an advanced exerciser, a good walking program can be beneficial. For beginners, it's an easy way to start a cardiovascular exercise program. For deconditioned exercisers, it's a safe way to begin the journey back to fitness. For others, walking can serve as an effective warm-up or add variety to a cross-training program. It's free, easy, safe, and appropriate for almost everyone!

Jogging or running provides a more intense (and effective) cardiovascular workout than walking. Although appropriate for many people, running puts greater strain on muscles and joints, and demands higher levels of cardiovascular conditioning. Thus, many walkers need to gradually get in better shape before embarking on a vigorous running program.

**WHERE, WHEN, AND
HOW**
Where

Indoors. If weather or personal preference finds you indoors, use a pedometer to calculate the desired distance at a local shopping mall. Indoor tracks and gymnasiums also provide potential locations. Local fitness centers often have treadmills for indoor exercise; less expensive versions can be purchased for in-home use.

Outdoors. Outdoor distances can also be calculated using a pedometer or car odometer. Look for routes that are scenic and safe, with a minimum exposure to car exhaust fumes and other sources of air pollutants. If a group is exercising together, consider routes with long, straight stretches to keep each other in view. For safety's sake, walk or run facing traffic with an appointed leader on the outside of the group. Advanced groups may wish to include steps or hills in their route.

When

Safety should be your primary consideration in deciding what time of day to exercise. During warm weather, you may prefer to work out in the early morning or late afternoon.

How

Walk or run with your shoulders back and relaxed, chest lifted, eyes straight ahead, and chin up. Swing your arms naturally and rhythmically.

Rotate the hips naturally to avoid stress on the knees and ankles. Strike down on the front foot with the heel as you push off with the big toe of the back foot. Then roll the weight along the outer sole of the foot to the big toe to prepare for the next push-off.

EQUIPMENT
Shoes

Although many people exercise in street shoes, aerobic shoes, or tennis shoes, special walking and running shoes have been designed to provide maximum support, shock absorbency, and durability. A good pair of athletic shoes is an investment in your exercise program, and may decrease your chance of injury. It is also recommended that you wear thick socks, or more than one pair.

If your hips, knees, and ankles are not within normal alignment, or if walking or running is biomechanically stressful, it may be necessary for you to use orthotics (shoe inserts). If you have any discomfort in your joints, consult a podiatrist, physical therapist, or sports medicine specialist for assistance.

Clothing

Clothing is a matter of personal preference. Some exercisers prefer Spandex, others wear sweats. Let comfort and weather guide your clothing selection. When possible, stay cool during your workout. The hotter you are,



the less likely you will feel like working hard. When your intensity is lower, you receive fewer cardiovascular and calorie-burning benefits.

Comfortable, nonchafing clothing is best. Layered clothing, such as shorts under sweats and T-shirts under sweatshirts will allow you to remove layers as the body warms up (see following sections). Reflector vests or tape is advised if you are walking along roads when visibility is poor (daybreak, dusk, fog, etc.). In cold weather, cover your head and hands, and dress in layers. Everyone should wear sunscreen on bright days.

BUILDING INTENSITY

When starting a walking/running program, choose a routine based on your current fitness level. Adopt a basic walking program if you are currently a nonexerciser or if you exercise infrequently. Begin by walking slowly to warm up, then more briskly at a comfortable pace. Twenty minutes at medium to high intensity at least three times a week is the minimum duration needed to receive a cardiovascular benefit. You should always be able to “talk while you walk.”

As you become more fit, increase the duration of your workout or add another workout to your weekly schedule. Alternatively, you can increase the intensity of your workout.

Some options include:

1. RUSH Walking—Walk quickly. Imagine being late for an important appointment.

2. RUSH Walking with Arms—Rush walk with exaggerated arm movements to incorporate upper body work.

3. Hills, Stairs, or Curbs—Add a long hill, flight of stairs, or stepping up and down on a curb as part of your workout.

4. Power Walking or Race Walking—Walk as quickly as possible without jogging—one foot is always in contact with the ground. Keep hips low, walk with a heel-to-toe striking movement on every step. Maintain good posture with the head, shoulders, hips, and heels in a vertical line.

As your conditioning improves, intersperse walking and running as appropriate. For example, run one minute for each three to five minutes of walking. Increase the time running as you become more fit. Eventually, you should progress until you can jog or run for the entire workout.

Hand Weights

Another method to add intensity is to use hand weights. However, for beginners, hand weights may push the heart rate above a safe target level. For this reason, weights should only be used by those with adequate endurance to complete at least a 20 minute brisk walk using exaggerated arm movements. In addition, persons with hypertension or back, knee, or other musculoskeletal problems

should not use hand weights.

If you use hand weights:

✓ Make sure your upper body muscles are warmed up before you use them.

✓ Hold weights with a light grip. Forceful gripping causes muscle fatigue and produces a “pressor response,” increasing blood pressure.

✓ Arm movements should be controlled, without momentum. Don’t swing your arms above your head or allow your elbows to lock. Keep your arms moving, but not swinging.

✓ To avoid joint trauma, never put weights on your ankles, waist, or legs while walking.

✓ Never run with weights. Running is a high impact activity. Weights increase the load on bones and joints.■

APRIL

Our Mining Heritage



Irish miners in Schuylkill County, Pennsylvania, cheer the return to work following the "Long strike."

Irish Personalities Lead the Battle Cry For Better Working Conditions

The history of Irish immigration to America is not the familiar fairy tale of poor immigrants finding success and prosperity in a new land. Rather, it is a more realistic one of a people forced to battle prejudice and economic oppression to carve their own niche in their new home.

From the period of their earliest migration to America, the Irish found a land brimming with

both promise and prejudice. Their determination to fight for their rights and better conditions matched the American spirit of independence, yet sometimes intimidated traditional Americans who were still adjusting to the diversity that the nation would one day embrace.

Life in Ireland was not easy for Irish Catholic peasants in the mid-1800s. The tidal wave of immigration to America began with a blight of the Irish potato crop in 1840 which left the farmlands covered with black rot. Food prices soared as crops across Europe failed. Poor Irish farmers watched helplessly as their food stores rotted in the cellars, taking their only hope of paying rent to their British and Protestant landlords and then even their own source of food. Consumption of rotten produce sickened entire communities and villages staggered under twin waves of cholera and typhus. Fatal victims were left unburied as priests sacrificed coffin money to buy food for the living.

Unable to find redress in the courts, these poor Irishmen took refuge in secret societies that could fight for change under a cloak of anonymity. During the 1840s, a new group known as the "Molly Maguires" became well known in both the northern and southern counties of Ireland for its efforts to fight the oppression of the title collector.

When immigrants from these areas later arrived in America, they carried with them the memory of this earlier struggle. Landlords moved to cut their losses by evicting thousands of peasants and later by even paying their tenants to emigrate. Greedy ship-owners often crowded hundreds of Irish onto ships unequal to the task of providing shelter to so many. It was estimated that up to one-third of the passengers of these "coffin ships" never made it to their new home alive. Of the one million immigrants who left Ireland during this decade, most traveled to England or America.

Life in Ireland had been cruel but most Irish did not view the exodus to America as a journey of joy. In fact, it was often referred to as the American Wake. Yet others who had made the journey wrote home describing a land of abundance and urging family members to follow them through the "Golden Door" to America. The call was answered and while America was preoccupied with its Civil War, approximately 100,000 Irishmen fled their native land hoping to gain employment in America.

These Irishmen arrived at a time for need for American industry. The nation was experiencing the most intense period of growth it had ever witnessed, and workers were needed for the heavy chores of building railroads, bridges, canals, and mines. It was a common expression among Irishmen that the railroad had



“an Irishman buried under every tie.”

Many of these new Irish arrivals sought employment in the mining industry of northeastern Pennsylvania. But the land they discovered was one far removed from the Golden Door they had been promised. Mining was hard, dangerous work where the guiding principle was profit, not humanity. The coal companies placed experienced workers from England and Wales as overseers of their operations and the past resentment against the Irish Catholics hung heavy in the air. The Irish found themselves once again held captives to an economy that worked them to the point of death and offered little gain in return. Miners faced cave-ins, explosions, flooding, and fire as they battled to make their living underground.

This time the Irish had nowhere to run and no desire to do so. Instead, they stood proud and ready to issue a call for change in the mining industry. This battle cry brought forth a new list of Irish heroes who led the charge to change the industry forever. One of the earliest of these Irish warriors in America was John Siney who arrived in Saint Clair, Pennsylvania, by way of Ireland and England. Siney had learned the basics of organizing while employed in the Lancashire textile mills. In 1868, he formed the first anthracite labor union and christened it the Workmen’s Benevolent

Association (WBA). For a few years the WBA was an active force in improving working conditions. Membership quickly soared to include 30,000 of the 35,000 miners in the anthracite fields.

The WBA quickly organized a Committee on Political Action to direct its membership in the battle for improved conditions. This committee traveled to Harrisburg to lobby successfully for the first mine safety law. The act as passed was designed to provide “for the better regulation and ventilation of mines and for the protection of the miners in the County of Schuylkill.” The Act of 1869 held many requirements that would be the basics of mine safety legislation for the next century; including ventilation standards, fire boss inspections, signal system requirements, and the creation of an office of state mine inspector.

John Siney and the WBA were encouraged by the successful passage of the Mine Safety Act of 1869 but realized that much remained to be done. This fact became painfully evident on September 6, 1869, when 110 men and boys died in the Avondale mine disaster. Siney responded to the disaster by working to bring miners together for change. He made this statement, “You can do nothing to win these dead back to life, but you can help me to win fair treatment and justice for living men who risk life and health in their daily toil.”

Under the urging of Siney, the General Council of the WBA sent a committee made up of members from each county union to Harrisburg to demand better mining legislation. Stunned by the public outcry that followed the Avondale disaster, the Pennsylvania lawmakers quickly passed a more detailed Mine Safety Act of 1870. The Act of 1870 included the following provisions:
Required mine operators to provide two accurate maps of each mine - one original copy to be filed with the state mine inspector.
Gave mine operators four months to provide their mines with two or more outlets or an injunction could be ordered closing the mine.
Increased the number of mine inspectors to six.

Although the gains it had supported were impressive, the WBA under the leadership of John Siney, would suffer greatly over the next half decade. An extended strike in 1875 forced miners back to work on the operator’s terms and brought an end to the Workers’ Benevolent Association as established by John Siney.

However, the brave Irishman was far from defeated. Instead, Siney began looking for an avenue to bring miners together under a more comprehensive union. Determined to create an organization with strength

(Continued next page)



APRIL

enough to force the passage of more effective mine safety laws, Siney formed the Miners' National Association (MNA) in 1873. Within a year, the new organization boasted 25,000 members from Maryland, Missouri, Wyoming, Illinois, Indiana, Ohio, Pennsylvania, and West Virginia.

By 1875, the new union peaked with a membership of 35,000 in twelve states. Siney told the workers, "Single-handed we can do nothing, but united, there is no power or wrong we cannot openly defy." However, life was not well with the brave Irishman, John Siney. In 1875, MNA President Siney and organizer Xingo Parks were arrested and imprisoned in Pennsylvania under a charge of criminal conspiracy. Parks was later convicted under an operator's charge of interfering with the company's right to work its property by instigating a strike. Siney was acquitted but the MNA never recovered. Within a year, the national union had faded into the pages of history.

Over the next few years, John Siney would appear only briefly in the news of battles for rights. An explosion that took the life of six men in the Wadesville Mine in 1877 brought him into action to demand an inquest. At his urging, frightened miners were convinced to testify about dangerous gases and inept mining inspectors. Victory was won when one inspector was charged with negligence and

more careful monitoring of safety measures was ordered.

However, the victories were few for John Siney in these last days of his life. Winning a meager living at an unsuccessful tavern was all the opportunity left to him as his mining career came to an end. In 1880, the proud Irishman who had worked so hard to make life better for his fellow workers fell victim to consumption, known as the "miner's plague."

Yet the seeds he had sown with support of the earliest mining legislation would grow to become a garden of change as resilient as a field of Irish clover. ■



Two Irish Miners – circa 1890

2001 Holmes Safety Association, MSIA, NASMIA National Meetings

The 2001 National Meetings of the Holmes Safety Association, Mine Safety Institute of America, and National Association of State Mine Inspection Agencies will be held together in San Antonio, Texas during June 4-7, 2001. This meeting will provide a variety of Safety and Health workshops presented by experts from around the U.S., and representing all sectors of mining.

The Meeting will be held at the Holiday Inn San Antonio Riverwalk in downtown San Antonio. Call 210-224-2500 to make reservations. Rooms are limited and registration should be made by April 30th. Be sure to indicate you are attending the Holmes Safety Association meeting to get the reduced room rate of \$91.00. The registration fee is \$150.00 for early registration on or before April 30th. Late registration is \$175.00 after April 30th. Registration for spouses and guests is \$100.00 and covers all special events except the golf outing.

BUSINESS MEETINGS

- NASMIA (June 4th 8:30 - 4:00)
- MSIA Board of Dir.
(June 5th 1:00 - 3:00)
- Annual Meeting**
(June 6th 4:00 - 5:00)
- JAH/HSA Exec. Comm.
(June 5th 3:00 - 5:00)
- Annual Meeting**
(June 7th 4:00 - 5:00)

AGENDA

REGISTRATION (June 4-7)

WORKSHOPS

- Innovative Annual Refresher
- Abandoned Mines and Employee Safety
- Blasting Dynamics
- HAZCOM
- EFS Makes the Difference
- Lock Out / Tag Out
- Noise Abatement
- Tailgate Safety
- Low Tech Solutions
- Independent Contractor's Responsibility Towards Safety
- Dust Control Processes
- Fall Protection

PANEL SESSIONS

- Noise Standard
- Part 46

SPECIAL EVENTS

- Golf Outing (June 5th)
- Vendors Reception *
- Evening Fiesta Recep *
- HSA Awards Banquet *
- * Cash Bar

For more info. contact:

**Judy Tate or Sherry Wood
at 214-767-8423 or 8401**

Bone



San Antonio

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Stafford

(See next page)

APRIL

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HOLMES SAFETY ASSOCIATION

The 2001 National Holmes Safety Association Meeting

June 5, 6 and 7

San Antonio, Texas

Complete this form, detach and mail with check or money order made out to **HOLMES SAFETY ASSOCIATION** to the following address:

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Attendees: _____ @\$150.00 = _____

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Will you and/or your guest be participating in the Golf Outing: YES ___ NO ___

If yes, more information will be sent to you.



Join Today! and Grow with us...

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Membership is free. Your organization can become a **Holmes Safety Association Chapter** by completing a membership application and submitting it to the Holmes Safety Association.

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Name you would like to call the chapter being established:

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HOLMES SAFETY ASSOCIATION

MARCH

New Membership or Address Changes?

For address changes and new subscription requests, contact:

Bob Rhea

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Please address any comments to:

Donald Starr

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National Mine Health and Safety Academy

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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***.



Reminder: The District Council Safety Competition for 2001 is underway - please remember that if you are participating this year, you need to mail your quarterly report to:

**Mine Safety & Health Administration
Educational Policy and Development
Holmes Safety Association Bulletin
P.O. Box 4187
Falls Church, Virginia 22044-0187**



Holmes Safety Association Officers and Executive Committee 1999-2001

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