Training

Highlighted "versus degraded" technique

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What do fighter pilots and miners have in common? They are learning to recognize hazards using the "degraded" technique developed by the U.S. military. Traditionally, fighter pilots learned to recognize targets by studying photos taken under the best of conditions (a "highlighted" training approach). However, research showed that the pilots did better when trained with less than ideal ("degraded") pictures of the targets. "Degraded" refers to pictures where cloud cover, rain, poor weather conditions, natural barriers, buildings, or other obstructions partially hide the object—conditions that pilots would likely encounter in real life.

This approach can also be used for mine hazard recognition training. One example used a "highlighted" photo of a miner's foot positioned within a trailing cable loop on a mine floor. The photo showed the potential dangers of tripping or being caught by a retracting cable. The second photo showed a "degraded" version of the scene. The cable loop hazard is obvious. However, other more subtle dangers are present, including working without safety gloves and glasses.

Other examples include working in a confined area between rib and equipment, and placing tools on machinery (especially if the machinery is powered up or moving). One advantage of the degraded approach is that it encourages group discussions about workplace hazards.

To compare the effectiveness of "highlighted" versus "degraded" hazard recognition training, we developed experimental and control training modules. These modules were used alternately during Part 48 training and followed with the same individual test of hazard recognition. Miners trained with the "degraded" training module scored significantly higher on the test than those trained in the more traditional "highlighted" manner. We conducted two further field studies in underground coal mines in the South and Midwest involving more than 2,600 miners. Both sites experienced more than a 25% drop in incident rates, which management and researchers attributed in part to the "degraded" hazard recognition program. However, in field studies such as this, one cannot rule out the possibility that factors other than the change of training method contributed to this reduction.

We are currently working with the Illinois Department of Natural Resources and Illinois Eastern Community College to develop a "degraded" hazard recognition training package for the mining industry. The package, including a video, slides, overheads, and an instructor's manual, will be available from MSHA's National Mine Health and Safety Academy, Beckley, WV (304-256-3257) by fall of 1997.

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MSHA Hazard Alert—Falls from trucks

Five deaths and 396 serious injuries

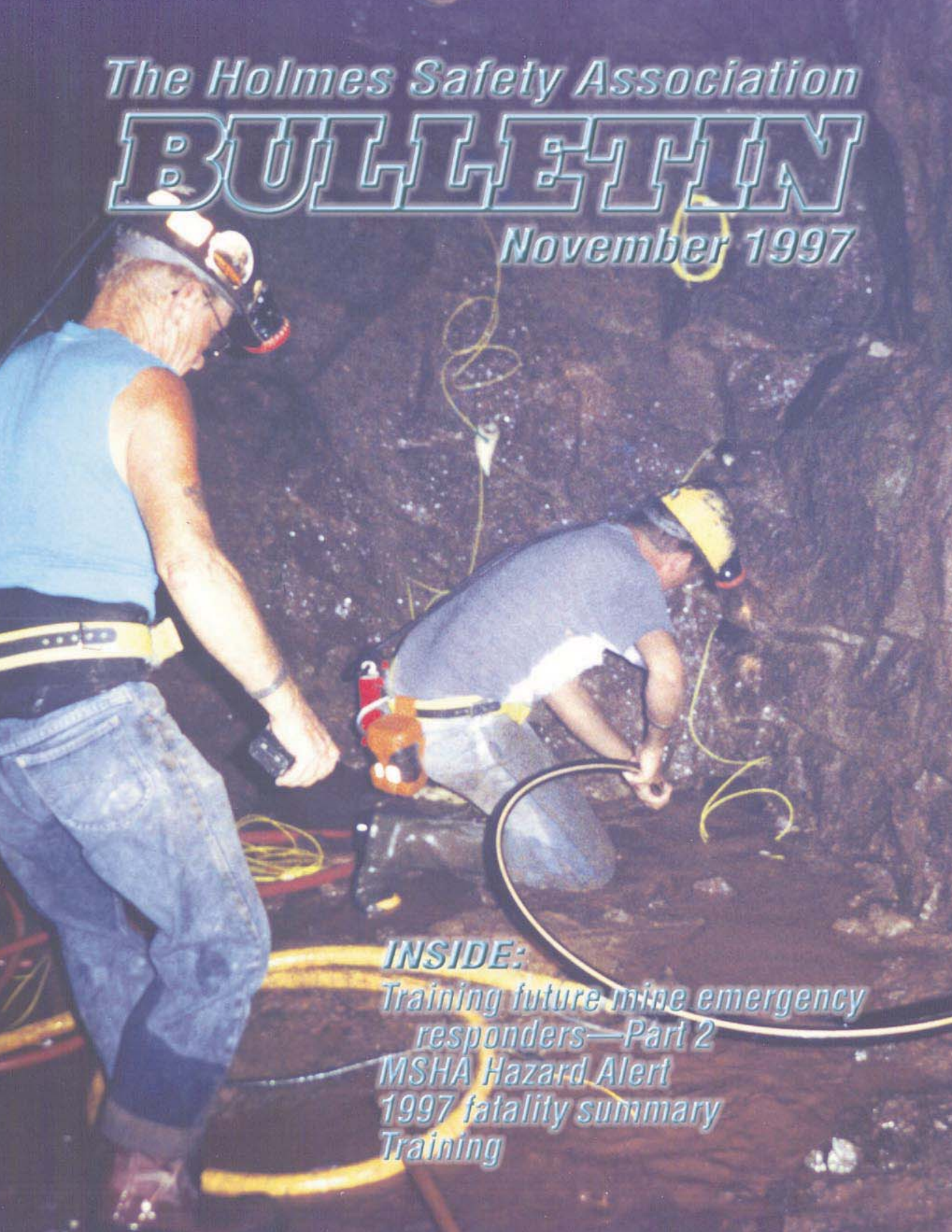
Since January of 1992, five truck drivers have been fatally injured when they fell from trucks. Fall protection was not provided in three of the fatalities and in the other two fatalities, fall protection was available but not used.

Additionally, 396 truck drivers have been seriously injured during the same time period. These injuries are occurring as the drivers conduct various activities on and around trucks used in mining. Climbing on top of and getting off the trucks account for the biggest percentage of the accidents. Other activities which accounted for the most accidents:

Checking the load distribution on the truck. Securing tarps on loaded trucks. Opening and closing hatches on tanker trucks. Performing one of the required preshift safety checks. Getting in or out of the vehicle cab.

To help prevent these type of accidents, operators should:

Provide load-out facilities equipped with fall protection. Require that fall protection be used at all load-out facilities. Provide fall protection for truckers when tarping trucks. Train all truck drivers in the proper methods of getting on and off the trucks. Require preshift inspections be conducted in a safe manner.



The Holmes Safety Association BULLETIN

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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 to groups of mine and plant workers during on-the-job safety meetings.

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.

COVER: Thanks to Terry Jacobs of Gouverneur Talc Co., Inc. (Gouverneur, NY) for this month's cover photo of miners loading a shot to sink a decline in their woolastinite mine—a mineral used in ceramics and as a neutral filler in paints. The miners are, from the left, Kenny Woods and "Doc" Taylor working in Gouverneur Talc's No. 4 mine. [If you have a potential cover photo, please send an 8" x 10" print to the editor, Fred Bigio, MSHA, 4015 Wilson Blvd., Arlington, VA 22203-1954]

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