



Technology News

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Milestones in Mining Safety and Health Technology

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Expert Miner Training Video Released By NIOSH

Objective

To develop safety training tools for mine safety and health professionals that fill gaps in currently available materials.

Background

Over the past 4 years, NIOSH has developed and released a series of training videos targeted at underground mine safety. These videos were developed in close cooperation with the mining industry and safety training professionals and were intended to provide realistic, interesting, effective training to both new hires and experienced miners. The videos cover the mining cycle, starting with the breaking of the rock (*Handling Explosives in Modern Mines*), making certain the work area is safe after a blast (*Rock Falls— Preventing Rock Fall Injuries in Underground Mines*), installation of ground supports and recognition of failed supports (*Miner Mike Saves the Day*), and hauling both ore and materials in the mine (*Hazards in Motion*). A separate video (*Hidden Scars*) captures the story of a fatal rock burst through an interview with a miner who nearly died and who lost his partner in the accident. These videos have been extremely popular in the mining industry and are being used across the nation as well as in 18 other countries. Two of them, *Rock Falls* and *Miner Mike Saves the Day*, have won Alice Hamilton awards, NIOSH's highest recognition for Excellence in Occupational Safety and Health, in the Educational Materials category.

Approach

A recently completed independent evaluation of the SRL mining videos identified five themes that mine safety trainers consider necessary for successful training materials: high quality, credibility, accurate content, effectiveness, and an engaging nature. All of the NIOSH videos were rated very high for each theme.

Using these measures of effectiveness, a more difficult challenge has been undertaken. Much has been written in the mining industry about the coming turnover in employment. The average age of miners in the United States is approaching 50, and many of the "experts" will be leaving the industry as they reach retirement age. The mining industry, like many industries involving skilled labor, relies heavily on a master-apprentice relationship between new hires

and older miners. New hands learn from experienced miners. Their learning falls into three primary categories—they learn what's important to know, they learn how to do things correctly and safely, and they learn the culture.

With the expected exodus of experts, there's a very real concern in the industry about how to train new miners when there aren't enough master miners left to go around. The new NIOSH video, *Zen and the Art of Rockbolting* attempts to capture the wisdom and experience of a master miner to help train a new generation of miners long after he has retired.

Zen and the Art of Rockbolting

This video showcases Jim Mortensen, a "gyppo" miner for nearly 40 years in a deep, underground silver mine in the West. Jim is paid for what he produces and consistently out-produces everyone else in the area. He has never lost a day to a lost-time injury. In the video, Jim explains to a young miner, Ted, what he has learned over the years. He tells young Ted how to survive and how to do the job right. He discusses such things as proper work practices and personal protective equipment, and at the same time, provides valuable lessons on what it means to be a hard-rock miner. Jim is a master and is highly credible as a trainer.

This video runs 33 minutes, and while it was filmed in a hard-rock environment, it's an excellent introduction to the necessary interaction between working safely and working hard in any mine.

For More Information

Additional information and research reports can be obtained by contacting Elaine Cullen at (509) 354-8057, e-mail efc8@cdc.gov, Spokane Research Laboratory, E. 315 Montgomery Ave., Spokane, WA 99207.

To receive additional information about occupational safety and health problems, call **1-800-35-NIOSH (1-800-356-4674)**, or visit the NIOSH Web site at www.cdc.gov/niosh

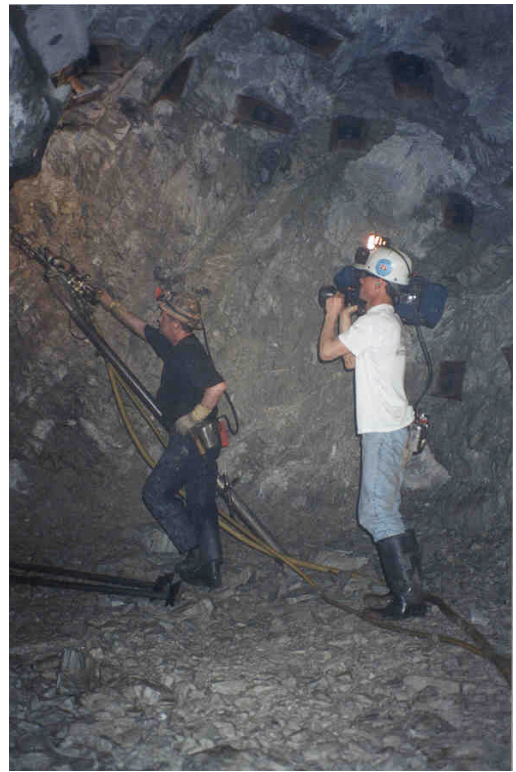
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Jim Mortensen, master miner



Filming Jim as he works at the face.