

**CDC****NIOSH**

SAFER • HEALTHIER • PEOPLE™

# Technology News

No. 483

**Milestones in Mining Safety and Health Technology**

January 2001

## Safety Training Tools for Rock Scaling Personnel

### Objective

To develop and evaluate the effectiveness of safety training tools specific to the underground hard-rock mining industry.

### Background

Scaling, the removal of loose rock from the roofs and walls of a mine by manual or mechanized means, may be necessary during any stage of mining. Manual scaling is very labor intensive, and mechanical methods can be too powerful and actually produce a less stable roof.

A systematic review of recent MSHA accident and fatality reports for underground metal/nonmetal mines revealed that nearly a quarter of all fatalities were related to rock falls, approximately one-third of all accidents involved scaling, and about half of all scaling-related accidents involved miners with less than 3 years of mining experience. Thus, the process of scaling was identified as a major source of injuries to miners and targeted for investigation.

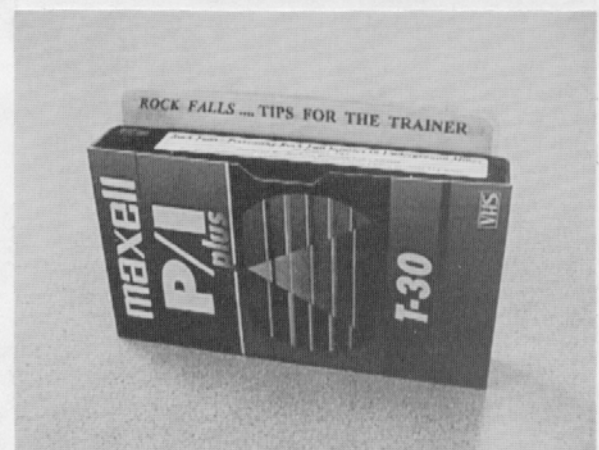
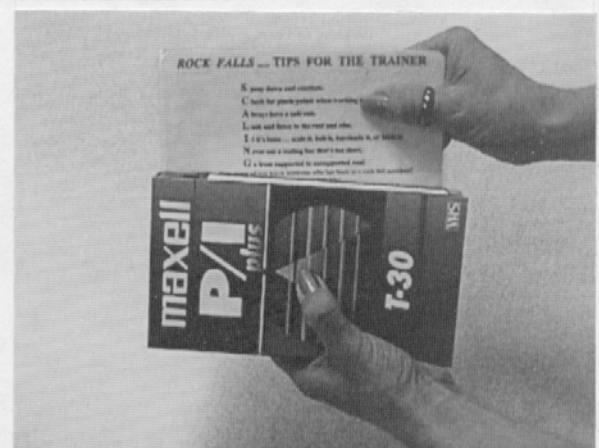
### Approach

The miners, safety trainers, and industry professionals interviewed unanimously requested an up-to-date video on scaling procedures. They suggested that the video include information regarding —

- Proper scaling techniques,
- Hazard identification,
- Accident prevention, and
- Commonly used scaling equipment.

After reviewing dozens of other safety videos and interviewing many safety education professionals, an action-packed-drama format was chosen to get miners' attention and draw them into the video. With the format chosen, we focused our efforts on developing a

script that would deliver our message. Hence, the *Rock Falls—Preventing Rock Fall Injuries In Underground Mines* video was created.

**U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES**

Public Health Service

Centers for Disease Control and Prevention

National Institute for Occupational Safety and Health

After the *Rock Falls* video had been completed, a manual to be used by safety trainers in conjunction with the video was considered. Once again, miners, safety trainers, and industry professionals were consulted. The general consensus was that the trainers' guide should be short, concise, and easily stored with the video. Hundreds of safety videos, manuals, and journal articles were reviewed and dozens of education and safety professionals were consulted to determine the content and format of the trainer's guide. *Rock Falls...Tips for the Trainer* is a one-page, double-sided, laminated sheet that slides easily into the cover of the *Rock Falls* video.

## How It Works

The opening scene of the *Rock Falls* video begins with a rock fall accident. The remainder of the video discusses proper scaling techniques, hazard identification, accident prevention, and commonly used scaling equipment. To increase viewer comprehension, the major points were presented using a, "Tell-them-what-you're-going-to-tell-them, tell-them, then-tell-them-what-you-just-told-them" approach.

*Tips for the Trainer* provides questions specifically worded to generate discussion. Suggestions are offered to make the video

more effective, and a S.C.A.L.I.N.G. mnemonic is provided. A game, *Miner Feud*, is also included to promote miner participation and interaction.

## For More Information

Additional information can be obtained by contacting Art L. Miller (509) 354-8028, e-mail: [ALMiller@cdc.gov](mailto:ALMiller@cdc.gov) or Grant W. King (509) 354-8046, e-mail: [gking@cdc.gov](mailto:gking@cdc.gov), Spokane Research Laboratory, 315 East Montgomery Avenue, 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](http://www.cdc.gov/niosh)

Mention of any company name or product does not constitute endorsement by the National Institute for Occupational Safety and Health.