Instructor Training Workshop – Part 46

U.S. Department of Labor
Mine Safety and Health Administration
National Mine Health and Safety Academy

Instruction Guide Series
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Visit the Mine Safety and Health Administration Web site at www.msha.gov

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INTRODUCTION

Rationale:

Federal law requires miners to be trained and retrained to enable them to perform their jobs safely and in a healthful manner. Further, 30 CFR Part 46 requires that persons who provide training and retraining be competent to do so. Mining companies are responsible for the training of their personnel and the training of visitors on their property.

Independent contractors working on mine property also are required to follow the training requirements contained in Part 46. Inexperienced or new miners are required to receive 24 hours of training within 90 days of employment. This training is a combination of classroom and/or on-the-job performance.

In addition, experienced miners are required to receive 8 hours of annual refresher training to keep them aware of good safety practices at their operation.

Goals:

This Instructor Training Workshop has been developed to assist instructors and potential instructors with the following goals:

- To become knowledgeable in the requirements of 30 CFR Part 46
- To become effective classroom trainers

This workshop is not designed to provide subject matter expertise in the various mining topics.

Objectives:

Given a training request, the mine trainer will be able to develop a course following a systematic model.

Given a developed course, the mine trainer will be able to teach that course using one or more learner-centered instructional techniques.

Criterion Test Items:

1. Using the topics given in 30 CFR Part 46, select a topic and develop a lesson plan for a 15-minute instructional segment.

2. Using the lesson plan developed in item 1, teach a 15-minute instructional segment. The presentation will be videotaped for playback and individual review.

Outline:

Day 1

A. Introduction and Overview
B. Becoming an Approved MSHA Instructor
C. Part 46 Requirements
D. Developing Objectives and Evaluation Methods

Day 2

A. Principles of Adult Learning
B. Outlining Training Content and Developing Lesson Plans
C. Determining Instructional Methods
D. Developing and Using Training Aids

Day 3

A. Student Presentations
B. Feedback

CHAPTER 1
BECOMING A COMPETENT INSTRUCTOR

30 CFR Part 46.4(a)(2) requires that all training conducted in accordance with the operator's training plan be presented by a "competent person," and that the training be presented in a language understood by the miners who are receiving the training.

A "competent person" is defined as a person designated by the production-operator or independent contractor who has the ability, training, knowledge, or experience to provide training to miners in his or her area of expertise.

This course does not certify nor attempt to train you as a "competent person." We only provide you with training which we hope will lead to improving your abilities, knowledge, and skills as an instructor in the mining industry.

For your information, we have included the following:

- Metal and Nonmetal District Offices
- Contact Information for Educational Field and Small Mine Services (EFSMS)
- Contact Information for State Grants
- Web Sites for Additional Training Information

METAL/NONMETAL MINE SAFETY AND HEALTH
DISTRICT OFFICES

Northeastern District - Warrendale, PA
Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New York, New Jersey, Ohio, Pennsylvania, Rhode Island, Vermont, West Virginia

North Central District - Duluth, MN
Illinois, Indiana, Iowa, Michigan, Minnesota, Wisconsin

Rocky Mountain District - Denver CO
Arizona, Colorado, Kansas, Montana, Nebraska, North Dakota, South Dakota, Utah, Wyoming, and in the state of Idaho for the counties of Clark, Fremont, Jefferson, Madison, Teton, Bingham, Bonneville, Caribou, Bannock, Power, Bear Lake, Franklin, and Oneida

Southeastern District - Birmingham, AL
Alabama, Florida, Georgia, Kentucky, North Carolina, Puerto Rico, South Carolina, Tennessee, Virginia, Virgin Islands, and Mississippi for the counties of Alcorn, Benton, Calhoun, Chickasaw, Choctaw, Clarke, Clay, George, Greene, Grenada, Itawamba, Jasper, Kemper, Lafayette, Lauderdale, Lee, Lowndes, Marshall, Monroe, Montgomery, Neshoba, Newton, Noxubee, Oktibbeha, Pontotoc, Prentiss, Tippah, Tishomingo, Union, Webster, Winston, and Yalobusha

South Central District - Dallas, TX
Arkansas, Louisiana, Missouri, New Mexico, Oklahoma, Texas, and Mississippi for the counties of Adams, Amite, Attala, Bolivar, Carroll, Claiborne, Coahoma, Copiah, Covington, DeSoto, Forrest, Franklin, Hancock, Harrison, Hinds, Holmes, Humphreys, Issaquena, Jackson, Jefferson, Jefferson Davis, Jones, Lamar, Lawrence, Leake, Leflore, Lincoln, Madison, Marion, Panola, Pearl River, Perry, Pike, Quitman, Rankin, Scott, Sharkey, Simpson, Smith, Stone, Sunflower, Tallahatchie, Tate, Tunica, Walthall, Warren, Washington, Wayne, Wilkinson, and Yazoo

Western District - Vacaville, CA
Alaska, California, Hawaii, Idaho not to include the counties of Clark, Fremont, Jefferson, Madison, Teton, Bingham, Bonneville, Caribou, Bannock, Power, Bear Lake, Franklin, and Oneida; Nevada, Oregon, Mohave County, Arizona, Washington County Utah, and State of Washington

METAL/NONMETAL MINE SAFETY AND HEALTH
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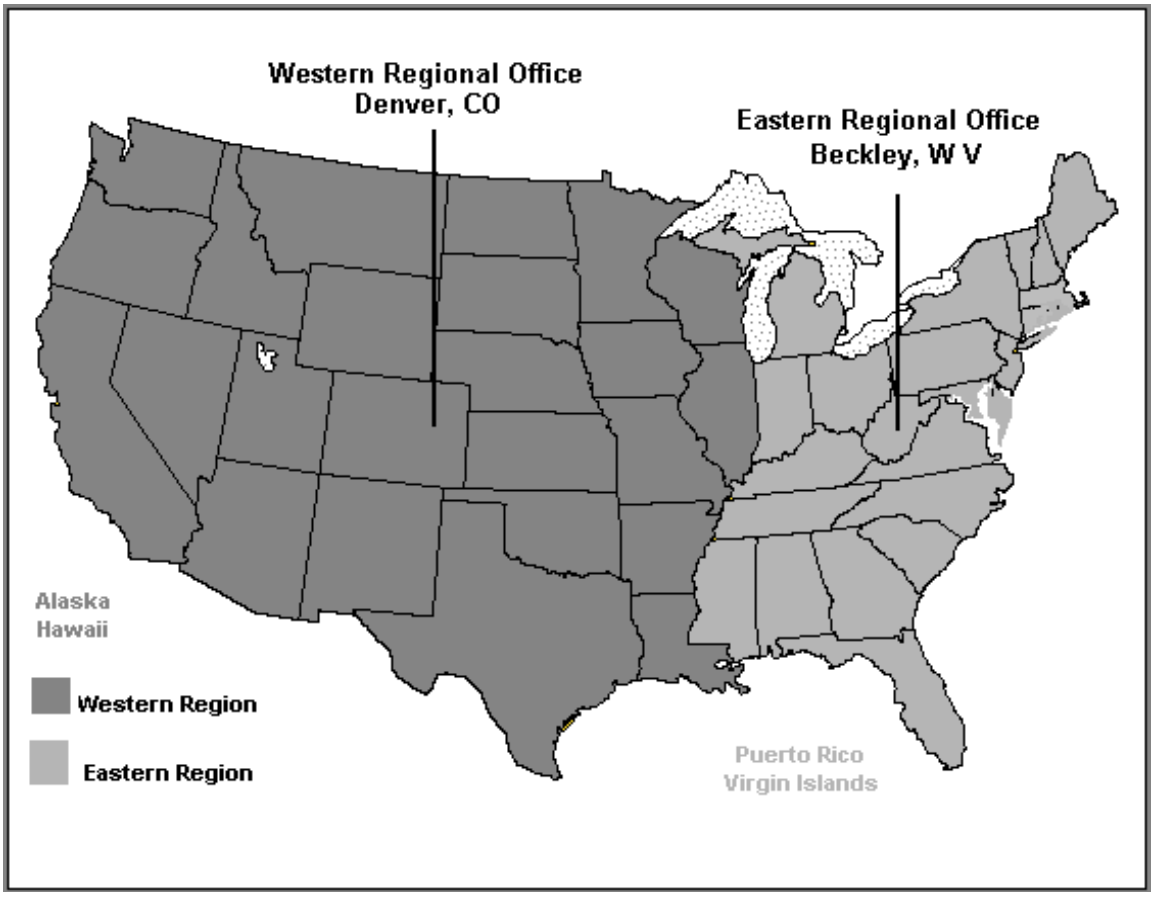

Educational Field and Small Mine Services (EFSMS) Contacts

If you wish to receive help or guidance relating to Part 46 training, please check the list below and contact the EFSMS office in the state where your mining operation is located.

ALABAMA

BIRMINGHAM			
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VIRGINIA

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SUMMERSVILLE			
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Web Sites

www.msha.gov
www.osha.gov
www.cdc.gov/niosh

State Grants Contacts

State Grants Contacts

The 1977 Mine Act authorizes MSHA to grant money to the states to provide health and safety training and other services to miners and mine operators. Participating states have developed programs designed to address mine health and safety issues that exist within their state.

State grantees can help you to develop your Part 46 Training Plan and can provide the miners at your site with the training required by the provisions of Part 46. Most of this assistance and training is free-of-charge or available at minimal cost to you.

If you wish to receive help in developing a training plan or to schedule training sessions, please check the list below and contact the grant program office in the state where your mining operation is located.

ALABAMA

Mr. Ken Russell
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101 State Street, Box 800
Sumiton, AL 35148
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CHAPTER 2
PART 46 TRAINING REQUIREMENTS

Note: This section is intended for general information only. For a more specific interpretation of Part 46 requirements, contact your Educational Field and Small Mine Services (EFSMS) Specialist.

Part 46 applies to "Training and Retraining of Miners Engaged in Shell Dredging or Employed at Sand, Gravel, Surface Stone, Surface Clay, Colloidal Phosphate, Surface Limestone, Marble, Shale, Kaolin, Feldspar, Granite, Traprock, Cement, Lime, Sandstone, and Slate Mines and Operations."

Introduction

As an instructor, you are expected to be familiar with the basic requirements of Part 46. The following guidelines will help you gain a better understanding of the Part 46 regulation. For additional information, please refer to the text of the regulation in 30 CFR Part 46.

Section 115 of the Federal Mine Safety and Health Act of 1977 (The Act) requires each mine operator to have a health and safety training program for miners. The training programs are intended to ensure that miners will be effectively trained in matters affecting their health and safety, with the ultimate goal of reducing the frequency and severity of injuries in the Nation's mines.

The Act requires that new surface miners having no experience must receive a minimum of 24 hours of training.

In addition to new miner training, the Act requires a minimum of eight (8) hours "annual refresher training" each year for miners working in the industry to ensure that critical skills are maintained, basic health and safety knowledge is reviewed, and any new applicable health and safety issues are discussed.

Task training was also addressed by the Act. It states that "any miner who is reassigned to a new task in which he or she has no previous work experience shall receive training ... in the health and safety aspects specific to that task prior to performing that task."

Part 46 of CFR 30 applies mainly to the aggregate industry. Each operator or independent contractor is responsible for compliance with all applicable provisions of Part 46. Therefore, operators and contractors should be prepared to provide all mine training as necessary.

Scope (§46.1)

The provisions of this part set forth the mandatory requirements for training and retraining miners and other persons at shell dredging, sand, gravel, surface stone, surface clay, colloidal phosphate, and surface limestone mines.

Definitions (§46.2)

Competent person is defined as a person (1) designated by the production operator or independent contractor, and (2) who has the ability, training, knowledge, or experience (in areas of expertise) to provide training to miners. The competent person must be able to both effectively communicate the training subject to miners and to evaluate whether the training given to miners is effective.

Another important definition is the term "miner." Any person, including any operator or supervisor, who works at a mine and who is engaged in mining operations is considered a miner. This definition includes independent contractors and employees of independent contractors who are engaged in mining operations, and any construction worker who is exposed to the hazards of mining operations. The definition of miner does not include scientific workers, delivery workers, customers (includes commercial over-the-road truck drivers), vendors, or visitors. Also not included are maintenance or service workers who do not work at a mine site for frequent or extended periods.

Part 46 defines "experienced miner" as a miner meeting one or more of the following conditions:

1. A person who is employed as a miner on April 14, 1999;
2. A person who has at least 12 months of cumulative surface mining or equivalent experience on or before October 2, 2000;
3. A person who began employment as a miner after April 14, 1999, but before October 2, 2000, and who has received new miner training under 48.25 of this title or under proposed requirements published April 14, 1999;
4. A person employed as a miner on or after October 2, 2000, who has completed 24 hours of new miner training under Part 46.5, or Part 48.5 and who has at least 12 cumulative months of surface mining or equivalent experience.

Once a miner is an experienced miner as defined by Part 46.2, he/she will retain that status permanently.

Training Plan (§46.3)

A written Part 46 training plan must contain as a minimum the following:

- The company name, mine name, and MSHA mine identification number or independent contractor I.D. number;
- The name and position of the person responsible for the health and safety training at the mine;

- Subject areas
  - general description of the teaching methods
  - course materials
  - approximate time spent on each subject
  - evaluation procedures used to determine the effectiveness of the training
- A list of competent persons who will do the training and the subject areas in which each person is competent to teach. (All 50 states and the Navajo Nation participate in the MSHA State Grant Program. They have provided training to small mines for many years. These states can be a source of training assistance.)

Training Plan Implementation (§46.4)

Once you have developed your training plan you must ensure that each program, course of instruction, or training session is:

1. Conducted in accordance with the written training plan;
2. Presented by a competent person; and
3. Presented in a language understood by the miners who are receiving the training.

You may conduct your own training or arrange for training to be conducted by other associations. This should be reflected in your training program. You may also substitute health and safety training required by Occupational Safety and Health Administration (OSHA) or other state agencies if the training is relevant to the subjects required in your training plan.

Training can consist of many forms including: classroom instruction, OJT, computer-based, or any combination thereof. Employee health and safety meetings, including informal safety talks, may be credited to training provided that you document the time and length of the session.

New Miner Training (§46.5)

Each new miner must receive 24 hours of training as described in §46.5.

Before new miners can do any work they must receive at least four hours of training in the following subjects:

- An introduction to the work environment, including a visit and tour of the mine;
- Instruction on the recognition and avoidance of electrical hazards and other hazards present at the mine;
- A review of the emergency medical procedures and escape and emergency evacuation plans in effect at the mine, and instruction in the fire warning signals and firefighting procedures;
- Instruction on the health and safety aspects of the tasks to be assigned, including the mandatory health and safety standards pertinent to such tasks;

- Instruction on the statutory rights of miners and their representatives under the Act;
- A review and description of the line of authority of supervisors and miners' representatives and the responsibilities of such supervisors and miners' representatives; and
- An introduction to your rules and procedures for reporting hazards.

No later than 60 days after beginning work, a new miner must receive training in:

- Instruction and demonstration on the use, care, and maintenance of self-rescue and respiratory devices, if used at the mine; and
- A review of first aid methods.

No later than 90 days after beginning work, a new miner must receive the balance of the 24 hours training.

Newly-Hired Experienced Miner Training (§46.6)

Unlike new miner training, newly-hired experienced miner training does not need to have a minimum number of hours. Newly-hired experienced miners must receive training in the same subjects as a new miner before beginning work. No later than 60 days after beginning work, these miners must also receive instruction and demonstration on the use, care, and maintenance of self-rescue and respiratory devices, if used at the mine.

New Task Training (§46.7)

New task training must address the safety and health aspects and safe work procedures specific to that task. Task training must be provided to miners when they are reassigned to a new task in which they have no previous experience, or where a change has occurred in an assigned task that affects their health and safety. Practice under the close observation of a competent person may be used to fulfill the requirement for task training.

Annual Refresher Training (§46.8)

Each miner must receive eight hours of refresher training at least once every 12 months.

Annual refresher training must include instruction on changes at the mine that could adversely affect the miner's health or safety. Refresher training must also address health and safety subjects relevant to mining operations at the mine. Recommended subjects are listed in the regulation at §46.8.

Site-Specific Hazard Awareness Training (§46.11)

AS A REMINDER: ***A miner is any person, including any operator or supervisor, who works at a mine and who is engaged in mining operations. This definition includes independent contractors and employees of independent contractors who are engaged in mining operations and any construction worker who is exposed to hazards of mining operations.***

You must provide site-specific hazard awareness training to any person who is not a miner but is present at a mine site.

Persons who need site-specific hazard training include:

- Office or staff personnel;
- Scientific workers;
- Delivery workers and customers including commercial over-the-road truck drivers;
- Maintenance or service workers who do not work at the mine site for frequent or extended periods; and
- Vendors or visitors

You must provide site-specific hazard awareness training to miners, such as drillers and blasters, who move from one mine to another while remaining employed by the same production operator or independent contractor. You must also provide site-specific hazard awareness training to construction workers or employees of independent contractors who are not miners.

You may provide hazard training through the use of written hazard warnings, oral instruction, signs and posted warnings, walk-around training, or other appropriate means.

Training Records (§46.9)

Part 46 requires that the mine operator/independent contractor record and certify that miners have received health and safety training. A record must be kept for miners for each training class. Each training record must be certified upon completion of new miner, newly-hired experienced miner, annual refresher, and site-specific hazard awareness training, and at least once every 12 months for task training. You may use the MSHA Form 5000-23 (see page 37) or any form that contains the following information:

AS A REMINDER: ***False certification that training was completed is punishable under 110(a) and (f) of the Act.***

- The printed full name of the person trained (first, middle, last name);
- The type of training completed, the duration of the training, the date the training was received, and the name of the competent person who provided the training;
- The mine or independent contractor name, MSHA mine identification number or independent contractor I.D., and location of training (if an institution, the name and address of the institution);

- The statement, “False certification is punishable under Section 110(a) and (f) of the Federal Mine Safety and Health Act,” printed in bold letters and in a conspicuous manner; and
- A statement signed by the person designated as responsible for health and safety training in the MSHA-approved training plan for the mine that states, “I certify that the above training has been completed.”

Compensation for Training (§46.10)

Training must be conducted during normal working hours. Persons taking training must be paid at a rate that corresponds to the rate of pay they would normally receive if they had been working. They also must be compensated for any additional expenses that they might incur as part of the training, such as additional travel or meal expense.

Certificate of Training

U.S. Department of Labor
Mine Safety and Health Administration

Approved OMB Number 1219-0009, Expires January 31, 2018.

This certificate is required under Public Law 91-173 as amended by Public Law 95-164. Failure to comply may result in penalties and other sanctions as provided by sections 108 and 110, Public Law 91-173 as amended by Public Law 95-164.

➡ Issue Certificate Immediately Upon Completion of Training

Serial Number (for operator's use)

1. Print Full Name of Person Trained (first, middle, last)

2. Check Type of Approved Training Received:

☐ Annual Refresher ☐ Experienced Miner ☐ Hazard Training
☐ New Task (specify below) ☐ Newly Employed, Inexperienced Miner ☐ Other (specify)

Date	Task	Initials Instr / Studt	Date	Task	Initials Instr / Studt

3. Check Type of Operation and Related Industry:

A. ☐ Surface ☐ Construction ☐ Underground ☐ Shaft & Slope
B. ☐ Coal ☐ Metal ☐ Nonmetal

4. Date Training Requirements Completed

☐ Check if not completed and go to item 5, below.

➡ If completed, go to item 6, below.

5. Check Subjects Completed (use only for partially completed training):

☐ Introduction to Work Environment
☐ Hazard Recognition
☐ Emergency Medical Procedures
☐ H&S Aspects of Tasks Assigned
☐ Statutory Rights of Miners
☐ Self-Rescue & Respiratory Devices
☐ Transport & Communication Systems
☐ Roof/Ground Control & Ventilation
☐ Mine Map; Escapeways; Emergency Evacuation; Barricading
☐ Cleanup; Rock Dusting
☐ Mandatory Health & Safety Standards
☐ Authority & Responsibility of Supervisors & Miners' Representatives
☐ Health
☐ Electrical Hazards
☐ First Aid
☐ Mine Gases
☐ Explosives
☐ Prevention of Accidents
☐ Other (specify)

6. **False certification is punishable under section 110 (a) and (f) of the Federal Mine Safety & Health Act (P. L. 91-173 as amended by P. L. 95-164).**

I certify that the above training has been completed
(signature of person responsible for training)

7. Mine Name, ID, & Location of Training (if institution, give name & address)

8. Date

I verify that I have completed the above training
(signature of person trained)

MSHA Form 5000-23, May '13 (revised) Copy 1 - Employer's Personnel Record

Instructions for Completing an MSHA Certificate of Training Form (5000-23)

All Part 46 training must be properly recorded on a Mine Safety and Health Administration (MSHA) Form 5000-23 (training certificate), or on an MSHA approved alternate form. For additional policy information on the 5000-23 form, you may refer to the MSHA Program Policy Manual. To review the applicable policy, please use this link.

The current MSHA Form 5000-23 has an expiration date of September 30, 2001; however, previously issued forms with an earlier expiration date may still be used. The printed version comes with four copies. Listed below are notations, which appear on the bottom right-hand side of the form, showing the intended use of each copy.

Copy 1 (white) – Employer's Personnel Record
Copy 2 (pink) – Employee's Record Copy
Copy 3 (yellow) – Employee's Separation Copy
Copy 4 (green) – Record Keeping

The following is a description of how to complete each item of the 5000-23.

ITEM	DESCRIPTION
Serial Number (for operator's use)	This is an optional field which may be used to help track employees by an identification number. There is no Federal requirement to use this field.
Item 1. Print Full Name of Person Trained (first, middle, last)	Enter the person's name who has received the training.
Item 2. Check Type of Approved Training Received	There are five boxes for the five types of training required. Check the appropriate box(es) to indicate what training was given. When New Task is checked, additional space is provided to record 1-8 task training events. This space is used to identify each task and to allow for the initials of the instructor(s) and the student (miner), as needed.
Item 3. Check Type of Operation and Related Industry	(1) Mark the box for the appropriate commodity: coal, metal or nonmetal. (2) Mark the box for the appropriate location: surface or underground. (3) Mark the appropriate box if the training is for construction or shaft and slope work. When completed, the box should identify the type of mining, location and if construction or shaft and slope activities are involved.

Item 4. Date Training Requirements Completed	Depending on whether the training is complete or partial will determine how this item is completed. Only entering a date indicates that the training marked in item 2 is completed. Placing a check in the box to the right of the date entry, indicates that the training for the program(s) marked in item 2 is not complete. The appropriate boxes in item 5 must then be checked to indicate what subjects were completed. *Note: If completing the course for Part 46 Training, you must also include the length of time for the course.* The following are some examples of partially completed training: (1) training for new miners given away from the mine site (which will then require site specific training at the mine site); and (2) providing partially completed annual refresher training.
Item 5. Check Subjects Completed (use only for partially completed training)	This is generally used for conducting annual refresher training in increments throughout an annual refresher cycle; or for newly employed inexperienced miner training which does not cover mine specific courses that are required to be covered at the mine site.

Item 6. Signature of person responsible for training	Upon completion of an MSHA approved training program, such as experienced miner, task, or annual refresher training, you must record and certify on the 5000-23 form that the miner has received the specified training. The person signing the form in item 6 is certifying that the miner has received the indicated training. Anyone falsifying the 5000-23 form is criminally liable under Section 110(a) and (f) of the Federal Mine Safety and Health Act. Generally, the person signing the form is the mine operator or a person acting on behalf of the operator. For example, a company safety official, a trainer employed or contracted by the operator, or a cooperative instructor (such as, a state grantee). *Note: If you are completing this form for Part 46 Training, you must also include the name of the competent person conducting the training. The competent person cannot sign this form under Part 46, unless he/she is also designated in the training plan as responsible for the health and safety training.*
Item 7. Mine Name, ID, & Location of Training (if institution, give name & address)	List the mine name, mine ID, and location where training was conducted. If the training was conducted by a cooperative instructor or state grantee and a class participant is not employed at a particular mine, fill in the cooperative instructor's name or state name and address.
Item 8. Date and (signature of person trained)	The person trained has the option of signing and dating the form, acknowledging that the training indicated on the form was received. A copy of the 5000-23 form must be given to the miner upon completion of each MSHA approved training program, such as experienced miner, task, or annual refresher training.

NEW MINER TRAINING RECORD/CERTIFICATE

Miner's Full Name (Print): _____

Mine or Contractor Name: _____ ID#_____

Subject **30 CFR Part 46.5**	**Course Length**	**Date**	**Competent Person**	**Location** (Name & Address, if Institution)	**Miner's Initials**
The miner received no less than 4 hours training in the following before beginning work:					
(b) (1) Introduction to work environment, mine tour, mining method/operation					
(b) (2) Instruction on recognition and avoidance of electrical and other hazards					
(b) (3) Emergency procedures, escape and firefighting					
(b) (4) Health and safety aspects of tasks assigned					
(b) (5) Instruction on statutory rights of miners and their representatives					
(b) (6) Authority and responsibility of supervisors and miners' representatives					
(b) (7) Introduction to your rules and procedures for reporting hazards					
No later than 60 days:					
(c) (1) Self-rescue, respiratory devices, if used					
(c) (2) First aid					
No later than 90 days (balance of 24 hours including the following subjects):					

False certification is punishable under Section 110(a) and (f) of the Federal Mine Safety and Health Act

I certify that the above training has been completed.

_____ _____

(Signature of person responsible for health and safety training) (Date)

NEWLY-HIRED EXPERIENCED MINER TRAINING RECORD/CERTIFICATE

Miner's Full Name (Print): _____

Mine or Contractor Name: _____ ID#_____

Subject **30 CFR Part 46.6**	**Course Length**	**Date**	**Competent Person**	**Location** (Name & Address, if Institution)	**Miner's Initials**
The miner received the following training before beginning work:					
(b) (1) Introduction to work environment, mine tour, mining method/operation					
(b) (2) Instruction on recognition and avoidance of electrical and other hazards					
(b) (3) Emergency procedures, escape and firefighting					
(b) (4) Health and safety aspects of tasks assigned					
(b) (5) Instruction on statutory rights of miners and their representatives					
(b) (6) Authority and responsibility of supervisors and miners' representatives					
(b) (7) Introduction to your rules and procedures for reporting hazards					
No later than 60 days:					
(c) (1) Self-rescue, respiratory devices, if used					

False certification is punishable under Section 110(a) and (f) of the Federal Mine Safety and Health Act

I certify that the above training has been completed.

_____ _____

(Signature of person responsible for health and safety training) (Date)

NEW TASK TRAINING RECORD/CERTIFICATE

Miner's Full Name (Print): _____

Mine or Contractor Name: _____ ID#_____

New Task 30 CFR Part 46.7	**Course Length**	**Date**	**Competent Person**	**Location** (Name & Address, if Institution)	**Miner's Initials**
The miner received the following training before performing a new task, or a change occurred in an assigned task that affects health and safety:					

False certification is punishable under Section 110(a) and (f) of the Federal Mine Safety and Health Act

I certify that the above training has been completed.

_____ _____

(Signature of person responsible for health and safety training) (Date)

ANNUAL REFRESHER TRAINING RECORD/CERTIFICATE

Miner's Full Name (Print): _____

Mine or Contractor Name: _____ ID#_____

Subject **30 CFR Part 46.8**	**Course Length**	**Date**	**Competent Person**	**Location** (Name & Address, if Institution)	**Miner's Initials**
The miner received no less than 8 hours of annual refresher training in the following:					
Instruction on changes at the mine that could adversely affect the miner's health or safety					
Health and safety subjects relevant to mining operations at the mine					
For recommended subjects see 46.8(c):					

False certification is punishable under Section 110(a) and (f) of the Federal Mine Safety and Health Act

I certify that the above training has been completed.

_____ _____

(Signature of person responsible for health and safety training) (Date)

SITE-SPECIFIC HAZARD AWARENESS TRAINING RECORD/CERTIFICATE

Miner's Full Name (Print): _____

Mine or Contractor Name: _____ ID# _____

Location (Mine Site):

Length of Training:

Date Training Provided:

Competent Person Providing Training:

Miner's Initials:

False certification is punishable under Section 110(a) and (f) of the Federal Mine Safety and Health Act

I certify that the above training has been completed.

_____ _____

(Signature of person responsible for health and safety training) (Date)

Responsibility for Independent Contractor Training (§46.12)

Each production-operator has primary responsibility for ensuring that site-specific hazard awareness training is given to employees of independent contractors. If the operator does not do the site-specific training they must provide the hazard information to the contractor and ensure the training takes place.

Each independent contractor who employs a miner, as defined in §46.2, has the primary responsibility for providing the comprehensive training.

The independent contractor must inform the production operator of any hazards of which the contractor is aware that may be created by the performance of the contractor's work at the mine.

CHAPTER 3
PRINCIPLES OF ADULT LEARNING

CHAPTER OBJECTIVE

3-1 At the end of this lesson, the participant will be able to describe how following principles of adult learning when developing and conducting training will result in more effective training.

Much research has been conducted in the area of learning in general, and adult learning in particular. Some of the results of this research have obvious implications for instructors of adults, but others are a bit more obscure.

One of the obvious conclusions shown by research is that adults are not just "big children" nor can they be treated as such in the training situation. Adults differ from children in several major ways:

Children	Adults
Have shorter attention span	Have longer attention span
Rely on others to decide what is important	Decide for themselves what is important
Accept information being presented at face value	Need to "weigh" information given against what they already know
Have little or no "life experiences" upon which to draw	Have many "life experiences" upon which to draw

However, just knowing these differences does not always help an instructor to design the course for adult learners. For instance, many instructors take advantage of an adult's longer attention span (and their ability to outwardly control their discomfort) to make them sit for longer periods of time, listening to the instructor "teach." In this case, the "obvious" implication runs counter to other good principles of adult learning.

The biggest problem of most instructors of adults is that they model their behavior after instructors they have had in the past, rather than develop a style which is more suited to adults. In most instances, this means the dominant teaching technique used is lecture. Unfortunately, the classic lecture is probably the poorest method to accomplish learning.

What then does produce the most effective learning situation for adults? The following are some general guidelines in developing and conducting training.

Principles of Adult Learning

From a variety of sources, there emerges a body of fairly reliable knowledge about adult learning. The principles listed below lend themselves to three basic divisions:

- Things we know about adult learning and their motivation.
- Things we know about designing curriculum for adults.
- Things we know about working with adults in the classroom.

Motivation to Learn

Adults learn best when they feel a need to learn. Most adults are motivated to learn when they see an immediate and direct application of the knowledge or skill. Adults can't be threatened, coerced, or tricked into learning something new. Adults can be ordered into a classroom and into a seat, but they cannot be forced to learn. Though trainers are often faced with adults who have been sent to training, there are some insights to be gathered from the research on adults who seek structured learning experiences on their own.

- Although adults have been found to engage in learning for a variety of reasons, the love of learning is not its own reward. Adults who are motivated to seek a learning experience do so primarily because they have a use for the knowledge or skill sought.
- Increasing or maintaining one's sense of self-esteem and pleasure are strong secondary motivators for engaging in learning experiences.

Curriculum Design

Instructors, not learners, are responsible for making the material applicable to the "life" or "work" world of trainees. Instruction should relate to the trainees' goals. The instructor should focus on "real world" problems when designing curriculum. The following principles should also be considered during curriculum development.

- Adults learn best by being actively involved. The more passive the training, the more ineffective it tends to be. Instructors should provide instructional activities which require the trainee to use more than one "sense" (i.e., listening). Instructors should structure their courses around learner activities rather than teacher activities.
- Adults need to be able to integrate new ideas with what they already know if they are going to keep (and use) the new information. Instructors must integrate the new knowledge to be learned with the previous knowledge of the trainees by providing "bridging" opportunities.
- Information that conflicts sharply with what is already held to be true, and thus forces a reevaluation of the old material, is integrated more slowly. Instructors should anticipate when such a conflict could occur, and present the material slowly to allow time for trainee reevaluation and integration. Instructors should allow debate and challenge of ideas.

- Information that has little “conceptual overlap” with what is already known is acquired slowly.
- The curriculum designer must know whether the concepts and ideas will be in concert or in conflict with the learner and organizational values.
- Programs need to be designed to accept viewpoints from people in different life stages and with different value “sets.”
- Regardless of media, straightforward “how-to” is the preferred content orientation. As many as 80% of the polled adults in one study cited the need for applications and how-to information as the primary motivation for undertaking a learning project.

In the Classroom

Adults prefer an informal learning environment. Most adults are motivated by a desire to maintain or build their image as a self-respecting, responsible grownup, not as an immature, dependent child. Instructors should carefully avoid causing adult trainees to lose face when they make errors or try new behaviors in front of peers.

- The learning environment must be physically and psychologically comfortable. Instructors should use a classroom arrangement more suited for discussion.
- Adults have expectations, and it is critical to take time up front to clarify and articulate all expectations before getting into content. Both trainees and the instructor/facilitator need to state their expectations. When they are at odds, the problem should be acknowledged and a resolution negotiated.
- Adults report that long lectures, periods of sitting, and the absence of practice opportunities are high on the irritation scale. Instructors should create an informal, participatory atmosphere in the classroom.
- Adults bring a great deal of life experience into the classroom, an invaluable asset to be acknowledged, tapped, and used. Almost invariably, the sum of the trainees’ knowledge far exceeds that of the instructor. Adults can learn well (and much) from dialogue with peers. Instructors should draw out trainees’ experience by using discussion methods, rather than by using lecture. This allows trainees to learn from their peers as well as from the instructor.
- The key to the instructor role is control. The instructor must balance the presentation of new material, debate and discussion, sharing of relevant trainee experience, and the clock. Ironically, we seem best able to establish control when we risk giving it up. When we shelve our egos and stifle the tendency to be threatened by challenge to our plans and methods, we gain the kind of facilitative control we seem to need to affect adult learning.
- The instructor has to protect minority opinions, keep disagreements civil and unheated, make connections between various opinions and ideas, and keep reminding the group of the variety of potential solutions to the problems.

Characteristics of a Good Instructor

- Knowledge of subject and keep up on any changes
- Knowledge of teaching techniques
- Positive personality - show enthusiasm and sincerity
- Good leadership - can develop proper attitudes, appreciation and character traits in students
- Positive attitude which creates a desire to learn

How Can You as an Instructor Improve Yourself?

- Know what makes a good instructor.
- Observe other instructors or speakers.
- Analyze your own characteristics - build upon your strengths and correct your weaknesses.
- Concentrate on specific techniques and work out a systematic plan for their improvement.
- Seek the help of others to evaluate the instruction.

Profit by Mistakes - Don'ts

- Don't bluff - if you don't know the answer, admit it, find the correct answer, and give it to the class.
- Don't use profanity or obscenity.
- Don't use sarcasm or ridicule.
- Don't talk down to the class.
- Don't lose patience.

Speech Techniques

- Get the attention of the class and have opening remarks well in mind.
- Look at and talk to the students.
- Speak in a tone so all can hear.
- Be alert! Look alert!
- Remember - your body talks, maintain a good posture and neat appearance.
- Avoid distracting mannerisms: leaning on lectern - constant pacing back and forth - counting change in pockets - waving pointer or pencil.
- Choose words properly and be sure you're understood.
- Make a silent pause, avoid the "er-r-r," "ah" or "uh-h-h."

CHAPTER 4
DEVELOPING OBJECTIVES AND EVALUATION METHODS

CHAPTER OBJECTIVES

4-1 The participant will be able to write an appropriately stated objective from the guidelines given in this material.

4-2 Given a written objective, the participant will be able to write a test item to match the objective.

Developing Objectives

"If you don't know where you're going, it doesn't matter which road you take."

This statement relates to designing good classroom training programs. Before any work is done in designing the course and developing the materials, the trainer must define the objectives of the course.

Well-written objectives are the foundation of good training. Objectives are very useful tools for letting both the instructor and trainee know what is expected as a result of the training. They keep the instructor focused on what is important when developing and conducting training. They provide the trainee with a clear understanding of the performance required at the end of the training.

There are two steps to follow in developing objectives:

- Clarify the tasks to be performed after training. This may have already been done in the task analysis.
- Develop appropriately stated objectives based on those tasks.

It is important that the objectives for the training come as close as possible to the actual behavior the trainee will be expected to perform back on the job.

A well-written objective contains three components:

- Statement of task. This states what action the trainee should be able to do.
- Condition(s) under which the task is to be performed. This defines the important condition(s) under which the action is going to occur. The conditions answer one or both of these questions, "What are the givens?" or "What are the restrictions?"
- Standard(s) of performance that is required. This states how well the trainee must perform the action for it to be acceptable.

What an Objective Should Do

- Help the instructor to plan his or her instruction in an organized way that accomplishes the goal.
- Help the student know what he or she needs to achieve to reach the goal.
- Provide a means of evaluating student achievement relative to the goal.

Specifying the Task

The performance statement should be written from the trainee's point of view. It should state what the trainee will do, not what the instructor will accomplish.

When writing the performance statement, it is important to use "action" verbs, or words that describe observable behavior. The following gives examples of appropriate and inappropriate words to use.

Appropriate Words for Writing Objectives			Inappropriate Words
Information	**Mental Skill**	**Physical Skill**	
State Name Recite Describe List Relate Tell Write Express	Demonstrate Discriminate Classify Generate (a solution) Apply (a rule) Solve Prove Analyze Evaluate	Operate Repair Adjust Manipulate Handle Manufacture Calibrate Remove Replace Construct	Accept Be aware of Remember Recall Be familiar with Consider Value Appreciate Comprehend Understand Know Believe

Specifying the Conditions

When writing the condition statement of the objective, specify what the trainee will be given. Conditions include:

Job Aids:	*Given a maintenance checklist*...
Equipment:	*Given a front-end loader...*
Technical References	*Given an Inspection Manual...*
Special Tools:	*Given an electric drill...*
Environmental Conditions:	*Given a highwall 48' in height...*

Special Instruction:	*Given the company Safety Procedural Manual...*
Signals, Symbol:	*Given a piece of equipment on which combustible material has accumulated…*
Problem Situations or Contingencies:	*Given a case study...*

Specifying the Standard

When writing the standard for the objective, specify the outcome and how well it will be done. The measure of how well the task will be done can be based on several different things:

Referring to a standard operating procedure	*Given a 20-pound block placed on the floor, lift and place the block on a table according to the lifting procedures discussed in class.*
Implying the standard of no error	*Given the voltage and resistance of a wire, determine its current.* Adding "perform without error" would not increase the requirement for accuracy.
Specifying minimum acceptable level of performance	*Shown a series of slides depicting hazardous situations, the student will identify at least 8 of the hazards.*
Specifying time requirements	*Upon hearing the warning sound for a blast, the miner will evacuate the blast area within three minutes.*
Specifying qualitative requirements	*Given a maladjusted carburetor and the necessary tools, the trainee will adjust the carburetor to idle at its smoothest point.*

Exercise: Recognizing the Parts of Objectives

Select the performance statement, standard, and conditions in the following objective statements.

1. Using a resusci-Anne in a classroom setting, the student will demonstrate the one-person CPR method as learned in the American Heart Association CPR class.

2. The student will list two hazards that miners are subject to when operating a disconnect switch.

Performance Statement:

1.

2.

Conditions:

1.

2.

Standard:

1.

2.

Exercise: Recognizing Properly Written Objectives

Indicate with a ✓ those statements that are properly written as objectives.

1. Participants will appreciate the importance of front-end loaders at a mining operation.

2. The use of hearing protection in mining.

3. Participants will list two methods of giving artificial respiration according to the First Aid Manual.

4. In a classroom setting, participants will demonstrate two methods of giving CPR as established by the American Heart Association.

5. Participants will be introduced to dust sampling.

6. Given the opportunity in a hospital emergency room, participants will demonstrate the mouth-to-mouth method of artificial respiration according to MSHA standards.

7. Participants will develop a deep understanding of accident prevention.

8. Participants will list five common hand tools used in maintenance operations according to company policy.

9. The participant will know five steps in first aid.

10. Participants will understand the importance of job safety analysis as described in the MSHA Safety Manual “Job Safety Analysis.”

11. Mining hazard analysis.

12. Without the use of notes or other references, the participants will list on paper three ways to prevent haulage accidents as discussed in a class on prevention of haulage accidents.

13. Upon viewing a video vignette of a mining situation, participants will identify at least three safety hazards depicted in the video.

14. Given a checklist, the miner will conduct a pre-operation check of the haul truck and report any deficiencies. This will be done according to the standards in the Operating Procedures Manual.

15. Participants will appreciate the role of the safety inspector in a mine.

16. Participants will apply a pressure bandage on wounds of the ear as explained in the First Aid Manual and demonstrated by the instructor.

17. Participants will explain how to use a monitoring device.

18. Introduction to AC-DC theory for mine safety and health inspectors with at least 10 years inspection experience.

19. Participants will relate examples of mine accidents from personal experience.

20. Participants will list two safe uses of explosives according to the *Dupont Blaster's Guide.*

Exercise: Writing Objectives

In the space below, write an objective for a unit of instruction in new miner training. Be sure you include the task, condition and standard.

Evaluation Methods

Evaluation, if properly done, is an integral part of the teaching-learning process. Evaluations aid instructors by letting them know where to concentrate their efforts. Evaluations also aid the trainees by motivating, checking retention and transfer to learning, and facilitating self-understanding.

An evaluation which is designed as an instructional tool should be relatively easy. It should emphasize and reinforce what the trainees already know, as well as let them see where their weaknesses are. Evaluations contain practice items. These practice items may be samples of actual questions that may appear on a later test, or they may be lower-level questions to help trainees prepare for higher-level application questions.

Mastery Type Evaluations, on the other hand, are used to determine when trainees have achieved sufficient competence in a particular area. Mastery evaluation items should closely match the course objectives. For example:

Objective:	*Given a suspected shock victim, the trainee will demonstrate the procedure for caring for him/her according to the guideline in the First Aid Manual.*
Instructional Evaluation Item:	*List the steps in caring for a patient in shock.*
Mastery Evaluation Item:	*Using your assigned partner as a suspected shock victim, demonstrate the correct procedure for caring for him/her.*

A well-written objective makes evaluation methods easy. All the instructor needs to do is ask the trainee to perform the behavior asked for in the objective. Remember, the objective of the training and evaluation is not to differentiate among employees to show who knows the most, but to ensure that all trainees reach at least a minimum level of competence.

Exercise: Match Game (Criterial Evaluation)

If the evaluation item directly matches the objective, mark with a ✓.

If the evaluation item closely matches the objective, but not perfectly, mark with an **A**.

If the evaluation item does not match the objective, mark with an **X**.

1. Objective: *Students will raise and properly block a front-end loader bucket.*

   Evaluation Item: *Describe the method of blocking a front-end loader bucket.*

2. Objective: *Students will name four steps in mouth-to-mouth resuscitation from memory.*

   Evaluation Item: *Recite the four steps in mouth-to-mouth resuscitation*.

3. Objective: *Students will perform mouth-to-mouth resuscitation, in an emergency, to restore normal breathing.*

   Evaluation Item: *Demonstrate mouth-to-mouth resuscitation on the provided mannequin.*

4. Objective: *Students will use a front-end loader to scale down a highwall.*

   Evaluation Item: *Describe how to scale down a highwall using a front-end loader.*

5. Objective: *Students will use the respirator properly in a dusty work environment.*

   Evaluation Item: *Enter the simulated dusty work environment and put on the provided respirator.*

6. Objective*: Students will be able to recognize ventilation problems in a welding booth.*

   Evaluation Item: *Ventilate the welding booth in the shop.*

Exercise: Writing Evaluation Items

Write an evaluation item to match the objective written for the exercise on page 58.

CHAPTER 5
OUTLINING THE TRAINING CONTENT AND DEVELOPING LESSON PLANS

CHAPTER OBJECTIVE	
5-1	At the end of this lesson, the trainee will be able to outline the content of an instructional unit for miner training.
5-2	At the end of this lesson, the trainee will be able to develop a lesson plan to be used for miner training.

The training content is everything that the trainee must learn in order to achieve the objective for the lesson. Outlining the content serves three purposes:

- It enables the instructors to sort through all the material available on a subject and identify that which is necessary.
- It allows the instructors to organize and sequence the material so that it is more easily followed by the instructor and learned by the trainee.
- It serves as a process for checking to ensure that the training includes everything that learners need to know.

There are three steps involved in outlining the training content:

- List the actions the trainees must take to accomplish the objective.
- Identify the knowledge required so that the trainee can take those actions.
- Sequence the training content according to an appropriate order for training.

List Actions

Learning is most effective when the training content is broken down into small steps. The smaller the steps, the more easily they can be learned. Breaking down the content into small steps also helps the instructor to ensure that no steps are left out.

To develop a list of actions, it is sometimes helpful to visualize the trainee performing the tasks on the job, including the tasks that involve mental actions.

Example

Objective: *At the end of this lesson, the trainee will demonstrate two of the three accepted methods for controlling arterial bleeding.*

Action(s): *Recognize arterial bleeding*
Identify accepted control methods
Demonstrate accepted control methods

Identify Knowledge Requirements

Outlining the content includes both what the trainee must do and the information they must know to enable them to do. As the instructor lists each action, he/she should consider what information will be required to perform it.

Example

Recognize arterial bleeding.	*Facts associated with types of bleeding.*
	Rules for distinguishing types of bleeding.
Identify accepted control methods.	*Facts associated with the three accepted methods.*
Demonstrate accepted control methods.	*Procedures to follow for the three accepted methods.*

Sequence the Training

Once all actions and knowledge requirements have been identified, they can then be sequenced in the order they should be presented in training. As a general rule, knowledge requirements precede the related actions.

Example

Objective: At the end of this lesson, the trainee will demonstrate two of the three accepted methods for controlling arterial bleeding.

Training Content Sequence:

1. Facts associated with types of bleeding (knowledge)
2. Rules for distinguishing types of bleeding (knowledge)
3. Recognize arterial bleeding (action)
4. Facts associated with the three accepted methods (knowledge)
5. Identify accepted control methods (action)
6. Procedures to follow for the three accepted methods (knowledge)
7. Demonstrate accepted control methods (action)

Exercise: Outlining Training Content

On the following two pages:

1. List the actions for the objective written for the exercise on page 58.

2. List the knowledge requirements for each of the actions written in the first exercise.

Training Content Outline

Learning Objective

At the end of the lesson, the trainee will:

Actions

Knowledge Requirements

Training Content Outline

Sequenced Training Content

Lesson Plans

A lesson plan serves two purposes. Primarily it serves as a guide for the instructor to follow when presenting the course. Secondarily, it is an administrative document showing the organization of the course content, use of facilities and audiovisual equipment, allotment of time, and instructor activities.

Lesson plans usually include, but are not limited to the following items:

- Title. The title identifies the lesson. It should be descriptive and concise.
- Instructor goals and objectives. State reason(s) for teaching the unit. Objectives limit your subject matter. They are used as a guide in preparing presentation.
- Instructional methods to be used.
- Time to be allotted.
- Training aids and student materials. List all training aids and equipment to be used. Also, list handouts and other instructional materials needed. This composite list will enable you to determine quickly all the items that you need to assemble before teaching the class.
- References. List all texts, instruction books, and other materials needed to prepare for the lesson.
- Outline of content to be covered and the specific activities to be used to teach each concept. This information comprises the bulk of the lesson plan.

Developing the Content Outline and Instructional Activities

The content outline is normally divided into three parts: introduction, body, and summary. It follows the advice given for all instructors and speakers: Tell them what you are going to tell them; tell them; and then tell them again what you told them!

The **introduction** normally needs only to be brief to stimulate interest and relate to objectives. Introductions serve the following purposes:

- Develop trainee interest.
- Direct trainee thinking along desired lines.
- Establish scope of lesson by stating objectives.
- Create personal interest by stating benefits of lesson to trainees.
- Explain what method(s) will be used.
- Inform trainees as to what will be expected of them by the end of the session.

The **body** contains most of the actual content of the presentation. It consists of the sequenced training outline of the subject matter to be taught. For each concept listed in the outline, you should make notes as to instructional activity to be used. More information on specific instructional material will be covered in the next chapter. If you do not determine the instructional activities during the planning stage, all you will be able to do in class is lecture!

Since you want to appeal to as many senses as possible, always first think in terms of what activity students can do to learn the material. For example:

- Have students practice CPR on a Resusci-Anne.
- Divide students into groups of 3 to 4 persons and have them identify the hazards depicted in the photos.
- Have students play Jeopardy.
- Have students role play a given part in a mine emergency scenario.

Secondarily, think of what activity you can provide. For example:

- Show chart #1.
- Show slide #14.
- Show the video on...
- Write key concepts on blackboard.
- Demonstrate the safety belt and line.
- Tell the joke about...
- Tell the story about the miner who...
- Ask the following questions to promote discussion...

The **summary** is a repeat of the “must know” subject matter. Ensure that students take with them all “must know” subject matter, either through notes or handouts.

There are as many lesson plan formats as there are instructors. The one shown on the next pages is an example of one that has proven to be useful to some instructors.

COURSE LESSON PLAN

Lesson: **Total Time:**

Objectives:

Methods:

Training Aids:

References:

LESSON OUTLINE	INSTRUCTOR ACTIVITIES

CHAPTER 6
DETERMINING THE INSTRUCTIONAL METHODS AND PREPARING EFFECTIVE PRESENTATIONS

CHAPTER OBJECTIVE

6-1 At the end of this lesson, the trainee will be able to match appropriate learner-centered instructional methods with the training content.

New Miner vs. Experienced Miner Training

Instructors who are developing training for both new miners and annual refresher training must keep in mind the differences between the two groups. The type of instructional techniques used must be different for the two groups.

New Miner Training	Annual Refresher Training
Trainees lack specific job skills	Trainees have proficient job skills
Trainees lack knowledge of safe job procedures	Trainees usually have knowledge of safe job procedures, but fail to follow them on occasion
Trainees unable to recognize hazardous situations or conditions	Trainees often not observant of hazardous situations or conditions
Primary goals of the training are to teach job skills and safe mining practices	Primary goals of the training are to change trainee attitudes which lead to unsafe behavior, and to “refresh” old skills and knowledge
Trainees often young, without much work experience	Trainees often older than the instructor, and possessing much more work experience

Learner-Centered vs. Instructor-Centered Instruction

A concept to bear in mind when determining which instructional techniques to use is that it does not matter what the instructor does, but what the trainee does that is critical to learning.

Many mine trainers think that “teaching” and “covering material” are synonymous terms. They often get so caught up in the subject matter that they try to cover more material than the trainee can possibly absorb in the time allotted. Thinking of teaching as covering materials leads instructors to rely on lecture as the primary teaching technique.

Lecture is one of the least effective methods of teaching in any type of course. It is most appropriately used when the trainee does not know much about the information to be taught. In annual refresher training, this is rarely the case.

There are several factors which drive instructors to lecture:

- it is the easiest method when course preparation time is limited;
- it is the least risky method when the instructor is not totally familiar with the subject content;
- it is the most easily managed method when the class size is large; and
- since most instructors imitate techniques they have seen used and since lecture is the most commonly used technique, it is the only method that some instructors know how to use.

Lecture becomes more inappropriate when the instructor is primarily trying to change attitudes rather than impart skill or knowledge. Lecture frequently causes trainees to become more hardened in their inappropriate attitude.

The most effective way to change trainee attitudes is to provide learning activities which cause them to interact with each other and the concepts to be learned in such a way that they become aware of their inappropriate attitudes without losing face. Small group instructional techniques are usually much more effective when trying to change attitudes.

An operating definition for small group instruction is 2 to 6 people. Small group instruction produces several outcomes not characteristic of large group or individual instruction.

- Small group instruction leads to conformity of learning and behavior.
- Small group instruction leads to cohesiveness of group.
- Group thought is generally more accurate than individual thought.
- Groups are generally riskier than individuals.
- Groups are generally more creative than individuals.

There are many types of small group instructional activities that can be used effectively for training miners: discussion groups, buzz groups, demonstration-performance, case studies, simulations, games, and role playing. These are discussed more fully in the following pages.

Discussion Groups

Discussion is one type of small group activity that is very useful when the instructor wants to guide the participants toward a predetermined objective. Discussion is also described as a conference or seminar method. In this method, the members of the groups, with the instructor as the leader, participate in an exchange of ideas and information.

Discussion allows the trainees to contribute what they know about a subject, which is usually considerable in annual refresher training. This participation keeps them more alert during training. Since ideas are also coming from their peers, they are able to compare their thoughts against others in a similar situation. It is this comparison which is more likely to result in a shift in attitudes. Most persons are influenced by group thought.

During discussion, the instructor is still able to control the learning that takes place. The instructor is responsible for redirecting the discussion when it digresses from the topic, and for correcting any misinformation.

The key to conducting a successful discussion group is to ask questions.

Why ask questions?

ASK means: An instructor will teach more Attitudes, Skills and Knowledge by asking, rather than by telling or showing.

Below are some specific reasons why instructors should ask questions.

- To open a discussion - to arouse interest and curiosity.
- To keep interest alive.
- To get trainees to think.
- To get trainees involved, especially timid participants.
- To balance the discussion - take the floor away from an over participator.
- To develop the topic - bring out additional information or issues.
- To channel the thinking - get participants headed in a particular direction.
- To get discussion back on target.
- To see how well the participants understand the material.
- To determine group acceptance.
- To get action.

Types of questions

Questions can be categorized in several different ways:

- Overhead Question - one directed to the entire group. Any one person or several people may answer. Its primary purpose is to stimulate discussion.
- Direct Question - one which is asked to a specific person.
- Rhetorical Question - one addressed to the entire group, with no answer expected. This type of question is usually used to stimulate thinking, often at the beginning of a session.

Advantages of discussion groups are:

- they stimulate thinking,
- they are interesting and informative, and
- the informality is conducive to learning and retention.

The disadvantages are:

- discussion groups are time consuming,
- the instructor must be a skillful questioner,
- the instructor must be able to subtly control the group,
- the instructor must have a good subject background, and
- one or two people can dominate the discussion.

Discussion can be used very effectively to resolve problems after a lecture or to discuss key ideas after a film or demonstration.

Buzz Groups

Buzz groups are small discussion groups (usually 3 to 6 individuals) which are formed to work out easy problems. Usually the groups work without the instructor.

Advantages of buzz groups are:

- the informal setting facilitates learning,
- everyone has a chance to participate, and
- they are excellent for greater in-depth discussion.

The disadvantages are:

- they are time consuming,
- they are not good for introducing new material, and
- one or two people can dominate.

Procedures for facilitating buzz groups include:

- Break larger group into small groups (3 to 6 individuals)
- Assign subject/objective
- Assign a time limit
- Assign a recorder and a leader to report
- Watch each group work, and be available for assistance
- Have leaders report the conclusions of their groups
- Discuss the conclusions

Demonstration-Performance

The demonstration-performance method combines the showing of an operation or procedure with actual practice by the individual.

Advantages of demonstration-performance are:

- appeals to all senses,
- provides actual practice,
- stimulates interest,
- maintains attention, and
- allows the instructor to spot and remedy incorrect techniques.

Disadvantages include:

- instructor must break activity into several steps and present it in logical order,
- instructor must be totally familiar with the steps,
- individual practice is time consuming,
- advance arrangements must be made for equipment,
- it is not practical for large groups,
- equipment may not be easily moved, and
- may be difficult to get audience to equipment site.

Case Studies

In a case study approach, a real life situation or “case” is presented to a group. The case consists of the details of a problem and a solution or decision is called for. Presenting a problem situation or case study to participants allows them to apply new knowledge to specific situations.

Advantages are that case studies:

- lend reality to an indirect experience,
- help learners see others' points of view,
- help people acquire elementary decision-making skills,
- indirectly help people gain insight into their own interaction pattern,
- pool the insight of group members,
- bridge the gap between theory and practice,
- show that few problems have easy answers, and
- discourage "causal over-simplification."

Disadvantages are:

- they are time consuming, and
- instructor must develop a pertinent case in advance.

Procedures for developing case studies include:

- Develop a case that is realistic or relevant to trainees' jobs.
- Give the individuals time to discuss case or work on the problem.
- Call for a decision and give definite instructions as to what is to be done.
- Supply a solution. Do not leave it open-ended.

Case study variations include:

- Classical Case - consists of a comprehensive written record or evidence which influences a situation. The group is asked to find causes/recommendations.
- The Unfinished Story - consists of a few details of a situation. The group is asked, "Now what should be done?"
- Critical Incident - confronts the group with a situation at the "explosion" point. The group is asked, "Now it has happened, what do you do?"
- Informational Case - shows the group a picture of a situation. The group is asked, "What do you see?"
- "Ex Post Facto" Case - gives the group both the problem case and the decision. The group is asked, "Did he/she act wisely?"
- Baited Case - deliberately withholds significant parts of the case or deliberately includes insignificant parts. The group is asked to look for a solution.
- Interview Case - gives just an incident to the group. The instructor is used as a source person to be interviewed. The group is asked to search for facts, weigh them in view of circumstances, and decide on action.

Simulations

Simulations are model systems. For training purposes, an instructor can simulate any system: the human body, a mine environment, a ventilation system, etc. When using this technique, the instructor should introduce some kink in the system and let the participants resolve the problem.

Advantages are:

- simulations foster creativity;
- they have a good impact on all three domains of learning: attitude, skill, and knowledge; and
- experiential learning makes greater impact.

Disadvantages are:

- cost of equipment, and
- time required.

Games

Games have become a popular teaching technique in recent years. Although games have been primarily used in management training, they are applicable in many other courses. Games are especially useful in courses which require participants to develop decision-making ability, and in courses that teach sets of rules.

Advantages include:

- motivation level is high,
- competition makes trainees active,
- it gives participants feedback,
- provides practice, and
- it helps with the decision-making process.

Disadvantages include:

- some games require coaching as well as instruction,
- they require extensive planning and development,
- elaborate equipment may be necessary, and
- they are time consuming.

Guidelines for Developing and Using Games:

- Games should not be used to teach new material. They are effective when reviewing material with which trainees are already familiar.
- Games should take no more than 1 to 1 ½ hours out of an 8 to 16 hour training session. Too much game playing is just as bad as too much of any other technique.
- The goal of the game is to maximize learning. Progress in the game should be based primarily on knowledge of the subject material, not just luck or skill at gaming.
- An element of chance should be built into every game. Trainees need to have a way to "save face" if they lose the game.
- The game should be as participatory as possible. Every trainee should be thinking about every question asked, even if not required to answer.
- The game should be structured very simply for first-time players. As trainees become more adept at game playing, the rules can become more complex.
- The rules of play should be adapted so that they suit the teaching style of the instructor as well as the material to be covered.
- It is best to have groups of 4 to 6 players to answer questions. If the group is too large, some trainees let others do all the work. But if the group is too small, the atmosphere may become too threatening to some trainees.
- Games have to be changed periodically in order to remain effective. Changing a game means rewriting the questions, changing the subject area covered, or changing the format of the game.
- Games can be used as an icebreaker activity in the beginning of a training session.
- Games can be used as an assessment tool at the beginning of a training session. However, it may be frustrating for trainees if they don't know the answers to many questions.
- Games can be used as a review tool at the end of a training session.
- Games can be used during a training session to keep participants alert and involved. After lunch is a good time since that is a time when many trainees become sleepy.
- Short, individualized games can have value as filler exercises. For example, if a test is being given, persons who finish early can be given a game to keep them occupied and quiet while others complete the test.

Role Playing

Role play involves acting out by individuals, without script or rehearsal, or job techniques needed in particular situations. In role play, the instructor does not determine the outcome in advance. The instructor may explain to each participant how he/she feels in the role, and the participant acts out these feelings.

Advantages of role play are that it allows trainees to:

- practice in dealing with people in particular situations,
- demonstrate abilities, and
- see how others do it.

Disadvantages are:

- role play is time consuming,
- instructor must be prepared to handle emotional situations,
- atmosphere must be friendly, and
- some individuals may “ham it up.”

Procedures for using role play include:

- Select a situation that will be meaningful to the group.
- Ask individuals to volunteer.
- Give each player instructions.
- Prepare the observers for what is about to happen and what they should watch for.
- Stop the role playing when real feelings begin to develop among the players or when the situation is resolved.
- Allow individuals to critique their behavior first, then let the group.
- Discuss the role play in a positive way, asking such questions as: What did you like? How can it be improved?
- Encourage the group to relate the role play to their job.

Criteria for Selecting a Particular Technique

There are three general criteria that instructors should consider when they are selecting methods for training. They are shown below.

Criteria	Explanation
The Learning Objective	Will the method most effectively lead the learner toward the accomplishment of the learning objective?
The Trainee	Does the method take into account the group size, experience levels, and other special characteristics of the group?
The Practical Requirements	Is the method feasible given the physical environment, time (both preparation and classroom), materials, and any cost limitations?

Preparing Effective Presentations

A quality of an effective instructor is knowledge of the subject matter. An instructor can acquire the necessary knowledge in the following basic ways: formal schooling, self-study, and experience. An instructor who knows the subject will not be effective unless his or her message is relevant and concise. Everything an instructor says or does should ultimately help the student attain the objectives. Training time is so valuable that the instructor cannot afford to waste it by giving nonessential information even though it may be in the same general area as the objective.

Well-developed materials are a definite asset, but they are not the complete story. Many students have failed to attain objectives because they had the experience of listening to instructors who not only failed to keep their interest, but whose entire manner was an open invitation to slumber. Student interest must be aroused and maintained although it is often difficult to do so. The difficulty will vary with the subject matter, time of day, situation, and the instructor's manner. Any instructor who desires to be able to hold the attention of students can be trained to do so.

Tips for Effective Presentations:

- Give your listeners signals to help them follow your ideas.
  Example: "Let's look at the causes of the problem...," as an introduction to a new topic.
- Don't start off on the wrong foot. It is unprofessional to start with an apology, except as good manners require, for example, for lateness. Don't start with an irrelevant joke or story.
- Be alert to your audience. Watch the body language of the group.
- Maintain eye contact with the trainees. You do not need to look at each individual in the group (although that is preferred) as long as you look at each section of trainees.
- Vary the speed at which you talk. Although we are told to vary the tone of our voices, it is a difficult thing to do. A better rule to follow is to vary your speed.
- Make sure that everyone in the room can hear. The basic rule here is to make your voice loud enough so that you can be heard by the persons in the last row.
- Use natural gestures. Avoid making gestures to be used in your talk. Do what comes naturally; for example, move toward the group when you want to get them to answer or ask questions.
- Avoid putting your hands near your face. Putting your hands near your mouth may have psychological implications. Often, people who lack confidence in what they are saying display this body language. The speaker's insecurity can spill over to the audience to the point where they begin to lose confidence in the speaker.
- Use pauses effectively. People generally need time to think. When you make a particularly important point in your presentation, you should pause. This will feel awkward at first as ten seconds of silence can feel like ten minutes. However, there are times when those ten seconds are essential.

- Talk from notes rather than from a script. Speaking from notes tends to appear more spontaneous and natural than reading a script. Be sure your notes are easy to follow.
- Eliminate bad habits. Psychologists have found that we fall into bad habits because we are not aware we are doing them. A technique that can help one overcome a bad habit is to force oneself into a five-minute inundation. What will happen is that the next time you start the bad habit in front of a group, you will immediately become aware of what you are doing, and stop the behavior.
- Never memorize your presentation. Use your note cards for reference. The ideas are the same and choice of words will be free and natural.
- Keep your conclusion short. Your conclusion should consist of one or two carefully thought-out sentences.
  - Summarize the main points briefly.
  - Reemphasize the reasons why the subject is important.
  - Suggest something the listeners can do to put the ideas presented into action.
  - Avoid an abrupt ending. Don't just walk away without a clear indication that you have finished.
- Practice. Do this regularly.

Some ways to ensure the training material is meaningful to the trainees:

- Understand the subject yourself – you cannot make it meaningful for the trainees unless you understand it.
- Pretest trainees' existing knowledge by asking them questions about their previous experience, etc.
- Provide background information. Train from the known to the unknown – relate the new material to something they already know. Make sure they know "Part A" before going to "Part B."
- Break the training session up into stages and present in a logical sequence.
- Explain technical terms. Define the word for the trainees by using it in a meaningful context. Be aware that the trainees will be making a mental picture out of your words; consequently, it is essential they give the same meaning to the words as you do.
- Teach at the trainees' level. Determine the trainees' present level of knowledge and skills and their ability to understand, then teach them at their level, not yours. It's better to oversimplify than to be too complicated.

Do's and Don'ts for the New Trainer

DO

- Maintain eye contact.
- Be aware of audience cues.
- Pay attention to such physical factors as room temperature, outside noise, etc.
- Start on time.
- Give complete directions when giving assignments.
- Allow enough time to develop skills.

- Check supplies and audiovisual equipment.
- Establish program objectives from the beginning.

DON'T

- Be afraid to ask questions.
- Be afraid of silence.
- Rely on technical jargon.
- Talk down to participants.
- Openly criticize yourself or others.
- Include too many people for group exercises.
- Hesitate to say, "I don't know."
- Expect to reach the skill or attitude level of learning from a lecture.

A Checklist for the Final Step of Preparation

Prepare yourself

- Look your best
- Review your teaching notes
- Arrive early to take care of details

Arrange props

- Put up charts and screen
- Arrange other visual aids
- Check machine equipment
- Arrange handout material in order

Check the room

- Select a room removed from outside noise
- Arrange the seating
- Check lights and ventilation
- Remove trash
- Clean chalkboard

Check needed supplies

- Registration cards
- Attendance list
- Pencil, paper, folders
- Chalk and erasers
- Any other types of visual aids needed

CHAPTER 7
DEVELOPING AND USING TRAINING AIDS

CHAPTER OBJECTIVE	
7-1	At the end of this lesson, the trainee will be able to develop and use training aids appropriately.

Training aids are media (materials), both visual and written, that support the training methods chosen. Training aids are not intended to do the training for the instructor, although they are often used this way inappropriately.

Too often the trainer considers the lecture the only communication method available. While there is no denying that this method is effective for many training tasks, the trainer has a much wider variety of channels open to him or her. There are many channels of learning. No single avenue should be excluded if it will aid in the teaching of a lesson.

Criteria Used for Selecting Training Media (Aids)

The following are criteria for selecting training aids:

- Background abilities and motivation of the group and instructor.
- Course objectives are the key to all instruction and must be considered in selecting media.
- Location of the classroom will indicate the various constraints of time, travel, and physical environment.
- Media which are beyond your control to schedule must be checked for availability.

Always judge the medium on the basis of its ability to economically and effectively solve your training task. The training content should determine the media selection. Don't solve the problem by working the available media around the training task.

Training aids serve a variety of purposes. Some of the general purposes are:

- Focus attention on topic by having learners visually review the material.
- Increase interest in the topic by presenting material that is visually appealing.
- Improve learner retention by involving more than one sense (e.g., hearing and seeing) when presenting the material.

Some general guidelines the instructor should consider when using any instructional aid are:

Needed	Use an aid if: • It will help the trainees understand the point. • Words might evoke different images for different people. • A high level of retention is desired.
Ready to Use	Have aids set up and tested. Have aids in correct order with all materials needed.
Out of Sight When Not in Use	Make aids as inconspicuous as possible except when being used.
Audible/Visible	Make certain all trainees can see and hear the aids.
Time to Absorb	Tell the trainees the significance of the aid and give them time to absorb it.
Proper Presentation of Aid	Talk to the trainees, not the aid; do not read the aid, and present it smoothly.

Each type of training aid has enough unique considerations that each should be dealt with separately. The most common training aids are:

- Videos or DVDs
- Computer presentations
- Flip charts
- Handouts

Videos and DVDs

Videos or DVDs have particular advantages in training. They stimulate trainees' interest, motivate them to try new things, illustrate behaviors, and add professionalism to the training. Normally instructors will not be developing new videotapes or DVDs because of the costs involved. However, there are many videos available commercially or from MSHA.

Using a video or DVD will require a video or DVD player and monitor or a multimedia projector and screen. The instructor should always ensure that all equipment is in good working order before the trainees arrive.

After selecting the video or DVD for the training, the instructor should develop a plan for increasing its impact on trainee learning and for smoothly integrating it into the program. The best model is to follow the old public speaking adage: first tell them what you are going to tell them, then tell them, and finally tell them what you have told them.

Prepare. Prepare means to ready the equipment and ready the trainee. The instructor should insert the video or DVD into the player during a break prior to the showing. These should prepare the trainee to watch the video or film by telling them the major point they should focus on and retain, and should also tell trainees what they will be asked to do after the viewing.

View. Once the video or DVD has begun, it usually is necessary to adjust the sound and light levels. It is not always necessary to show a video or DVD in its entirety, particularly if it is long. The instructor may want to show only those portions which are most pertinent. Also, it is not always necessary to show a video or DVD without interruption. It is often of value to stop at predetermined points to discuss what has just occurred.

Summarize. After the trainees have viewed the video or DVD, it is useful to summarize the major points that were presented, discuss other important points that were not covered, or discuss ways in which the concepts covered in the video or film can be applied.

Reasons to Use Video or DVD:

- Provides an effective way to communicate new ideas or model positive behavior.
- Gives a consistent message to many people in a decentralized organization, to different groups of people in one location, or to successive attendees to a session given over several dates.
- Relieves the trainer of repetitive tasks, providing time to prepare new programs, tailor topics to specific groups, respond to questions, and facilitate discussion.
- Reinforces the overall quality of the training programs as well as the organization's commitment to training. In the process, video elicits corresponding levels of commitment and involvement from participants.
- Saves time – it communicates a message quickly and clearly.
- Allows you to bring experts and nationally acclaimed speakers into your training room. Everyone gets the benefits of hearing, seeing, and learning from these professionals without incurring the expense of off-site travel and meeting space, or the costs of scheduling appearances by one or more speakers on-site.
- Offers an alternative approach to learning, allowing your training to reflect the reality that different people learn in different ways.

Times to Show a Video or DVD:

- To kick off a session – it gets everyone relaxed and in a positive frame of mind.
- To close a session – it motivates all to leave with an upbeat "can do" attitude.
- Just before lunch – it helps generate informal discussions among participants.
- At "big" meetings – it builds enthusiasm and sets a positive tone for company-wide meetings.

BAD TIME... After lunch – a darkened room after any meal may produce snores rather than a lively discussion. Save the video or DVD for a few minutes.

Computer Presentations

PowerPoint is one example of a complete presentation graphics software package. It gives you everything you need to produce a professional looking presentation – text handling, outlining, drawing, graphing, clip art, and so on. It also offers speaker support and aids to help you create effective presentations. PowerPoint makes you, the presenter, an independent producer of your own high-quality presentations. You can use materials that you have created in other Microsoft products, such as Microsoft Word and Microsoft Excel, in PowerPoint.

Here's what you can make using PowerPoint:

- **Presentations.** A PowerPoint presentation is a collection of slides, handouts, speaker's notes, and outline, all in one file. As you create slides, you're creating a presentation – you're designing how your presentation should look and giving it a format that carries through from beginning to end.
- **Slides.** Slides are the individual "pages" of your presentation. Slides can have titles, text, graphs, drawn objects, shapes, clip art, drawn art, photographs, and visuals created with other applications.
- **Handouts.** To support your presentation, you have the option of providing handouts for your audience. Handouts consist of smaller, printed versions of your slides – either two, three, or six slides per page. If you want, you can print additional information such as your company name, the date, and the page number on each page.
- **Speaker's Notes.** You can create and print speaker's notes. You'll see a small image of the slide on each notes page, along with any notes you type.
- **Outlines.** As you're working on a presentation, you have the option of working with your presentation in outline form. In the outline, your titles and main text appear, but not your art or the text typed with the Text tool. You can also print your outline.

Whether you need quick slides for a briefing, or slides for a training session, PowerPoint has it all. Prompts, tips, and cue cards help you learn the product quickly; wizards, templates, and auto-layouts help you get right to work; and a complete set of easy-to-use tools ensures you have everything you need to get your point across and share information with others.

Principles for Effective Visuals:

- The visual must be capable of being understood quickly, accurately, and effortlessly.
- The visual is intended to reinforce the message. The rule for the maximum amount of printed material is six lines. If the message exceeds six lines, consider breaking the visual into two or three slides.
- Choose your lettering for its readability. Printing is ordinarily much easier to read than cursive. Underlining should be used sparingly. Letters should be one inch high for every 25 feet of viewing distance.
- The boldness of the letters is as important as their size. Boldness includes the line width, density, and sharpness. For maximum legibility, the width of the lines used to make letters should be about 15 percent of the letter height. It is as bad to have the lines too thick as too thin. The density of the print determines the contrast on the screen.
- The organization of the message is also important to the understanding of the visual as a whole. We ordinarily look first at the upper left area of printed material. This is probably the best place to start the message.
- The best test of the readability of the visual is to simply try it out in the training area where it will be used.

Flip Charts

A flip chart consists of a pad of blank paper attached to an easel. Notes are recorded on the chart with a felt tip marker. The information can be prepared ahead or recorded during the training. Prerecording information saves training time and ensures neatness. Recording during the training allows the instructor to respond to the immediate learning situation.

Regardless of whether flip charts are prepared ahead or during the training, there are certain guidelines to follow to make them more readable and appealing.

- Make letters at least 1½ inches high.
- Leave two inches or more between lines.
- Use the top of the pad.
- Use as few words as possible.
- Highlight key words by using color, shapes, graphics, boxing, underlining, or pictures.
- Check readability by going to various parts of the room.
- Leave a blank page between each prerecorded page so that the writing on the next chart does not show through and distract trainees.

Advantages of Flip Charts:

- The trainer can control the presentation of material.
- Material for the flip chart can be prepared in advance or on the spot.
- The flip chart is highly portable.
- A variety of shapes, colors, and devices can be used with the flip chart.
- The flip chart can be used to answer spontaneous questions from students.

Limitations of Flip Charts:

- Difficult to see beyond 15 feet.
- Usually not good for groups of students exceeding 20.
- Pages are occasionally difficult to flip.

Below are some additional tips that are useful when using flip charts as a training aid:

- Lightly write memory joggers in pencil in the margins of the prerecorded charts, and use as presentation notes.
- Tab prerecorded charts to eliminate searching for them when needed.
- Cover prerecorded errors with paste-on labels; then write correct information on labels.
- When recording trainee input, record key words quickly.
- When recording trainee input, check to ensure their ideas are being reflected accurately.
- When recording trainee input, alternate color when listing group's ideas.
- When planning to compare and contrast data, use two flip charts.
- If the material should be displayed for a period of time, hang the pages on the wall.

Handouts

Handouts are written materials prepared in advance and distributed to trainees during the training. Information covered in the handout can be used during the training and/or retained for use after the training.

Handouts are important training aids to consider, particularly if the instructor wants to:

- Have trainees use the information at a later time.
- Allow trainees to absorb information at their own pace.
- Eliminate the need for trainees to memorize or take extensive notes.

Some additional notes regarding handouts:

- Vary your handouts. Use some outline handouts that require the trainees to fill in information. This will stimulate interest and hold attention.
- Don't overdo the volume of handouts.
- Leave a lot of white space on each page.

The first step in developing a handout is to decide on the format to use. One frequently used format is paragraph form. It can be useful, but it is visually less appealing than other formats. More visually appealing are:

- Charts
- Check Lists
- Work Sheets

Appendix

Alternate Lesson Plans

New Miner Training (§46.5)

Newly-Employed Experienced Miner (§46.6)

The lesson plans on the following pages can be used as models to train miners for the indicated Part 46 training.

Recognition and Avoidance of Hazards §46.5(b)(2); §46.6(b)(2)

(This course must be presented before the new miner or newly-hired experienced miner begins work at the mine.)

Course Length: from _____ to _____.

Competent Instructor(s)_____.

The purpose of this course is to train the miner to recognize potentially hazardous locations, conditions, or procedures. Once a potentially hazardous location, condition, or procedure is identified, discuss or demonstrate how to avoid the hazards.

Potential hazards should be discussed and considered as:

i. Hazards to the miner; and
ii. Hazards to others by the miner's actions.

Discuss the differences and give examples of different kinds of hazards such as:

- Moving vehicles;
- Exposed "pinch points" and rotating mechanical parts;
- Releases of energy such as compressed gas, hydraulic lines, energized components, and explosives;
- Environmental such as dust, deep water, high places, slippery areas, welding areas, overhead power lines, etc;
- Lifting hazards;
- Slips and falls; or
- Other: _____.

Training Materials:

- Company safety rules
- Company accident reports
- MSHA hazard recognition pamphlet
- MSHA-produced publication "Fatal Accidents Involving Small Crushed Stone, Sand and Gravel Operations," (OT 41)
- MSHA Health Hazard (HH) information cards

Recognition and Avoidance of Hazards §46.5(b)(2); §46.6(b)(2) (Cont.)

Evaluation: Have the miner identify any potential hazards he/she can identify at a work process. Discuss these ideas with the miner and tell how the miner could avoid being hurt by them.

Take a few minutes to see if you can spot any of the potential causes of an

accident in the _____ area.

Why do you think _____ is a potential cause for an injury?

What events would cause this to happen?

What could you do to prevent this from happening?

Discuss the miner's responses and offer any additional insights.

A Review of Emergency Medical Procedures, Escape and Emergency Evacuation Plans, Fire Warning Signals, Firefighting Procedures §46.5(b)(3); §46.6(b)(3)

(This course must be presented before the new miner or newly-hired experienced miner begins work at the mine.)

Course Length: from _____ to _____

Competent Instructor(s) _____

The purpose of this training is to train the miner in appropriate steps to take in the event of fire or other emergency that would require the miner to leave the mine or affected area of the mine.

Training Materials:

- Company mine emergency and evacuation plan
- Fire extinguisher
- MSHA-produced video, "Fire Fighting in the Mineral Industry," DVD 579
- MSHA-produced safety manual "Fire Safety" (SM 13)

If you are hurt on the job, you should first _____; second _____.

If you see a fire or excessive smoke in the buildings or on a piece of machinery, you should _____.

If the fire is _____ in size, you should fight the fire using _____.

If the fire is an electrical fire, you should _____.

If the fire is too large to put out, you should _____.

The fire or emergency signal(s) at this mine are _____.

If you hear or see this signal(s), you should _____.

Point out the locations of fire extinguishers. Use an extinguisher to point out restraining pin, operating handle, and nozzle operation.

Evaluation: Have the miner explain or demonstrate the correct procedures for reporting, fighting, and escaping a fire. Also have him/her indicate the locations of fire extinguishers and describe the correct initiation and use of a fire extinguisher. Correct any mistakes and have the miner repeat the correct response.

Health and Safety Aspects of the Task Assigned §46.5(b)(4); §46.6(b)(4)

(This course must be presented before the new miner or newly-hired experienced miner begins work at the mine.)

Course Length: from _____ to _____.

Competent Instructor(s) _____.

The purpose of this training is to identify safe work procedures for each major step of the miner's assigned task.

Job hazards will be addressed during job training. Potential hazards will be identified and explained for each job step. Explain how to avoid each hazard in turn, and where appropriate, ways to avoid the hazard. Where feasible demonstrate correct procedures. Related health and safety standards will be discussed for each potential hazard.

Training materials:

- MSHA-produced job safety analysis materials for appropriate jobs
- 30 CFR Part 56
- MSHA-produced on-the-job training modules for appropriate jobs

I will demonstrate the job for you and explain what I am doing, why I'm doing it, the expected results of my action and the potential consequences of the action. The job steps will be explained in the order you will normally perform them. I will identify ways you may be hurt doing each step. I will also show you ways to avoid being hurt. Please ask questions at any stage or ask if the step needs to be repeated. I will be asking you to demonstrate and explain each step back to me at the end of the training.

You have been assigned to _____.

The first job step is _____.

You do this by _____.

You could be hurt if _____.

You can keep this from happening by _____.

The MSHA standards that apply to this step are _____.

The second (etc.) job step is _____.

You do this by_____.

Health and Safety Aspects of the Task Assigned §46.5(b)(4); §46.6(b)(4) (Cont.)

You could be hurt if_____.

You can keep this from happening by _____.

The MSHA standards that apply to this step are _____.

Evaluation: I want you to demonstrate the job for me. I want you to perform each step, in order, and tell me what you are doing, why you are doing it, what you expect to happen, and any potential problems or dangers that might happen for each step.

I have been assigned to _____.

The first job step is _____.

I will do this by _____.

I could be hurt if _____.

I can keep this from happening by _____.

The second (etc.) job step is _____.

I do this by _____.

I could be hurt if _____.

I can keep this from happening by _____.

Instruction in the Statutory Rights of Miners and Their Representatives §46.5(b)(5); §46.6(b)(5)

(This course must be presented before the new miner or newly-hired experienced miner begins work at the mine.)

Course Length: from _____ to _____.

Competent Instructor(s)_____.

The purpose of this training is to inform miners of their rights under the Federal Mine Safety and Health Act of 1977.

Training Materials:

- Federal Mine Safety and Health Act of 1977 ("The Act")
- MSHA-produced booklet "A Guide to Miners' Rights and Responsibilities Under the Federal Mine Safety and Health Act of 1977" (OT 2)

The Act gives individual miners and their representatives the following rights:

- The right to have a representative of the miners accompany Federal inspectors during inspections at a mine.
- The right to obtain an inspection of a mine where there are reasonable grounds to believe that an imminent danger, or a violation of the Act or a safety or health standard, exists.
- The right to be paid during certain periods of time when a mine or a part of a mine has been closed because of a withdrawal order.
- The right to be protected from discrimination based on the exercise of rights given by the Act.
- The right to receive safety and health training.
- The right to be informed of, and to participate in, enforcement and legal proceedings under the Act.

Discuss any questions or, if necessary, repeat any rights they were unable to follow.

Evaluation: A 10-question true and false test. Return the corrected tests to the miner and discuss any misunderstandings or missed questions.

A Review and Description of the Line of Authority of Supervisors and Miners' Representatives and the Responsibilities of Such Supervisors and Miners' Representatives §46.5(b)(6); §46.6(b)(6)

(This course must be presented before the new miner or newly-hired experienced miner begins work at the mine.)

Course Length: from _____ to _____.

Competent Instructor(s)_____.

The purpose of this course is to acquaint miners with the persons in authority over them, the persons who may represent them for purposes of the Mine Act, and their respective responsibilities. This knowledge is critical for the miner's correct response to instructions and warnings and for the exercise of their rights under the Mine Act.

Your immediate supervisor is _____ and he/she is

responsible for _____.

In his/her absence, you will report to _____.

Your supervisor reports to _____and he/she is responsible for _____.

Your miners' representative is _____; he/she can be contacted _____.

Introduce the miner to each respective supervisor or manager.

Training Materials:

- Company organizational chart

Evaluation: Have the miner name each supervisor and give a brief description of his/her responsibilities.

Introduction to Company Rules and Procedures for Reporting Hazards §46.5(b)(7); §46.6(b)(7)

(This course must be presented before the new miner or newly-hired experienced miner begins work at the mine.)

Course Length: from _____ to _____.

Competent Instructor(s)_____.

The purpose of this course is to ensure that the miner knows how to report hazards he/she may encounter while working at the mine.

Training Materials:

- Copy of the mine reporting and safety procedures
- 30 CFR Part 50

If you should become aware of a potential hazard while you are working, you should do the following immediately.

- List in order appropriate reporting steps including: to whom, what method, what kind of information, etc.

Evaluation: Have the miner repeat or list the steps to reporting a hazard. Correct any mistakes before ending the session.

Practice under the Close Supervision of a Competent Person §46.5(e); §46.6(d)

(This course must be presented before the new miner or newly-hired experienced miner begins work at the mine.)

Course Length: from _____ to _____.

Competent Instructor(s)_____.

The purpose of this training is to monitor the practice and initial performance of miners when they are assigned to a new task. The miner must first receive hazard recognition training specific to the assigned task before practicing the task.

This practice training will be supervised and conducted by a person competent in performing the task. The competent person will be within sight and sound (hearing distance) of the miner during the training.

The miner will be observed for _____.

Training Materials:

- MSHA-produced on-the-job training modules for appropriate jobs

Evaluation: Practice will continue until the miner can repeatedly and successfully perform each of the job steps required to accomplish the task in the appropriate order.

If the miner performs a significant step incorrectly, or performs a potentially unsafe act or an operation that could endanger others working in same area, the miner will be signaled by _____ and the miner will be retrained in the step or procedure.

Instruction and Demonstration on the Use, Care, and Maintenance of Self-Rescue and Respiratory Devices, if Used at the Mine §46.5(c)(1); §46.6(c)

(This course will be presented no later than 60 days after the new miner or newly-hired experienced miner begins work at the mine.)

Course Length: from _____ to _____.

Competent Instructor(s)_____.

The purpose of this training is to prepare the miner to use the appropriate self-rescue or respiratory device in an emergency or health hazard situation.

Training Materials:

- MSHA and/or manufacturers' manuals for the appropriate devices

When you are working in the _____ area, you need to wear a _____ respiratory device. You properly put the unit on by _____. The fit is then adjusted by _____. The proper filter for this unit is _____. The filter is replaced by_____. The filter should be replaced every _____. In an emergency indicated by _____, you will (if the units are cached) indicate the location(s) and put on the _____ self-rescuer using the following steps, in order, _____. You will then evacuate the mine by _____.

Evaluation: Have each miner explain to you when the device is to be used. Then have him/her demonstrate the proper method for putting on the unit, demonstrate adjusting the unit for fit, describe the type of filter used, and demonstrate changing the filter. (In the case of a self-rescue device, have the miner describe the procedure for evacuating the hazardous area.)

Correct any errors and have the miner repeat the process until satisfactory performance is achieved.

A Review of First Aid Methods §46.5(c)(2)

(This course will be presented no later than 60 days after the new miner or newly-hired experienced miner begins work at the mine.)

Course Length: from _____ to _____.

Competent Instructor(s)_____.

The purpose of this training is to provide a general overview of first methods.

Training Materials:

- Company first-aid procedures
- Recognized first-aid manual
- Bandaging material
- Splinting material
- A sample of a first-aid kit used at the mine
- Stretcher

Review the steps an employee should follow if they are injured or encounter an injured person.

Where feasible, have the miner practice each of the first aid methods demonstrated in the class. Training will be prioritized based on the ability to save a life.

Review the fundamental types of first aid methods such as cardiopulmonary resuscitation (CPR), control of breathing, controlling bleeding, treating for shock, treating burns, immobilizing broken bones, etc.

Examples:

If you injure yourself here at the mine and you are able to walk, you should

_____.

If you injure yourself here at the mine and you are unable to walk, you should

_____.

If you find an injured person, you should

_____.

A Review of First Aid Methods §46.5(c)(2) (Cont.)

The first aid kit(s) at this mine are located at

_____.

Emergency medical help can be obtained by

_____.

Some example accidents that may cause a person not to have a pulse are

_____.

The method for determining if a person has a pulse is

_____.

If they do not have a pulse, you should

_____.

Divide into pairs and check for each other's pulse. Let's practice performing one-person cardiopulmonary resuscitation (CPR) using this training mannequin.

Evaluation: Observe the miner practice sessions and make corrections as appropriate. At the completion of the class, have miners volunteer to serve as simulated victims. Describe an example of an accident and the type of injury the victim has received. Have small groups demonstrate on the volunteers the correct first aid procedures.

New Task Training (§46.7)

Health and Safety Aspects of the Task Assigned §46.7

(This training must be given before any miner begins work in a task in which he/she has no previous experience.)

Course Length: from _____ to _____.

Competent Instructor(s)_____.

The purpose of this training is to identify safe work procedures for each major step of the miner's assigned task.

Job hazards will be addressed during job training. Potential hazards will be identified and explained for each job step. Explain how to avoid each hazard, in turn, and (where appropriate) discuss or demonstrate ways to avoid the hazard. Related health and safety standards will also be discussed for each potential hazard.

Training materials:

- MSHA-produced job safety analysis materials for appropriate jobs
- 30 CFR Part 56
- Appropriate company-produced standard operating procedures

- Demonstrate each job step in order.
- Explain why the step is necessary.
- Explain or demonstrate the expected result and the potential consequences of the action.
- Identify ways the miner may be hurt doing each step.
- Explain or demonstrate ways to avoid being hurt.
- Have miner ask questions at any point or indicate if the step needs to be repeated.
- Have the miner demonstrate and explain each step in the same fashion to the instructor.

You have been assigned to _____.

The first job step is _____.

You do this by _____.

You could be hurt if _____.

You can keep this from happening by _____.

The mandatory Federal health and safety standards that apply to this step are

_____.

Health and Safety Aspects of the Task Assigned §46.7 (Cont.)

The second (etc.) job step is _____.

You do this by _____.

You could be hurt if _____.

You can keep this from happening by _____.

The mandatory Federal health and safety standards that apply to this step are _____.

Evaluation: I want you to demonstrate the job for me. I want you to perform each step, in order, and tell me what you are doing, why you are doing it, what you expect to happen, and any potential problems or dangers that might happen for each step.

I have been assigned to _____.

The first job step is _____.

I will do this by _____.

I could be hurt if _____.

I can keep this from happening by _____.

The second (etc.) job step is _____.

I do this by _____.

I could be hurt if _____.

I can keep this from happening by _____.

Annual Refresher Training (§46.8)

The following lesson plan can be used as a model to train miners for Part 46 annual refresher training.

Course Length: from _____ to _____.

Competent Instructor(s)_____.

The purpose of this training is to keep miners informed of conditions at the mine that present potential health or safety hazards. This training will address the working environment, equipment, mining processes, communications, and causes of accidents or near misses that have occurred. Ways to avoid or eliminate the causes of accidents or near misses will also be discussed or presented.

Training Materials:

- MSHA accident data
- Company accident data
- State accident data and safety materials
- Applicable MSHA safety manuals and hazard awareness publications
- Holmes Safety Bulletins
- Input from miners or their representatives

We are planning to change the method that we _____. The new process will _____. Some things that you need to be aware of are _____. Do you see any other things that we need to consider or you would like to discuss?

During the last _____ our industry has experienced the following types and numbers of accidents _____. Is there anything we need to consider to prevent these types of accident trends from happening at our mine?

_____

During the last _____ we have experienced the following accidents (near misses) _____.

I will briefly describe the events and conditions of each accident (near miss) and we can discuss ways to prevent a recurrence.

Evaluation: Class participation and responses to questions and discussions. Discuss 30 CFR 56/57.15020.

Additional Training Materials

MSHA has produced many publications as part of the Agency's continuing effort to protect the health and safety of our nation's miners. These materials are designed to supplement existing training programs and assist the industry in conducting effective on-the-job training.

- DVDs (some interactive)
- Safety manuals
- Instructional guides
- On-the-job training modules
- Pocket cards
    - Best Practices (BP)
    - Health Hazard (HH)

To order materials and for a complete listing of all training products, please request the latest copy of the *Catalog of Training Products for the Mining Industry* from the National Mine Health and Safety Academy.

An order form is at the back of this guide.

Appendix

Alternate Lesson Plans

New Miner Training (§46.5)

Newly-Employed Experienced Miner (§46.6)

The lesson plans on the following pages can be used as models to train miners for the indicated Part 46 training.

Recognition and Avoidance of Hazards §46.5(b)(2); §46.6(b)(2)

(This course must be presented before the new miner or newly-hired experienced miner begins work at the mine.)

Course Length: from _____ to _____.

Competent Instructor(s)_____.

The purpose of this course is to train the miner to recognize potentially hazardous locations, conditions, or procedures. Once a potentially hazardous location, condition, or procedure is identified, discuss or demonstrate how to avoid the hazards.

Potential hazards should be discussed and considered as:

iii. Hazards to the miner; and
iv. Hazards to others by the miner's actions.

Discuss the differences and give examples of different kinds of hazards such as:

- Moving vehicles;
- Exposed "pinch points" and rotating mechanical parts;
- Releases of energy such as compressed gas, hydraulic lines, energized components, and explosives;
- Environmental such as dust, deep water, high places, slippery areas, welding areas, overhead power lines, etc;
- Lifting hazards;
- Slips and falls; or
- Other: _____.

Training Materials:

- Company safety rules
- Company accident reports
- MSHA hazard recognition pamphlet
- MSHA-produced publication "Fatal Accidents Involving Small Crushed Stone, Sand and Gravel Operations" (OT-41)
- MSHA Health Hazard (HH) information cards

Recognition and Avoidance of Hazards §46.5(b)(2); §46.6(b)(2) (Cont.)

Evaluation: Have the miner identify any potential hazards he/she can identify at a work process. Discuss these ideas with the miner and tell how the miner could avoid being hurt by them.

Take a few minutes to see if you can spot any of the potential causes of an

accident in the _____ area.

Why do you think _____ is a potential cause for an injury?

What events would cause this to happen?

What could you do to prevent this from happening?

Discuss the miner's responses and offer any additional insights.

A Review of Emergency Medical Procedures, Escape and Emergency Evacuation Plans, Fire Warning Signals, Firefighting Procedures §46.5(b)(3); §46.6(b)(3)

(This course must be presented before the new miner or newly-hired experienced miner begins work at the mine.)

Course Length: from _____ to _____

Competent Instructor(s) _____

The purpose of this training is to train the miner in appropriate steps to take in the event of fire or other emergency that would require the miner to leave the mine or affected area of the mine.

Training Materials:

- Company mine emergency and evacuation plan
- Fire extinguisher
- MSHA-produced video "Fire Fighting in the Mineral Industry" DVD 579
- MSHA-produced safety manual "Fire Safety" (SM 13)

If you are hurt on the job, you should first _____; second _____.

If you see a fire or excessive smoke in the buildings or on a piece of machinery, you

should _____.

If the fire is _____ in size, you should fight the fire using _____.

If the fire is an electrical fire, you should _____.

If the fire is too large to put out, you should _____.

The fire or emergency signal(s) at this mine are _____.

If you hear or see this signal(s), you should _____.

Point out the locations of fire extinguishers. Use an extinguisher to point out restraining pin, operating handle, and nozzle operation.

Evaluation: Have the miner explain or demonstrate the correct procedures for reporting, fighting, and escaping a fire. Also have him/her indicate the locations of fire extinguishers and describe the correct initiation and use of a fire extinguisher. Correct any mistakes and have the miner repeat the correct response.

Health and Safety Aspects of the Task Assigned §46.5(b)(4); §46.6(b)(4)

(This course must be presented before the new miner or newly-hired experienced miner begins work at the mine.)

Course Length: from _____ to _____.

Competent Instructor(s) _____.

The purpose of this training is to identify safe work procedures for each major step of the miner's assigned task.

Job hazards will be addressed during job training. Potential hazards will be identified and explained for each job step. Explain how to avoid each hazard in turn, and where appropriate, ways to avoid the hazard. Where feasible demonstrate correct procedures. Related health and safety standards will be discussed for each potential hazard.

Training materials:

- MSHA-produced job safety analysis materials for appropriate jobs
- 30 CFR Part 56
- MSHA-produced on-the-job training modules for appropriate jobs

I will demonstrate the job and explain what I'm doing, why I'm doing it, the expected results of my action, and the potential consequences of the action. I will explain the job steps in the order you normally perform them, and will identify ways you may be hurt doing each step. I will also show you ways to avoid being hurt. Please ask questions at any stage or ask if the step needs to be repeated. I will be asking you to demonstrate and explain each step back to me at the end of the training.

You have been assigned to _____.

The first job step is _____.

You do this by _____.

You could be hurt if _____.

You can keep this from happening by _____.

The MSHA standards that apply to this step are _____.

The second (etc.) job step is _____.

You do this by_____.

Health and Safety Aspects of the Task Assigned §46.5(b)(4); §46.6(b)(4) (Cont.)

You could be hurt if _____.

You can keep this from happening by _____.

The MSHA standards that apply to this step are _____.

Evaluation: I want you to demonstrate the job for me. I want you to perform each step, in order, and tell me what you are doing, why you are doing it, what you expect to happen, and any potential problems or dangers that might happen for each step.

I have been assigned to _____.

The first job step is _____.

I will do this by _____.

I could be hurt if _____.

I can keep this from happening by _____.

The second (etc.) job step is _____.

I do this by _____.

I could be hurt if _____.

I can keep this from happening by _____.

Instruction in the Statutory Rights of Miners and Their Representatives §46.5(b)(5); §46.6(b)(5)

(This course must be presented before the new miner or newly-hired experienced miner begins work at the mine.)

Course Length: from _____ to _____.

Competent Instructor(s)_____.

The purpose of this training is to inform miners of their rights under the Federal Mine Safety and Health Act of 1977.

Training Materials:

- Federal Mine Safety and Health Act of 1977 ("The Act")
- MSHA-produced booklet "A Guide to Miners' Rights and Responsibilities Under the Federal Mine Safety and Health Act of 1977" (OT 2)

The Act gives individual miners and their representatives the following rights:

- The right to have a representative of the miners accompany Federal inspectors during inspections at a mine.
- The right to obtain an inspection of a mine where there are reasonable grounds to believe that an imminent danger, or a violation of the Act or a safety or health standard, exists.
- The right to be paid during certain periods of time when a mine or a part of a mine has been closed because of a withdrawal order.
- The right to be protected from discrimination based on the exercise of rights given by the Act.
- The right to receive safety and health training.
- The right to be informed of, and to participate in, enforcement and legal proceedings under the Act.

Discuss any questions or, if necessary, repeat any rights they were unable to follow.

Evaluation: A 10-question true and false test. Return the corrected tests to the miner and discuss any misunderstandings or missed questions.

A Review and Description of the Line of Authority of Supervisors and Miners' Representatives and the Responsibilities of Such Supervisors and Miners' Representatives §46.5(b)(6); §46.6(b)(6)

(This course must be presented before the new miner or newly-hired experienced miner begins work at the mine.)

Course Length: from _____ to _____.

Competent Instructor(s)_____.

The purpose of this course is to acquaint miners with the persons in authority over them, the persons who may represent them for purposes of the Mine Act, and their respective responsibilities. This knowledge is critical for the miner's correct response to instructions and warnings and for the exercise of their rights under the Mine Act.

Your immediate supervisor is _____ and he/she is

responsible for _____.

In his/her absence, you will report to _____.

Your supervisor reports to _____and he/she is responsible for _____.

Your miners' representative is _____; he/she can be contacted _____.

Introduce the miner to each respective supervisor or manager.

Training Materials:

- Company organizational chart

Evaluation: Have the miner name each supervisor and give a brief description of his/her responsibilities.

Introduction to Company Rules and Procedures for Reporting Hazards §46.5(b)(7); §46.6(b)(7)

(This course must be presented before the new miner or newly-hired experienced miner begins work at the mine.)

Course Length: from _____ to _____.

Competent Instructor(s)_____.

The purpose of this course is to ensure that the miner knows how to report hazards he/she may encounter while working at the mine.

Training Materials:

- Copy of the mine reporting and safety procedures
- 30 CFR Part 50

If you should become aware of a potential hazard while you are working, you should do the following immediately.

- List in order appropriate reporting steps including: to whom, what method, what kind of information, etc.

Evaluation: Have the miner repeat or list the steps to reporting a hazard. Correct any mistakes before ending the session.

Practice under the Close Supervision of a Competent Person §46.5(e); §46.6(d)

(This course must be presented before the new miner or newly-hired experienced miner begins work at the mine.)

Course Length: from _____ to _____.

Competent Instructor(s)_____.

The purpose of this training is to monitor the practice and initial performance of miners when they are assigned to a new task. The miner must first receive hazard recognition training specific to the assigned task before practicing the task.

This practice training will be supervised and conducted by a person competent in performing the task. The competent person will be within sight and sound (hearing distance) of the miner during the training.

The miner will be observed for _____ .

Training Materials:

- MSHA-produced on-the-job training modules for appropriate jobs

Evaluation: Practice will continue until the miner can repeatedly and successfully perform each of the job steps required to accomplish the task in the appropriate order.

If the miner performs a significant step incorrectly, or performs a potentially unsafe act or an operation that could endanger others working in same area, the miner will be signaled by _____ and the miner will be retrained in the step or procedure.

Instruction and Demonstration on the Use, Care, and Maintenance of Self-Rescue and Respiratory Devices, if Used at the Mine §46.5(c)(1); §46.6(c)

(This course will be presented no later than 60 days after the new miner or newly-hired experienced miner begins work at the mine.)

Course Length: from _____ to _____.

Competent Instructor(s)_____.

The purpose of this training is to prepare the miner to use the appropriate self-rescue or respiratory device in an emergency or health hazard situation.

Training Materials:

- MSHA and/or manufacturers' manuals for the appropriate devices

When you are working in the _____ area, you need to wear a _____ respiratory device. You properly put the unit on by _____. The fit is then adjusted by _____. The proper filter for this unit is _____. The filter is replaced by_____. The filter should be replaced every _____. In an emergency indicated by _____, you will (if the units are cached) indicate the location(s) and put on the _____ self-rescuer using the following steps, in order, _____. You will then evacuate the mine by _____.

Evaluation: Have each miner explain to you when the device is to be used. Then have him/her demonstrate the proper method for putting on the unit, demonstrate adjusting the unit for fit, describe the type of filter used, and demonstrate changing the filter. (In the case of a self-rescue device, have the miner describe the procedure for evacuating the hazardous area.)

Correct any errors and have the miner repeat the process until satisfactory performance is achieved.

A Review of First Aid Methods §46.5(c)(2)

(This course will be presented no later than 60 days after the new miner or newly-hired experienced miner begins work at the mine.)

Course Length: from _____ to _____.

Competent Instructor(s)_____.

The purpose of this training is to provide a general overview of first methods.

Training Materials:

- Company first-aid procedures
- Recognized first-aid manual
- Bandaging material
- Splinting material
- A sample of a first-aid kit used at the mine
- Stretcher

Review the steps an employee should follow if they are injured or encounter an injured person.

Where feasible, have the miner practice each of the first aid methods demonstrated in the class. Training will be prioritized based on the ability to save a life.

Review the fundamental types of first aid methods such as cardiopulmonary resuscitation (CPR), control of breathing, controlling bleeding, treating for shock, treating burns, immobilizing broken bones, etc.

Examples:

If you injure yourself here at the mine and you are able to walk, you should

_____.

If you injure yourself here at the mine and you are unable to walk, you should

_____.

If you find an injured person, you should

_____.

A Review of First Aid Methods §46.5(c)(2) (Cont.)

The first aid kit(s) at this mine are located at

_____.

Emergency medical help can be obtained by

_____.

Some example accidents that may cause a person not to have a pulse are

_____.

The method for determining if a person has a pulse is

_____.

If they do not have a pulse, you should

_____.

Divide into pairs and check for each other's pulse. Let's practice performing one-person cardiopulmonary resuscitation (CPR) using this training mannequin.

Evaluation: Observe the miner practice sessions and make corrections as appropriate. At the completion of the class, have miners volunteer to serve as simulated victims. Describe an example of an accident and the type of injury the victim has received. Have small groups demonstrate on the volunteers the correct first aid procedures.

New Task Training (§46.7)

Health and Safety Aspects of the Task Assigned §46.7

(This training must be given before any miner begins works in a task in which he/she has no previous experience.)

Course Length: from _____ to _____.

Competent Instructor(s)_____.

The purpose of this training is to identify safe work procedures for each major step of the miner's assigned task.

Job hazards will be addressed during job training. Potential hazards will be identified and explained for each job step. Explain how to avoid each hazard, in turn, and (where appropriate) discuss or demonstrate ways to avoid the hazard. Related health and safety standards will also be discussed for each potential hazard.

Training materials:

- MSHA-produced job safety analysis materials for appropriate jobs
- 30 CFR Part 56
- Appropriate company-produced standard operating procedures

- Demonstrate each job step in order.
- Explain why the step is necessary.
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- Identify ways the miner may be hurt doing each step.
- Explain or demonstrate ways to avoid being hurt.
- Have miner ask questions at any point or indicate if the step needs to be repeated.
- Have the miner demonstrate and explain each step in the same fashion to the instructor.

You have been assigned to _____.

The first job step is _____.

You do this by _____.

You could be hurt if _____.

You can keep this from happening by _____.

The mandatory Federal health and safety standards that apply to this step are _____.

Health and Safety Aspects of the Task Assigned §46.7 (Cont.)

The second (etc.) job step is _____.

You do this by _____.

You could be hurt if _____.

You can keep this from happening by _____.

The mandatory Federal health and safety standards that apply to this step are _____.

Evaluation: I want you to demonstrate the job for me. I want you to perform each step, in order, and tell me what you are doing, why you are doing it, what you expect to happen, and any potential problems or dangers that might happen for each step.

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Annual Refresher Training (§46.8)

The following lesson plan can be used as a model to train miners for Part 46 annual refresher training.

Course Length: from _____ to _____.

Competent Instructor(s)_____.

The purpose of this training is to keep miners informed of conditions at the mine that present potential health or safety hazards. This training will address the working environment, equipment, mining processes, communications, and causes of accidents or near misses that have occurred. Ways to avoid or eliminate the causes of accidents or near misses will also be discussed or presented.

Training Materials:

- MSHA accident data
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- Holmes Safety Bulletins
- Input from miners or their representatives

We are planning to change the method that we _____. The new process will _____. Some things that you need to be aware of are _____. Do you see any other things that we need to consider or you would like to discuss?

During the last _____ our industry has experienced the following types and numbers of accidents _____. Is there anything we need to consider to prevent these types of accident trends from happening at our mine?

During the last _____ we have experienced the following accidents (near misses) _____.

I will briefly describe the events and conditions of each accident (near miss) and we can discuss ways to prevent a recurrence.

Evaluation: Class participation and responses to questions and discussions. Discuss 30 CFR 56/57.15020.

Additional Training Materials

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An order form is on the next page.

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