

DEVELOPING TOOLBOX TRAINING MATERIALS FOR MINING

By Floyd D. Varley¹ and C.M.K. Boldt²

WHAT IS TOOLBOX TRAINING AND WHY USE IT?

Toolbox training is often described as short, informal training conducted at a worksite by technically competent persons for the benefit of a work team. The key feature of toolbox training is the focus on a work team and what is important to that group in its workplace. Toolbox training conducted by peers can connect miners and establish the feeling that the hazard is a real threat to them. This feeling can bridge the gap between delivery of a safety message and behavioral changes that can prevent an accident.

Toolbox training is a popular form of “maintenance” training that should *not* be used to teach a new skill. The 10- or 15-minute toolbox session is simply too short a time to teach or learn a new skill and test for skill development. However, the toolbox format is an excellent way to inform workers of changes in workplace rules, conditions, or hazards by bringing the discussion of change to the level of the work group and suggesting how a change will affect the way workers perform their jobs.

Toolbox training should be structured to address a very specific hazard. That is, the hazard source should be identified and the effect of the hazard on the worker described. The temptation to discuss a safety subject in broad terms will result in an equally vague result. For instance, discussing “equipment guards” is inappropriate for a 15-minute training session. There simply is not enough time to cover all the hazards and their remedies. A more appropriate topic would be “placing guards on a conveyor return roller” or “hazards of cleaning a conveyor return roller.” Each topic is concise enough to allow the trainer time to define a particular threat to the safety of miners and discuss ways to defend against that threat. The clearest way to a safe workplace is to identify hazards methodically and eliminate them. This cannot be done with sweeping, generalized training. Some best practices that will protect a worker from the hazard should be presented, and the hazard should be located at the specific worksite.

Toolbox training is an opportunity for the work team to participate in learning and share experiences and knowledge,

often through storytelling. Storytelling is an ancient form of passing along information in an entertaining way. It is entertaining because it draws the listener in with imagination and creativity. Stories told within work groups are a way for miners to exchange experiences in which they made mistakes that resulted in an accident or a near-miss and learned a valuable lesson. Thus, co-workers can learn from others without the pain or fear that accompanied the storyteller’s learning path.

To encourage these shared experiences, the people in the group must be comfortable with one another. Participation doesn’t stop with listening to a near-miss story or informing the group of an unsafe work practice. Participation by sharing experiences, knowledge, and skills should lead toward action in changing the unsafe tool, practice, or machine (Wallerstein, 1992).

This power to change is called empowerment. Empowered workers use toolbox training sessions to discuss a problem; direct their own knowledge, experience, and talents in the context of their work environment to solve the problem; and put into practice what they have learned by sharing (Baker, 1992). A worker is much more likely to implement changes they have contributed to creating than changes forced upon them.

Toolbox training functions best when the group size is small (under 20) and composed of workers with similar job functions. While combining all workers on a shift or multiple shifts may be convenient, the level of participation will drop dramatically as group size increases and participants are less connected. Similarly, when the work group participants are from different job functions, keeping the materials relevant to the individual becomes more difficult. The role of management in the toolbox training system is to communicate among various groups so that all groups at a mine site are hearing the same message. In very small operations, combining work groups can be productive if the trainer can promote open discussions and lead the group to solutions that address the needs of all and not let one group or individual dominate the discussion.

WHY USE NARRATIVE METHODS

An effective communications tool is to use stories as a means of describing a hazard and its consequences. Historically, using stories to transfer knowledge between individuals of the same

and different generations is well established. All good stories share the same elements required to communicate safety principles. Stories require a setting (the part of the workplace), a plot (the circumstances that lead to a hazard), the solution (best practices), the lesson (what can happen), and the result (what will be done to prevent the hazard) (Dennehy, 1999).

¹Safety engineer.

²Civil engineer, Spokane Research Laboratory, National Institute for Occupational Safety and Health, Spokane, WA.

Toolbox training, by definition, is not a place for long epic tales. However, telling stories, the narrative method, provides a way to open the door to empathy among workers regarding one individual's hazardous experience. The difference between toolbox training and traditional storytelling is the need to involve the workers by having them take part in the story.

The narrative toolbox method begins with a short true story surrounding a hazardous condition that resulted in an accident. The setting and the plot have been established. The result, usually a bad one, for the individual in the story is also revealed. The next step is to lead the workers through the remaining parts of the story and guide them in rewriting the story as it applies to them, their workplace, and their reactions to the hazard.

The first stop in story immersion is to bring out what best practices the victim did *not* use. Group discussions then lead to

the question, "Could this happen here?" Now is the time to try to get the workers to open up about similar experiences they have had and what they learned. Following these revelations, the group should discuss the result for the team, that is, what will be done to protect against this hazard. This section of the training will, if successful, produce work for management in terms of things that must be acted upon, such as purchasing and installing signs or barriers, installing different guards, or scheduling follow-up task training.

Effective use of storytelling and open discussions will result in time well spent in narrative toolbox training sessions. Writing down what the workers said and following up with feedback on the recommendations will help toolbox training be a part of an effective safety and health program.

HOW TO BUILD A TOOLBOX

Identify a Subject:

The first step in creating toolbox training materials is to identify a subject relevant to the work group. Obvious examples would be accidents that have occurred in the work group, at the worksite, or at other sites within the company. Accidents outside of the work group can also be meaningful sources of training topics if the conditions or circumstances of that accident are present at the worksite. Other topics are the introduction of new work rules or policies related to safety, as well as new equipment or procedures that are about to be introduced in the workplace. Toolbox training can also be an effective means to reinforce topics related to citations issued by the Mine Safety and Health Administration (MSHA) or faults noted in your own safety audits. Special or nonroutine events, such as a construction activity, a weather episode, an intense production period, or an extensive maintenance activity, could be used as toolbox training topics to increase awareness of hazards associated with these events.

In selecting a topic for toolbox training, remember to narrow the subject to specific actions, equipment, and/or hazards so that the short training period can both fully explore the subject and develop solutions.

Describe the Hazard:

After selecting the subject to develop into a toolbox talk, make a list of the hazardous characteristics of the subject. Describe what type of accidents and injuries can occur and the circumstances that create a hazard. This exercise will help narrow the subject to the specific topic to be covered in the training session. For instance, a subject such as housekeeping in the shop can cover several potential hazards. To specify a hazard such as slips and falls or fire will direct the housekeeping discussions to one of these very different aspects of housekeeping.

Identifying the potential result helps build empathy for the victim and interest in the topic by clearly stating the full range of consequences that could result from this hazard. Focusing

only on fatalities can dilute the impact of a safety message because most people are not willing to recognize such a severe result as an outcome for themselves or their peers. Most miners will never experience a fatality in their workplace, and so news of such an event usually carries with it the impression that it happens to other people. Most miners do feel vulnerable to injuries and may better identify with the potential hazard and personal impact of these injuries because they or someone they know has probably had an on-the-job injury. A miner may take to heart a message about a broken arm that cost several week's wages more readily than a discussion of the same hazard in which someone died.

By noting the circumstances that created this hazard, a trainer can create "what to watch for" lists to set the stage for discussions. This list is intended to provide a mental audit for miners to remind themselves of the conditions that could create a hazard. The list should relate to where potential hazards exist at a worksite. Listing circumstances not relevant to the work group, even if they may create more substantial risks, may diminish the message by creating a link to someone other than the miner. An example would be to note icy conditions as a potential slip and fall hazard at a mine that does not experience freezing weather.

Use a Story To Improve Empathy and Interest:

Developing a sense of empathy toward the victims in a story of a real accident or incident is one of the best ways to convey the circumstances and consequences of a hazardous condition. The most common example of this tool in the mining industry is the use of MSHA's fatalgram. These short reports offer a basic description of a fatal accident.

In addition to fatalgrams, MSHA has listed on its website all reportable accidents that have occurred in U.S. mines. These reports are available through the MSHA Data Retrieval System at <http://www.msha.gov/drs/drshome.htm>. This resource can be used to look at accidents reported by other mines so enough information can be acquired to frame a story for a training talk.

The system provides accident information by mine or mine operator. NIOSH is currently working on another web-based accident information source that will allow searches by type of accident or commodity being mined. A casual search of neighboring mines or mines in the region will usually produce a good supply of story material. Mines with different mining methods and mined commodities will have many of the same hazards facing employees.

Story lines can also be developed from newspaper articles about accidents in the community. Many subjects, such as hand tool use and misuse, can be covered by stories found in local papers. Begin by clipping these stories and building a toolbox talk around the stories.

In presenting a story, strive to duplicate the hazard description effort.

- Identify the hazard and the circumstances that created the hazard.
- Finish with the result, the injury to the victim. Embellishments of the story may help sell the story as long as it can still be claimed as a true story.

Offer Best Practices:

After telling the story, the next step in the process is to make sure the injury result of the story is not repeated at the mine. Offer ideas for best practices that, had they been followed, would have prevented the accident. Reinforcing best practices followed in the story is also a good idea as it can help demonstrate that going part way in safety efforts is often not enough. Best practices are intended to be springboards to discussion.

Visual aids such as pictures of someone doing the task the right way or the wrong way can help reinforce best-practice discussions and may help the competent trainer better understand the material.

Elicit Participation:

A miner's active participation in the training is probably the most important and beneficial aspect of narrative-style toolbox training. A way to elicit participation is by asking leading or open-ended questions. Examples of these common questions, when to use them, and what to expect are described below. The appendix to this paper is an example of a training module.

- **"Has anyone here had a similar accident or a close call or know of one?"**

This question seeks to link the work group to the potential hazard. If miners feel free to express themselves, the trainer may find out about holes in the company's systems. For the future

success of the training method and communications in general, information revealed in this forum should not lead to disciplinary actions. It is reasonable to council an employee individually if an incident should have been reported. When a employee volunteers an experience, it is important to follow up with the question—

- **"What do you do differently now to prevent the accident?"**

If there are no volunteers willing to admit a similar experience, add a question to connect the story to the miner's world, such as—

- **"What could the person in the story have done to prevent the accident?"**

Much like the follow-up to an employee's story, this question opens discussion to solving the potential problem. In all cases, connect the message to today with—

- **"Where in our mine could this same accident happen?"**

To reinforce the best practices, encourage discussion with a question such as—

- **"Are there other best practices we do or could use here?"**

This will open the floor to new ideas on solving the problem and may lead to the follow-up question—

- **"Is there anything that prevents us from using these best practices?"**

Other questions that connect the previous safety training to the present can be used, such as **"Does anyone remember what we talked about last week?"** or **"Does anyone have a suggestion for a future safety topic?"** It would also be useful to add follow-up questions such as **"Last week Joe said he'd check the first aid kit. Was it done?"**

Document:

The need for documentation will be based on how the toolbox training is to be used. At a minimum, the names of the miners who participated in the training should be recorded. If the intent is to use these training sessions toward Part 46 annual refresher requirements, each participating miner and the competent person leading the training must print their names on a log (see appendix) that identifies the talk, the date, the time spent, the location, and a note that the training is part of the 46.8c annual refresher requirement. In addition, Part 46 requires that training plans include a reference to the subjects covered in toolbox training if the toolbox meetings are to be used to satisfy the minimum training time requirements. The person responsible for training at the mine must sign either the log or another document that summarizes the logs of several training sessions to certify that training has been completed and acknowledging that he or she knows the punishment for false certification.

CONCLUSION

Toolbox training can be a valuable part of a training program. It can be used to share safety information and provide a structured, but informal, forum for improving safety at a mine.

Toolbox training requires preparation, active participation, and follow-up, but it can stimulate attention to everyone's health and safety on the job.

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TAILGATE TRAINING



PERSONAL PROTECTION EQUIPMENT AND PRACTICES - MODULE 2B

HAZARD - Loose clothing, jewelry or hair catching in equipment

RESULT - Cuts, burns, broken bones, death

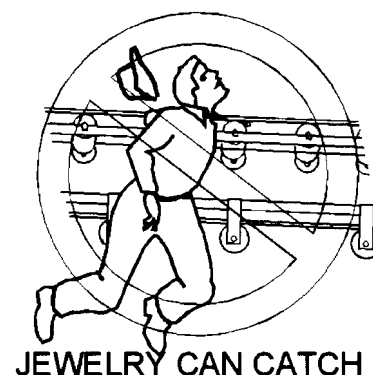
LOOK FOR - Loose clothes, jewelry, hair, pinch points

REAL ACCIDENTS: On a cold February evening, a 20-year-old laborer with 1 year of experience was checking a head pulley. The sleeve of his sweater was caught by the pulley or edge of the belt, pulling in his arm and crushing it. **40 DAYS LOST.**

BEST PRACTICES:

- ✓ Don't wear ragged, loose, or hooded clothing.
- ✓ Keep sleeves and pant legs/cuffs tight.
- ✓ Keep long hair tied up and inside hard hat.
- ✓ Don't wear necklaces, scarves, or rings during work.
- ✓ Make sure all pinch points are well guarded.

WHAT ABOUT OUR SITE?	COMMENTS
Who remembers what we talked about last week? Was there something we needed to fix?	
What can get caught in pinch points? (Jewelry, shovels, pry bars, clothing, hair)	
Has anyone had or seen an accident or near-miss with pulleys?	
What places/jobs in our mine have a high risk for catching clothing? (Show us.)	
Is there any other way to reduce the hazard? (Hair and clothing code, add/fix guards)	



TRAINING RECORD

DATE: _____ MSHA MINE/CONTRACTOR NAME and ID No.: _____

TRAINER: _____ LENGTH: _____ LOCATION: _____

☐ Check If this is Part of Annual Refresher Training (CFR 30, 46.8.c)

PERSONS TRAINED (PRINT FULL NAME):

I certify that the above training has been completed: _____

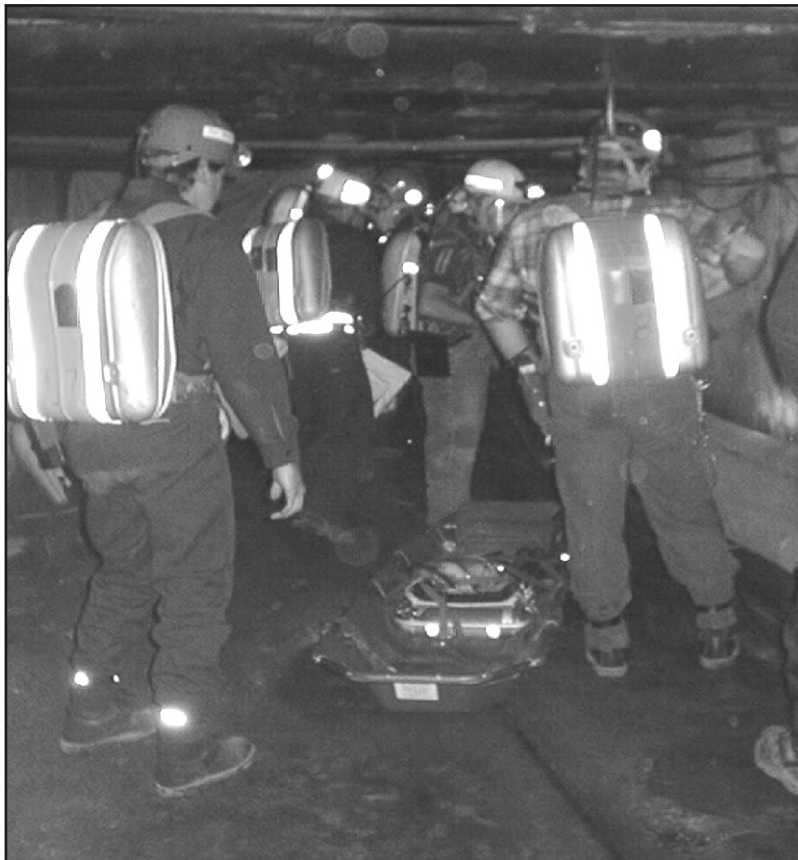
False certification is punishable under §110(a) and (f) of the Federal Mine Safety and Health Act



IC 9463

INFORMATION CIRCULAR/2002

Strategies For Improving Miners' Training



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Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health



Information Circular 9463

Strategies For Improving Miners' Training

Robert H. Peters, Editor

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CONTENTS

Page

Introduction	1
Principles of Adult Learning: Application for Mine Trainers	3
Getting Through to Greenhorns: Do Old Training Styles Work With New Miners?	9
An Overview of the Evaluation Process for Mine Trainers	13
Innovative Alternatives to Traditional Classroom Health and Safety Training	19
Considerations in Training On-the-Job Trainers	27
Releasing the Energy of Workers To Create a Safer Workplace: The Value of Using Mentors to Enhance Safety Training	35
Developing Toolbox Training Materials for Mining	39
Communicating the Same Message with Different Media: An Example from Hearing Loss Prevention	45