

Problem in the Shop

Instructor's Copy

Coal Mining Technology Program
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Springfield, Illinois

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Introduction

This document contains most of the materials needed to use the exercise. The main part of the document is the instructor's copy. It tells how to use the exercise, presents the objectives, the master answer sheet, the scoring key, and discussion notes to be used following the exercise. The last part of this document is three appendices. Appendix A is the exercise problem booklet. This booklet can be duplicated locally. The booklets are reusable. One is needed for every person in the classroom. Appendix B is the answer sheet. Copies of this answer sheet must have the invisible ink answers that appear in Appendix C printed on them.² Answer sheets are consumable. One is needed for each small group of 3 to 5 persons who work the exercise.

Exercise Summary

Read this section first. It determines if the exercise is appropriate for your classes. If you choose to use the exercise, examine the table of contents and review the remainder of this document.

<u>Type:</u>	Invisible ink
<u>Audience:</u>	First line supervisors, mine maintenance personnel and mechanics, and miners
<u>Length:</u>	Twelve questions (35 minutes for administration plus 35 for discussion)
<u>Skills:</u>	Communicate one's authority and concerns to employees, while enhancing their dignity and worth Distinguish between hearsay and fact when attempting to determine the guilt or innocence of a person, or the details of an event Order actions in terms of priorities when a situation requires immediate response and longer term investigation Recognize the limits of one's responsibility given a particular supervisory role and context Document inappropriate behavior or poor performance of workers such that worker rights are respected and due process procedures followed Conceptualize costs of stolen, misplaced, or damaged tools, supplies and equipment in terms of safety, productivity, and dollars
<u>Location:</u>	Equipment maintenance shop for a coal mine
<u>Problem:</u>	You have recently been transferred to another mine and assigned to supervise the 8 mechanics in the maintenance shop. The mine superintendent is worried about tool pilferage and loss in your department. Soon after you are on the job you hear rumors that Bill, the best and most senior mechanic in the group, has been stealing tools. A crisis develops when equipment must be repaired, but the critical tool needed to do the job is missing. Other mechanics say Bill knows where the tool is. You must decide what to do to maintain safety and production, and to deal with the problem of the missing tool. A few

² You can do this yourself if you have the proper equipment, or you may obtain copies of preprinted answer sheets from MSHA, National Mine Health & Safety Academy, Dept. of Instructional Materials, 1301 Airport Road, Beaver, WV 25813-9426 phone 304-256-3257, fax 304-256-3368 or email to lord-mary@msha.gov.

How to Use This Exercise

1. Look at the performance objectives. Decide if the exercise is relevant for your mine training class.
2. Work through the exercise with the developing pen and score your responses.
3. Read the master answer sheet for the exercise. Look at all the answers.
4. Read the "Instructor's Discussion Notes" for the exercise.
5. Become thoroughly familiar with the problem so that you can present it to your class without reading it. Put the background and problem statement on an overhead projector so you can use these to help introduce the problem.
6. When you present the exercise to the class:
 - Give each person an exercise booklet, and each group of 3 to 5 persons an answer sheet and a developing pen.
 - Demonstrate how to select and mark answers using the developing pen.
 - Go over the instructions for doing the exercise with the whole group.
 - Explain the problem making sure everyone understands the problem situation.
 - Have the class members work the exercise.
 - When the class members finish, have them figure up their score using the instructions at the end of the exercise.
 - When everyone has finished, ask class members to discuss the exercise. Add your own ideas.

Performance Objectives for Problem in the Shop

Objective number	Capability verb(s)	Description of required performance and conditions under which it is to occur
1. PM/IC ³	Recognize Respect	Worker dignity and rights
2. PM/IC	Discriminate	Among effective and ineffective ways to communicate with employees about work related problems
3. PM/LK	Distinguish	Between fact and hearsay when dealing with problematic events and allegations of worker wrongdoing
4. PM	Order Prioritize	Actions in terms of priorities when dealing with personnel and operational problems involving missing equipment and possible theft
5. PM/LK	Identify Recognize	Limits of one's supervisory role with respect to documentation and correction of employee problem behavior or alleged problem behavior
6. PM/LK	Recognize	Effective means for documentation of factual details related to problematic events and behaviors in the work place
7. PM	Conceptualize Estimate	The costs of stolen or lost tools and equipment in terms of morale, safety, productivity, and dollars

³ Skill and knowledge domain abbreviations:
 PM = personnel management
 IC = interpersonal competence
 LK = legal knowledge

Master Answer Sheet for Problem in the Shop

Use this answer sheet to mark your selections. Rub the developing pen gently and smoothly between the brackets. Don't scrub the pen or the message may blur. Be sure to color in the entire message once you have made a selection. Otherwise you may not get the information you need.

Question A (Select as MANY as you think are correct.)

1. [You don't know that Bill is guilty.]
2. [Correct! But you find they are poorly maintained and incomplete.]
3. [The crew becomes angry. You are accusing everyone of theft when
[there may be no theft or only one person who is a thief.]
4. [Correct! This is open, honest, fair, and it invites them to help solve the
[problem.]

Question B (Select as MANY as you think are correct.)

5. [Correct! Every \$100 worth of lost tools and parts costs many tons of
[coal production.]
6. [This angers the crew. You appear self-centered and concerned about
[only your own needs. There may be no pilferage. Try again!]
7. [The crew becomes angry and resentful. You have not made an effort
[to correct the problem or allowed them to do so. Try again!]
8. [Correct! Poor maintenance of equipment often leads to accidents.
[Mechanics also are at greater risk of injury when proper tools are not
[available and they must improvise.]
9. [Correct! This calls attention to existing procedures and is a first step in
[correcting the problem.]
10. [Correct! They suggest routine use of the tool crib check-in and check-
[out procedures by all persons, and good housekeeping.]

Question C (Select as MANY as you think are correct.)

- 11. [Correct! The tool is missing and not signed out.]
- 12. [Later. There are other more important things to do now.]
- 13. [Correct! Repairs need to be made immediately to resume production
[and to maintain safety.]
- 14. [If the tool is missing, report it later. You need to do something else now.]
- 15. [This is dangerous and illegal. Try again!]

Question D (Select as MANY as you think are correct.)

- 16. [Correct! Larry is angry. He repeats, "Bill knows where the tool is!"]
- 17. [This would not be effective. Everyone knows about the missing tool.
[This action would be bad for morale.]
- 18. [Correct! No one knows where the tool is. Bill says he hasn't seen it
[since last week.]
- 19. [The problem is serious. It needs your attention.]
- 20. [He is annoyed. He says, "I put you in charge to take care of things like
[this!"]
- 21. [This violates Bill's rights and it damages your credibility. If you find the
[tool it won't mean Bill has stolen or intends to steal the tool.]

Question E (Choose only ONE unless you are told to "Try again!")

22. [You have no proof of Bill's pilferage. Try again!]
23. [Correct! You talk to Bill about these matters, but he gets angry and]
[says you are accusing him of stealing. Do the next question.]
24. [This is unfair to Bill and makes the situation worse. Try again!]
25. [Your request insults the mechanic and is unfair to Bill. This sneaky]
[behavior also damages your leadership credibility. Try again!]

Question F (Choose only ONE unless you are told to "Try again!")

26. [This action may make you an accessory to theft. Try again!]
27. [Correct! He says earlier he took the tools from one mine to another in]
[his truck, and forgot to return them to the shop. Do the next question.]
28. [You have exceeded your authority. You also have not followed]
[normal due process procedures. Try again!]
29. [You are condoning Bill's problem behavior, and taking responsibility]
[for the tools when he should do so. Try again!]
30. [This action doesn't address and attempt to correct the problem. It may]
[be seen as a weak, ineffective and sneaky. Try again!]

Question G (Select as MANY as you think are correct.)

31. [Correct! Good due process procedures require you to tell Bill what you]
[intend to do. You should do this calmly and quietly.]
32. [Correct! This information is needed as part of the record.]
33. [This doesn't help. The miner looks away and says nothing.]
34. [Correct! You find the tools were not signed out.]
35. [This is unwise and in violation of company policy.]
36. [Correct! Accurate documentation is essential.]

Question H (Select as MANY as you think are correct.)

- 37. [Your report should stick to the facts about this event.]
- 38. [Correct! These particulars soon can be forgotten if not recorded.]
- 39. [Correct!]
- 40. [These facts do not belong in your report.]
- 41. [Correct! This person is a witness to the event.]
- 42. [Correct! This is necessary to clearly identify the tools.]
- 43. [Correct! A record of what you did and in what sequence is necessary.]
- 44. [Correct! This helps establish that Bill knew the company procedures.]
- 45. [Correct!]
- 46. [Your report should not include such speculation.]
- 47. [Correct! Bill's explanation should be quoted in your report.]
- 48. [Your report should stick to the facts surrounding this event.]

Question I (Select as MANY as you think are correct.)

- 49. [Correct! Your oral and written reports should be factual and complete.]
- 50. [You have no evidence to substantiate this.]
- 51. [You have no evidence for this. You have exceeded your responsibility.]
- 52. [You don't know if he is a thief. You have exceeded your responsibility.]
- 53. [This should not be a concern now. Bill is your best mechanic. He has]
[violated company rules. His problem behavior may be corrected.]

Question J (Select as MANY as you think are correct.)

54. [Correct! Theft can result in termination. A miner's wages over a period of years are worth thousands of times more than a \$120 set of tools.]
55. [These conditions do not necessarily follow from being a thief, or from being accused of theft.]
56. [Correct! Criminal charges and records harm both the individual and his or her loved ones.]
57. [Correct! It is often more difficult for a person to work effectively with co-workers and supervisors after charges of theft or proof of theft.]
58. [Correct! Most workers are honest and do not like persons who steal. Even if Bill is not a thief, many persons in his company may think he is.]
59. [Skill loss would not be immediate, but could come about from not being able to get a job after being fired.]
60. [Correct! Rumors about "problem" workers spread far and wide. This makes it difficult for the worker to change jobs or to advance.]

Question K (Choose only ONE unless you are told to "Try again!")

61. [Try again!]
62. [Try again!]
63. [Try again!]
64. [Try again!]
65. [Correct! \$30 per ton times 4% profit = \$1.20 profit per ton. 100 tons times \$1.20 = \$120 (tool cost). Do the next question.]

Question L (Choose only ONE unless you are told to "Try again!")

66. [Not possible! The mine is producing near capacity. Extra labor and equipment would be required and costs would rise. Try again!]
67. [Correct! This is the only immediate good option. If losses continue at this rate, the company will lose \$852,000 or 35.5% of its annual profit. End of Problem.]
68. [Not likely! Prices are dropping. Competitors on the spot market are selling well below \$30 per ton. Try again!]
69. [The profit margin has dropped to 2.6 cents on the dollar. If this continues the mine will probably close and hundreds of company and community jobs will be lost. Try again!]

Finding your score

Number of "correct" answers you colored in = (1) _____

37 minus number of incorrect answers you colored in = (2) _____

Add the numbers in blanks one and two to get your total score = (3) _____

Highest possible score = 69

Lowest possible score = 0

Instructor's Discussion Notes for Problem in the Shop

Use the information presented here and on the master answer sheet, your own ideas and experience, and those of the miners in your class to discuss the exercise after it is completed. Group discussion can help strengthen knowledge and skills, correct errors, and relate the exercise content to the experiences of the miners. After they have worked the exercise, miners enjoy discussing the problem. They also frequently think of better ways to respond to a problem than those listed among the answers. The purpose of the exercise is to help miners think about and remember knowledge and skills they may someday need. The discussion following the exercise can contribute to this goal and tailor the exercise content to the needs of the group you are training.

It is helpful to show overhead transparencies of the answers on the master answer sheet during the discussion, while the miners look at their problem booklets. This allows you to lead the group through the exercise and to discuss all the answers to each question. Most of the information about why particular answers are correct or incorrect is given on the master answer sheet.

The following notes provide additional information for you to discuss with your class. Read through and think about the notes before the class. Don't read the notes to the class members. This would be boring and ineffective. Rather, incorporate the ideas you find here with your own ideas and make these points at the appropriate place in the discussion of the exercise.

Question A - The correct answers are 2 and 4. The supervisor needs to check the tool crib records, and he needs to share his concerns with the crew about the missing tools. It is ethically and legally wrong to confront persons or to suspect them of theft on the basis of rumor (1). Mechanics often carry tools in their lunch buckets and jacket pockets when they are at work. Assembling the shop crew and warning them to stop stealing tools (3) conveys that the foreman already has decided they are thieves. This is unfair, unethical, divisive and will be perceived as such.

Question B - Answers 5, 8, 9, and 10 are correct. The problem of missing tools should be examined from the perspective of production, safety, and worker morale. There is a tendency to think and talk about missing and stolen tools in terms of who is guilty, how to catch the guilty party, and what should be done to that person. However, at this point the main concern of the supervisor should be for the safety, morale, and productivity of the shop crew. A full complement of well maintained tools is needed to meet these goals. A skilled supervisor can help the shop crew achieve and maintain this more positive and productive attitude, as opposed to adopting a blaming and punishing outlook. The supervisor who demands no further pilferage to prevent damage to his or her career (6) appears self-centered, insecure, weak, and unfair because he or she presumes theft. Threatening the crew with having to purchase their own tools (7) is wrong because it presumes guilt, and because threats generate hostility that can escalate into unproductive and divisive shouting matches that do nothing to solve the problem.

Question C - The correct answers are 11 and 13. First, it should be established that the tool is missing and not checked out. If the tool is not missing the problem becomes one

of errors in procedures and communication among the shop crew, not a potential problem of theft. When it is established that the tool is missing, the immediate concern is to get a replacement tool so that repairs can be made to the shuttle car to maintain safety and production. It is inappropriate to immediately start an investigation about the missing tool (12) because attention must be directed to repairing the brakes on the shuttle car if safety and productivity are to be maintained. The shop foreman should be able to act on his own without involving the mine superintendent at this point (14). Telling the section foreman to keep the shuttle car in operation with no brakes is dangerous and illegal (15).

Question D - The correct answers are 16 and 18. The shop foreman needs to talk to Larry and the section mechanic, to learn more about the facts related to the missing tool. Similar discussions should take place individually between the shop foreman and each mechanic at the end of the shift (18) or at other convenient times during the shift. The purpose of these discussions is to gather information about where the tool is and how it came to be missing. Making a lunch box check for each mechanic at the end of the shift (17) is ineffective as well as demeaning to the crew members. The missing tool incident would be widely known. A thief already would have removed it from his or her lunch box. The lunch box check also communicates that the shop foreman believes one of the mechanics has stolen the tool, a position for which there is no evidence. Just waiting and hoping the problem will go away (19) is unwise and invites more problems in the future including loss of respect of the crew and accusation of poor supervisory performance. Asking the mine superintendent what to do (20) is a clear signal that the shop foreman can't handle this job. It is good to ask for help, but not until one has tried to solve a problem. Secretly looking in Bill's lunch box and jacket for the tool (21) is wrong because it invades Bill's privacy and because if the tool is found, it proves nothing. Bill could have placed the tool there in the normal course of his work and forgotten he did so. Tools in lunch boxes or clothing are problematic when the miner is going off the property, not when he or she is working on mine property.

Question E - The correct answer is 23. The foreman should talk with Bill privately about the need to follow check-out procedures as a way to prevent missing tools. The supervisor should not accuse Bill of theft (24) or take disciplinary action against him (22). There is no proof of theft on anyone's part. Privately asking another mechanic to watch Bill and report his suspicious behavior to the shop foreman (25) will be perceived as sneaky and manipulative. Asking workers to inform on one another is demeaning, destroys morale, and damages the credibility of the supervisor.

Question F - The correct answer is 27, to speak privately to Bill and ask for an explanation. The foreman should not pretend he has not seen the tools and then later report the observation to the superintendent (30). This is unfair to Bill and also an ineffective means to deal with the problem. If Bill did not return the tools, it would put the foreman in a bad spot. Making a deal with Bill to let him go if he doesn't take tools in the future (26) is unwise and illegal. This action compromises the foreman. It invites Bill to blackmail or take advantage of the foreman in the future. It makes the foreman an accessory to theft. Telling Bill that he is suspended (28) is both premature and beyond the scope of responsibility of the foreman. More evidence is needed and due process procedures must be followed prior to suspension. If Bill had been more cooperative in

the earlier meetings with the foreman, asking him to sign the tools out on the spot (29) might be a gentle way to correct the problem. But now, this response is one more instance of assisting Bill in not following the tool check-out procedures.

Question G - The correct answers are 31, 32, 34, and 36. The foreman should immediately tell Bill what he is going to do, e.g. return the tools, check to see if they were signed out, sign them in, and write down the facts surrounding the incident including the date, time, location, name of the other miner present, the name and ID number of the tools found in Bill's truck box, the circumstances under which the tools were found in Bill's truck box, and the actions that the foreman took. Asking the other miner present for his or her name (32), and informing that miner that he or she will be named as a witness is wise. Asking the miner to speculate on why the company tools are in Bill's truck box (33) is inappropriate. The foreman should not take the tools home with him intending to bring them back the next morning (35). This violates company policy and the foreman could be charged with bad judgment or theft.

Question H - Answers 38, 39, 41, 42, 43, 44, 45, and 47 are all correct because they provide factual information related to this particular event, e.g. the foreman's observation of Bill transporting company tools off the property. A summary of the earlier rumors about Bill being a thief (37), factual statements about Bill's strengths and weaknesses (40), speculations on why he had the tools (46), and a reminder that Bill is the best and most senior mechanic in the shop (48) provide no facts related to this particular incident. Making reference to the notes from the earlier meetings with Bill (44) does provide relevant factual information related to this event because it establishes that Bill was informed of the company procedures for checking tools in and out.

Question I - The only correct answer is 49. It is important that the foreman's written and verbal report fully document the facts surrounding the events he observed. The foreman should not suggest Bill's earlier theft of tools (50). There is no evidence for this. Suggesting that a warrant be obtained to search Bill's home (51), or recommending Bill receive counseling for his "stealing problem" (52) exceed the role of the foreman's responsibility and could be construed as slander. At this point, Bill is guilty of not following company procedures, not of theft of tools. It is likely that he will be able to keep his job and it may be in the best interest of the company to keep him employed because he is a hard worker and a good mechanic. Therefore, it is premature to be thinking about a replacement for Bill (53). The foreman's concerns should be focused on safety, productivity, morale, and making the shop a good place to work.

Question J - Answers 54, 56, 57, 58, and 60 are all correct. The meeting should focus on the purpose for the company tool policies and the potential problems from not following these procedures. The discussion should not focus on Bill or his behavior. It is well documented that theft behavior often results in large overall loss of income because persons lose jobs and become unemployable (54). Patterns of alcohol and drug abuse may be aggravated by the stress related to being accused of being or found to be a thief and subsequent loss of a job, etc. (55), but cannot be said to be caused by this. Patterns of drug, and alcohol abuse are believed to be a complex interaction of genetic predisposition, social orientation and values, and learned behavior. Theft, or the allegation of theft, also prejudices persons and agencies against the worker and his or

her family including dependent children (56). Social, community, and work relationships often become more difficult after theft is alleged or proven (57). Fellow workers often lose respect for a person if they believe he or she is a thief (58). Mechanics are especially wary of other mechanics who steal tools. Most mechanics own thousands of dollars of personal tools and adhere to a strong set of ethics concerning the care, borrowing, and use of these. Loss of professional skills as a mechanic (59) could occur for a worker like Bill, but only if he loses his job and is not able to find new employment for a long period of time. Once a person develops a reputation as a "problem worker," it is often difficult to transfer to other jobs within or outside the company (60). Even if Bill is only guilty of not following company procedure, fellow workers and management personnel may believe he is a problem worker because of his behavior in this situation.

Question K - The correct answer is 65. Confirmation of this answer is shown in the arithmetic in the invisible ink answer. Persons often are unaware of how many extra tons of coal must be mined to pay for lost or damaged equipment, and you may find persons who refuse to believe this. This and the next question provide an opportunity for interesting class discussions that can help to better inform employees about the need to care for tools, equipment, and materials.

Question L - The immediate and best solution is to cut waste and loss of equipment, materials, supplies, and production (67). Long term solutions could include a) greater mechanization and automation and a subsequent reduction in work force size, b) selling the mine to another company, and c) shutting the mine down and waiting until the coal market improves. Can you think of others? It is doubtful that investors who provide capital for the mine will be willing to continue with a 2.6% profit margin (69). Other investments provide opportunity for greater returns. Attempting to make up the losses through increased production (66) requires more equipment and work hours, and it wastes remaining coal reserves on the property, reserves that will probably become more valuable in the future. The world market, not the company, determines the sale price of coal, although good company management thinks and plans well ahead and makes the most of market opportunities. You may wish to point out that Table 1 is designed to illustrate the relationship between loss, profit margins, and the ability of the mine to continue operating. The loss values for any mine or company can never total zero, but they can be made smaller. If management and employees fail to work together to keep losses low, they may exceed the value allowed in the mine plan, and they may contribute to the failure of the mine, the parent company, or both.

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Scoring Key for Problem in the Shop

The correct answers are marked with an asterisk.⁴

Question	Answer Number						
A	1	2*	3	4*			
B	5*	6	7	8*	9*	10*	
C	11*	12	13*	14	15		
D	16*	17	18*	19	20	21	
E	22	23*	24	25			
F	26	27*	28	29	30		
G	31*	32*	33	34*	35	36*	
H	37	38*	39*	40	41*	42*	43*
	44*	45*	46	47*	48		
I	49*	50	51	52	53		
J	54*	55	56*	57*	58*	59	60*
K	61	62	63	64	65*		
L	66	67*	68	69			

⁴ This page may be duplicated and used as an overhead transparency.

Appendix A: Problem Booklet

Duplicate this copy of the problem booklet for use in your classes. **Booklets should be printed on only one side of the paper.** Each person in your class should have a problem booklet while they are working the exercise. The problem booklets are reusable.

You may obtain a copy of the problem booklet from MSHA, National Mine Health & Safety Academy, Dept. of Instructional Materials, 1301 Airport Road, Beaver, WV 25813-9426 phone 304-256-3257, fax 304-256-3368 or email to lord-mary@msha.gov.

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Problem Booklet

Instructions

Read the problem situation described on the next page. Next, answer each of the 12 questions. Do them one at a time. Don't jump ahead, but you may look back to earlier questions and answers. Some questions ask you to select all of the answers that you think are correct. Other questions ask you to select only one answer unless you are told to "Try again!" Follow the directions for each question.

After you have selected a choice to a question, look up its number on the answer sheet. Select your answer(s) to each question by rubbing the developing pen between the brackets on the answer sheet. A hidden message will appear and tell you if you are right. When you have finished, you will learn how to score your performance.

Problem in the Shop

Background

You have worked for this company for 8 years at its Rim Rock Mine.

You have just been transferred to its Horse Shoe Mine. You are the new foreman for the mine equipment maintenance shop.

After several years at this shop the previous foreman recently was transferred to another portal. You've heard he was disorganized and ran a sloppy operation.

There are 8 mechanics in this shop, including "Good Ole Bill."

Good Ole Bill has worked in the shop for 25 years and is well-liked. He is known as an excellent mechanic and works hard and well for the company. He is good-hearted and does repair work at his home shop on his buddies' cars and trucks for the price of parts.

This company has a tool crib check-in/check-out policy at all its shops.

Company policy prohibits transport of company tools and equipment in private vehicles on mine property.

There are 490 employees at this mine.

Last year's coal production was 2 million tons.

Problem

Company management has communicated to all supervisory personnel that costs in many areas are escalating and the market price of coal is declining. When you were transferred, the mine superintendent made it clear he is concerned about loss and/or pilferage of tools and equipment in your department.

Turn the page and answer the first question.

Question A

After a few days on the job, you find the shop has poor housekeeping and that a number of tools appear to be missing. You hear rumors from other company supervisors and workers that Good Ole Bill is "borrowing" tools and parts for his home shop. You have noticed Bill carrying tools in his lunch bucket while he is working.

What should you do now? (Select as MANY as you think are correct.)

1. Immediately confront Bill about his possible theft of tools.
2. Look at the tool crib check-in/check-out records.
3. Get the shop mechanics together and tell them they had better quit stealing tools.
4. Meet with the entire crew. Level with them. Discuss your concerns about the missing tools and poor housekeeping.

When you have made your selection(s), do the next question.

Question B

For the next few days, you work with your crew and improve housekeeping while you also try to get the tool crib in order. You decide to meet with the shop crew to discuss the problems of missing tools. What points should you discuss? (Select as MANY as you think are correct.)

5. Describe the impact of tool and parts loss on production.
6. State that your reputation and career are at stake here and you will not tolerate pilferage.
7. Tell the shop crew if the tool loss doesn't stop you will ask the superintendent to require mechanics to buy all their own tools.
8. Explain that tool loss may lead to inadequate maintenance and possible accidents and injury.
9. Describe the need to adhere to the proper tool crib check-in/check-out procedures and to maintain good housekeeping.
10. Ask the shop crew what ideas they have for solving the problem.

When you have made your selection(s), do the next question.

Question C

Two weeks later, a section foreman calls you. The brakes on a shuttle car have failed and the car has rammed the miner and damaged the trailing cable. You immediately send Larry, one of your mechanics, to assist the section mechanic. Soon Larry comes back. He says a special tool needed for the job is missing. He and the section mechanic cannot complete the repairs properly without the tool. What should be your main concern at this point? (Select as MANY as you think are correct.)

11. Establish that the tool is missing.
12. Immediately start an investigation to determine what happened to the tool.
13. Call the warehouse. Have the proper tool rushed to the section.
14. Immediately report the situation to the mine superintendent.
15. Tell the section foreman to keep the shuttle car in operation until your crew can find the missing tool and properly repair the brakes.

When you have made your selection(s), do the next question.

Question D

Later that day, Larry and the section mechanic come to see you. They are upset about the missing tool. They say the section foreman is angry about the accident and the production loss, and that he chewed them out when they couldn't fix the brakes properly. Then Larry says, "I think Bill knows where the tool is!" What should you do now? (Select as MANY as you think are correct.)

16. Question Larry and the section mechanic. Try to learn more details.
17. Make a lunch box check on each mechanic as he comes off the shift.
18. Talk to each mechanic as he comes off the shift. Try to locate the tool.
19. Just forget about it. Tomorrow is another day.
20. Ask the mine superintendent what you should do.
21. When you can do so without being observed, secretly look for the tools inside Bill's lunch box and his jacket.

When you have made your selection(s), do the next question.

Question E

Two days later Larry tells you he thinks Bill has been stealing tools, including the missing brake tool. When you finish straightening up the tool crib, examining records, and taking inventory, you find several tools have disappeared over the last few months. You notice Bill rarely checks tools in and out. What should you do now? (Choose only ONE unless you are told to "Try again!")

- 22. Take immediate disciplinary action against Bill.
- 23. Meet with Bill privately to discuss the missing tools, and the need to check tools out and in.
- 24. Confront Bill with your suspicions about his thievery.
- 25. Privately select one of the other mechanics you trust. Ask him to watch Bill and to report any suspicious actions to you.

Question F

Two weeks later most of the mechanics are properly checking tools in and out of the tool crib, and housekeeping is better. Bill sometimes signs tools out, but often doesn't bother to. Twice when you have talked to him about this, he has gotten angry, and says this nonsense slows him down. You observe he is a good mechanic who is productive, fast, and always busy.

Today you and some of the shop mechanics, including Bill, have been working overtime. On your way home, you see Bill's pick-up stopped to help another miner whose car has broken down. Bill's truck is still on mine property, about a quarter mile from the mine entrance and 4 miles from the mine shop. You stop to help. As you walk by Bill's truck, you notice his truck box is open. Inside you see a tap and die set labeled with the company name and inventory number. What would you do now? (Choose only ONE unless you are told to "Try again!")

26. Make a deal with Bill to let him off this time if he promises not to carry tools in his personal truck and not to take them off the property again.
27. Take Bill aside and ask him for an explanation.
28. Tell Bill he is immediately suspended and that you intend to recommend discharge.
29. Tell Bill to sign out the tools on the spot.
30. Pretend you don't see the tools. Tomorrow, tell the superintendent what you observed.

Question G

After you take Bill aside, and he gives his explanation, you ask him to immediately return to the shop and check the tools in. He gets angry and, says, "Get off my back!" Then he ignores you and goes back to helping the other miner fix his car.

Now what should you do? (Select as MANY as you think are correct.)

31. Tell Bill you are going to confiscate and return the tools, and file a written report about what you have observed.
32. Record the name of the other miner who is present.
33. Ask the other miner why the tap and die set is in Bill's truck box.
34. Immediately return the tools to the shop and sign them in.
35. Take the tools with you and return them to the shop the next morning.
36. Immediately make a written record of what you have observed.

When you have made your selection(s), do the next question.

Question H

As soon as you return the tools to the shop, you prepare to make a written report. What information should be included in your report about Bill transporting company tools off the property? (Select as MANY as you think are correct.)

37. Summarize the earlier rumors about Bill's theft of tools.
38. Note the time, date, location, and Bill's destination when you observed the tools in his truck box.
39. State your name, title, and the activity in which you were engaged when you observed the tools in Bill's truck box.
40. Include factual statements concerning Bill's strengths and weaknesses.
41. List the name of the miner Bill was helping.
42. Describe the tap and die set including the inventory number.
43. Describe the sequence of actions you took after observing the company tools in Bill's truck box.
44. Refer to your notes from your earlier meetings with Bill to discuss the company procedures for checking tools in and out.
45. Report that your subsequent check of the tool crib records showed that the tap and die set was not signed out.
46. Explain why you think Bill was transporting tools off the property.
47. Quote Bill's explanation for why he was taking the tools off the property.
48. Include a statement that Bill is the best and most senior mechanic in the shop.

When you have made your selection(s), do the next question.

Question I

The next day you file your report and call the superintendent. That noon he calls you to his office to discuss the report. It has been established that Bill .was transporting company tools off the mine property, without signing them out, without permission, and in violation of company policy. As the shop foreman, what should be your main concerns at this point? (Select as MANY as you think are correct.)

- 49. Make sure you have accurately and fully documented and reported the events surrounding Bill's taking the company tools off the property.
- 50. Suggest that Bill was responsible for earlier theft and loss of tools.
- 51. Suggest a warrant be obtained for a search of Bill's home and garage.
- 52. Recommend that Bill receive counseling for his stealing problem.
- 53. Find another mechanic who can replace Bill.

When you have made your selection(s), do the next question.

Question J

Subsequently the superintendent calls a meeting involving Bill, you, and company and miner representatives. Bill admits that he was transporting tools off the company property without permission, but maintains he simply forgot to check them out and bring them back. Bill's high productivity and good work record are noted by the miner representative and you confirm this information. After the hearing Bill is reprimanded and suspended for 3 days without pay.

A week later, after Bill has returned to work, you schedule a meeting with the shop crew to review the company policy for checking-out and transporting tools on mine property. You want the mechanics to understand the reasons for the policy, and to also understand the personal risks involved in tool theft or in behavior that can appear as theft. What are some of these risks? (Select as MANY as you think are correct.)

- 54. Loss of personal income.
- 55. Alcohol and drug abuse.
- 56. Loss of personal and family prestige and opportunity.
- 57. Increased difficulty in work and social relationships.
- 58. Loss of professional status among fellow workers.
- 59. Loss of professional skills as a mechanic.
- 60. Difficulty in obtaining employment in a different place within or outside the company.

When you have made your selection(s), do the next question.

Question K

After Bill returned to work, he continued to be a productive and good mechanic, and he followed the company procedures for signing tools in and out. After you got to know him a little better, he apologized for giving you a "rough time." He explained that he thought he was in line for the foremen's job and was angry when you got it instead. A couple of weeks later the missing brake tool was found pressed into coal dust and dirt on the floor of the tool crib near a bench. Now think about this whole exercise and the problems this company is having. Then answer the next two questions.

Bill's company mines 2 million tons of coal per year and sells it for \$30 per ton. The profit margin is 4%. How many tons of coal must be mined to pay for \$120 worth of lost tools? (Choose only ONE unless you are told to "Try again!")

61. 4 tons

62. 15 tons

63. 40 tons

64. 75 tons

65. 100 tons

Question L

Last year Bill's company had total revenues of 60 million dollars, from 2 million tons of coal mined and sold at \$30 per ton. At a 4% profit margin, the company earned \$2,400,000 net profit.

The large majority of workers at this company do not steal tools and materials. But many workers unintentionally lose and damage tools, equipment, material, and resources. Table 1 on the next page summarizes some of the costs for lost and damaged equipment for a six month period. Study Table 1, then answer this last question.

What steps should be taken to keep this coal mine in business? (Choose only ONE unless you are told to "Try again!")

- 66. Extra tonnage should be mined to cover the losses.
- 67. Losses should be cut through better work procedures, better housekeeping, and increased awareness of the problem among employees.
- 68. Company marketing officials should obtain a higher price for the coal.
- 69. The company should continue on as usual because the net annual profit is still reasonably high.

Scoring your performance

- 1. Count the total number of responses you colored in that were marked "correct." Write this number in the first blank on the answer sheet.
- 2. Count the total number of incorrect responses you colored in. Subtract this number from 37. Write the difference in the second blank on the answer sheet.
- 3. Add the numbers on the first and second blanks. This is your score.

The best possible score of 69 results from selecting all the correct answers and no wrong answers. The worst possible score of zero results from selecting all the wrong answers and no correct answers.

Table 1: Estimated Costs from Lost and Damaged Equipment for Six Months⁵

Description of Damage and/or Loss	Estimated Cost	
	Dollars	Tons Coal
A maintenance crew leaves gas welding equipment in a shuttle car. Next shift the operator loads the car and dumps the welding tanks into the feeder-breaker with the first load of coal. An explosion and fire result. No one is hurt, but production is down for 3 days and repairs are costly.	62,000	51,667
A supply man transports roof bolts to the face in a shuttle car. He accidentally leaves two bolts in the bottom of the car. One gets all the way to the prep plant where it damages equipment and shuts down production for 9 hours. Repairs are costly.	28,600	23,833
A secretary in the company office keeps her computer disks in a storage compartment with salt and pepper shakers, sugar, soft drinks and other food. She eats and smokes over the keyboards of two computers. Two keyboards and three disk drives are damaged. She made no backup files. Equipment repair costs are \$1,450 and data re-entry labor costs are \$6,350.	7,800	6,500
A supply man for one mine routinely tangles roof bolts, timbers, bearing plates, rock dust, oil cans, stopping blocks and other supplies. This damages materials, makes it more difficult for miners at the face to get and use the supplies, results in lost production and in increased lost time and medical claims from miners who receive strains and sprains from trying to lift and move poorly stacked supplies.	240,500	200,417
A surveyor parks his 4X4 utility truck in a blind spot for a 180 ton surface mine haul truck. The haul truck runs over and totals the utility truck. Costs include replacing the 4x4, conducting an investigation, and making out reports.	19,500	16,250
Replacement costs for loss, pilferage, and damage to small hand tools and equipment like SCSRs, fire extinguishers, methane spotters, grease guns, etc. total \$56,000 for the 6 month period.	56,000	46,667
Two company administrators spend \$11,600 more than necessary for travel expenses and fancy accommodations related to company business.	11,600	9,667
Totals	426,000	355,000

⁵ Some loss will always occur, and some loss is always anticipated and budgeted for in the mine planning process. If these types of losses can be kept low, the company has a better chance of competing in a tight market, and the mine is more likely to continue in operation.

Appendix B: Answer Sheet Blanks

These are the answer sheet blanks. Copies of these blank answer sheets may be duplicated in the normal fashion. However, the answers that are found within the brackets must be printed on these blank answer sheets in invisible ink. These answers are found in Appendix C. If you have the capability to print invisible ink, make copies of the blank answer sheets. Make a master of the answers that appear in Appendix C. Then print the invisible ink on the blank answer sheets, being careful to make sure all pages print and that the appropriate answers line up with the appropriate blanks. The Master Answer Sheet shows all the answers in their proper places.

Most companies and trainers prefer to obtain copies of the preprinted answer sheets from MSHA, National Mine Health & Safety Academy, Dept. of Instructional Materials, 1301 Airport Road, Beaver, WV 25813-9426 phone 304-256-3257, fax 304-256-3368 or email to lord-mary@msha.gov.

The exercise is designed to be used in small groups. You will need one answer sheet for each group of 3 to 5 persons in your class. The answer sheets are consumable. You will need a new set for each class.

A developing pen is also needed by each person who marks an answer sheet.

Answer Sheet for Problem in the Shop

Use this answer sheet to mark your selections. Rub the developing pen gently and smoothly between the brackets. Don't scrub the pen or the message may blur. Be sure to color in the entire message once you have made a selection. Otherwise you may not get the information you need.

Question A (Select as MANY as you think are correct.)

- 1. []
- 2. []
- 3. []
[]
- 4. []
[]

Question B (Select as MANY as you think are correct.)

- 5. []
[]
- 6. []
[]
- 7. []
[]
- 8. []
[]
[]
- 9. []
[]
- 10. []
[]

Question C (Select as MANY as you think are correct.)

11. []

12. []

13. []
[]

14. []

15. []

Question D (Select as MANY as you think are correct.)

16. []

17. []
[]

18. []
[]

19. []

20. []
[]

21. []
[]

Question E (Choose only ONE unless you are told to "Try again!")

22. []

23. []
[]

24. []

25. []
[]

Question F (Choose only ONE unless you are told to "Try again!")

26. []

27. []
[]

28. []
[]

29. []
[]

30. []
[]

Question G (Select as MANY as you think are correct.)

31. []
[]

32. []

33. []

34. []

35. []

36. []

Question H (Select as MANY as you think are correct.)

- 37. []
- 38. []
- 39. []
- 40. []
- 41. []
- 42. []
- 43. []
- 44. []
- 45. []
- 46. []
- 47. []
- 48. []

Question I (Select as MANY as you think are correct.)

- 49. []
- 50. []
- 51. []
- 52. []
- 53. []
[]

Question J (Select as MANY as you think are correct.)

54. []
[]

55. []
[]

56. []
[]

57. []
[]

58. []
[]

59. []
[]

60. []
[]

Question K (Choose only ONE unless you are told to "Try again!")

61. []
[]

62. []

63. []
[]

64. []

65. []
[]

Question L (Choose only ONE unless you are told to "Try again!")

66. []
[]

67. []
[]
[]

68. []
[]

69. []
[]
[]

Finding your score

Number of "correct" answers you colored in = (1) _____

37 minus number of incorrect answers you colored in = (2) _____

Add the numbers in blanks one and two to get your total score = (3) _____

Highest possible score = 69

Lowest possible score = 0

Appendix C: Invisible ink Answers

These pages contain the answers that must be printed in the blanks of the answer sheet in Appendix B. These answers are spaced and sequenced correctly so that they exactly match up with the appropriate blanks on the answer sheet blank.

Once the answers have been printed in the answer sheet blanks, the developing pen reveals the formerly invisible printed message.

You may obtain preprinted answer sheets or you may prepare your own copies. To learn more about these options, and to determine how many answer sheets and developing pens you will need, see the introductory section of the Instructor's Copy.

You don't know that Bill is guilty.

Correct! But you find they are poorly maintained and incomplete.

The crew becomes angry. You are accusing everyone of theft when there may be no theft or only one person who is a thief.

Correct! This is open, honest, fair, and it invites them to help solve the problem.

Correct! Every \$100 worth of lost tools and parts costs many tons of coal production.

This angers the crew. You appear self-centered and concerned about only your own needs. There may be no pilferage. Try again!

The crew becomes angry and resentful. You have not made an effort to correct the problem or allowed them to do so. Try again!

Correct! Poor maintenance of equipment often leads to accidents. Mechanics also are at greater risk of injury when proper tools are not available and they must improvise.

Correct! This calls attention to existing procedures and is a first step in correcting the problem.

Correct! They suggest routine use of the tool crib check-in and check-out procedures by all persons, and good housekeeping.

Correct! The tool is missing and not signed out.

Later. There are other more important things to do now.

Correct! Repairs need to be made immediately to resume production and to maintain safety.

If the tool is missing, report it later. You need to do something else now.

This is dangerous and illegal. Try again!

Correct! Larry is angry. He repeats, "Bill knows where the tool is!"

This would not be effective. Everyone knows about the missing tool. This action would be bad for morale.

Correct! No one knows where the tool is. Bill says he hasn't seen it since last week.

The problem is serious. It needs your attention.

He is annoyed. He says, "I put you in charge to take care of things like this!"

This violates Bill's rights and it damages your credibility. If you find the tool it won't mean Bill has stolen or intends to steal the tool.

You have no proof of Bill's pilferage. Try again!

Correct! You talk to Bill about these matters, but he gets angry and says you are accusing him of stealing. Do the next question.

This is unfair to Bill and makes the situation worse. Try again!

Your request insults the mechanic and is unfair to Bill. This sneaky behavior also damages your leadership credibility. Try again!

This action may make you an accessory to the ft. Try again!

Correct! He says earlier he took the tools from one mine to another in his truck, and forgot to return them to the shop. Do the next question.

You have exceeded your authority. You also have not followed normal due process procedures. Try again!

You are condoning Bill's problem behavior, and taking responsibility for the tools when he should do so. Try again!

This action doesn't address and attempt to correct the problem. It may be seen as a weak, ineffective and sneaky. Try again!

Correct! Good due process procedures require you to tell Bill what you intend to do. You should do this calmly and quietly.

Correct! This information is needed as part of the record.

This doesn't help. The miner looks away and says nothing.

Correct! You find the tools were not signed out.

This is unwise and in violation of company policy.

Correct! Accurate documentation is essential.

Your report should stick to the facts about this event.

Correct! These particulars soon can be forgotten if not recorded.

Correct!

These facts do not belong in your report.

Correct! This person is a witness to the event.

Correct! This is necessary to clearly identify the tools.

Correct! A record of what you did and in what sequence is necessary.

Correct! This helps establish that Bill knew the company procedures.

Correct!

Your report should not include such speculation.

Correct! Bill's explanation should be quoted in your report.

Your report should stick to the facts surrounding this event.

Correct! Your oral and written reports should be factual and complete.

You have no evidence to substantiate this.

You have no evidence for this. You have exceeded your responsibility.

You don't know if he is a thief. You have exceeded your responsibility.

This should not be a concern now. Bill is your best mechanic. He has violated company rules. His problem behavior may be corrected.

Correct! Theft can result in termination. A miner's wages over a period of years are worth thousands of times more than a \$120 set of tools.

These conditions do not necessarily follow from being a thief, or from being accused of theft.

Correct! Criminal charges and records harm both the individual and his or her loved ones.

Correct! It is often more difficult for a person to work effectively with co-workers and supervisors after charges of theft or proof of theft.

Correct! Most workers are honest and do not like persons who steal. Even if Bill is not a thief, many persons in his company may think he is.

Skill loss would not be immediate, but could come about from not being able to get a job after being fired.

Correct! Rumors about "problem" workers spread far and wide. This makes it difficult for the worker to change jobs or to advance.

Try again!

Try again!

Try again!

Try again!

Correct! \$30 per ton times 4% profit = \$1.20 profit per ton. 100 tons times \$1.20 = \$120 (tool cost). Do the next question.

Not possible! The mine is producing near capacity. Extra labor and equipment would be required and costs would rise. Try again!

Correct! This is the only immediate good option. If losses continue at this rate, the company will lose \$852,000 or 35.5% of its annual profit. End Of Problem.

Not likely! Prices are dropping. Competitors on the spot market are selling well below \$30 per ton. Try again!

The profit margin has dropped to 2.6 cents on the dollar. If this continues the mine will probably close and hundreds of company and community jobs will be lost. Try again!