



INSTRUCTOR'S GUIDE
FOR
ACCIDENT PREVENTION
FUNDAMENTALS
AND
INDUSTRIAL HYGIENE

ARMCO INC.

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I. ROLE OF DISCUSSION LEADER

ACCIDENT PREVENTION FUNDAMENTALS is the product of many years of effort and experience. It is comprehensive and covers all basic tools of plant accident prevention. The concepts are sound. The principles are widely accepted. The procedures are practical. They have been tried and found effective in other major steel companies.

To be maximally effective, however, the Program needs discussion leaders who will put it across with skill, conviction, and enthusiasm. The best developed program of instruction is no better than the instructor who gives it. As the instructor, you can make or break the Program. If you approach your instruction task as a burdensome chore, come to the training sessions poorly prepared, and do a poor job of instruction, the Program will be tedious and poorly received. On the other hand, if you know the subject matter and impart it with vigor and skill, it will be a rewarding experience to the participants.

ACCIDENT PREVENTION FUNDAMENTALS is a line management responsibility. For that reason, the discussion leaders have been chosen from the ranks of line management wherever possible. It is recognized that most of those selected will have had relatively little experience instructing a program of this magnitude. This manual has been prepared to help you carry out your instruction assignment.

The Instructor's Guide has broken down each of the 36 chapter sections into a series of instruction questions. Your job as an instructor and discussion leader is to instruct and/or discuss each of these key questions. The Instructor's Guide describes how to handle each such question.

The Guide does not intend to restrict the initiative and ingenuity of the instructors. Feel free to deviate from the instructions given herein if you think it will improve the quality of instruction. Be cautious, however. Do not reach beyond your knowledge and skills. The instructional methods and recommendations described herein do work. They have been tried and found satisfactory. Follow them unless your experience as an instructor and discussion leader convinces you that you can improve upon them.

II. RECOMMENDED INSTRUCTION MATERIALS

The following instructional materials are recommended:

1. Large pads of conference paper. (About 28"x34") Standard-sized conference pads may be purchased with holes punched at the top for mounting the pads on wall brackets or easels. Lightweight collapsible easels are available commercially for holding such pads. Three easels are required for instruction.
2. Heavy black and red crayons. Black and red "Magic Marker" ink pens are preferable to crayons from the standpoint of visibility. Use black for general purpose writing. Block lettering is preferable to script writing because of greater legibility. Use red to underline key words. Either write the key words in red or underline such words in red to make them stand out.
3. Pencils and note pads. Not many supervisors take notes during training sessions. There is really no need for extensive note taking. Even so, note pads and pencils should be made available. There will be times when they are handy.
4. Slide projector. (Optional) Some plants may wish to convert the text illustrations to 2"x2" slides. Slides make it easier to focus a group's attention to a particular illustration or part of an illustration. They also break up the instruction routine. Unless a cartridge-type projector is available, it is better to do without the slides. Manually operational projectors involve too much delay.
5. Opaque projector. (Optional) The illustrations in the text may be projected directly from the text with an opaque projector, thus eliminating the need for costly slides. An opaque projector requires a well-darkened room, and does not project as sharp an image as the slide projector. It is preferable, however, to asking a large group of people to thumb through the text to locate specific illustrations.
6. Conference tables. (Optional) It is preferable to have trainees sit at tables for the training than sit in rows of chairs. Tables are more comfortable, and practical for discussion. They can be arranged so a large group is broken up into a number of small conversational groups.

III. RECOMMENDED INSTRUCTIONAL METHODS

Each chapter is organized into one to four major sections. The sections are distinctively headed and titled. They are the basic units of instruction. There are 36 sections.

To simplify instruction, each section has been broken down into a series of key questions. Your job as discussion leader will be to see that the questions are answered. There are three ways you can get the answers to the questions across to the group. They are as follows:

1. **Straight Instruction.** You pose the question to the group, and then provide the answer by telling them.
2. **Questions and Answer Discussion.** You put the question to the group, and you try to draw the answer key points from the group.
3. **Leaderless Group Discussion.** You pose the question to the group, and then let the members discuss it among themselves while you refrain from entering into the discussion.

The details of these three methods of instruction are described as follows:

The Straight Instruction Method (SI)

General Description. In the straight instruction (SI) method, the instructor describes, explains, demonstrates, etc., while the participants listen, take notes, and ask questions. The discussion leader is the key figure and does the talking.

The SI method is most applicable when the topic involves matters that are new and unfamiliar to the participants, and when there is reason to believe the key points of the topic will not be readily developed through free discussion. The SI method is also suitable when the instruction topic involves factual information unknown to the group; for example, accident statistics, details of new procedures, or definitions of terms.

The SI method has an important advantage over discussion methods of training in that the leader has more control over the training situation and can pace the instruction to fit a time schedule. The instructor can direct the group's thinking, present ideas in the order planned, and use predetermined examples. Questions can be deferred until the instructor is ready for them.

The SI method has one serious weakness. Most people are not good listeners. They tend to become restless, bored, sleepy, and inattentive when forced to listen passively for too long a period. Of course, the skill of the leader and the nature of the topic will influence how soon listeners lose interest. Even so, the passive role of participants in this method inclines them to periods of inattentiveness. For that reason the emphasis of this course will be on discussion methods.

General Procedure. A general procedure that is suitable to most discussion leaders conducting the group sessions involves four basic steps:

1. Introduce the topic.
2. State the instruction question.
3. Present key points of the answer.
4. Summarize or conclude the topic.

The following material explains each step in detail.

1. **How to introduce the topic.** Before a group can be instructed on any topic, it must be prepared to listen to the topic. The way to do that is to introduce the topic so that the introduction sets the stage for the instruction. A good introduction has the following five characteristics:
 - (a) It is brief. A lengthy, meandering introduction runs the risk of confusing the group as to what will follow. It also runs the risk of causing people to tune out the leader.
 - (b) It describes generally what the instruction will cover. The introduction is the same as the title of a book, or a chapter, or a section of a chapter. It tells what will follow without going into details.
 - (c) It ties the topic to a previously discussed topic when there is such a relationship. Suppose, for example, the topic is a continuation of a preceding topic. The introduction should point out the relationship to the previous topic to establish continuity.
 - (d) It ties the topic to a more general subject when it is in the nature of a sub-topic. A topic usually becomes more meaningful when it is related to the larger subject of which it is a sub-topic. An introduction should bring out such relationship when it exists.
 - (e) It arouses some degree of interest. One way to arouse interest is to relate the topic to the needs and interests of the group. For example, most supervisors are more apt to be interested in why people work unsafely if told that such knowledge will help them handle the chronic unsafe employee. Another way to arouse interest is to create a need to know the topic. For example, people are more apt to show an interest in a topic if they know they will be quizzed on their knowledge of the topic.

Sometimes, you may use the introduction to tell the group how you plan to cover the topic. For example, you may plan to first instruct the group in two ways of handling a problem and secondly follow-up with a group discussion of the pro's and con's of each way. Telling the group in advance what you plan to do serves to get them ready for the discussion by listening more attentively to the instruction phase.

2. **How to state the topic question.** Each session is broken down into a series of topic questions. They are often the same as the questions in the script at the end of each session. The questions are listed in later sections of this guide.

You should have the topic question written out in block letters on one of your large easel pads. (Follow same procedure if using one of the alternate methods.) This should be done before the start of the training session. When you finish your topic introduction, draw the group's attention to the topic question. Read it slowly, distinctly, and with emphasis. If the question is lengthy, it is sometimes a good idea to repeat the question to make sure it sinks in. If the question is susceptible to misunderstanding, rephrase the question instead of merely repeating it. For example: "What are the main causes of unsafe practices? In other words, why do people often act unsafely?"

Do not put more than one topic question on a single page of your easel pad. Be sure to print boldly so the question can be easily read by all. Don't tear off such pages when you are through with the discussion of a particular question. Instead, flip them over. You may want to use the same questions with another group of participants, or refer back to the questions with the same group later.

3. How to present the key points to the answer. The answer to any topic question will consist of a number of key points that must be explained in a proper sequence. If these key points (and their sub-points) are written out, they will be an outline of the answer. Here, for example, is an incomplete outline of the answer to the question, What is the general procedure for the lecture method of instruction?

1. INTRODUCE THE TOPIC.

- a. Be brief.
- b. Tell what follows.
- c. Tie to previous topics.
- d. Tie to general subject.
- e. Arouse interest.

2. STATE THE TOPIC QUESTION

- a. Get question from leader's guide.
- b. Read with emphasis.
- c. Repeat or rephrase.

Presenting the key points means explaining or describing the elements of such an outline. The leader's guide for each session indicates the key points that should be gotten across to the group for each topic question. Those key points are the basis of developing an outline as shown above. With practice, you should be able to make such an answer outline for each topic question.

An experienced discussion leader who knows the subject thoroughly will have the answer outlined. For example: the instructor would know the four basic steps of the lecture method, and would know the sub-points of each step and the proper order to explain them. Chances are you won't be able to operate in that fashion, at least not at first. What can you do to avoid the embarrassment of forgetting or mixing up key points and sub-points while in front of the group? We suggest you do this:

Use your second easel pad as an answer guide. Outline your key points and their sub-points in the manner shown above on the pad before the start of the discussion session. Keep the page covered until you are ready to use it. Then, use it as a guide to cue you as to what to explain and in what order. Do not regard this method as a substitute for knowing your topic. If you don't really know your topic, the outline in front of you won't help. It will be very clear to the group that you have not prepared adequately for the session. If you do know the topic, the outline will work smoothly as a prompter. It will trigger off all the things you have to say.

When you have completed a key point, you may want to check with the group to see if they have any questions. It is not necessary to ask the group if there are any questions after presenting each key point. With experience, you will develop a feel for when to pause for questions.

4. How to summarize or conclude the topic. After you have completed the presentation of the key points, the topic instruction is ended with either a summary of what has been covered or a conclusion drawn on the basis of what has been covered.

A summary is a brief review of the main points of the topic. A simple way to summarize any topic is to review the key points and sub-points of the topic outline. Do this by pointing to them on the pad as you mention each one briefly. Here, for example, is how a leader may summarize the topic outline shown in the previous section.

"Let's summarize what has been said. The question was, What is the procedure for the

lecture method of instruction? (Point to topic question.) There are four steps to the procedure. (Point to steps as you read them.)

1. Introduce the topic.
2. State the topic question.
3. Present the key points.
4. Summarize or conclude the topic.

"A good topic introduction, we said, should be (points to sub-points of the first step) brief; it should tell what follows; it should tie to previous topics" . . . and so on until the summary is complete.

A conclusion is a generalization based upon the facts or opinions brought out in the presentation of the topic. For example, suppose you have been discussing reasons why first-line supervisors should investigate all minor injury accidents. You might end your discussion something like this:

"We agreed that the first-line supervisor is the logical person to investigate all accidents that occur to employees. The supervisor knows the jobs, the workers, and the conditions under which they work. Also the supervisor is the one who must learn about the causes of accidents."

Usually, a topic is ended with either a summary or a conclusion. End with a summary when your presentation has been primarily to tell, to give information. End with a conclusion when your presentation has been to convince, to impress a generalization.

The Question and Answer Discussion Method (Q & A)

General Description. With some topics there may be good reason to believe that the key points are known to the group as a whole, although no one person may know all of the separate points of the answer. In other words, the answers are there, waiting to be brought out. To promote active participation, the leader can draw the answers from the group through the use of skillful questioning and guidance. This is preferable to telling the group as a whole what they already know. In effect, the members of the group tell each other the answers. The leader is merely the catalyst who brings the answers out of the group.

General Procedure. The general procedure for the question and answer discussion method involves the following steps:

1. Introduce the topic.
2. State the topic question.
3. Draw out the answer key points.
4. Summarize or conclude the topic.

The following material explains each step in detail.

1. **How to introduce the topic.** The topic introduction for a question and answer discussion topic is no different from the way the topic is introduced for the SI method. The introduction should relate the topic to a topic discussed previously or to broader subject matter.
2. **How to state the topic question.** The topic question should be written out in block letters on one of the easel pads before the start of the training session. After you have completed your introduction, read the topic question slowly, distinctly, and with emphasis to the group. Repeat or rephrase the topic question if you feel additional emphasis is needed.

3. How to draw out the answer key points. Before you ask for answers to the topic question, write a heading on the second easel pad that ties in with the topic. For example, if the topic question is, What are the reasons why people work unsafely?, your heading might be, Why People Work Unsafely. Jot down the answer key points as you draw them from the group.

Ask the group for the answers. Call on someone whom you know is likely to have an answer if you get no immediate response. If several indicate they have something to say, recognize only one person at a time.

If what the person has to offer is an acceptable answer, record the key point on the pad. Record only a phrase that expresses the core of the idea. Strengthen the answer with your own comments and examples if you feel it needs such support. Handle this as a running commentary while you record the key points.

If what the person has to offer is unacceptable as an answer, don't say it is wrong. Instead, turn the answer over to the group. Ask the group for agreement or disagreement. Use questions to guide the group's thinking. Usually, you can count on the group to reject or at least cast doubt on the unacceptable answer.

An alternative way to handle an unacceptable answer is to rephrase the answer so that it is more acceptable without making a point of doing so. Then, if the answer needs further improvement, correct it when you record it on the easel pad. This requires a little tact, but it has the advantage of not making an issue of somebody's answer.

Proceed to draw out other answer points from the group in a similar manner. If the group fails to mention one that you feel should be included, throw your point out for the group's consideration. If it has merit, the point will be accepted, and can be added to the others.

4. How to summarize or conclude the topic. When you have drawn out the answers, and the group has no further points to offer, summarize the key points quickly. Use what you have recorded as a guide for your summary.

If the answers lead to a general conclusion that should be emphasized to the group, either draw the conclusion, or get the group to draw the conclusion through the use of leading questions.

The Leaderless Group Discussion Method (LG)

General Description. The question and answer discussion method (Q & A) uses the leader to evoke discussion. The leader's role is an active one of guiding or controlling the direction of the discussion.

The leaderless group discussion method (LG) permits the leader to be removed from the discussion. It works like this. The leader divides the large group into several smaller groups. Ideally, the smaller groups should consist of three or four people. The discussion question is given to the groups, and then the groups are turned loose to discuss the questions and develop the answer key points on their own. One person in each small group is asked to jot down ideas developed through the discussion. After a given period of time, usually five to ten minutes, the leader terminates the discussions and then calls on each group to give one point related to the topic question, continuing from group to group until all points have been picked up. Each point is recorded with appropriate comments as it is received from a group.

General Procedure. The general procedure involves the following steps:

1. Introduce the topic.
2. State the topic question
3. Allow small group discussion.
4. Collect key points from small groups.
5. Summarize or conclude the topic.

The following material explains each step in detail.

1. **How to introduce the topic.** As part of your introduction, tell the group how you plan to proceed and what you expect them to do. Describe how you will break them up into small discussion groups, how much time you will give them to discuss the topic, and how someone should record answer points in each small group.
2. **How to state the topic question.** The topic question should be written out in block letters on one of the easel pads before the start of the training session. After you have completed your introduction, read the topic question slowly, distinctly, and with emphasis to the group. Repeat or rephrase the topic question if you feel additional emphasis is needed.

3. **How to initiate the small group discussions.** After the topic question has been stated, ask the people to break up into small groups as instructed. When they are all settled, ask each group to select one person to jot down answer points as they are developed in the group discussion. Tell them if they have any questions during their discussion they are free to call on you.

During the discussion period, it is a good idea to visit briefly with each discussion group to check whether or not they are proceeding as expected. Do not participate in the discussions during such visits except to help if the discussion is not going well.

4. **How to collect key points from small groups.** After you call a halt to the discussions, ask each group in turn for one answer point that was developed during the discussion. The recorder of each group is the person to give the answer. Record each answer key point on the pad.

Proceed from group to group until you have collected all of the answer points developed during the discussions. Handle questionable answers as described previously.

5. **How to summarize or draw topic conclusions.** When you have received all the answers developed by the small group discussions, and the groups have no further points to offer, summarize the key points quickly. Use what you have recorded as a guide for your summary.

If the answers lead to a general conclusion that should be emphasized to the total group, either draw the conclusion, or get the group to draw the conclusion through the use of leading questions.

General Hints For Good Discussion Leading

1. Prepare thoroughly for each discussion session.
 - Know your subject.
 - Know how you will present it.
2. Speak so you can be understood.
 - Don't talk too rapidly or slowly.
 - Avoid talking to the floor.

- Avoid talking to the easel or blackboard.
 - Use simple, everyday language.
 - Speak up so you can be heard.
3. Maintain good personal relations.
- Don't ridicule any ideas offered.
 - Help individuals to express their ideas.
 - Compliment a particularly good idea.
 - Don't play one participant against another.
 - Don't stifle complaints or gripes.
 - Don't "prove" someone is wrong.
 - Create a friendly atmosphere.
4. Explain your topics thoroughly.
- Use concrete examples to support ideas.
 - Don't assume people know more than they do.
 - Check the group's comprehension.
 - Use diagrams, sketches, pictures, etc.
5. Encourage active participation by all.
- Don't allow anyone to do all the talking.
 - Feed easy questions to non-participants.
 - Protect participants from ridicule by others.
 - Protect the right of minority opinion.
 - Don't argue against ideas offered.

IV. USE OF INSTRUCTOR'S GUIDE

For each of the 36 sections, there is an instruction guide. Each guide is headed with the same distinctive heading as the equivalent text section. A guide consists of four parts.

1. The Instruction Objective.
2. An Introductory Lead.
3. The Key Instruction Questions.
4. Alternative Discussion Questions.

Each is discussed briefly below.

1. **Instruction Objective.** The instruction objective is a short paragraph that describes or enumerates your objectives as an instructor for the section. Do not read the paragraph to your trainees. It is not for the purpose of orienting them. Its sole purpose is to remind you of the instruction goals of each section.
2. **Introductory Lead.** The introductory lead is an example of how you might introduce the section to the group. Each section should be given a proper introduction that orients the group on what is to come. A good introduction sets the stage for the instruction and discussion that follows.

The introductory lead is given as a quote. Do not make the mistake of reading the introductory lead to the group. That sounds too mechanical. Also, do not try to memorize it. It is provided merely to give you an idea of how you might introduce the section. Feel free to use a different type and style of introduction. If you do use the one given, put it in your own words.

3. **Key Instruction Questions.** The key instruction questions for each section are typed in CAPITAL LETTERS. Behind each question, there is the number of the text page on which the answers to the question can be found. Behind the page number, there is an abbreviation which tells the recommended method(s) for handling the instruction: (SI) stands for straight instruction, (Q & A) stands for question and answer discussion, and (LG) stands for leaderless group discussion.

Underneath the instruction question are suggestions for handling the question. Regard these suggestions as a blueprint for instruction. Feel free to add to what is suggested in order to tailor the answer to your particular group.

The instruction guides are printed on both sides of a page sheet. Insert a blank piece of ruled note paper between each printed sheet. With that you will have a blank page of note paper facing the instruction questions. Use the blank note page to develop your answer key points to each instruction question. Record your key points in outline form as shown in page 7. Do not elaborate, record just enough of each answer key point so that what you record will remind you of the complete answer key point. Don't record whole sentences. Record key phrases. For example, the answer key points to the question, What are the basic types of accidents?, can be written thusly:

BASIC TYPES OF ACCIDENTS

- | | | |
|-------------------|--------------------|-------------------------|
| 1. STRUCK BY | 5. CAUGHT IN | 9. DIFFERENT LEVEL FALL |
| 2. CONTACTED BY | 6. CAUGHT ON | 10. OVEREXERTION |
| 3. STRUCK AGAINST | 7. CAUGHT BETWEEN | 11. EXPOSURE |
| 4. CONTACT WITH | 8. SAME LEVEL FALL | |

The answer key points should be recorded in the same way as you intend to record them on the "answer" easel pad. That way you can prepare for a training session from the Instructor's Guide, and be confident that the same answer key points will be on the "answer" easel pad, ready to give you an assist if you need one.

WARNING: Do not rely on the "answer" chart as a substitute for studying and knowing the answers. It won't work. The answer chart is useful as (1) a prompter to get started and keep you on the track, and (2) a guide to summarizing. It will not do your instructing for you. It is no substitute for adequate preparation.

4. **Alternate Discussion Questions.** There are two methods of handling reading assignments. One way is to assign the trainees to read the text material that will be covered in the next training session. The other way is to assign them to read the text material that was covered in the just-completed training session.

With advance reading, some trainees will study and know the material well, particularly if they know they will be examined. In that case, it tends to be a little boring to have the instructor go over the same material as if they had not read it. On the other hand, one cannot assume they got it all by reading. The instructor still must cover the material. However, some of the instruction questions can be hit more lightly. That will leave time for alternative discussion questions.

The instruction questions that can be gone over lightly in view of advance readings are marked with an asterisk. Select from the alternative questions those which you think will stimulate discussion or action. You should determine in advance of each training session what alternative or additional discussion questions you will use.

An Introduction To Accident Prevention

Chapter

1

Industrial Safety History - Progress - Problems

Section

1

INSTRUCTION OBJECTIVE:

This section has several objectives: (1) to give supervision an idea of what the industrial accident problem was like before the safety movement got underway. (2) To show them how the safety movement got started. (3) To give them a background for appreciating the effectiveness of organized accident prevention. (4) To remind them that Armco has a long history of concern for employee safety. (5) To show supervisors how safety progress is measured. (6) To impress them with the tremendous progress that has resulted from organized accident prevention. (7) To convince them that accidents can be prevented and that there is no limit to improvement. (8) To review OSHA record keeping requirements and finally (9) To remind them there is still a considerable accident problem today.

INTRODUCTORY LEAD:

"In order to appreciate the progress that has been made through organized accident prevention, it is necessary to know what things were like before people made a serious effort to prevent accidents. That's what we will discuss now — how people felt about industrial accidents sixty years ago, how serious the accident problem was then, how the safety movement got underway, what has been the progress, and what are the problems ahead."

INSTRUCTION QUESTIONS:

1. WHAT WERE THE ATTITUDES AND BELIEFS PEOPLE HAD ABOUT INDUSTRIAL ACCIDENTS AROUND 1900? (p. 1) (SI or Q & A)

Read the quote on p. 1 with vigor and expression. Then ask the group if they think the attitude reflected in the quote was common. Ask what the attitudes of management personnel were in those years? Ask what the attitudes of workmen were in those years? Finally, ask them why people had such attitudes and beliefs about accidents.

2. WHAT DID COMPANIES DO AROUND 1900 TO PREVENT ACCIDENTS? DID THEY HAVE SAFETY PROGRAMS? (p. 2) (Q & A)

Develop the general answer by asking a series of specific questions, like: Did they have full-time safety personnel then? What kind of working conditions were the rule? Did they provide personal protective equipment? Did they investigate and report accidents? Conclude by emphasizing that very few companies did much of anything in the way of organized accident prevention.

3. HOW SERIOUS WAS THE ACCIDENT PROBLEM AROUND 1900? (p. 3) (SI)

Point out that no one really knew the answer to this question before the Pittsburgh Survey because companies didn't report or even keep accident statistics. Explain the Pittsburgh Survey: what it attempted to do, when it took place, how it was conducted.

Describe the findings. Direct attention to the Death Calendar on p. 4. Let them study it for a minute. Then ask: Do you think the accident problem was serious in those days? Read the quote on p. 4 aloud, with some feeling to make an impression. Conclude that there certainly was a serious problem. Point out that those facts represent only one industrial area. Ask them to think of what the national figures were.

4. HOW DID THE SAFETY MOVEMENT GET UNDERWAY IN THE UNITED STATES? (p. 5) (SI and Q & A)

Explain how the public reacted to the findings of the Pittsburgh Survey. Give a brief account of how the federal government, the states, and many companies reacted. Explain that these things did not occur overnight, but within five years after the Pittsburgh Survey, the safety movement was well underway.

Clarify the basic idea of workman's compensation. Then, ask what the workman's compensation laws had to do with stimulating company safety programs.

5. WHAT ARE SOME OF THE HIGHLIGHTS OF ARMCO'S SAFETY HISTORY? (p. 6) (SI)

Have the key points listed on the answer pad. Go over each highlight briefly. Do not elaborate. This type of factual material does not need explanation. Do make a point of the fact that Armco does have a long history of concern for employee safety. Mention this course as another landmark in Armco's safety history.

6. WHAT ARE THE FOUR TYPES OF DISABLING INJURIES? (p. 7) (SI or Q & A)

Ask for the four types of disabling injuries, without any explanation of how they are defined. Expose the four types listed on the answer chart. Get different individuals to explain each. If necessary, help them with their explanations by restatement of the correct definitions. Explain non-disabling injuries. Encourage questions to facilitate clarification. Point out that progress is usually measured in terms of reduction in disabling injuries.

7. WHAT IS A DISABLING INJURY FREQUENCY RATE? (p. 8) (SI and Q & A)

Ask why one cannot compare a plant for two successive years merely on the basis of the number of disabling injury accidents. Clarify the idea that the man-hours worked must be taken into account.

Explain how a frequency rate is calculated, and how it is used to measure progress. Have some examples worked out on the answer chart. You may want to have the group calculate some easy-to-calculate frequency rates. Summarize by directing attention to Figure 2, p. 9.

8. WHAT IS A DISABLING INJURY SEVERITY RATE? (p. 10) (SI and Q & A)

Explain how the disabling frequency rate tells only part of the disabling injury story. (p. 11) The other part is told by the severity rate.

Explain how severity charges are made when disabling injuries occur. Use the examples given in the text. Point out the principles. (p. 10)

Explain how a severity rate is calculated. Use the example in the text (p. 10). Explain how a severity rate is used to measure safety progress. (Practice calculations are optional.) Interpret the trends in Figure 3, p. 11 for them.

Ask them why they think more emphasis is given to frequency rates than severity rates. Clarify with your own explanation if necessary.

Develop the severity rate trend for your plant for the past 10 years. Give them the figures. Discuss the interpretation of the figures.

9. WHAT ARE OSHA RECORD KEEPING REQUIREMENTS? (SI and Q & A)

Explain what an OSHA Occupational Injury and Illness is and the forms used to record experience.

Explain the difference between types of injury for the Armco and OSHA record keeping system. Use Figure 8, p. 17 to help you explain.

Explain the difference between Armco's Disabling Injury Frequency and Severity Rate and OSHA's lost workday case and lost workday rate.

10. HOW MUCH SAFETY PROGRESS HAS BEEN MADE SINCE THE DAYS OF THE PITTSBURGH SURVEY? (p. 17) (SI; some Q & A)

1. Direct attention to Figure 9, p. 18. Explain the bar diagram. Ask the group if these facts reflect progress. Emphasize that the tremendous improvement shown is despite a tripling of the work population.
2. Direct attention to Figure 10, p. 18. Explain the death rate trend. Again, emphasize these facts mean progress. Ask them to guess the number of lives saved that is reflected by the improvement.
3. Direct attention to Figure 11, p. 19. Emphasize the continuous downward trend in frequency and severity rates. Get some opinions as to why.
4. Direct attention to Figure 12, p. 19. Emphasize that (1) all industries have made substantial safety progress, and (2) some have made better progress than others. See if they can identify (1) the industry that shows the sharpest decrease in frequency rate, (2) the industry that seems to have leveled off, (3) the industry with the lowest rate today, and (4) the industry with the highest rate.
5. Finally, direct attention to Figure 13, p. 21. Use the figure to discuss Armco's safety performance thru the years. Develop similar data for your plant. Give them the facts of your plant's frequency rate trend.

11. WHAT ARE THE REASONS FOR THE PROGRESS MADE SINCE THE PITTSBURGH SURVEY? (LG)

The text does not enumerate the reasons. Get the group to identify the many factors that have contributed to the continual downward trend in disabling injury frequency rates. Emphasize the importance of plant accident prevention programs.

12. WHAT MAJOR CONCLUSIONS CAN BE DRAWN FROM THE TYPICAL FREQUENCY RATE TREND? (p. 20) (SI and Q & A)

Use Figure 13 as a typical trend of an industry leader. Point out the basic features of the trend, i.e. sharp improvement in the early years, periods of no apparent improvement followed by still further improvement, and finally a slower rate of improvement in recent years.

Ask them what major conclusions are supported by the facts. If necessary, use leading questions to bring out the three major conclusions. Emphasize the meaning or implications of each conclusion.

Ask them to challenge the conclusion: Do the progress facts really prove accidents can be prevented? Is it true improvement has no limit? If not, where is the limit?

13. WHAT IS THE MAGNITUDE OF THE INDUSTRIAL ACCIDENT PROBLEM TODAY? (p. 20)
(SI: some Q & A)

Have the five year "national" facts listed on the answer board. Point them out, and repeat them aloud. Ask the group whether they agree that there is still an industrial accident problem.

Do the same for the recent five year facts for Armco Steel. Also provide the trainees with the direct and indirect costs of the accidents. Point out the dollar value of products Armco must sell in order to recoup these costs.

Get the group to agree that despite the tremendous progress that has been made, accidents are still a major problem.

ADDITIONAL DISCUSSION QUESTIONS:

1. How does a workman's compensation operate in our state? Do the nature and causes of accidents have any bearing on injury compensation?
2. Is the annual toll of lives on U.S. highways in any way similar to the industrial accident problem before the Pittsburgh Survey? Who is responsible?
3. Armco pioneered the first 8-hour day in the steel industry. What bearing did that have on safety in the steel industry?
4. Are all accidents preventable? What's the danger of admitting that some are not preventable?
5. Are disabling injuries the only basis for measuring accident prevention progress? What other measures can be used to reflect progress?
6. Of the plant's last six disabling injuries or lost workday case, which were "unpreventable"? (Review each case. Get the group to identify the causes. Challenge them to show how each could have been prevented.)

An Introduction To Accident Prevention

Chapter
1

Armco Policy, Approach & Responsibilities

Section
2

*INSTRUCTION OBJECTIVES:

The objectives for this section are: (1) To acquaint supervisors with Armco's policy regarding employee safety and accident prevention. (2) To emphasize the concept of a team work approach to accident prevention, and what it requires. (3) To acquaint all levels of management with the basic responsibilities of all levels of management. (4) To encourage supervision to question the necessity for their assigned responsibilities.

INTRODUCTORY LEAD:

"We know that Armco has a long-standing concern for employee safety. Let's now see what the official corporate policy is on employee safety and accident prevention. Also, let's see what the basic approach to accident prevention is at Armco plants. Then, we'll take a look at the specific responsibilities of each level of management under the new corporate program."

INSTRUCTION QUESTIONS:

1. WHAT IS ARMCO'S POLICY ON ACCIDENT PREVENTION AND EMPLOYEE SAFETY? (p. 23) (SI; Q & A)

Direct the group's attention to p. 23 where the accident prevention objective is stated. Ask them to read it silently while you read it aloud with emphasis. Point out how that objective tells the story of Armco's policy.

Direct the group's attention to the Introduction Section in the APT Training Manual Binder. On the first page is printed a portion of Armco Policies. Ask them to read it then and there.

Ask the group if there is any evidence that such fine words (the policies) are not merely empty expressions for public consumption. What evidence is there that Armco really believes and acts upon its policies?

2. WHAT IS THE BASIC ARMCO APPROACH TO ACCIDENT PREVENTION? (p. 23) (SI)

Explain the concept of teamwork approach based upon each level of management doing what it best can do toward accident prevention. Point out that no one level of management can do the job alone. All must share in the action responsibilities. Ask the group if it can be any other way.

3. WHAT ARE THE FOUR REQUIREMENTS FOR ORGANIZED ACCIDENT PREVENTION BASED ON THE ARMCO APPROACH? (p. 23) (SI)

Have the 4 requirements on the answer pad. Take one at a time; explain it to the group. Then point out that the course was developed to ensure that these requirements were met.

*Instruct Sections 2 and 3 together. Examination for Section 2 contains questions on Section 3. There is no separate examination for Section 3.

4. WHAT IS GENERAL MANAGEMENT'S ROLE IN ACCIDENT PREVENTION? (p. 25) (LG)
Ask the group to discuss what they think general management should do on a continuing basis to promote accident prevention. Record all suggestions. Compare the group's recommendations with the text answer. (p. 25)
5. WHAT ARE THE MANAGER'S ACCIDENT PREVENTION RESPONSIBILITIES? (p. 25) (LG and Q & A)
Try the same approach as described for the preceding instruction question. Jot down all suggestions. The works or plant manager may like to see what other levels of management think he should be doing. Discuss the ideas once listed on the answer sheet. Get the group to identify the most practical ones. Check those.
6. WHAT ARE A SUPERINTENDENT'S ACCIDENT PREVENTION RESPONSIBILITIES? (p. 26) (SI and LG)
Have the key phrases indicating responsibilities listed on the answer pad. Explain each briefly. Then, ask the group in a LG discussion to decide if any are unnecessary or impractical. Also ask them to decide if some important responsibilities have been omitted. Determine what they are. Forward the suggestions to the plant program coordinator.
7. WHAT ARE A GENERAL SUPERVISOR'S ACCIDENT PREVENTION RESPONSIBILITIES? (p. 27) (SI and LG)
Use the same approach as described above. Get the group to question each responsibility. Determine what additional responsibilities should be added. Encourage free discussion. Expect complaints about lack of time, etc. Let them air their complaints.
8. WHAT ARE A FIRST-LINE SUPERVISOR'S RESPONSIBILITIES? (p. 28) (SI and LG)
Use the same approach as described above. Again, let complaints about lack of time be aired. Aim to get agreement on the importance of these responsibilities.
9. WHY IS THE FIRST-LINE SUPERVISOR SUCH A KEY FIGURE IN ACCIDENT PREVENTION? (p. 28) (LG)
Turn the question over to small group discussions. Ask them to identify specific reasons why the first-line supervisor is a key figure in the plant safety program.
10. WHAT ARE A SAFETY & INDUSTRIAL HYGIENE SUPERVISOR'S BASIC RESPONSIBILITIES? (p. 30) (LG and SI)
Try the approach of having them discuss and recommend what they think a safety and industrial hygiene supervisor should be doing. List the suggestions that the group accepts as sound. Then, briefly, enumerate the responsibilities indicated in the book.
Clarify the advisory and service role of the safety and industrial hygiene supervisor.
Direct the attention of the class to the specialized responsibilities of the safety engineer and industrial hygiene engineer
11. DO DESCRIPTIONS OF RESPONSIBILITIES LIMIT INDIVIDUAL AND PLANT INITIATIVE (LG)
The answer is NO! See if by small group discussion they will arrive at the same conclusion. Have an open discussion of the problem.

ADDITIONAL DISCUSSION QUESTIONS:

1. What should the plant do to establish additional responsibility descriptions in accordance with local needs?
2. What responsibilities do non-supervisory employees have?
3. What responsibilities should employee representatives have?

An Introduction To Accident Prevention

Chapter

1

Armco's Responsibility Under Federal, State and Local Occupational Safety and Health Requirements

Section

3

***INSTRUCTION OBJECTIVES:**

The section objectives are: (1) To describe the Government's role in Occupational Safety & Health, (2) How Armco is complying with Government requirements, and (3) To outline the procedures for handling a Compliance Inspection.

INTRODUCTORY LEAD

In the past decade the disabling occupational injury frequency trend had flattened out and for the past several years the overall industry average has shown an upward trend. Workman's Compensation cost and lost man-hours to industry have skyrocketed. In an attempt to improve this experience, the Federal Government in 1970 established the Occupational Safety & Health Act. The purpose of the law was "to assure so far as possible every working man and woman in the nation safe and healthful working conditions." Armco fully endorses the Occupational Safety & Health Act.

INSTRUCTION QUESTIONS:

1. **WHAT ARE THE KEY PROVISIONS OF THE ACT? (p. 34) (SI)**

Cover the 9 provisions as outlined on p. 34.

2. **HOW IS ARMCO'S SAFETY POLICY COMPATIBLE WITH OSHA OBJECTIVES? (p. 35) (SI)**

Emphasize the fact that the law was established to accomplish what has always been one of Armco's major goals — to continually reduce our frequency and severity rates. Refer to Figure 13, p. 21 to reinforce this fact.

3. **WHAT ARE THE PROCEDURES TO FOLLOW WHEN OSHA CONDUCTS A COMPLIANCE INSPECTION? (p. 35) (SI)**

Emphasize to the class the first 3 steps on page 35 under Armco's Compliance Procedures. If someone in the group has been involved in an inspection, get the person to comment on their reaction.

*Instruct Sections 2 and 3 together. Examination for Section 2 contains questions on Section 3. There is no separate examination for Section 3.

The Nature, Causes, and Results of Accidents

Chapter
2

The Nature of Accidents

Section
4

INSTRUCTION OBJECTIVES:

The section objectives are: (1) To acquaint supervision with three basic concepts: personnel accident, equipment accident, and near-accident. (2) To show the significance related to the definition of each idea. (3) To point out the different basic types of accidents.

INTRODUCTORY LEAD:

"Different people have different ideas about what are accidents and near-accidents. So we all understand the difference, we'll adopt a working definition. Also we will analyze our definitions so you get a better appreciation of the nature of accidents. Finally, we will define 11 basic types of accidents. When we are through, you should know what it is we are trying to prevent."

INSTRUCTION QUESTIONS:

1. WHAT IS A PERSONNEL ACCIDENT? (p. 1) (SI; Q & A)

Read the definition aloud from the text. Have the group read the definition silently as you read it aloud.

Point to the three key elements written on the answer chart. Cite an accident, and show how it fits the three key points. (p. 1) Ask someone to cite an accident. Have the group identify the three basic elements in the accident cited.

Explain what is meant by 'object', 'substance', and 'exposure' — or, ask someone from the group to volunteer an explanation.

2. WHAT IS AN EQUIPMENT ACCIDENT? (p. 1) (Q & A) WHY ARE WE CONCERNED WITH SUCH ACCIDENTS? (p. 1) (Q & A)

Ask someone to volunteer an explanation of an equipment accident. Then, read aloud the text definition while the group reads silently with you. Point out the similarity to the personnel accident.

Draw the answer to the second question from the group. Once the general point is made, get them to cite some cases of equipment accidents that resulted in personnel accidents.

3. ACCIDENTS ARE UNEXPECTED! HOW DOES THE UNEXPECTEDNESS OF ACCIDENTS CAUSE ACCIDENTS? WHAT IS THE SIGNIFICANCE FOR ACCIDENT PREVENTION? (p. 2) (SI and Q & A)

Explain how accidents are caused because people do not expect them. The point is not easily explained. Use a good example to illustrate the point. Point out that even when people deliberately take a chance, they do not really expect to have an accident. If they did, they wouldn't take the chance.

Draw the two practical implications (p. 2) from the group. For example, "Why should we instruct employees so they know what might occur? Why should we convince them that the unexpected will occur if precautions are not taken?"

***4. ACCIDENTS ARE CONTACTS! WHAT'S THE ADVANTAGE OF THINKING OF ACCIDENTS AS CONTACTS? (p. 2) (SI)**

Explain how thinking of accidents as specific types of contacts, e.g. struck by, strike against, etc. helps us recognize potential accidents.

5. ACCIDENTS INTERRUPT WORK! IN WHAT WAYS DO ACCIDENTS REPRESENT PRODUCTION LOSSES? (p. 2) (LG)

By small group discussion, get the group to identify the many different ways that accidents result in production losses, either directly or indirectly. Have the key points on the answer chart for summarizing after the points have been derived from the group.

Explain why a point is made about the fact that accidents represent production losses. (p. 3)

6. DO ACCIDENTS NECESSARILY INVOLVE INJURIES? WHY SHOULD NON-INJURY ACCIDENTS BE INVESTIGATED? (p. 3) (Q & A) (LG)

Cite an example of a personnel accident that involved no injuries. Get agreement that it was an accident. Get the answer to the first question. Ask the second question. Allow 5 minutes of small group discussion to develop the answer.

7. WHAT IS A NEAR-ACCIDENT? WHY SHOULD NEAR-ACCIDENTS BE INVESTIGATED? (p. 3) (SI) (LG)

Explain the basic idea of a near-accident! Use the LG method for the second question. Allow 5 minutes.

8. WHAT ARE THE BASIC TYPES OF ACCIDENTS? (p. 4) (SI, Q & A)

Have the list of basic types recorded on the answer chart. Explain each by pointing out the principle. Explain the textbook case for each type. (Use slide or overhead projection of each case if slides are available or direct attention to the text illustrations.)

After each type is explained, get someone from the group to cite a second case. Point out they must be able to identify all cases according to the basic types. Chapter 4 discusses how to prevent each type.

If there are multiple types of accidents involved in an injury, the precipitative cause should be used to identify the type of accident.

ADDITIONAL DISCUSSION QUESTIONS:

1. Should equipment accidents be investigated? Should such accidents be made a matter of written report? Under what circumstances?
2. Should no-injury accidents be written up? Under what circumstances?
3. Should near-accidents be written up? Under what circumstances?
4. Can several basic types of accidents be involved in a single accident?

The Nature, Causes, and Results of Accidents

Chapter
2

The Causes of Accidents (I)

Section
5

INSTRUCTION OBJECTIVE:

The section objectives are: (1) To make supervision aware that cause analysis is the key to accident prevention. (2) To provide an understanding of what are causes, the sources of causes, and the principle of multiple causes. (3) To explain fully what supervisors should know about unsafe acts.

INTRODUCTORY LEAD:

"Accident prevention starts with the recognition that accidents are caused. To prevent accidents, we have to (1) know and recognize causes of accidents, and (2) take steps to eliminate recognized causes. That makes it important that you have a good understanding of accident causes in general. The more you understand about accident causes, the better will you be able to spot them before accidents happen; and to analyze them after they happen. The purpose of today's session is to introduce you to some basic ideas about accident causes."

INSTRUCTION QUESTIONS:

1. WHAT, IN GENERAL, IS AN ACCIDENT CAUSE? (p. 11) (Q & A)

Read aloud the definition given in the text. Get the group to agree that specific actions and conditions can be causes, by referring them to a list of the causes given on p. 11. Explain why a wide-open approach to cause analysis is the only practical approach. (You may wish to have the general definition recorded on the answer chart.)

2. WHAT ARE THE TWO DIRECT SOURCES OF ACCIDENT CAUSES? (p. 11) (SI) ARE MOST ACCIDENTS CAUSED BY THE PERSON WHO HAD THE ACCIDENT, THE ENVIRONMENT, OR A COMBINATION OF BOTH? (p. 11) (Q & A)

Point out the two direct sources of accident causes, i.e. the employee and the environment. Explain what is meant by an employee cause. (p. 11) Indicate what % of accidents are caused by employee actions.

Define what is meant by environment. Give a variety of examples. Explain the idea of an environmental cause. Get the group to cite some examples. Indicate what % of accidents are caused by environmental factors.

Ask the group what conclusion can be drawn when 85% of accidents are caused by the employee who had the accident and 75% are caused by environmental factors. BOTH KINDS OF CAUSES ARE USUALLY INVOLVED.

Use the cases illustrated in Section 4 to illustrate the principle. Focus the group's attention on each case. Get the group to identify the employee causes and the environmental causes. Select some of your own plant cases to nail down the principle.

3. WHAT IS THE PRINCIPLE OF MULTIPLE CAUSES? (p. 12) (SI)

Retell the case of John Doe. (p. 12) Ask the group to identify all the factors that contributed to John Doe's accident. When you have them all identified, use them to explain the principle of multiple causes.

Explain the fallacy of single cause thinking. Point out how it leads to incomplete understanding of accidents.

4. WHAT ARE THE FOUR MAJOR KINDS OF ACCIDENT CAUSES? (p. 12) (Q & A)

Use the John Doe case as follows to develop the four major kinds of causes: Explain each major type of cause in general terms. Have them diagrammed on the answer chart as below:

PERSONAL FACTOR

UNSAFE ACT

SOURCE CAUSE

UNSAFE CONDITION

Get the group to slot under each heading the causes of John Doe's accident. (p. 12) End by giving the group the alternative names for the four kinds of causes. (p. 13)

5. WHAT, IN GENERAL, IS AN UNSAFE ACT? (p. 13) (SI)

Have the definition recorded on the answer chart. Read it aloud. Explain the idea of a deviation that increases the chances of accidents. Get across the idea that unauthorized deviations from recommended practices are not acceptable. New approaches should be checked out with supervision first.

6. WHY MUST SUPERVISION BE CONCERNED WITH ALL UNSAFE ACTS, NOT MERELY THOSE THAT ARE RULE VIOLATIONS? (p. 14) (Q & A)

Get agreement that not all unsafe acts are rule violations. Cite a few examples. Then, draw the answer to the question above from the group.

7. WHAT ARE THE BASIC TYPES OF UNSAFE ACTS? (p. 14) (SI; Q & A)

Have basic types listed on answer chart. Instruct one at a time as follows: (1) Explain the idea or principle. (2) Ask the group to say why it is unsafe. (3) Draw specific examples of the unsafe act from the group. Be ready to cite additional examples if necessary. Try to evoke examples that the supervisors have actually observed, not stereotyped examples they have heard about. (4) Ask the group to cite an accident caused by the unsafe act.

*8. DO UNSAFE ACTS ALWAYS RESULT IN ACCIDENTS? HOW ABOUT IN THE LONG RUN? WHAT IS THE PRACTICAL IMPLICATION? (p. 16) (Q & A; SI)

Draw answers #1 and #2 from the group. Explain what the implication is when instructing people about unsafe practices. The key point is: There's no guarantee about the very next time.

9. ARE ALL UNSAFE ACTS EQUALLY UNSAFE FROM THE STANDPOINT OF (1) LIKELIHOOD OF ACCIDENTS, AND (2) LIKELIHOOD OF SERIOUS INJURY? WHAT IS THE PRACTICAL IMPLICATION? (p. 16) (Q & A or SI)

Try drawing the answers out with examples of unsafe acts. For example, cite two unsafe acts that are clearly unequal in a frequency sense of producing accidents. Ask if they are equal? (Or, ask how they are different.)

Draw out the idea that some deserve more training attention than others. But all must be corrected when observed! Ask the group why!

10. HOW DO UNSAFE ACTS BECOME HABITS? (p. 17) (SI: Q & A)

Explain how repetition of an unsafe act may result in a strongly entrenched work habit. Ask the group why supervision should correct all unsafe practices. Why should extra effort go into the initial correction of an unsafe practice? What is the harm in not correcting a "minor" unsafe practice now and then?

ADDITIONAL DISCUSSION QUESTIONS:

1. What does a supervisor risk when failing to correct all unsafe practices observed?
2. How can the basic list of unsafe practices be put to practical use by supervision?
3. Should a superintendent correct an employee observed working unsafely or should the employee's supervisor be notified?

The Nature, Causes, and Results of Accidents

Chapter
2

The Causes of Accidents (II)

Section
6

INSTRUCTION OBJECTIVE:

The section objectives are: (1) To give supervisors an understanding of the factors which cause or influence people to work unsafely. (2) To define the concept of an unsafe condition, and acquaint supervision with the basic types of unsafe conditions. (3) To identify the major sources of unsafe conditions.

INTRODUCTORY LEAD:

"This section continues our analysis of the direct and indirect causes of accidents. The previous section dealt with unsafe practices. Today, we will analyze the causes of unsafe practices. We will also discuss unsafe conditions and their causes. When we get through you should have a pretty good understanding of the direct and indirect causes of accidents."

INSTRUCTION QUESTIONS:

1. WHAT IS A PERSONAL FACTOR CAUSE? WHAT ARE THE MAJOR CAUSES OF UNSAFE ACTS? (p. 18-21) (SI; LG)

Have the definition of a personal factor cause written on the answer chart. Point at it. Read it with emphasis. Explain it with an example to illustrate the key point that personal factor causes are within the person.

Ask the group to identify the personal factors which cause or influence employees to act unsafely. After their discussion, instead of drawing the points from the participants, turn to the answer chart on which they are written, and briefly explain each. Get group participation by asking for examples or for personal factors to be added to the ones listed.

2. WHAT, IN GENERAL, IS AN UNSAFE CONDITION? (p. 22) WHY SHOULD SUPERVISION ALWAYS CALL A SPADE A SPADE WHERE UNSAFE CONDITIONS ARE CONCERNED? (SI; LG)

Have the definition written on the answer chart. Point at it. Read it aloud. Explain in your own words the basic idea of an unsafe condition. Cite some recent examples that have come to your attention. You may even want to look for some before this session.

Turn the second question over to the group. After discussion, bring out the ways it can backfire on management when unsafe conditions are ignored.

3. WHAT ARE THE BASIC TYPES OF UNSAFE CONDITIONS; (p. 22-24) (SI and Q & A)

Have the 12 basic types listed on the answer chart. Instruct each one as follows: (1) Explain the idea or principle. (2) Get the group to cite examples. Try to evoke examples that are of recent origin or ones that have been repetitive problems. (3) Try to get an accident case cited for each unsafe condition.

As a between session assignment, have all participants develop a list of conditions in their area of responsibility that they regard as unsafe and in need of correction. The list is to be handed in for review and discussion.

4. ARE ALL UNSAFE CONDITIONS EQUALLY UNSAFE? WHAT ARE THE IMPLICATIONS? (p. 24-25) (SI)

Explain how unsafe conditions differ in terms of degree of employee exposure, and what that means for corrective action. Get the group to cite examples of differences in exposure.

Explain how unsafe conditions differ in potential injury severity. Get the group to cite examples of differences in potential injury severity. Ask what the implications for corrective action are.

5. WHAT RELATIONSHIP DO UNSAFE CONDITIONS HAVE TO WORK OUTPUT? (p. 25) (LG)

Ask the group to identify by discussion unsafe conditions which can or might interfere with work output. Get some of the conditions cited for the benefit of all. Get across the key point: In general, as unsafe conditions increase, work output decreases. Give this as another reason why they should be concerned with eliminating unsafe conditions.

6. WHAT ARE THE COMMON SOURCES OF UNSAFE CONDITIONS? (p. 26-27) (Q & A)

Have the sources listed on the answer chart. Handle each as follows: (1) Explain it in a brief sentence or two. Do not overexplain. (2) Cite a choice example. (3) Try to get the group to cite at least two other examples. (4) Ask what supervision can do to reduce the number of unsafe conditions produced by each source.

ADDITIONAL DISCUSSION QUESTIONS:

1. Is it possible to eliminate unsafe conditions permanently, that is, once and for all times?
2. What are inherent hazards? Are inherent hazards different from unsafe conditions?
3. What are the consequences of neglecting to correct unsafe conditions?
4. What effect does management reluctance to correct unsafe conditions have upon employee morale?

The Nature, Causes, and Results of Accidents

Chapter
2

The Results of Accidents

Section
7

INSTRUCTION OBJECTIVE:

The purpose of this section is to impress supervision with the many direct and indirect consequences of accidents. A second purpose is to convince supervision of the importance of investigating minor injury and near-injury accidents.

INTRODUCTORY LEAD:

"In the previous session, we completed our analysis of accident causes. Now, let's look at the other side of accidents — the consequences. Let's see what the direct and indirect consequences of accidents are."

INSTRUCTION QUESTIONS:

1. WHAT ARE THE MAJOR DIRECT RESULTS OF ACCIDENTS? (p. 28) (LG)

Let the group identify by discussion the major direct consequences of accidents. After discussion, turn up an answer chart to a complete list of the direct results. Ask them if they feel any others should be added to the list. Make sure the list includes such consequences as product damage, equipment breakdown, and work stoppage. Summarize the direct results."

2. ARE THE DIRECT RESULTS PREDICTABLE FROM KNOWLEDGE OF CAUSES AND TYPE OF ACCIDENT? (p. 29) (Q & A; SI)

State that the direct results are not predictable. Read aloud the case of John Doe on p. 29. Ask the group if they can say for certain what the outcome was. Point out what the results could have been.

The key point is to emphasize the importance of investigating all accidents. Cite the case (or a local case) on page 29 to illustrate the point.

3. WHAT ARE THE MAJOR INDIRECT RESULTS OF ACCIDENTS? AS THEY AFFECT EMPLOYEES? AS THEY AFFECT THE COMPANY? (p. 30) (LG)

Have the group identify the indirect consequences via small group discussion. After getting the answers from the group, explain how these consequences make the job of being a supervisor more difficult. Try to show them how accidents affect them personally.

ADDITIONAL DISCUSSION QUESTIONS:

1. What can a department do to establish the true costs of its accidents?

NOTE: This training session may also be used to give supervisors actual cost data on plant accidents. Select specific cases for complete accident cost analysis. Cite the breakdown of costs

associated with such cases. If possible, select cases that involve several of the following costs.

1. Compensation costs.
2. Medical costs.
3. Equipment damage costs.
4. Product damage costs.
5. Administrative costs.
6. Equipment downtime costs.
7. Employee lost-time costs.
8. Investigation costs.
9. Wage loss costs.
10. And other relevant costs.

Basic Accident Prevention Principles & Procedures

Chapter
3

Principles for Establishing Accident Causes

Section
8

INSTRUCTION OBJECTIVE:

The objectives of this section are: (1) To acquaint supervision with the foundation principles of accident prevention. (2) To emphasize the principles for detecting potential causes and determining actual causes. (3) To show supervision what basic tools of accident prevention are related to the principles for establishing accident causes. Indirectly, this section aims at convincing supervision that accident prevention is best accomplished by applying the basic principles and procedures rather than resorting to gimmicks.

INTRODUCTORY LEAD:

"The purpose of this section is to remind you of the basic principles of accident prevention, and the tools used to put these principles to work. Sometimes people think there are quick and easy answers to accident prevention. That's why so many plants resort to gimmicks to arouse interest in safety. The real effort must be in putting the basic principles to work. Let's see what the principles are. But first let's make sure we understand the difference between principles and procedures.

INSTRUCTION QUESTIONS:

1. PRINCIPLES AND PROCEDURES! WHAT'S THE DIFFERENCE? (p. 1) (SI)

Explain the difference between principles and procedures as described in the text. Then, point out a sound accident prevention program concentrates on applying the basic principles, and the procedures called for by those principles. Get across the idea that there are no quick and easy answers to accident prevention; banners, contests, slogans — all these things are strictly secondary.

2. WHAT ARE THE TWO FOUNDATION PRINCIPLES OF ACCIDENT PREVENTION? (p. 1) (SI: Q & A)

Have the two principles written on the answer chart. Show how they derive from the basic fact that all accidents are caused. Explain that all accident prevention activities are an attempt to apply these two principles.

Ask them if these two principles apply to problems other than accidents. Cite an application to an everyday problem other than accidents.

3. POTENTIAL AND ACTUAL CAUSES! WHAT'S THE DIFFERENCE? HOW ARE THE TWO FOUNDATION PRINCIPLES CHANGED? (p. 2) (Q & A)

Get the group to cite several examples of potential and actual causes. Draw out the conclusion that there is no basic difference; one is before the fact of the accident and the other is after the fact of the accident.

Have the restated foundation principles (p. 2) written on the answer chart. Explain each briefly.

4. WHAT FOUR PRINCIPLES ARE CONCERNED WITH DETECTING POTENTIAL CAUSES?
(p 2) (SI; Q & A)

Have the four principles written on the answer chart. Point to each. After restating each, ask "Why?" for each principle. Get group agreement that each principle is sound. Make sure you get good reasons in support of each.

5. WHAT BASIC PROCEDURES CARRY OUT EACH OF THE PRINCIPLES FOR DETECTING ACCIDENT CAUSES? (p. 3-6) (SI; Q & A)

Have the basic procedures listed on the answer chart under the applicable principle. Handle each as follows: (1) Explain the basic idea. (2) Ask the group whether the procedure should be adopted in their plant (or if the procedure is sound). Let there be free discussion. Get across the idea of why each procedure is a good idea.

6. WHAT FOUR PRINCIPLES CONCERN ESTABLISHING ACTUAL ACCIDENT CAUSES?
(p 6) (SI; Q & A)

Have the four principles written on the answer chart. Instruct each principle as follows: (1) Read it aloud. (2) Explain it fully. (3) Emphasize the key question (shown in italics in the text). (4) Check for group understanding and agreement with appropriate question.

7. WHAT WEAKNESSES CHARACTERIZE MANY ACCIDENT INVESTIGATIONS? (p. 6-8)
(LG)

Restate the question several times to make sure the group understands. Allow 10 minutes of small group discussion. Draw the main points out of the group. Elaborate briefly on each main point as you get it. Do not reject ideas that go beyond the text.

ADDITIONAL DISCUSSION QUESTIONS:

1. Identify all plant safety activities that are not clearly related to the basic principles of accident prevention. Discuss the pros and cons of each.

Basic Accident Prevention Principles & Procedures

Chapter
3

Principles for Eliminating Accident Causes

Section
9

INSTRUCTION OBJECTIVE

This section aims to give supervisors an understanding of the principles related to eliminating unsafe practices and unsafe conditions. The emphasis is on what must be done. The details of how come later.

INTRODUCTORY LEAD:

"This last session concerned detection of potential accident causes. (Restate the four principles.) We also covered the principles for determining actual causes. (Restate the four principles.) Establishing accident causes is not enough. To prevent accidents, you have to eliminate them. That's what we will discuss today — the principles for eliminating accident causes."

INSTRUCTION QUESTIONS:

1. WHAT ARE THE PRINCIPLES FOR ELIMINATING UNSAFE PRACTICES CAUSED BY INSUFFICIENT AWARENESS, JOB KNOWLEDGE, OR JOB SKILL? (p. 10-11) (Q & A)

Have the five principles written on the answer chart. Handle the instruction of each as follows: (1) Point it out. Read it aloud with emphasis. (2) Ask the group how the principle will, if applied, prevent or eliminate unsafe practices caused by not knowing better. (3) Get group agreement that the principle is sound.

The following additional questions will bring out some of the text points related to the principles:

- Why is it important that initial job instructions be planned, thorough, and complete?
- Why is asking the employee if instructions are understood a poor way to check understanding?
- What are the side benefits of regular safety contacts?
- What determines how most employees will react to being reinstructed for an unsafe practice?
- What kinds of jobs call for pre-job safety instructions?

2. WHAT IS THE MOTIVATION PROBLEM? (p. 12) (SI)

This is a difficult instruction point. Be prepared! Draw the group's attention to the diagram on p. 12. (A projection of the diagram is best.) Explain each of the four key points listed on p. 13 in bold type as follows: (1) Point to the appropriate plus or minus sign. Explain that a plus means something is attracting and a minus means something is repelling the worker. (2) Use an example to illustrate what may attract (or repel) the worker. (3) Try to get another example, or even two from the group.

Once the four key points are covered, get across the idea that the person may be in a conflict between going in one direction or another. The choice made will depend on which alternative offers the worker the greatest gain.

3. WHAT ARE THE FOUR PRINCIPLES FOR ELIMINATING UNSAFE PRACTICES CAUSED BY CONFLICTING MOTIVATIONS? (p. 13) (SI or Q & A)

If handled as SI, have the four principles written on the answer chart. Explain each along the lines of the text.

An alternative method is to draw the principles out of the group by skillful questioning. For example: (Instructor points to + sign in safe way circle.) "What should be done about the things that may attract people to the safe way?" (Waits for response. If no response, continues.) "Do we want more of such things or less?" (Gets the response, "More!") "Alright, the principle, then, is to increase the advantages and satisfactions of working safely. Now, how about the things that repel people from the safe way? What should be done about them?"

When all points are drawn out, summarize by referring to the 4 principles written on an answer chart that has been covered until time for the summary. Check the analysis by directing group attention to Figure 2, p. 14.

4. WHAT, IN GENERAL, WILL REDUCE UNSAFE ACTIONS CAUSED OR INFLUENCED BY PHYSICAL OR MENTAL UNFITNESS? (p. 15) (SI and Q & A)

Have the principles written on the answer chart. Handle the instruction of each point as follows: (1) Point at the principle. Read it aloud with proper emphasis. (2) Explain the basic idea. (3) Ask group opinions.

Avoid going into details of how to apply the principles. The how will be dealt with in a later section. Aim for getting agreement that the principles are sound.

5. WHAT SIX PRINCIPLES APPLY TO ELIMINATING UNSAFE CONDITIONS ONCE SPOTTED? (p. 16) (Q & A)

Have the 6 principles, in shorter form, written on the answer chart. Handle the instruction of each as follows: (1) Explain the basic idea. (2) Ask what might occur if the principle is not applied. Allow free discussion. Point out that the six principles are the responsibilities of every level of supervision. They apply to all supervisors.

ADDITIONAL DISCUSSION QUESTIONS:

1. What should a supervisor do when reporting an unsafe condition and hears no more about it? (The condition is ignored.)
2. What should be done when many workers persist in a certain specific unsafe practice because they reject the safe alternative?
3. What fitness standards does the plant now apply when hiring new employees?

Preventing The Basic Types of Accidents

Chapter
4

Preventing Struck By And Contacted By Accidents

Section
10

INSTRUCTION OBJECTIVE:

This section aims (1) to acquaint supervisors with the basic work situations likely to produce struck by and contacted by accidents, and (2) to acquaint them with basic solutions that, in principle, will prevent such accidents. A third objective is to show supervisors how they can use Chapter 4 as a reference chapter for ideas to prevent different types of accidents.

INTRODUCTORY LEAD:

"In Chapter 2, 11 basic types of accidents were described. They were — — — (points and reads them aloud from answer chart.) In today's session, we'll identify the common situations that produce two types of accidents — struck by accidents and contacted by accidents. We will also discuss the basic solutions for preventing such accidents."

INSTRUCTION QUESTIONS:

1. NORMALLY MOVING OBJECTS AND NORMALLY STATIONARY OBJECTS!

WHAT'S THE DIFFERENCE? (p. 1) (SI)

Using examples, explain what normally moving and normally stationary objects are. Get the group to cite several things that fall into each category.

2. WHAT THREE SITUATIONS OFTEN RESULT IN STRUCK-BY-NORMALLY-MOVING-OBJECT ACCIDENTS? (p. 1)

Have the three situations identified on the answer chart. Briefly explain each. Cite an example. Get the group to cite a second example.

3. WHAT CAN BE DONE TO PREVENT WORKERS FROM STEPPING OR GETTING INTO THE PATH OF ON-COMING MOVING OBJECTS, AND BEING STRUCK? (p. 2)

Attention: All questions in Chapter 4 that ask for basic solutions, as does this question, are best instructed as described below. No additional suggestions will be given for such questions. They will be followed by the sentence, (Use case discussion method).

For each such question, search plant accident files for three or four cases that involved the basic situation to which the question refers. Select cases that might have or would have been prevented had the appropriate basic solutions listed in the text (p. 2 for the above question) been applied or in existence. Consult the plant Supervisor of Safety and Industrial Hygiene if there is one. Also, use the cases in Chapters 2 and 4.

Use the cases as follows: (1) Describe, and if possible, project a sketch of the case. (2) Get the group to identify (a) the employee actions and (b) the environmental factors that contributed to the accident. (3) By discussion, bring out the "solutions" for preventing repetition of the accident. (4) After several cases have been analyzed, summarize the basic solutions which, in

principle, apply to preventing such types of accidents. Include any of the text "solutions" which were not brought out by the discussion.

The case method of instruction leads to lively discussion, and is very effective and interesting. THE KEY IS PROPER SELECTION OF CASES.

4. WHAT CAN BE DONE TO PREVENT STRUCK BY ACCIDENTS AS A RESULT OF UNEXPECTED START-UP AND MOVEMENT? (Use case discussion method.) (p. 3)
5. WHAT CAN BE DONE TO PREVENT STRUCK BY ACCIDENTS AS A RESULT OF A MOVING OBJECT LEAVING ITS NORMAL PATH? (Use case discussion method.)
6. WHAT FOUR BASIC ACTIVITIES OFTEN RESULT IN STRUCK BY ACCIDENTS INVOLVING NORMALLY STATIONARY OBJECTS? (Handle same as No. 2.)
7. WHAT CAN BE DONE TO PREVENT STRUCK BY ACCIDENTS IN A MATERIAL TRANSPORTING SITUATION? (Use case discussion method.)
8. WHAT CAN BE DONE TO PREVENT STRUCK BY ACCIDENTS WHILE STORING, PILING, OR POSITIONING OBJECTS? (Use case discussion method.)
9. WHAT CAN BE DONE TO PREVENT STRUCK BY ACCIDENTS WHILE MANUALLY USING MATERIALS OR EQUIPMENT? (Use case discussion method.)
10. WHAT CAN BE DONE TO PREVENT STRUCK BY ACCIDENTS IN AN OVERHEAD WORK SITUATION?
11. WHAT ARE THREE SITUATIONS LIKELY TO PRODUCE CONTACTED BY ACCIDENTS? (Handle same as No. 2.)
12. HOW CAN CONTACTED BY ACCIDENTS BE PREVENTED WHERE INJURIOUS MATERIALS ARE MANUALLY HANDLED? (Use case discussion method.)
13. HOW CAN CONTACTED BY ACCIDENTS BE PREVENTED WHEN EQUIPMENT CONTAINING INJURIOUS MATERIALS MUST BE REPAIRED? (Use case discussion method.)
14. HOW CAN CONTACTED BY ACCIDENTS CAUSED BY PRESSURE EQUIPMENT FAILURES BE PREVENTED? (Use case discussion method.)

Preventing The Basic Types of Accidents

Chapter
4

Preventing Struck Against, Contact With and Caught In, On, and Between Accidents

Section
11

INSTRUCTION OBJECTIVE:

The section's objectives are to acquaint supervisors with (1) the basic situations likely to produce struck against, contacted with, and caught in, on, and between accidents, and (2) the basic solutions for preventing such accidents.

INTRODUCTORY LEAD:

"This session continues our analysis of basic types of accidents. We will follow the procedure of discussing actual cases to develop ideas for preventing struck against, contacted with, and caught in, on, and between accidents. Let's start our discussion with analyzing struck against accidents."

INSTRUCTION QUESTIONS:

1. WHAT FOUR COMMON SITUATIONS OFTEN PRODUCE STRUCK AGAINST ACCIDENTS? (p. 11) (SI)

Have the answer key points written on the answer chart. Instruct each as follows: (1) Explain it. (2) Cite an example. (3) Get the group to cite additional examples.

2. HOW CAN "STRUCK AGAINST, MOVABLE PROTRUDING OBJECT" ACCIDENTS BE PREVENTED? (p. 11) (Use case discussion method.)

3. HOW CAN "STRUCK AGAINST FIXED PROTRUDING OBJECT" ACCIDENTS BE PREVENTED? (p. 12) (Use case discussion method.)

4. WHAT ARE SOME SOLUTIONS FOR PREVENTING STRUCK AGAINST ACCIDENTS IN CONGESTED WORK AREAS? (p. 12) (Use case discussion method.)

5. WHAT ARE SOME SOLUTIONS FOR PREVENTING STRUCK AGAINST ACCIDENTS RESULTING FROM APPLICATION OF MANUAL FORCE? (p. 13) (Use case discussion method.)

6. WHAT THREE SITUATIONS OFTEN PRODUCE CONTACT WITH ACCIDENTS? (p. 13) (SI) (Handle same as Question 1 above.)

7. WHAT CAN BE DONE TO PREVENT CONTACT WITH ACCIDENTS AROUND ELECTRICAL EQUIPMENT? (p. 14) (Use case discussion method.)

8. WHAT CAN BE DONE TO PREVENT CONTACT WITH ACCIDENTS WORKING WITH OR NEAR HOT OBJECTS? (p. 15) (Use case discussion method.)

9. WHAT CAN BE DONE TO PREVENT CONTACT WITH ACCIDENTS WORKING WITH OR HANDLING CHEMICALS? (p. 15) (Use case discussion method.)
10. WHAT THREE SITUATIONS MAY PRODUCE CAUGHT IN ACCIDENTS? (SI) WHAT IS THE ANSWER TO EACH? (p.15) (Use case discussion method.)
11. WHAT CAN BE DONE TO PREVENT CAUGHT IN ACCIDENTS INVOLVING SMALL DOOR OR GROUND OPENING AND VERY TIGHT PLACES? (p. 16-17) (Use case discussion method.)
12. WHAT TWO SITUATIONS OFTEN PRODUCE CAUGHT ON ACCIDENTS (p. 17) (SI) (Handle same as Question 1 above.)
13. WHAT CAN BE DONE TO PREVENT CAUGHT ON ACCIDENTS INVOLVING STATIONARY PROJECTIVE OBJECTS? (p. 17) (Use case discussion method.)
14. WHAT CAN BE DONE TO PREVENT CAUGHT ON ACCIDENTS INVOLVING MOVING PROJECTING OBJECTS? (p. 18) (Use case discussion method.)
15. WHAT THREE BASIC SITUATIONS OFTEN PRODUCE CAUGHT BETWEEN ACCIDENTS? (p. 19) (SI) (Handle same as Question 1 above.)
16. HOW CAN CAUGHT BETWEEN-STATIONARY-AND-NORMALLY-MOVING OBJECT ACCIDENTS BE PREVENTED? (p. 19) (Use case discussion method.)
17. HOW CAN CAUGHT BETWEEN-NORMALLY-MOVING OBJECT ACCIDENTS BE PREVENTED? (p. 20) (Use case discussion method.)
18. HOW CAN STATIONARY-AND-MOVING-BUT-NORMALLY-STATIONARY-OBJECT ACCIDENTS BE PREVENTED? (p. 20) (Use case discussion method.)

Preventing The Basic Types of Accidents

Chapter 4

Preventing Falls, Overexertion, and Exposure Accidents

Section 12

INSTRUCTION OBJECTIVE:

This section's objectives are to acquaint supervision with (1) the basic work situations likely to produce falls, overexertion, and exposure accidents, and (2) the basic solutions that apply to preventing such accidents.

INTRODUCTORY LEAD:

"This session continues our analysis of basic types of accidents. Today, we will discuss actual cases to develop ideas about preventing falls, overexertion accidents, and exposure accidents. Let's start with an analysis of falls."

INSTRUCTION QUESTIONS:

1. WHAT ARE THE TWO KINDS OF UNSAFE CONDITIONS THAT PRODUCE MOST SAME LEVEL FALL ACCIDENTS? (p. 22) (SI)
Have the two conditions listed on the answer chart. Instruct each as follows: (1) Explain the basic idea. (2) Get the group to identify specific examples of the hazard.
2. HOW CAN SLIP AND FALL ACCIDENTS BE PREVENTED (p. 22)
HOW CAN TRIP AND FALL ACCIDENTS BE PREVENTED (p. 33) (Use case discussion method.)
3. WHAT TWO BASIC SITUATIONS OFTEN PRODUCE DIFFERENT LEVEL FALL ACCIDENTS? (p. 23) (SI) (Handle same as Question 1 above.)
4. HOW CAN FALLS BE PREVENTED IN OVERHEAD WORK SITUATIONS? (p. 24) (Use case discussion method.)
5. HOW CAN FALLS BE PREVENTED WHEN WORKING AROUND FLOOR OPENINGS? (p. 25) (Use case discussion method.)
6. WHAT COMMON WORK SITUATIONS OFTEN RESULT IN OVEREXERTION INJURIES? (p. 25) (SI) (Handle same as Question 1 above.)
7. HOW CAN OVEREXERTION INJURIES FROM MANUAL MATERIAL HANDLING BE PREVENTED? FROM EXERTING TO RELEASE STUCK OBJECTS? FROM EXERTING TO REGAIN CONTROL? (p. 26-27) (Use case discussion method.)

8. WHAT THREE SITUATIONS OFTEN PRODUCE FUME, GAS, OR VAPOR EXPOSURE ACCIDENTS? (p. 27) (SI)
WHAT ARE SOME PREVENTIVES FOR EACH SITUATION? (p. 27-29) (Use case discussion method.)
9. WHAT OTHER TYPE OF EXPOSURE ACCIDENTS MAY BE A PROBLEM?
HOW CAN SUCH EXPOSURE INJURIES BE PREVENTED? (p. 29-30) (Use case discussion method.)

INSTRUCTION OBJECTIVE:

The objectives of this section are to give supervisors an understanding of (1) the meaning of the term "job" as it is used for JSA purposes, (2) the basic steps for doing a JSA, and what each step involves, and (3) how cost reduction can be combined with JSA work.

INTRODUCTORY LEAD:

"Up until this session, we have been concerned with understanding principles. Now we are ready for our first accident prevention tool — job safety analysis. Job safety analysis — or JSA as we shall call it — is a proven tool in accident prevention. Properly done and used, JSA's reduce accidents. JSA's can also be a waste of time if they are not done right, or if they are not used after completion."

INSTRUCTION QUESTIONS:

1. WHAT IS THE BASIC IDEA OF A JOB? WHAT IS THE DISTINCTION BETWEEN "JOBS" AND POSITIONS"? (p. 1) (SI)

Have a list of 6-12 jobs on the answer chart. Use the list to explain the concept of a job. Explain how "job" and "position" are different. Get the group to cite many examples of jobs and positions. After each, ask whether it is a job or position. Stop when you feel the group has the idea.

2. WHAT MUST BE DONE IN PRINCIPLE TO MAKE A JOB SAFE TO WORK (p. 1) (SI and Q & A)

Direct attention to Figure 1, p. 1 (Or, better reproduce the diagram on the answer chart. Use the diagram to explain (1) that jobs consist of basic steps, (2) that the hazards associated with each step may vary in number and potential severity, (3) that a job cannot be made safe to work unless the hazards are known, and (4) that it cannot be made safe unless there is a solution for the known hazards. Get the group to state what has to be done to make a job safe to work.

3. WHAT IS A JOB SAFETY ANALYSIS (p. 2) (SI)

Explain the JSA as a method of (1) identifying hazards of each job step, and (2) developing solutions that will eliminate or nullify such hazards. Direct attention to the completed JSA shown in Figure 2, p. 3. Let them study it for a few minutes. Indicate that what they see is a completed JSA. Point out the main features, e.g. what is in the three columns.

4. WHAT ARE THE FOUR BASIC STEPS FOR DOING A JSA? (p. 2) (SI)

Have steps recorded on answer chart. Read them aloud, but do not explain. Indicate that each step will be discussed separately.

5. HOW ARE JOBS SELECTED FOR JOB SAFETY ANALYSIS? (p. 2) (Q & A)

Ask the group to guess at the number of jobs there are in their plant (or department). Then ask, which of that many jobs should be subject to JSA. Ask, what should be taken into account when selecting a job for JSA. When the answer key points have been drawn out, summarize by turning over an answer chart to expose the key points. Emphasize each.

Show how making a list of jobs requiring special emphasis on safety (p. 4-5, Fig. 3) can help in deciding what jobs to write JSA's. Point out also how this system will help to code and identify JSA's for easy reference. Point out this system will be used when conducting planned safety observations. (Chapter 6)

6. HOW ARE JOBS BROKEN DOWN INTO BASIC STEPS (p. 4) (SI plus assigned exercise.)

Get a step by step breakdown of "planting a tree" by pulling the ideas from the group, e.g. "What's the very first step?" Record or have someone else record each step on the answer chart as it is volunteered and accepted. Point out any plant job can be broken down in the same way. Explain the purpose of breaking down a job into basic steps, and why the steps must be neither too "fine" or too "broad".

Next, have each supervisor select a job (preferably a relatively short, repetitive job) that he will analyze. Give them a blank JSA worksheet. Tell them to break the job down into basic steps. Allow about 10 minutes. Check their work. Ask someone to volunteer his "breakdown". Discuss the breakdown. Resolve any differences of opinion. Ask the group to be prepared to hand in their completed "breakdown" at the next session.

7. HOW ARE JOB STEP HAZARDS IDENTIFIED? (p. 6) (SI; Q & A)

Acquaint the group with the general approach, for example, "What can happen to the man?" Next tackle the specific approach, for example, "Can he be struck by anything?" Ask the group which approach they think will turn up more potential accidents.

Explain briefly the idea of observing a job in action to get ideas about potential accidents.

8. WHAT ARE THE DIFFERENT TYPE OF SOLUTIONS FOR POTENTIAL ACCIDENTS? (p. 6) (SI and Q & A)

Have the answer key points listed on the answer chart. Handle each as follows: (1) Explain the basic idea. (2) Cite a concrete example. (3) Get the group to cite other examples.

Point out that a JSA may involve more than one type of solution.

9. HOW CAN COST REDUCTION BE COMBINED WITH JSA? (p. 7) (SI)

Explain the two basic steps. Then proceed as follows: For each asterisked item listed on p. 6-8, ask the group if they can recall a job that involved a methods improvement as a result of someone raising the question. (You may only wish to cover a few items in each category.) Conclude by emphasizing that these questions do result in dollar saving ideas.

10. IN WHAT WAYS CAN COMPLETED JSA'S BE USED? (p. 9) (LG)

Allow 5-10 minutes of small group discussion to develop the answers. Pull key points from group. Record. Summarize.

ADDITIONAL DISCUSSION QUESTIONS:

1. Does JSA apply to maintenance jobs?
2. Can the JSA approach be applied to hazardous jobs that will be done only once?
3. Can JSA be applied to the basic procedures for using tools and equipment, such as a cutting torch?

INSTRUCTION OBJECTIVE:

The section's objectives are to acquaint supervision with the details of doing a JSA by (1) observation, (2) discussion, and (3) recall.

INTRODUCTORY LEAD:

"In our last session, we discussed the basic steps for doing a JSA. Today, we will discuss three methods for carrying out three of the basic steps. They are called (1) the Observation Method, (2) the Group Discussion Method, and (3) the Recall and Check Method. Each has its advantages and limitations."

INSTRUCTION QUESTIONS:

1. WHAT IS THE OBSERVATION METHOD FOR DOING A JSA? ADVANTAGES AND DISADVANTAGES? (p. 11) (SI and LG)

Explain the method generally. Use the LG discussion to develop the advantages. Bring out where this method cannot be readily applied. (p. 10)

2. WHAT IS THE DISCUSSION METHOD OF DOING THE JSA? ADVANTAGES AND DISADVANTAGES? (p. 11) (SI and LG)

Explain the method generally. Use LG discussion to develop the advantages. Emphasize the principal disadvantage.

3. WHAT IS THE RECALL AND CHECK METHOD OF DOING A JSA? (p. 12) (SI)

Explain the method. Ask the group what the main advantage and disadvantage are with this method. Emphasize that it is the least preferred method.

4. WHAT ARE THE ADVANTAGES AND DISADVANTAGES OF USING HOURLY EMPLOYEES TO DEVELOP JSA'S JOINTLY WITH SUPERVISORS? (p. 13) (LG)

Make sure the question is understood before it is turned over to discussion. After the advantages and disadvantages have been received and recorded, ask the group to reconsider the so-called disadvantages. Are they really disadvantages? How many agree that they are? (Ask for show of hands.)

5. OBSERVATION METHOD: HOW SHOULD THE JOB BE BROKEN DOWN INTO STEPS (p. 13) (SI and Q & A)

Have the key points recorded on answer chart. Instruct each as follows: (1) Read it aloud. (2) Explain the basic idea, without telling the underlying reason. (3) Ask the group to explain the why of what should be done, e.g. Why is it important to select the right one? To explain what is intended? To observe more than once? To check the breakdown with the individual?

6. OBSERVATION METHOD: HOW ARE POTENTIAL ACCIDENTS IDENTIFIED BY THE OBSERVATION METHOD? (p. 14) (SI & Q & A)

Have the key points recorded on the answer chart. Instruct each as follows: (1) Read it aloud. (2) Explain the basic idea of the key point. (3) Ask the group why it should be done that way.

Explain how potential accidents should be recorded. Show them how to fold the JSA worksheet so they can palm it for recording at the job site.

7. OBSERVATION METHOD: HOW ARE SOLUTIONS DEVELOPED (p. 15) (SI and Q & A)

Have the key points recorded on the answer chart. Instruct each as follows: (1) Review the basic idea. (2) Where there are details of HOW something should be done, explain how.

Ask them how they think observation will improve getting ideas for solutions.

8. HOW IS THE JSA DONE BY THE GROUP DISCUSSION METHOD? (p. 17) (Q & A)

The best way to instruct this question is to do a JSA by the discussion method. Select a job that the group will be familiar with, and follow the procedure described in the text. Try to complete at least a substantial portion of the JSA.

Managing a Job Safety Analysis Program

Chapter
5

Job Safety Analysis

Section
15

This section is written for the guidance of department heads. It should be given as a reading assignment to all supervisors. However, it is not instructed as are other sections. Instead, it is put into action by the department heads during the period when the basic tool, Job Safety Analysis, is to be initiated in the plant.

Department heads may wish to discuss certain features of the section with their supervisors before and during the period of installing the basic tool.

(Note: There is no examination for this section.)

INSTRUCTION OBJECTIVE:

This section has the following objectives: (1) To acquaint supervision with the different kinds of safety observations. (2) To convince supervision that all employees benefit from safety observations. (3) To show them how to use a list of the jobs that warrant planned safety observations as discussed in Chapter 5. (4) To develop awareness of the benefits of safety observations.

INTRODUCTORY LEAD:

"Supervisors sometimes complain about the many activities that interfere with observing their employee's at work. Today, we will take up an accident prevention tool that requires supervisors to observe their employees in action. It is called, the safety observation. We will consider the different types of observations, the kind of employees and jobs that should be observed, and the benefits of such observations."

INSTRUCTION QUESTIONS:

1. WHAT IS THE BASIC IDEA OF A SAFETY OBSERVATION? WHAT ARE THE THREE KINDS OF OBSERVATIONS? (p. 1) (SI and Q & A)

Explain the basic idea of the safety observation. Have the three types of observations written on the answer board. Explain the basic idea of each. Ask the group which is most effective in detecting unsafe practices. Ask if all three types of observations are desirable? What are the arguments for each? Be prepared to explain the key points if you can't draw them from the group.

Ask for a show of hands on how many practice each type of observation. Emphasize that planned observations are the least practiced. Therefore, the future emphasis must be on planned observations.

2. WHAT KINDS OF EMPLOYEES SHOULD BE GIVEN THE BENEFIT OF PLANNED OBSERVATIONS? (p. 2) (Q & A) or (LG)

The text identifies 5 types of employees who should be given observations. Have each type listed on the answer chart. For each, ask the group for reasons why such employees should be given observations. Ask also what other kinds of employees should be checked out with planned safety observations.

3. WHAT JOBS SHOULD BE SUBJECT TO SAFETY OBSERVATIONS? (p. 4) (SI) (Assigned Work)

Explain that observations should be concentrated on jobs that are known to be hazardous, that is, jobs that have involved accidents in the past or those that have a potential for producing serious injury accidents.

Refer to Chapter 5, p. 4-5 to explain to the class how this list can be used to guide a supervisor in the selection of a job to observe.

4. WHAT ARE THE BENEFITS OF PLANNED SAFETY OBSERVATIONS? (p. 5) (LG)

Have the benefits listed in the text (p. 5) listed on the answer chart. Do not expose the chart until ready. Ask the group to develop by discussion the possible benefits of observations. After 10 minutes of discussion, direct attention to the answer chart. Explain each point briefly. Ask the group if they came up with any additional benefits. Acknowledge all reasonable ideas.

ADDITIONAL DISCUSSION QUESTIONS:

1. Should hourly employees be consulted on developing lists of what jobs require special emphasis on safety? Why?
2. What kinds of jobs should be listed for repair and maintenance employees?
3. Why should employees who have returned to work after an extended "lay-off", illness, or sabbatical be subject to planned safety observations?
4. Should all employees be given an equal number of safety observations per period, e.g. month, quarter, or year? Why?
5. Should all jobs be given an equal number of "observations"? Why?

INSTRUCTION OBJECTIVE:

The objective of this section gives supervision the know-how necessary to conduct planned safety observations. A second objective is to acquaint supervision with a four step method for reinstructing employees observed working unsafely, when it is likely that they did not know better.

INTRODUCTORY LEAD:

"In our last session, you became acquainted generally with the idea of planned safety observations. Today, we will discuss the details of how to plan, make, and record such observations. We will also discuss how to reinstruct the employee observed working unsafely when reinstruction is called for rather than some other method of correction."

INSTRUCTION QUESTIONS:

1. SHOULD EMPLOYEES BE TOLD IN ADVANCE OR NOT IN ADVANCE THAT THEY ARE ABOUT TO BE OBSERVED? (p. 7) (Q & A)

Put the question to the group. Ask for a show of hands of those who believe employees should be told in advance. Then, ask for the hands of those who believe employees should not be told in advance. Then, ask for the hands of those who say it depends upon the purpose of the observation.

When should employees be told in advance? Draw the answer from the group. When should employees not be told in advance? Again, draw the answer from the group. If necessary, help with additional explanation. Check understanding by asking what they would do if they planned to observe (1) the "new" employee, (2) the accident repeater, (3) the "experienced" employee, (4) the transferred employee, (5) the "suspected unfit" employee, (6) the known chance-taker, and (7) the recently corrected employee.

2. SHOULD SUPERVISION MAKE A SPECIAL EFFORT TO CONCEAL THEMSELVES WHEN MAKING PLANNED OBSERVATIONS? (p. 8) (Q & A)

Cite an exaggerated example of concealment. Ask if they think supervision should do things like that. Ask why not. Get across the idea that concealment is not necessary.

3. HOW SHOULD PLANNED SAFETY OBSERVATIONS BE CONDUCTED? (p. 10) (SI)

Have the 4 basic steps and their sub-steps outlined on the answer chart. Explain the steps as follows:

PREPARING FOR OBSERVATION:

1. Deciding what employee. Direct attention to Figure 2, p. 12. Explain the observations recorded for John Doe. Have them duplicate the record of John Doe on a blank Safety Contact Record, so they get the idea of how observations are recorded. Then, ask them to

decide from looking at Figure 2, p. 12, which of the three employees they would select for observation, if there was no special reason for observing a particular employee. Explain that deciding the person is merely a matter of looking at the records for unmarked lower diagonal spaces.

Ask the group how else a supervisor may decide on the employee to observe.

2. Deciding what job. Explain how the record shown in Figure 1, p. 9, can be used to decide what job to observe the employee doing. Ans.: Any job not yet observed, unless there are special reasons for observing a particular job.
3. Reviewing what to observe for. Explain why it is a good idea to review the JSA if there is one and it has not been reviewed in a long time.

MAKING THE OBSERVATION:

1. Telling the employee in advance. Explain what and how as per text book.
2. Observing the employee. Ask these questions: Where should the supervisor stand? What specifically should the supervisor observe for? Should the supervisor interrupt the employee? Under what circumstances?

CONTACTING THE EMPLOYEE:

Explain how the employee should be corrected. Explain when a compliment is due.

RECORDING THE OBSERVATION:

Read off observations that you want recorded, e.g. "John Doe was observed doing the four steps of job 29-6 on July 7, and he performed safely on this four step job. Record the facts. Make all required entries." Emphasize that all entries must be initialed by the recording supervisor.

4. HOW SHOULD AN EMPLOYEE BE REINSTRUCTED FOR WORKING UNSAFELY ASSUMING OTHER METHODS OF CORRECTION ARE NOT CALLED FOR? (p. 13) (SI and Q & A)

Explain (or get the group to explain) when simple reinstruction is called for. Have the 4 steps of reinstruction written on the chart. Handle each as follows: (1) Explain it briefly. (2) Read aloud the italics (p. 13). (3) Ask the group to explain why it should be done that way.

Get the group to voice an opinion about this approach of reinstruction.

ADDITIONAL DISCUSSION QUESTIONS:

1. Can planned observations be conducted without keeping records? What are the advantages of keeping records?
2. What should be done with the record when an employee transfers to another department?
3. Is the record suitable for employees who go from a general labor pool to different departments as needed? Should such employees be observed?

Planned Safety Observations

Chapter
6

Managing a Safety Observation Program

Section
18

This section is written for the guidance of department heads. It should be given as a reading assignment to all supervisors. However, it is not instructed as are other sections. Instead, it is put into action by the department heads during the period when the basic tool, Planned Safety Observations is to be initiated in the plant.

Department heads may wish to discuss certain features of the section with their supervisors before and during the period of installing the basic tool.

(Note: There is no examination for this section.)

INSTRUCTION OBJECTIVE:

The objectives of this section are (1) to convince supervision that inspection for unsafe conditions must be put on a regular and planned basis, and (2) to show them how to conduct a safety inspection inventory in order to establish the inspection requirements for areas assigned to them for inspection purposes.

INTRODUCTORY LEAD:

"Earlier, we pointed out that unsafe conditions are always in the process of being created by normal wear and tear and by the actions of workers. That being so, considerable emphasis must be placed upon safety inspections to ferret out unsafe conditions before they cause accidents. In this section, the importance of planned inspections will be emphasized. However, before there can be planned inspections, there has to be an analysis of the inspection problem. That's the focal point of today's instruction — how to do a safety inspection requirements analysis."

INSTRUCTION QUESTIONS:

1. WHY ARE REGULAR SAFETY INSPECTIONS NECESSARY? (Review) (p. 1) (Q & A)

Review the sources of unsafe conditions, e.g. normal wear, actions of workers, purchasing practices, repair and maintenance work, etc. (Have the points listed on the answer chart.) Point out that casual inspection is too ineffective; that's why there must be periodic inspections. Get group agreement that some plan of periodic inspections is necessary, that management cannot leave it to chance to find unsafe conditions.

2. INCIDENTAL AND PLANNED INSPECTIONS! WHAT'S THE DIFFERENCE? ARE BOTH NECESSARY? (p. 1-2) (SI and Q & A)

Have the two kinds of inspection listed on the answer chart. Explain each. Ask the group whether both kinds are necessary.

3. WHAT IS A PLANNED SAFETY INSPECTION PROGRAM? WHAT MUST BE DONE BEFORE SUCH A PROGRAM CAN BE APPLIED? (p. 2) (SI)

Explain the planned safety inspection program as a division of a department into specific areas for which supervisors are made responsible for carrying out periodic, planned inspections, the results of which are made a matter of record and report to higher supervision.

Before such a program can be activated, it is necessary to analyze the inspection requirements of each departmental area. Point out one needs to know what the inspection requirements are before planned inspections are carried out.

4. WHAT ARE THE BASIC STEPS OF A SAFETY INSPECTION INVENTORY? (p. 2) (SI plus Q & A)

Have the 6 basic steps listed on the answer chart. Explain each step generally to give the group the basic idea of what the safety inspection inventory involves, and why each step is necessary. Do not go into the details of how each step is carried out. In addition, consider the following suggestions for the basic steps:

STEP 1. Have a floor plan of a department on a slide or enlarged blueprint. With the aid of group discussion, subdivide the department into specific suggestion areas, so each first-line supervisor has an assigned area.

STEP 2. Direct attention to the list of inspection categories. Read aloud and explain each category. Have members of the class check those categories that they would be concerned with in their present area of responsibility.

STEP 3. Use LG discussion to identify the kinds of parts that should be inspected regularly. See if the group can add additional categories to the eight listed on p. 4.

STEP 4. Ask why it is necessary to define precisely what conditions should be inspected for.

STEP 5. Ask what factors govern how frequently certain items should be inspected.

STEP 6. Ask why it is necessary to decide who should inspect each item that requires regular inspection.

5. HOW IS THE SAFETY INSPECTION INVENTORY FORM USED? (p. 5) (SI plus class exercise)

Distribute blank inventory forms. Have the group open their text to p. 5. Explain each step of the inventory analysis form. Refer to the form shown in Figure 2, p. 6, to illustrate your explanation.

Then, have each person start on the actual analysis of his or her assigned area. (If areas have not been assigned, let each person do an area that he or she is familiar with for the purposes of the class exercise.) Have them complete the identification of inspection categories (Item 1). Check to make certain they are proceeding correctly. Then, have them complete the analysis for as many items as it takes to complete the front and back of the inventory form. Completed work is to be handed in for a check. Ask each person to identify the analysis by completing the upper portion, e.g. department, area, and name. (Return forms with comments in the next session.)

6. WHAT ARE THE USES TO WHICH THE COMPLETED INSPECTION INVENTORY FORMS MAY BE PUT? (p. 7) (LG)

Turn the question over to LG discussion. Challenge them to identify all of the many possible uses for the completed inventory analysis. Collect ideas. Record on the recording chart. Impress the group that there are multiple benefits.

ADDITIONAL DISCUSSION QUESTIONS:

1. Is the safety inspection inventory applicable to areas assigned to maintenance supervisors, such as shops?
2. Can the safety inspection inventory be broadened to include items (parts) that should be inspected from the standpoint of production or product quality?
3. What is the advantage of having two supervisors independently "inventory" the same area?

4. Who should approve the "inventory" work done by first-line supervisors?
5. What role should the plant safety engineer have in the safety inspection inventory analysis?
6. Is it possible that the inventory will result in differences of opinion between operating departments and maintenance departments about who should inspect what? How should such differences be resolved?

INSTRUCTION OBJECTIVE:

The objectives of this section are (1) to convince supervisors of the advantages of using an inspection checklist, (2) to show them how to develop and use the type of checklist recommended in the text, and (3) to acquaint them with general standards of housekeeping.

INTRODUCTORY LEAD:

"In our last session, we discussed how to do an analysis of an area's inspection requirements. We also got started on such an analysis for your areas. Today, I want to review the results of checking your work. Then, we will discuss the pros and cons of using a checklist to guide your inspection activities. We will discuss a particular type of checklist. You will get an opportunity to start such a checklist for your assigned (or present area) area, and we will discuss how to use the checklist.

INSTRUCTION QUESTIONS:

1. WHAT ARE THE ADVANTAGES OF USING AN INSPECTION CHECKLIST? (p. 9) (LG)

Explain the basic idea of a checklist, e.g. a list of items that require inspection in the space to indicate the items have been inspected and found satisfactory or in need of some type of corrective action.

Turn the question over to LG discussion. Challenge the group to identify both the advantages and disadvantages of using a checklist. List both advantages and disadvantages on the recording pad. Get group agreement that the advantages far outweigh the disadvantages.

2. HOW IS THE RECOMMENDED TYPE OF INSPECTION CHECKLIST PREPARED? (p. 10) (SI plus class exercise)

Explain the mechanics of the recommended checklist by referring to Figure 3 (p. 9) and Figure 4 (p. 10).

Explain how the overlay is prepared from the Safety Inspection Inventory forms. Have each person prepare an overlay, as shown in Figure 3, from a partially completed inventory form. Check individual work to see that your instructions were understood. Make certain all persons understand how the overlays are derived from the Safety Inspection Inventory forms.

3. HOW IS THE RECOMMENDED TYPE OF CHECKLIST USED? (p. 11-12) (SI plus class exercise)

Cover the following points: (1) Use of a daily checklist. (2) Use of a weekly checklist. (3) Use of a monthly checklist. (4) Recording inspection findings. (5) Turning in underlays to higher supervision. Have the members place their prepared overlays on a blank underlay. Have them make entries to indicate findings that require (1) safe arrangement, (2) repair or replacement, (3) maintenance service, (4) general clean-up, and (5) no action. Have them exchange checklists,

so each person's will be checked over by another class member. Answer questions to resolve differences and clarify understanding.

4. WHO, OTHER THAN SUPERVISORS, CAN AND SHOULD MAKE USE OF AREA INSPECTION CHECKLISTS? (p. 12) (Q & A)

Draw the answers from the group. Expand and emphasize each answer key point as you get it from a volunteer. If you don't get the answers readily, use leading questions, e.g. Should a department superintendent use such area checklists? How?

5. WHAT GENERAL HOUSEKEEPING STANDARDS SHOULD SUPERVISORS APPLY TO THEIR ASSIGNED AREAS? (p. 12) (SI and Q & A)

Explain the importance of good housekeeping for safety and efficiency. Explain the principles of (1) orderliness and (2) cleanliness (p. 12).

Have a list of key words written on the answer chart that are the focal points of poor housekeeping, e.g. walkways, stairs, windowsills, storage racks, supply bins, yard storage areas, etc. (Get ideas from p. 13-15, and add your own.) Take up one key word at a time as follows: (1) Ask for a show of hands on how many have the item as a potential housekeeping problem. (2) Ask what some of the past housekeeping problems have been with the item. (3) Ask what standards apply for the item.

6. WHAT STEPS SHOULD A SUPERVISOR TAKE IN REGARD TO CORRECTION OF UNSAFE CONDITIONS? (p. 15) (LG)

This is a REVIEW item. List the six points (p. 15) on the answer chart. Explain the what and why of each point along the lines of the text.

7. WHO, BESIDES SUPERVISORS, SHOULD CONDUCT PLANNED SAFETY INSPECTIONS? (p. 15) (LG)

Let the group discuss the question for 5-10 minutes. Record their ideas as to who on the recording pad. Discuss each answer key point in terms of why. Point out that the plant has assigned inspection responsibilities to specialists, safety personnel, superintendents, etc. The idea is to convince supervisors that they are not alone in the planned search for unsafe conditions.

ADDITIONAL DISCUSSION QUESTIONS:

1. What are the arguments for and against labor-management safety inspection committees?
2. What are the arguments for and against employee representative inspection committees?
3. Is there any advantage in establishing housekeeping standards for assigned areas in writing?
4. What can a department head do to control a planned safety inspection program?

Planned Safety Inspections

Chapter

7

Managing a Safety Inspection Program

Section

21

This section is written for the guidance of department heads. It should be given as a reading assignment to all supervisors. However, it is not instructed as are other sections. Instead, it is put into action by the department heads during the period when the basic tool, Planned Safety Inspections, is to be initiated in the plant.

Department heads may wish to discuss certain features of the section with their supervisors before and during the period of installing the basic tool.

(Note: There is no examination for this section.)

The Investigation of Accidents.

Chapter
8

Introduction to Accident Investigation.

Section
22

INSTRUCTION OBJECTIVE:

The objectives of this section are (1) to acquaint supervision with the nature, purpose, and timing of accident investigations, (2) to convince them that first-line supervisors should investigate accidents occurring to their employees, and (3) to give them an understanding of why it is a problem when employees fail to report minor injuries, and what can be done to encourage such reporting.

INTRODUCTORY LEAD:

"Before we take up the subject of how to investigate accidents, there are some introductory topics to discuss. In this session, we will discuss why it is a management problem when employees fail to report minor injuries and what you can do to encourage them to report minors. Then, we will discuss the nature and purpose of accident investigation, and the proper timing of accident investigations. Lastly, we will discuss the role of first-line supervisors and higher plant management in accident investigation."

INSTRUCTION QUESTIONS:

1. WHY IS IT A PROBLEM WHEN EMPLOYEES FAIL TO REPORT MINOR INJURIES?
(p. 1-2) (LG)

Have the four key points listed but covered on the answer pad. Use small group discussion to establish the answer key points. Draw the key points out of the groups. Summarize by turning to the key points listed on the answer pad.

Try to have actual accident cases to illustrate why failure to report is a problem. Include an infection and/or aggravation of injury case.

2. WHY DO EMPLOYEES FAIL TO REPORT MINOR INJURIES? IN GENERAL, WHAT ARE THE REASONS? (p. 2) (Q & A)

Read aloud the question. Start the group thinking by citing one reason why an employee may not report a minor injury. Ask for other reasons. Respond affirmatively to each acceptable reason. Have someone record each accepted reason on the recording pad. When you have them all, summarize quickly from the recording pad. Star those that are under the control of supervision. Get the group to indicate which are under the control of supervision.

3. WHAT CAN SUPERVISORS DO TO ENCOURAGE THEIR EMPLOYEES TO REPORT MINOR INJURIES? (p. 2) (LG)

Turn the question over to the small group discussion. Allow about 10 minutes of discussion. Draw out and expand upon the answer key points. Emphasize the importance of frequent reminders to employees to encourage them to report minor injuries.

Discuss what constitutes a delayed report or neglected injury.

4. WHAT IS AN ACCIDENT INVESTIGATION? (p. 3)

WHAT IS THE ROLE OF THE ACCIDENT INVESTIGATOR? (p. 3) (SI)

Explain the accident investigation as a systematic effort to establish the facts of how an accident occurred and the causes of the accident.

The investigator, point out, is more than a mere collector of information. The supervisor must assess and evaluate all relevant information. The supervisor uses judgment to determine what occurred, how it occurred, why it occurred, and so on, based upon all available information. Knock out the idea that the investigator merely reports what has been told.

5. WHAT ARE TWO MISTAKEN VIEWPOINTS ABOUT WHY ACCIDENTS ARE INVESTIGATED? WHAT IS THE TRUE PURPOSE OF INVESTIGATING ACCIDENTS? (p. 3) (SI and Q & A)

Explain the two mistaken viewpoints about accident investigation. Draw the answer to the second question from the group. Emphasize that plant management wants all employees to understand the constructive purpose of accident investigation.

6. HOW SOON AFTER ACCIDENTS OCCUR SHOULD THEY BE INVESTIGATED? WHY? (p. 3) UNDER WHAT CIRCUMSTANCES SHOULD QUESTIONING OF THE EMPLOYEE WHO HAD THE ACCIDENT BE DELAYED? (p. 4) (Q & A)

Draw the basic answers from the group. Expand upon the answer key points sufficiently to cover all aspects of each answer. Be prepared to use leading questions to draw out the answers. Be sure to establish the reason (why?) for each answer.

7. WHY ARE FIRST-LINE SUPERVISORS REQUIRED TO INVESTIGATE ALL ACCIDENTS THAT OCCUR UNDER THEIR SUPERVISION? (p. 4) (LG)

Ask the group for all the reasons that add up to the fact that first-line supervisors are required to investigate all accidents occurring under their supervision. After 10 minutes discussion, draw out the answer key points. Ask why it would be impractical to have the safety department investigate all accidents. Emphasize that non-injury accidents are just as important to investigate as injury accidents. Explain why.

8. WHY SHOULD A SUPERINTENDENT PARTICIPATE ACTIVELY IN INVESTIGATING DISABLING INJURY AND ALSO NEAR-DISABLING INJURY ACCIDENTS? (p. 5) WHAT ARE THE ADVANTAGES OF A COMMITTEE INVESTIGATION FOR SUCH ACCIDENTS? (p. 5) (SI and Q & A)

Have the 3 answer key points to the first question listed on the answer pad. Explain each key point.

Draw the answers for the second question from the group.

9. WHAT CAN A DEPARTMENT SUPERINTENDENT DO TO IMPROVE THE QUALITY OF ACCIDENT INVESTIGATION AND REPORTING? (p. 6) (LG)

Turn the question over to 10 minutes of LG discussion. Draw the answers from the group. If you are the Department Superintendent, point out what you will do to improve the quality of accident reporting in your department. Be guided by the suggestions of the text.

10. WHAT CAN A DEPARTMENT SUPERINTENDENT DO TO MAKE CERTAIN PLANNED CORRECTIVE ACTIONS ARE APPLIED AFTER THE INVESTIGATION? (p. 6) (LG)

Turn the question over to 10 minutes of LG discussion. Draw the answers from the group. If you are the Department Superintendent, let the group know what you will do to control necessary corrective actions.

11. WHAT ARE THE PROCEDURES TO FOLLOW WHEN A FATALITY OCCURS? (p. 7) (SI)

Point out executive management's role in a fatal investigation.

ADDITIONAL DISCUSSION QUESTIONS:

1. What can the effect of a policy of disciplinary penalties for rule violations that have resulted in accidental self-injury have upon the accuracy of future investigations?
2. Why should Department Superintendents review all accident reports originating with their supervisors?
3. Why is it poor policy to rewrite a supervisor's accident report because it was badly written?
4. Why is it poor policy to exclude the responsible first-line supervisor from a committee assigned to investigate a disabling or near-disabling injury accident?

The Investigation of Accidents.

Chapter
8

Methods of Getting Accident Facts.

Section
23

INSTRUCTION OBJECTIVE:

The objective of this section is to give supervisors an understanding of how to investigate accidents. The emphasis is on the correct methods for interviewing persons who have had accidents and witnesses to accidents.

INTRODUCTORY LEAD:

"In our last session, we covered the purpose of accident investigations. We also said that accident investigation was a matter of getting and evaluating accident facts. Today, we will discuss how to get accident facts. The most frequent source of information is the employee who had the accident. If the employee is not interviewed correctly, the facts are apt to be distorted or covered up. That's the main point of today's discussion — how to interview the employee who had the accident. We will also discuss how to interview witnesses and how to reenact an accident."

INSTRUCTION QUESTIONS:

1. WHAT IS THE BASIC PROBLEM CONFRONTING THE SUPERVISOR WHEN THE SUPERVISOR TRIES TO GET THE ACCIDENT FACTS FROM THE EMPLOYEE WHO HAD THE ACCIDENT? (p. 8) (SI and Q & A)

The basic problem is getting the employee to cooperate by telling the truth as the employee knows it. Explain that; then ask the group why persons may be reluctant to tell all they know. Try to identify many reasons why employees will distort or omit facts. Point out that most reasons boil down to some form of fear.

Explain the significance: The investigator's conduct must be controlled so as to dispel fear and reluctance to cooperate.

2. WHAT IS THE RECOMMENDED METHOD FOR INTERVIEWING THE EMPLOYEE WHO HAD THE ACCIDENT? (p. 8-9) (SI and Q & A)

Have the five basic steps listed on the answer pad. Handle the instruction of each step as follows: (1) Explain what should be done and how it should be done. (2) Get the group to explain why it should be done that way. (Ask)

Ask the group why it is a poor practice to try to write up the accident report while interviewing the person who had the accident.

3. WHAT IS THE WRONG AND RIGHT WAY TO INTERVIEW THE EMPLOYEE WHO HAD THE ACCIDENT? (p. 10-12) (Q & A)

Get the right person to volunteer to read aloud the role of John. You read aloud the role of the Foreman. Act out the "wrong way" first. Then, ask the group to identify all the things the foreman did wrong. (See p. 10-11) Be prepared to prompt the group, e.g. Did he show an

interest in the man's injury?, Did he really listen to the man?, Did he put the man on the defensive?, etc. Summarize the do's and don'ts; then act out the "right way" to interview. Then, get the group to identify what the supervisor did correctly.

Ask the group if there is any reason why an accident investigation cannot be conducted on a friendly basis.

4. HOW SHOULD ACCIDENT WITNESSES BE INTERVIEWED? (p. 12-13) (SI and Q & A)

Have the five steps written on the answer pad. Instruct each as follows: (1) Read aloud the step. (2) Explain the step fully. (3) Where appropriate, get the group to explain why something should be done as suggested.

Have the general do's and don'ts listed on the answer pad. Go over each one briefly because they are almost self-explanatory. For each, get someone in the group to explain the reason for the do or don't.

5. WHEN SHOULD ACCIDENTS BE REENACTED? WHAT PRECAUTIONS SHOULD BE TAKEN? (p. 13) (SI and Q & A)

Have the 4 answers to the question, When should accidents be reenacted?, written on the answer pad. Explain each. Emphasize that reenactment is not necessary in the majority of cases.

Draw the answers of the second question from the group. If necessary, use leading questions.

ADDITIONAL DISCUSSION QUESTIONS:

1. Should an employee who has been seriously injured as a result of violating a safety rule be disciplined with a penalty? Suppose the injury the employee suffered was a minor one. Would that make a difference?
2. What effect will frequent issuance of disciplinary measures for accidents caused by unsafe practices have upon the effectiveness of accident investigations?
3. Why is it best to interview an employee at the source of the accident?

The Investigation of Accidents

Chapter
8

Reporting the Accident Facts

Section
24

INSTRUCTION OBJECTIVE:

The objective is to show supervisors how to complete the new accident and illness report form, and to give them some supervised experience with the new report form.

INTRODUCTORY LEAD:

"Today, we will discuss the new accident and illness report form. From here on, we will use one report form for reporting all minor injuries, disabling injuries, occupational illnesses, or serious equipment damage. The same report form can be used for preliminary investigations as well as final reports of all cases. It is more than an accident and illness report form. It is a guide to proper investigation.

INSTRUCTION QUESTIONS:

1. HOW SHOULD THE NEW ACCIDENT AND ILLNESS REPORT FORM BE COMPLETED?
(p. 14-20) (SI)

Have each person turn to the accident and illness report form on p. 17-18. Ask them to read the instructions at the top of the form. Then, using a completed form as a guide, explain each item. Indicate what information is wanted, how it is to be recorded, why it is wanted, and if appropriate, how the information is to be obtained. After each numbered item has been explained, ask for questions. Be sure to encourage them to raise questions.

When you have completed the discussion of the form, explain the distribution of the form for your plant.

Distribute blank accident and illness report forms to the group. Then, proceed as follows:

1. Assume that you have had an accident. Get the facts of the case clearly in mind. Select (or make up) a case that will result in all items on the form being completed when the case is written up.
2. Get a volunteer to interview you to establish the accident facts. The person should follow the 5 step approach described in the previous section. Answer the person's questions. Let the person's questioning develop the accident facts, instead of telling everything. The rest of the group should be listening to get the facts prior to completing the blank report form.
3. When the volunteer has completed the interview, allow members of the group to ask additional questions to bring out additional accident facts.
4. When there are no further questions, request each person to write-up the facts on the new form. Tell them to consult the instructions on p. 15-21. They are to hand in the completed form with their name written in as investigator.
5. Review the completed forms between training sessions. Red pencil each item that is incorrectly written or in need of improvement. Discuss the red penciled items in the next training session.

ADDITIONAL DISCUSSION QUESTIONS:

1. Can the new accident and illness report be used for equipment accidents? For near accidents?
2. Many cases are more simple than the case shown on p. 15. What is done when items on the new report form don't apply to the case investigated?
3. What role should the safety department play in getting the quality of accident reporting improved?
4. What should departments do with their copies of reports? How can the copies be used long after the individual case has been closed?

INSTRUCTION OBJECTIVE:

The objectives of this section are (1) to convince supervisors that job safety training must be planned, organized, and controlled to be effective, and (2) to show them how to conduct the different basic types of job safety training.

INTRODUCTORY LEAD:

"An employee has the right to know how to work the job safely — and we have the obligation to train the employee so that the employee does know. In this session, we will discuss four basic kinds of job safety training. You will be responsible for carrying out these kinds of job safety training in the future. They are: (1) position safety orientation; (2) initial job instruction; (3) pre-job safety instructions; and (4) planned personal safety contacts.

INSTRUCTION QUESTIONS:

1. WHY IS JOB SAFETY TRAINING SO ALL-IMPORTANT IN ACCIDENT PREVENTION? (p. 1) (LG and SI)

Ask the group to identify a number of serious accidents that resulted from inadequate training of employees, that is, accidents caused by employees not knowing. Allow 10 to 15 minutes discussion on this.

After the discussion, have several of the cases explained by different members of the group. Use these cases, plus others that you have developed with the aid of the plant safety supervisor, to convince the group of the importance of proper job safety training.

2. WHAT ARE THE FIVE KINDS OF JOB SAFETY TRAINING ALL SUPERVISORS SHOULD PRACTICE? (p. 1-13) (SI)

This question merely sets the stage for the details. Have the five kinds of job safety training listed on the answer pad. Explain the basic idea of each — the what not the why, when, and how — without going into details.

3. POSITION SAFETY ORIENTATION! WHY? WHEN? WHERE? WHAT TOPICS? (p. 1-3) (Q & A plus exercise)

Draw the answers to the following questions from the group: What is the purpose of the position safety orientation? Who should be given position safety orientations? How soon after the employee is assigned to a position should the employee be oriented? Where should the orientation be conducted? What topics should be covered?

As an exercise, have class members plan a position safety orientation for one position under their supervision. Distribute blank position safety orientation forms. Let them start on it in class, but complete the form between training sessions. Each person's immediate supervisor should review and approve the trial position safety orientation outline.

4. INITIAL JOB INSTRUCTION! WHAT ARE THE BASIC STEPS? HOW ARE THEY CARRIED OUT? (p. 2-5) (SI plus demonstration)

Have an outline of the answer recorded on the answer pad. (The outline should consist of the bold type on p. 2-5.) If you think it will help your presentation, you can also list the key points under the steps. For example:

A. PREPARATION

1. PREPARE YOURSELF
 - Review the JSA
 - Don't memorize
2. PREPARE THE JOB SITUATION
 - Assemble tools, equipment, etc.
 - Have protective equipment on hand
 - Have employee on hand for arrangement

Use the outline to guide and prompt your explanation of how initial job instruction should be carried out. Point out it is necessary to deviate from this basic procedure on some jobs.

If possible, have someone who has prepared in advance put on a demonstration of how to train an employee on a job involving the use of equipment. Select a "job" that can be demonstrated in class, e.g. lifting a box, up-ending a drum, etc. The person putting on the demonstration should follow the text. The demonstration should be practiced with a volunteer in advance of the class to ensure that it goes smoothly.

5. PRE-JOB SAFETY INSTRUCTIONS! FOR WHAT KINDS OF JOBS? WHAT TOPICS? HOW CAN JAS'S BE USED FOR THIS PURPOSE? (p. 5) (Q & A)

Draw the answers to the above questions from the group. If necessary, use leading questions. Expand on each key point as you draw it from the group.

6. PLANNED SAFETY CONTACTS! WHAT IS THE MAIN PURPOSE OF SUCH CONTACTS? HOW ARE THEY RELATED TO SHAPING EMPLOYEE SAFETY ATTITUDES? (p. 5) (SI plus Q & A)

Explain the main purpose of the planned contact as a reminder to ensure people are aware of the hazards, safe job procedures, and safety rules associated with their work.

Draw the answer to the second question from the group. Expand upon the answer until it is clear that regular planned safety contacts are a way to develop attitudes of acceptance of safe working procedures. Ask them what other benefits may come as by-products of planned safety contacts.

7. WHAT IS A PERSONAL SAFETY CONTACT? WHY ARE SUCH CONTACTS GENERALLY MORE EFFECTIVE THAN GROUP SAFETY CONTACTS? (p. 6) (SI and Q & A)

Explain the personal contact as an "instructional" contact between the supervisor and one, two, at the most three employees. Usually it is one employee.

Develop the reasons why personal contacts are superior to group contacts by drawing the key points from different members of the group.

8. WHAT KINDS OF TOPICS ARE SUITABLE FOR PERSONAL SAFETY CONTACTS? (p. 6) (Q & A)

Draw the answers from the group. Guide them so they identify the types of topics, e.g. safety rules, accident cases, JSA's, seasonal hazards, new protective equipment, temporary hazards, etc.

Explain why the main emphasis should be on safety rules and safe job procedures.

9. WHAT ARE THE BASIC STEPS FOR CONDUCTING PERSONAL SAFETY CONTACTS? HOW IS EACH STEP CONDUCTED WHEN SAFETY RULES ARE THE TOPIC? WHEN JOB PROCEDURES ARE THE TOPIC? (p. 6-10) (SI)

Have the four steps recorded on the answer pad. Explain their application to safety rules as follows:

1. Decide the topic. Explain why, in the absence of selecting a particular safety rule for a particular employee, there must be a basis for selecting what rules to discuss. To illustrate how the safety contact record is used to select rule topics, you will first have to explain how rule topics are recorded on the record. Direct attention to Figure 2, p. 7. Explain the contact entries under the heading "Safety Rules". Have them duplicate those entries on a blank contact form. Then, ask them to decide from looking at the record, what safety rules (codes) could be selected for a contact. Get across the objective: Every applicable safety rule is to be discussed with the employee in as many contacts as are necessary to accomplish the objective.
2. Prepare the contact. Explain what preparation may involve at a minimum and a maximum. Get the group to agree that a minimum preparation is desirable.
3. Make the contact. Have the three sub-steps recorded on the answer pad. (See bold type headings on p. 8-9.) Explain each. Get group agreement that if rules are explained that way people will understand them.
4. Record the contact. Give them some contacts verbally, and have them record them on the form.

NOTE: Follow the same basic procedure as described above for personal contacts covering safe job procedures.

Assign each person to prepare to demonstrate a personal safety contact at the next training session. The topic should be a major safety rule or some portion of a JSA. Select six persons at that session from the group to demonstrate their preparation. Have the group analyze each presentation critically, e.g. what was done well and what needs improvement.

10. WHAT ARE SOME "NATURAL" VARIATIONS OF PERSONAL SAFETY CONTACTS? (p. 10-11) (SI)

Have the five variations listed on the answer pad. Explain each fully. Answer any questions. Get group agreement that such informal contacts are instructional.

11. HOW IS THE REVERSE SIDE OF THE SAFETY CONTACT RECORD USED? (p. 11-13) (SI)

Direct attention to Figure 3, p. 12. Explain how the record is used to record (1) safety rule violations, (2) departmental safety codes, (3) accidents, (4) neglected injuries, (5) safety meeting attendance, (6) position safety orientation, and (7) job safety contacts.

ADDITIONAL DISCUSSION QUESTIONS:

1. Discuss and arrive at a plan of how the safety contact records will be stored so as to be accessible to supervisors.
2. Why is it necessary to maintain a record of safety contacts?
3. Discuss and arrive at a plan for tabulating safety contacts recorded on individual records for a monthly departmental report.

INSTRUCTION OBJECTIVE:

The objective of this section is to acquaint supervisors with the different types of planned group safety contacts.

INTRODUCTORY LEAD:

"In our last session, we emphasized that personal safety contacts are preferred over group safety contacts. That does not mean you cannot use group safety contacts. Properly conducted, they are effective. There are even certain situations that call for group safety contacts. Let's see when such contacts are useful, and how they should be conducted."

INSTRUCTION QUESTIONS:

1. **WHEN ARE GROUP SAFETY CONTACTS APPROPRIATE?** (p. 14) (SI)

Have the six answer points (p. 14) listed on the answer pad. Explain each. Get the group to give specific examples.

Discuss any particular problems the group may have in conducting group contacts.

2. **WHAT IS THE RECOMMENDED WAY TO INSTRUCT JOB PROCEDURES IN A GROUP CONTACT? WHAT ARE SOME VARIATIONS ON THE STANDARD PROCEDURE?** (p. 15-16) (SI & LG)

Have an outline of the answer recorded on the answer pad. (The bold type in the text is the basis for the outline.) Use the outline to guide your discussion.

Ask the group how variations may be employed to make for more active participation of the employees. Give them 10 minutes. Add the "variations" mentioned in the text to their list of ideas if they have not already done so.

3. **WHAT IS THE RECOMMENDED WAY TO INSTRUCT SAFETY RULES IN A GROUP CONTACT? WHAT ARE SOME VARIATIONS ON THE STANDARD PROCEDURE?** (p. 16-18) (SI and LG)

Follow instruction guide for Question 2 above.

4. **WHAT IS THE RECOMMENDED WAY TO DISCUSS AN ACCIDENT CASE IN A GROUP CONTACT? WHAT ARE SOME VARIATIONS ON THE STANDARD PROCEDURE?** (p. 18-19) (SI and LG)

Follow instruction guide for Question 2 above.

5. WHAT IS AN OBSERVED PRACTICES AND CONDITIONS GROUP CONTACT? HOW IS SUCH A GROUP CONTACT CONDUCTED? (p. 20-21) (SI)

Follow instruction guide for Question 2 above. In addition, give the group blank copies of the forms shown in Figures 4 and 4a. Give them the assignment to look for and keep a record of unsafe practices and conditions observed between this and the next training session. Set a definite date on which the forms are to be handed in. Challenge them to spot as many practices and conditions as possible by deliberately looking for them. At the next session, tally the results to (1) show how different supervisors (without naming anyone) will spot more than others, (2) point out the total number of unsafe practices and conditions found, and (3) try to catalog them by type. Emphasize that use of the record is optional with supervision.

Methods of Job Safety Training

Chapter
9

Managing a Safety Training Program

Section
27

This section is written for the guidance of department heads. It should be given as a reading assignment to all supervisors. However, it is not instructed as are other sections. Instead, it is put into action by the department heads during the period when the different types of job safety training are to be initiated in the plant.

(Note: There is no examination for this section.)

INSTRUCTION OBJECTIVE:

The objectives of this section are to (1) provide supervision with a basic strategy for motivating employees to work safely, (2) acquaint them with important psychological wants of people, and (3) give them an understanding of how acting in harmony with these wants will result in greater employee cooperation.

INTRODUCTORY LEAD:

"Training employees so they know how to work safely does not guarantee that they will work safely. They must be motivated to apply what they know. That brings us to a major problem that confronts supervision. How do you motivate employees to work safely? What can a supervisor do to make it more likely that his employees will do what they know from past instruction they should do?" Before we answer those questions, let's review the motivation problem, and develop a strategy for motivating employees to work safely."

INSTRUCTION QUESTIONS:

1. WHAT IS THE MOTIVATION PROBLEM? (REVIEW) (p. 1) (SI)

Explain the idea of a person being motivated; motivation means wanting something and doing something to get it. (See text)

Explain that the motivation problem exists when employees are not willing to do what they know they should for the sake of safety, when they are willing to risk unsafe practices.

Explain that the problem involves almost all employees at different times. Some, however, are chronic problems.

2. WHY IS THERE A MOTIVATION PROBLEM? IN OTHER WORDS, WHY DO PEOPLE RISK UNSAFE PRACTICES (p. 1) (Q & A)

This question was discussed in Sections 5 and 9. The general answer is: conflicting motivations. Explain the general answer; then draw specific examples from the group to refresh their understanding of the motivation problem.

3. WHAT IS THE GENERAL STRATEGY FOR MOTIVATING EMPLOYEES TO WORK SAFELY? (p. 2-3) (SI and Q & A)

Have the 5 principles that comprise the strategy written on the answer pad. Instruct each as follows: (1) Explain the principle in general terms. DO NOT GO INTO DETAILS OF HOW. (2) Check for group agreement. Discuss relevant questions at this point, but defer any answers on details. The details of how to apply the principles come later.

4. A BASIC VIEWPOINT ABOUT PEOPLE: WHAT ARE THE IMPLICATIONS FOR SUPERVISION? (p. 3-4) (Q & A)

Have the group read this section in class. After it has been read, draw the two implications from the group. Allow questions to be raised about the two points. Get agreement that the two implications are sound advice to supervision.

5. WHAT ARE FIVE IMPORTANT PSYCHOLOGICAL WANTS SHAPED BY VIRTUALLY ALL PEOPLE? (p. 4-6) (LG)

Have the 5 wants written on the answer pad. Handle each one as follows: (1) Ask the group to establish by small group discussion what each means. (2) Allow 5 minutes discussion for each. (3) Draw different interpretations of the want from the group.

Summarize the 5 wants. Point out that people don't outgrow such wants.

ADDITIONAL DISCUSSION QUESTIONS:

1. What are some things a supervisor might do that would conflict with employees' desire for approval and acceptance as a person? (LG)
2. What are some things a supervisor might do that would conflict with an employee's desire for recognition? (LG)
3. What are some things a supervisor might do that would conflict with an employee's desire for security thru knowing what to expect? (LG)
4. What are some things a supervisor might do that would conflict with an employee's self-respect? (LG)
5. What are some things supervisors might do that would make their employees feel like they were overly supervised? (LG)

INSTRUCTION OBJECTIVE:

The objectives of this section are (1) to acquaint supervisors with the way people react when their major psychological wants are frustrated, and (2) to give supervisors specific suggestions on what they can do toward satisfying such wants.

INTRODUCTORY LEAD:

"In our last session, we identified 5 important psychological wants shared by almost all employees. We also said that supervision had a stake in trying to harmonize with these basic desires of employees. Satisfaction of such wants is the key to developing a foundation for cooperation.

Today we will discuss how employees react when their wants are chronically unsatisfied on the job. Then, we will see what supervision can do toward satisfying such psychological wants — at least, in some reasonable degree."

INSTRUCTION QUESTIONS:

1. HOW DO EMPLOYEES REACT WHEN THEIR NON-MATERIAL WANTS GO CHRONICALLY UNSATISFIED? WHAT ARE THE END RESULTS OF SUCH REACTIONS? (p. 8) (LG)

Allow the group 10 minutes to develop by discussion the answers to the two questions. At the end of that time, draw the answers from the group. Have someone record the answer key points upon cue from you. (Two words are sufficient to record each answer point, e.g. "apathy and indifference", "excessive criticism", "active trouble making".

Get across the idea that such reactions create problems for supervisors. Also, acknowledge that supervisors do not have anything near 100% control over the satisfactions and frustrations of their employees.

2. WHAT CAN SUPERVISORS DO TO SHOW THEIR EMPLOYEES THAT THEY ARE ACCEPTED AS PEOPLE? (p. 10) (LG)

Rephrase the question once or twice to make certain the group understands. Ask them to develop a list of things a supervisor should do (or not do) to show that employees accepted as individuals. Allow 5-10 minutes discussion. Then, draw out and record the key points, e.g. "friendly greetings", "personal interest", "listen to them", etc. DO NOT LIMIT THE LIST TO THE IDEAS OF THE TEXT.

3. WHAT CAN A SUPERVISOR DO TO SHOW RECOGNITION FOR EFFORT AND ACCOMPLISHMENT? WHAT ARE SOME THINGS SUPERVISORS CAN COMPLIMENT THEIR EMPLOYEES ABOUT? (p. 10) (LG)

Follow the instruction guide for Question 2 above. In addition, give the simple rules for complimenting people.

4. WHAT CAN SUPERVISORS DO TO LET THEIR EMPLOYEES KNOW WHAT TO EXPECT? (p. 11) (LG)

Follow the instruction guide for Question 2 above.

5. WHAT CAN SUPERVISORS DO TO HARMONIZE WITH THEIR EMPLOYEES NEED FOR MAINTAINING SELF-RESPECT? (p. 11) (LG)

Follow the instruction guide for Question 2 above.

6. WHAT CAN SUPERVISORS DO TO GIVE THEIR EMPLOYEES A FEELING OF FREEDOM FROM EXCESSIVE DOMINATION? (p. 12) (LG)

Follow the instruction guide for Question 2 above.

7. PEOPLE ARE DIFFERENT! IN WHAT WAYS ARE THEY DIFFERENT? WHAT IS THE SIGNIFICANCE OF SUCH DIFFERENCES FOR SUPERVISION? WHAT CAN SUPERVISORS DO TO GET TO KNOW THEIR EMPLOYEES BETTER? (p. 12-14) (Q & A and SI)

Try to draw the answers to the first two questions from the group. Record the ways people are different on the recording pad. Develop a goal list. Review the completed list. Then, ask the second question.

Have the three points that answer the third question written on the answer pad. Explain each thoroughly. Encourage questions and discussion.

Ask them if they have some other ideas on how supervisors can get to know their employees better.

8. DO SUPERVISORS HAVE TO COMPROMISE MANAGEMENT OBJECTIVES TO APPLY A "HUMAN RELATIONS" APPROACH TO THEIR EMPLOYEES? (p. 14) (LG)

Explain the basic idea of a human relations approach, e.g. acting to harmonize with employee basic wants. Then, allow 10 minutes discussion. After the discussion, get different individuals to express their opinions.

Motivating Employees To Work Safely

Chapter
10

Incentives, Deterrents, and Attitudes

Section
30

INSTRUCTION OBJECTIVE:

This section's objectives are: (1) to make supervisors aware of what they can do to provide employees with incentives to work safely and deterrents against working unsafely, and (2) to give them an understanding of how attitudes develop, and what they can do to develop favorable attitudes by setting the right example.

INTRODUCTORY LEAD:

"In our last session, we discussed what supervision can do to develop a foundation for cooperation. That was the first point of our five point strategy for motivating employees to work safely. In this session, we will discuss three additional points of the strategy. They are (1) providing incentives for safe work, (2) providing deterrents against working unsafely, and (3) setting the right example."

INSTRUCTION QUESTIONS:

1. THE FOUR PRINCIPLES FOR SOLVING THE MOTIVATION PROBLEM. (A REVIEW)
(p. 16) (SI)

Have the four principles listed on p. 16 and 17 written on the answer pad. Direct attention to the sketch on p. 16. Use the sketch to review the idea of conflicting motivations which many influence the employee to choose the unsafe alternative. Explain the idea of a general readiness to go one way or the other. (See text)

Turn to the four principles. Read each one aloud, and explain it generally.

2. WHAT CAN SUPERVISION DO TO INCREASE THE INCENTIVE TO WORK SAFELY?
(p. 17) (LG and Q & A)

The question is sometimes misunderstood. Ask the group to develop by discussion a list of things that can be done to attract employees more to working safely. Start them out by giving an example: "Compliment safe work". Explain how complimenting employees for working safely acts as an incentive to work safely. Allow 10 or more minutes of discussion.

When you draw the answers from the group, always ask, "How will that increase their incentive to work safely?"

3. WHAT CAN SUPERVISION DO TO ELIMINATE THE DETERRENTS AGAINST WORKING SAFELY? (p. 18) (SI and Q & A)

Have the four step approach listed on the answer pad. Explain the basic principle of each step.

Ask the group to identify unsafe practices that are influenced because the safe alternative takes too much time or effort. Select one or two situations. Discuss possible ways of reducing the time and effort acquired by the safe alternative.

In advance of the session develop some good examples of how a revision of a safe alternative resulted in a safe way that required less time, or less effort, or less discomfort. Cite these as examples of "eliminating deterrents against working safely".

4. WHAT CAN SUPERVISION DO TO INCREASE DETERRENTS AGAINST WORKING UNSAFELY? (p. 18) (Q & A)

Have the seven points given in the text written on the answer pad. Discuss each one as follows: (1) Point at it; read it aloud. (2) Explain the basic idea. (3) Ask how doing that will increase the deterrents against working unsafely. (4) Expand on the answer as necessary to get the point across.

5. WHAT CAN SUPERVISION DO TO ELIMINATE INCENTIVES TO WORK UNSAFELY? (p. 19) (LG and SI)

Give them some specific examples to discuss, e.g. an employee who works unsafely to attract attention. Ask them to discuss how they would handle such an employee. At the conclusion of the discussion, point out the two principles on p. 20 for handling "employee-related incentives to work unsafely".

Explain how job-related incentives to work unsafely can be eliminated by eliminating the "penalties", e.g. more time, more effort, etc. associated with the safe alternatives.

NOTE: It should be pointed out that the ideas developed under the heading of "Applying the incentive-deterrent strategy" are most effective when all are applied as a total approach to the problem. Individually, each suggestion may be of small value. Their strength lies in their collective use.

6. WHAT IS AN ATTITUDE? WHY MUST SUPERVISORS BE CONCERNED WITH THE ATTITUDES THEIR EMPLOYEES DEVELOP? (p. 20) (SI and Q & A)

Have the definition of an attitude written on the answer pad. Read it aloud, and emphasize the key parts. Then, explain each of the key points.

Ask why supervisors must be concerned with the attitudes their employees develop. Bring out the idea that attitudes can influence behavior, for better or worse. Many of supervisors' problems are attributable to undesirable attitudes their employees may develop toward their work, their equipment, their supervision, the company, etc.

7. HOW DO EMPLOYEES DEVELOP ATTITUDES? (p. 21) (Q & A) or (SI)

Have the 4 ways employees develop attitudes listed on the answer pad. Get a different volunteer from the group to explain each way. (Use this approach if the group has been assigned to read the text before the session; otherwise, you will have to explain how the four attitudes develop.)

8. WHAT IS THE IDEAL SAFETY ATTITUDE? HOW, IN PRINCIPLE, CAN SUCH AN ATTITUDE BE DEVELOPED? (p. 22) (Q & A and SI)

Ask the group to develop a list of how they would like all their employees to act, e.g. willingness to comply with safety rules, to follow recommended safe work procedures, to avoid creating unsafe conditions, etc. (See text) These ideas can be drawn from the group with leading questions.

When you have the list developed, point out that the employee who does all these things regularly is the employee with an ideal safety attitude.

The way to instill such attitudes is to (1) develop a foundation for cooperation, (2) apply the four principles of the motivation strategy, and (3) SET THE RIGHT EXAMPLE. (That brings you to the next question.)

9. WHY IS IT ABSOLUTELY ESSENTIAL THAT SUPERVISORS SET THE RIGHT EXAMPLE WHEN IT COMES TO SAFETY? (p. 22) (Q & A)
WHAT SHOULD SUPERVISORS DO (OR NOT DO) TO SET THE RIGHT EXAMPLE? (p. 22-23) (LG)

Draw the following points from the group to answer the first question: (1) Setting the wrong example ensures that employees will follow suit. (2) One wrong example can cancel out the benefit of months of setting the rightt example.

Ask the group to recall some cases in which supervisors have set a wrong example. (No names should be mentioned.)

Give the group 10 minutes to develop a list of things supervisors should do (and not do) to set a right example. Ask them to be specific. Record each idea on the recording pad. Expand and emphasize each idea as you draw it from the group after the LG discussion period is over. Be sure your list covers the 6 points made in the text.

Make an effort to convince the supervisors that they must, without fail, set the right example in all the ways discussed.

Handling Safety Problem Employees

Chapter
11

The Impaired Capability Safety Problem

Section
31

INSTRUCTION OBJECTIVE:

The objectives of this section are (1) to acquaint supervisors with the different types of physical and mental conditions which may cause employees to work unsafely, and (2) to give them guidelines for handling such cases.

INTRODUCTORY LEAD:

"Accidents are often caused indirectly by temporary and sometimes chronic conditions of physical or mental impairment of employees. You all have probably experienced employees who worried you because you thought they were physically or mentally unfit to work safely. This is a difficult problem for a supervisor to face because there are limitations on what you can do in such cases. The purpose of today's session is to discuss the more commonly occurring conditions of physical and mental impairments. Some are temporary; others are permanent. We will discuss what can be done about this problem."

INSTRUCTION QUESTIONS:

1. HOW DO TEMPORARY PHYSICAL OR MENTAL IMPAIRMENTS SOMETIMES CAUSE ACCIDENTS? (REVIEW QUESTION) (p. 1) (SI)

Have listed on the answer pad the impairments, e.g. decreased stamina, strength, dexterity, coordination, concentration, etc. (see p. 1) which are the result of temporary conditions such as illnesses, intoxication, emotional states, etc. Point out that accidents are caused or influenced by such impairments.

2. WHAT ARE SOME TEMPORARY PHYSICAL AND MENTAL CONDITIONS FOR WHICH SUPERVISORS SHOULD BE ON THE LOOKOUT. (p. 1-3) (Q & A; SI)

Have the 7 conditions given in the text book listed on the answer pad. Instruct each as follows: (1) Ask how the condition can result in an accident. Ask if anyone knows of an accident so caused. (2) Explain the "signs" to look for. (You may wish to have these listed on the answer pad also because they are many, and pose an instruction problem.)

Be sure to explain that many of the "signs" of such conditions may be normal in some employees. Also, the presence of such "signs" does not necessarily mean the employee is a safety problem.

3. WHAT CAN THE SUPERVISOR DO WHEN AN EMPLOYEE IS SUSPECTED TO BE UNFIT TO WORK BECAUSE OF A TEMPORARY PHYSICAL OR MENTAL CONDITION? (p. 3-4) (SI; Q & A)

Emphasize that the approach taken depends upon (1) the condition of the employee, (2) what is known about the employee, (3) the nature of the employee's work, and (4) established plant practices.

Have the six courses of action given in the text listed on the answer pad. Present the first two (p. 3) as the recommended normal procedure.

Conduct an open group discussion on the other four courses of action. Discuss (1) when the course of action is in order, (2) what problems are involved in the course of action, and, if appropriate, (3) what risks are involved.

4. WHAT ARE SOME CHRONIC PHYSICAL OR MENTAL CONDITIONS FOR WHICH SUPERVISORS SHOULD BE ON THE LOOKOUT? (p. 5-6) (Q & A; SI)

(Follow the Instruction Guide for Question 2)

5. WHAT CAN A SUPERVISOR DO WHEN AN EMPLOYEE IS SUSPECTED TO BE UNFIT TO WORK BECAUSE OF A CHRONIC PHYSICAL OR MENTAL CONDITION? (p. 6)

Emphasize that each case is an individual problem, and must be dealt with on the basis of the facts. Point out or get the group to point out what kinds of facts have a bearing on how the employee is dealt with.

Have the four suggested general actions given in the text (p. 6-7) listed on the board. For each, (1) explain the basic idea, (2) ask the group how the idea can be implemented, and (3) allow discussion to clarify questions.

Also, ask the class if they have any cases now which are problems. Discuss each such case as follows: (1) What is the evidence that the employee is a safety problem? Is the evidence conclusive? (2) What are some alternatives of action that might work? (3) What should be done to get action started?

ADDITIONAL DISCUSSION QUESTIONS:

1. How should a supervisor handle an employee who is under the influence of intoxicants? (LG)
2. In what sense is a supervisor doing a disservice to an employee when the employee's condition of unfitness to work safely is ignored?
3. What community agencies are there that employees could be referred to for professional help with either chronic physical or emotional problems?

INSTRUCTION OBJECTIVE:

This section has several objectives: (1) To provide supervisors with a proper understanding of the concept of discipline. (2) To distinguish between preventive and corrective disciplinary measures. (3) To provide supervisors with a sequence of corrective measures for dealing with uncooperative employees.

INTRODUCTORY LEAD:

"All supervisors must sooner or later deal with employees who are uncooperative about working safely. If supervisors turn their back on the problem, they run the risk of losing respect and inviting more of the same. They have no alternative but to take an appropriate measure of corrective action. That brings us to the subject of discipline. Most supervisors confuse discipline with penalties. There's more to it than that. That's what we will discuss today — discipline and disciplinary measures.

INSTRUCTION QUESTIONS:

1. WHAT ARE SOME REASONS WHY SUPERVISORS HAVE HANDLED DISCIPLINARY PROBLEMS INADEQUATELY IN THE PAST? (p. 8) (LG)

Use the first paragraph under the heading "The Discipline Problem Today" as a means of introducing this question. Ask the group to develop by discussion some of the reasons why supervisors have handled disciplinary problems inadequately in the past. Allow about 15 minutes of discussion. Get different volunteers to give the "reasons". If they were not included, add and explain the three answer key points given in the text.

2. WHAT ARE THE TWO MEANINGS OF DISCIPLINE? (p. 8) (SI)

Prepare thoroughly for this question. Handle it by straight instruction. Have the two basic ideas listed on the answer pad, e.g. (1) Discipline is an attitude of readiness to do what is required. (2) Discipline is any action that helps develop the attitude of readiness

Break up the idea that discipline merely means punishment for wrongdoing. Point out the significance of the viewpoint that there are two meanings of discipline.

3. WHAT IS PREVENTIVE DISCIPLINE? HOW IS IT DIFFERENT FROM CORRECTIVE DISCIPLINE? WHAT ARE SOME SPECIFIC PREVENTIVE DISCIPLINARY MEASURES? (p. 9) (Q & A; LG)

Either explain or get someone from the group to explain the concept of preventive discipline. Do the same for the concept of corrective discipline.

When you are confident the group understands the difference, ask the group to identify by LG discussion, specific kinds of preventive disciplinary measures. Record on the appropriate pad the answer key points. Conclude by emphasizing that preventive disciplinary measures are the best way to build a sense of discipline.

4. WHAT ARE THE SIX BASIC PROCEDURES FOR CORRECTING SAFETY VIOLATIONS? WHAT IS THEIR NORMAL SEQUENCE OF APPLICATION? (p. 9)

Either project Figure 1 or direct attention to it in the text. Explain or get volunteers from the group to explain the main idea, not the details, of each type of correction shown in the diagram. Deal with them in the normal sequence of occurrence. Explain the idea of what is meant by the normal sequence of occurrence.

5. UNDER WHAT CONDITIONS IS IT REASONABLE TO DEVIATE FROM THE NORMAL SEQUENCE OF CORRECTIVE ACTIONS? (p. 11-13) (Q & A)

Again, work with Figure 1. Point out deviation No. 1. Ask what might the circumstances be that call for such a deviation. Do the same for the other deviations. Where there are serious differences of opinion, use small group LG discussions to get a resolution of the differences. If they are not resolved, give the "official" viewpoint.

Point out the factors that should be taken into consideration when determining that course of corrective action to take. You may want to have the five points (see p. 11-12) written on the answer pad.

ADDITIONAL DISCUSSION QUESTIONS:

1. Ask if any supervisor present has a problem employee now. Have the problem described without mentioning names. Get the group to discuss how they would handle the case.

Handling Safety Problem Employees

Chapter

11

Use of Corrective Disciplinary Measures

Section

33

INSTRUCTION OBJECTIVE:

The objectives of this section are to give supervisors an understanding of (1) how to apply correction by persuasion or warning, (2) how to handle a corrective interview, and (3) the principles of applying disciplinary penalties.

INTRODUCTORY LEAD:

"In our last session, we discussed six kinds of corrective disciplinary measures. Furthermore, a normal sequence of corrective action was indicated — first reinstruction, then correction by persuasion or warning, then a corrective interview, and finally, as a last resort correction by disciplinary penalty. Today, we will discuss in detail the last three."

INSTRUCTION QUESTIONS:

1. HOW SHOULD THE STEPPED UP CORRECTION BY PERSUASION OR WARNING BE HANDLED? (p. 14-16) (SI)

Explain when this type of correction is in order (p. 14).

Have the six basic steps written on the answer pad. Handle each step as follows: (1) Explain the basic idea of what should be done. (2) Get the group to give reasons why it should be done that way. (3) Read aloud the textbook italicized sections as an example.

When you have covered each step, explain that the details of how each step is applied depends on the employee, the supervisor, and the nature of the unsafe problem.

The book lists five ways to persuade an employee through the use of appeals. Have each appeal written on the answer pad. Explain each. Have a volunteer from the group read the italicized sections (p. 15-16) to illustrate the different appeals. Allow an additional five minutes discussion to develop additional "appeals". Be sure to explain that an appeal does not mean a "bended-knee" approach.

If time permits, try role-playing this type of correction. Give the group the facts of a problem employee. Request them to plan how they would correct such an employee. Ask at least two volunteers to demonstrate by role-playing how they would correct the employee. Play the role of the problem employee. Respond to the person playing the role of the supervisor as you suppose the normal employee may respond to what is being said. Get the group's reaction to each role-playing.

2. HOW SHOULD THE CORRECTIVE INTERVIEW BE CONDUCTED? (p. 16-20) (SI)

Have a step by step outline of the corrective interview written on the answer pad. (The outline consists of the bold type headings and sub-headings in the text.)

Explain the corrective interview as a last effort to straighten out a problem employee without resort to penalty. Using the outline as a guide, explain each step in terms of what, why, and how. (It will require thorough study of the text to instruct this type of correction.) Where a basic step is illustrated in the text by an italicized quote, read or have someone else read the quote aloud. When the text illustrates a conversation between the supervisor and the employee, have each part read by a different person.

After each step, check for questions before going on. Allow for discussion on any points of disagreement.

If time permits, the corrective interview should be role-played in the manner suggested for Question 2.

3. WHAT CASE CAN BE MADE FOR THE USE OF PENALTIES AS A LAST RESORT? WHAT ARE THE CONSEQUENCES OF FAILING TO RESORT TO PENALTY TYPE DISCIPLINE WHEN CALLED FOR? (p. 20) (LG)

Allow a full ten minute discussion of these questions. Do not participate. Small group discussion will invariably develop the correct answer, and persuade the doubters in the process.

4. DOES A DISCIPLINARY PENALTY USUALLY RESULT IN A PERMANENTLY DISGRUNTLED EMPLOYEE? (p. 21) (LG)

Ask the group to develop the answer by discussion. Ask them to try to recall actual cases, giving the facts of the case, the penalty, and the employee's reaction in time. Ask them to cite experiences they may have had with employees they caused to be disciplined with a penalty.

5. WHAT ARE THE PRINCIPLES THAT SHOULD GOVERN THE USE OF DISCIPLINARY PENALTIES? (p. 21-22) (Q & A)

Have the eight principles written on the answer pad. Cover each point as follows: (1) Read it aloud. (2) Ask for a volunteer to explain why it is a sound principle. If the answer is off the mark, ask for several other interpretations. (3) Encourage questions after each point.

ADDITIONAL DISCUSSION QUESTIONS:

1. Ask the group to discuss whether or not discipline is lax among employees now. (LG) If so, what can be done about it?
2. Why is the department head the employee who normally should conduct a corrective interview?
3. What authority should the person who conducts a corrective interview have?
4. Why is a written record of past offenses essential to the strategy of the corrective interview?

Controlling Physical Hazards

Chapter
12

Controlling Machinery & Handtool Hazards

Section
34

INSTRUCTION OBJECTIVE:

The objective of this section is to acquaint supervisors with the basic methods of controlling machinery, equipment, and handtool accidents.

INTRODUCTORY LEAD:

"This is the first of two sessions on methods for controlling physical hazards. Two common sources of physical hazards are machines and handtools. All of you have employees who either operate or work around machines or who use handtools. That's why we will stress the common machinery hazards and the basic methods of safeguarding machines. We will also discuss what can be done to control handtool and power tool hazards. The purpose of this session is not to make safety engineers out of supervisors. It is to acquaint you with the basics of controlling two repetitive sources of accidents — machines and handtools.

INSTRUCTION QUESTIONS:

1. WHAT IS THE BROAD CONCEPT OF MACHINE SAFEGUARDING? WHAT ARE THE MOST COMMON CAUSES OF MACHINERY ACCIDENTS? (p. 1) (SI)

Explain the answer to the first question as stated in the text. For the second question, have the causes written on the answer pad. Explain each. Ask the group to cite either an accident or a current condition that needs correction for each item. Be prepared to cite accidents if the group does not recall any. Ask the plant safety and industrial hygiene supervisor to identify appropriate cases for you before this session.

2. WHAT ARE THE CRITICAL PARTS OF MACHINERY THAT SHOULD BE SAFEGUARDED? (p. 2) (SI plus assignment)

Use Figure 1 to point out the machinery hazards. Either direct the group's attention to the text figure or, better, project the figure via slides, an opaque, or overhead projector. For each item, point at the unsafe condition. Ask why it is unsafe. What could occur? Point at the heading to emphasize the hazard. Direct attention to the method of safeguarding used.

Give the group the assignment to check their area for machinery hazards that are unguarded or poorly guarded. Ask for the hazards to be identified in writing by the next session.

3. WHAT ARE THE BASIC PRINCIPLES FOR SAFEGUARDING HAZARDOUS MACHINERY? (p. 2-6) (Q & A)

Have the bold headings of the principles listed on the answer pad. (See p. 2-6.) Ask a different person to explain each one, e.g. the basic idea and where it is most appropriately applied. (Not all of the principles may apply to machines under the supervision of your group. Emphasize the ones that do.)

Point out the design requirements for mechanical safeguards. (Direct the group's attention to the text (p. 5-6) or have the requirements listed on the answer pad.) Discuss each one. Ask the group if they know of any safeguards that fail to meet the design requirements. Try to develop a list to turn over to the plant safety and industrial hygiene supervisor for further study.

4. WHAT ARE THE MAJOR CAUSES OF HANDTOOL ACCIDENTS? WHAT CAN SUPERVISION DO TO CONTROL HANDTOOL ACCIDENTS? (p. 6-10) (LG)

Have the answer key points (see p. 6-10) to the two questions written on the answer pad, but do not expose. Turn the questions over to the group to develop the answers by discussion. After discussion, reveal the answer key points. Explain each briefly. Ask the group if they developed additional ideas in their discussion.

Discuss any problems with impact to (1) unavailability of proper tools, (2) inadequate tool storage facilities, (43) inadequate servicing of handtools.

(OPTIONAL) Develop a list of handtools used by the employees under the supervision of those present. Record each on the recording pad. After the list is developed, identify common unsafe conditions and practices associated with each handtool.

ADDITIONAL DISCUSSION QUESTIONS:

1. How can written safe handtool practices be established for currently used handtools?
2. Discuss a selection of machinery accidents that occurred over the past year or so. What were the causes? How was recurrence prevented? Are the corrective actions that were taken sufficient?

Controlling Physical Hazards

Chapter
12

Controlling Material & Related Hazards

Section
35

INSTRUCTION OBJECTIVE:

This section's objectives are: (1) To acquaint supervisors with the principles of fire prevention and control. (2) To show them how to control manual material handling hazards. (3) To acquaint them with safe storage practices for different types of materials.

INTRODUCTORY LEAD:

"This is the second of two sessions on controlling physical hazards. Today, we will cover fire prevention and control, manual material handling, and safe storage practices. Not all of the information covered in the text applies to your operations. Where it does, you should know it thoroughly because it is the kind of information that must be gotten across to our hourly employees — and you are the ones who have to get it across."

INSTRUCTION QUESTIONS:

1. WHAT ARE THE BASIC PRINCIPLES FOR PREVENTING FIRES? WHAT ARE THE BASIC PRINCIPLES FOR PUTTING OUT FIRES? (p. 11-12) (SI)

Direct attention to the fire triangle in the text or drawing on the answer chart. Explain how the three elements are necessary to have a fire. Derive the three principles for fire prevention from the fire triangle. Write them on the recording pad. Explain each. Get the group to cite examples of applying the three principles. Do the same for the three principles (p. 13) for putting out fires.

2. FIRE PREVENTION: WHAT CAN BE DONE TO ELIMINATE OR CONTROL FUEL SOURCES? (p. 12) (LG)

Have the types of fuels (p. 12-13) heading the top of three answer pad pages, e.g. "ordinary combustibles", "liquid flammables", and "flammable gases, vapors, dusts". Get the group to identify specific items in each category that are to be found in their areas.

Have the group develop specific do's and don'ts for the elimination or control of each class of combustibles. (If the plant has a qualified fire crew, a member may be invited to discuss control of combustibles. Also, consult your plant safety and industrial hygiene supervisor about films on the subject.)

3. FIRE PREVENTION: WHAT CAN BE DONE TO ELIMINATE OR CONTROL POTENTIAL IGNITION SOURCES? (p. 13) (Q & A)

Ask the group to identify potential sources of ignition, e.g. electrical equipment, friction sources, open flame equipment, etc. List them on the answer pad. For each category, ask the question, "How can we avoid _____ from becoming an ignition source?" Make sure the major key points suggested in the text are brought out.

4. WHAT SHOULD SUPERVISION KNOW ABOUT FIRE EXTINGUISHERS? (p. 14) (SI; if practical demonstration)

List the four main points on the answer pad. Discuss (1) strategic location, (2) maintenance of readiness, (3) selection of right extinguisher, and (4) extinguisher use. Have a display of the different types of extinguishers for (3) and (4) above.

If practical, have an outdoor demonstration of extinguisher use. (There are excellent films available on selection and use of extinguishers; consult your plant safety and industrial hygiene supervisor.)

5. WHAT ARE SOME ELEMENTARY PRECAUTIONS ABOUT MANUAL MATERIAL HANDLING? (p. 16) (Q & A)

Have the basic material handling actions listed on the answer pad. For each, draw a list of do's and don'ts from the group. After each ask, "why?". Demonstrate how to lift and set down objects.

6. WHAT ARE THE HANDLING PRECAUTIONS THAT APPLY TO (1) BOXES AND CARTONS, (2) SACKS AND BAGS, (3) BARRELS AND DRUMS, (4) SHEET METAL, (5) SCRAP METAL, (6) LENGTHY OBJECTS, (7) MOLTEN MATERIALS, (8) ACIDS AND CAUSTICS AND (9) TOXIC CHEMICALS? (p. 17-19) (SI and Q & A)

Omit any of the above that do not apply to your group's operations. Add missing items that do.

Focus the group's attention on each category. For each explain the do's and don'ts of lifting, moving, etc. Get group participation of asking for explanations of why. Where appropriate, demonstrate.

Get the group to recall accidents that resulted from faulty material handling. Get the members to suggest the appropriate precautions.

Select safety rules that have to do with manual material handling. Get volunteers to explain the reason for each such rule.

7. HOW SHOULD THE FOLLOWING ITEMS BE STORED? (1) BOXES AND CARTONS, (2) BARRELS AND DRUMS, (3) BAGS AND SACKS, (4) LUMBER STOCK, (5) PIPING AND BAR STOCK, (6) SHEET METAL, (7) WIRE AND CABLE, ETC. (p. 20-23) (Q & A)

Omit any of the above that do not apply to your group's operations. Add missing items that do.

Develop by discussion and/or instruction proper procedures for the storage of the listed items. Use photographs, sketches, or films to illustrate correct and incorrect storage methods. If you have some appropriate accident cases related to poor storage, cite them. Get the group to identify the causes and indicate the necessary corrections.

End with a LG discussion to identify storage problems that exist in the group's operations. Develop a list. Discuss possible solutions.



Research Center
SERVICE INVESTIGATION

S. I. No. 72-188

Subject Industrial Hygiene Survey - Coke Ovens,
Houston Works

Charge No. 03-S1

Requested by: { Letter dated _____ from _____ to _____
Work Req. dated 2-29-72 Signed by C. W. Simpson

In charge of G. E. Manning

Report by R. I. Kinnett

Procedure

Determine total dust loads and coal tar pitch volatiles
(benzene soluble portion) on silver membrane filter sample.

Date Material Received 2-29-72

Description of Material

Ten dust samples collected on silver membrane
filters contained in Millipore field monitors.

Remarks

This study was conducted to evaluate the
employee's exposure to coal tar pitch
volatiles and total dust in the working areas
near the coke ovens.

Report to:

C. W. Simpson

Copies to

R. J. Bendure
J. S. Chapman
M. Dannis
G. E. Manning

Research File

Assigned to

Date

RIKinnett

3-8-72

Approved By

M. Manning

~~COPIES~~ Manager

Date 3/24/72

ARM007756A89

cc: R. J. Bendure
J. S. Chapman
M. Dannis
G. E. Manning

March 24, 1972

To: Mr. C. W. Simpson
Industrial Hygiene Engineer
Safety & Industrial Hygiene

From: R. I. Kinnett

Subject: Industrial Hygiene Survey - Coke Ovens -
Houston Works

S.I. 72-188

Samples obtained by you on February 23 and 24, 1972, at the Coke Ovens, Houston Works were submitted to the Chemical Laboratories, Research and Technology for analysis. These samples were obtained by drawing ambient air through Millipore field monitors containing silver membrane pads. Total dust load and coal tar pitch volatiles (benzene soluble fraction) were requested on these samples. The analyses were carried out in the same manner as described in S.I. 71-769.

The T.L.V. for coal tar pitch volatiles (benzene soluble portion) is 0.2 mg/M³. All but one of these samples were above the established T.L.V. The samples representing the exposure of the Lidman, the Larryman, the Door Cleaner (Coke Side) and the Door Machine Operator were well above the T.L.V.

R. I. Kinnett

R. I. Kinnett
Advanced Research Technician
Chemical Laboratories
Research & Technology

RIK:vm

References: Daybook 3480, pg. 20
Chem Code 3K-9

Table I
Analyses of Houston Coke Plant Survey Samples

<u>Identification</u>	<u>Sample Location</u>	<u>Date</u>	<u>Total Dust Load mg/M³</u>	<u>Benzene Soluble Portion mg/M³</u>
F	Lidman	2-23-72	2.1	1.16
10	Larryman		3.9	2.68
A-50	Door Cleaner (Pusher Side)		1.2	0.34
102	Door Cleaner (Coke Side)		3.1	1.71
*L	Door Machine Operator		1.6	0.93
V-1	Lidman	2-24-72	2.9	2.13
A-1	Larryman		1.6	0.74
32	Door Cleaner (Pusher Side)		0.65	0.16
K	Door Cleaner (Coke Side)		3.2	1.42
D	Door Machine Operator		1.5	0.74
Threshold Limit Value (T.L.V.)			Does not apply	0.20

* Silver membrane filter was broken in one spot.

3K-9

03-S1

C.W. Simpson

Industrial Hygiene Coke Oven Houston

Silver Pads

	Orig wt	Final wt	Aft. ex- traction	Total Dust load gms	Air Vol (m ³)	Total dust load mg/m ³	gm mg	Benzene extractable mg/m ³
F	.35985	.36110 <u>37110</u> -125	.36110 36040 <u>00070</u>	.00125	.606	2.06	.00070	1.16
D	.30035	.30125 <u>30035</u> -100	.30125 30080 <u>00045</u>	.00090	.612	1.47	.00045	0.74
* L	.28325	.28420 <u>28325</u> -100	.28420 28365 <u>00055</u>	.00095	.590	1.61	.00055	0.93
A-1	.29795	.29890 <u>29795</u> -100	.29890 29845 <u>00045</u>	.00095	.608	1.56	.00045	0.74
K	.35670	.35865 <u>35670</u> -100	.35865 35780 <u>00085</u>	.00195	.600	3.25	.00085	1.42
10	.36400	.36630 <u>36400</u> -230	.36630 36470 <u>00160</u>	.00230	.596	3.86	.00160	2.69
32	.37830	.37870	.37860	.00040	.612	0.65	.00010	0.16
A-50	.39980	.40050 <u>39980</u> -70	.40030	.00070	.584	1.20	.00020	0.34
* 102	.33230	.33410 <u>33230</u> -180	.33310	.00180	.586	3.07	.00100	1.71
V-1	.33455	.33630 <u>33455</u> -175	.33500	.00175	.610	2.87	.00130	2.13
BI (A-5)	.34145	—	.34140				.00005	

OK
3/20/72

Ronald L. Kennel
3-8-72

**INSTRUCTOR'S GUIDE
FOR
ACCIDENT PREVENTION
FUNDAMENTALS
AND
INDUSTRIAL HYGIENE**

ARMCO INC.

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I. ROLE OF DISCUSSION LEADER

ACCIDENT PREVENTION FUNDAMENTALS is the product of many years of effort and experience. It is comprehensive and covers all basic tools of plant accident prevention. The concepts are sound. The principles are widely accepted. The procedures are practical. They have been tried and found effective in other major steel companies.

To be maximally effective, however, the Program needs discussion leaders who will put it across with skill, conviction, and enthusiasm. The best developed program of instruction is no better than the instructor who gives it. As the instructor, you can make or break the Program. If you approach your instruction task as a burdensome chore, come to the training sessions poorly prepared, and do a poor job of instruction, the Program will be tedious and poorly received. On the other hand, if you know the subject matter and impart it with vigor and skill, it will be a rewarding experience to the participants.

ACCIDENT PREVENTION FUNDAMENTALS is a line management responsibility. For that reason, the discussion leaders have been chosen from the ranks of line management wherever possible. It is recognized that most of those selected will have had relatively little experience instructing a program of this magnitude. This manual has been prepared to help you carry out your instruction assignment.

The Instructor's Guide has broken down each of the 36 chapter sections into a series of instruction questions. Your job as an instructor and discussion leader is to instruct and/or discuss each of these key questions. The Instructor's Guide describes how to handle each such question.

The Guide does not intend to restrict the initiative and ingenuity of the instructors. Feel free to deviate from the instructions given herein if you think it will improve the quality of instruction. Be cautious, however. Do not reach beyond your knowledge and skills. The instructional methods and recommendations described herein do work. They have been tried and found satisfactory. Follow them unless your experience as an instructor and discussion leader convinces you that you can improve upon them.

II. RECOMMENDED INSTRUCTION MATERIALS

The following instructional materials are recommended:

1. Large pads of conference paper. (About 28"x34") Standard-sized conference pads may be purchased with holes punched at the top for mounting the pads on wall brackets or easels. Lightweight collapsible easels are available commercially for holding such pads. Three easels are required for instruction.
2. Heavy black and red crayons. Black and red "Magic Marker" ink pens are preferable to crayons from the standpoint of visibility. Use black for general purpose writing. Block lettering is preferable to script writing because of greater legibility. Use red to underline key words. Either write the key words in red or underline such words in red to make them stand out.
3. Pencils and note pads. Not many supervisors take notes during training sessions. There is really no need for extensive note taking. Even so, note pads and pencils should be made available. There will be times when they are handy.
4. Slide projector. (Optional) Some plants may wish to convert the text illustrations to 2"x2" slides. Slides make it easier to focus a group's attention to a particular illustration or part of an illustration. They also break up the instruction routine. Unless a cartridge-type projector is available, it is better to do without the slides. Manually operational projectors involve too much delay.
5. Opaque projector. (Optional) The illustrations in the text may be projected directly from the text with an opaque projector, thus eliminating the need for costly slides. An opaque projector requires a well-darkened room, and does not project as sharp an image as the slide projector. It is preferable, however, to asking a large group of people to thumb through the text to locate specific illustrations.
6. Conference tables. (Optional) It is preferable to have trainees sit at tables for the training than sit in rows of chairs. Tables are more comfortable, and practical for discussion. They can be arranged so a large group is broken up into a number of small conversational groups.

III. RECOMMENDED INSTRUCTIONAL METHODS

Each chapter is organized into one to four major sections. The sections are distinctively headed and titled. They are the basic units of instruction. There are 36 sections.

To simplify instruction, each section has been broken down into a series of key questions. Your job as discussion leader will be to see that the questions are answered. There are three ways you can get the answers to the questions across to the group. They are as follows:

1. **Straight Instruction.** You pose the question to the group, and then provide the answer by telling them.
2. **Questions and Answer Discussion.** You put the question to the group, and you try to draw the answer key points from the group.
3. **Leaderless Group Discussion.** You pose the question to the group, and then let the members discuss it among themselves while you refrain from entering into the discussion.

The details of these three methods of instruction are described as follows:

The Straight Instruction Method (SI)

General Description. In the straight instruction (SI) method, the instructor describes, explains, demonstrates, etc., while the participants listen, take notes, and ask questions. The discussion leader is the key figure and does the talking.

The SI method is most applicable when the topic involves matters that are new and unfamiliar to the participants, and when there is reason to believe the key points of the topic will not be readily developed through free discussion. The SI method is also suitable when the instruction topic involves factual information unknown to the group; for example, accident statistics, details of new procedures, or definitions of terms.

The SI method has an important advantage over discussion methods of training in that the leader has more control over the training situation and can pace the instruction to fit a time schedule. The instructor can direct the group's thinking, present ideas in the order planned, and use predetermined examples. Questions can be deferred until the instructor is ready for them.

The SI method has one serious weakness. Most people are not good listeners. They tend to become restless, bored, sleepy, and inattentive when forced to listen passively for too long a period. Of course, the skill of the leader and the nature of the topic will influence how soon listeners lose interest. Even so, the passive role of participants in this method inclines them to periods of inattentiveness. For that reason the emphasis of this course will be on discussion methods.

General Procedure. A general procedure that is suitable to most discussion leaders conducting the group sessions involves four basic steps:

1. Introduce the topic.
2. State the instruction question.
3. Present key points of the answer.
4. Summarize or conclude the topic.

The following material explains each step in detail.

1. How to introduce the topic. Before a group can be instructed on any topic, it must be prepared to listen to the topic. The way to do that is to introduce the topic so that the introduction sets the stage for the instruction. A good introduction has the following five characteristics:
 - (a) It is brief. A lengthy, meandering introduction runs the risk of confusing the group as to what will follow. It also runs the risk of causing people to tune out the leader.
 - (b) It describes generally what the instruction will cover. The introduction is the same as the title of a book, or a chapter, or a section of a chapter. It tells what will follow without going into details.
 - (c) It ties the topic to a previously discussed topic when there is such a relationship. Suppose, for example, the topic is a continuation of a preceding topic. The introduction should point out the relationship to the previous topic to establish continuity.
 - (d) It ties the topic to a more general subject when it is in the nature of a sub-topic. A topic usually becomes more meaningful when it is related to the larger subject of which it is a sub-topic. An introduction should bring out such relationship when it exists.
 - (e) It arouses some degree of interest. One way to arouse interest is to relate the topic to the needs and interests of the group. For example, most supervisors are more apt to be interested in why people work unsafely if told that such knowledge will help them handle the chronic unsafe employee. Another way to arouse interest is to create a need to know the topic. For example, people are more apt to show an interest in a topic if they know they will be quizzed on their knowledge of the topic.

Sometimes, you may use the introduction to tell the group how you plan to cover the topic. For example, you may plan to first instruct the group in two ways of handling a problem and secondly follow-up with a group discussion of the pro's and con's of each way. Telling the group in advance what you plan to do serves to get them ready for the discussion by listening more attentively to the instruction phase.

2. How to state the topic question. Each session is broken down into a series of topic questions. They are often the same as the questions in the script at the end of each session. The questions are listed in later sections of this guide.

You should have the topic question written out in block letters on one of your large easel pads. (Follow same procedure if using one of the alternate methods.) This should be done before the start of the training session. When you finish your topic introduction, draw the group's attention to the topic question. Read it slowly, distinctly, and with emphasis. If the question is lengthy, it is sometimes a good idea to repeat the question to make sure it sinks in. If the question is susceptible to misunderstanding, rephrase the question instead of merely repeating it. For example: "What are the main causes of unsafe practices? In other words, why do people often act unsafely?"

Do not put more than one topic question on a single page of your easel pad. Be sure to print boldly so the question can be easily read by all. Don't tear off such pages when you are through with the discussion of a particular question. Instead, flip them over. You may want to use the same questions with another group of participants, or refer back to the questions with the same group later.

3. How to present the key points to the answer. The answer to any topic question will consist of a number of key points that must be explained in a proper sequence. If these key points (and their sub-points) are written out, they will be an outline of the answer. Here, for example, is an incomplete outline of the answer to the question, What is the general procedure for the lecture method of instruction?

1. INTRODUCE THE TOPIC.

- a. Be brief.
- b. Tell what follows.
- c. Tie to previous topics.
- d. Tie to general subject.
- e. Arouse interest.

2. STATE THE TOPIC QUESTION

- a. Get question from leader's guide.
- b. Read with emphasis.
- c. Repeat or rephrase.

Presenting the key points means explaining or describing the elements of such an outline. The leader's guide for each session indicates the key points that should be gotten across to the group for each topic question. Those key points are the basis of developing an outline as shown above. With practice, you should be able to make such an answer outline for each topic question.

An experienced discussion leader who knows the subject thoroughly will have the answer outlined. For example: the instructor would know the four basic steps of the lecture method, and would know the sub-points of each step and the proper order to explain them. Chances are you won't be able to operate in that fashion, at least not at first. What can you do to avoid the embarrassment of forgetting or mixing up key points and sub-points while in front of the group? We suggest you do this:

Use your second easel pad as an answer guide. Outline your key points and their sub-points in the manner shown above on the pad before the start of the discussion session. Keep the page covered until you are ready to use it. Then, use it as a guide to cue you as to what to explain and in what order. Do not regard this method as a substitute for knowing your topic. If you don't really know your topic, the outline in front of you won't help. It will be very clear to the group that you have not prepared adequately for the session. If you do know the topic, the outline will work smoothly as a prompter. It will trigger off all the things you have to say.

When you have completed a key point, you may want to check with the group to see if they have any questions. It is not necessary to ask the group if there are any questions after presenting each key point. With experience, you will develop a feel for when to pause for questions.

4. How to summarize or conclude the topic. After you have completed the presentation of the key points, the topic instruction is ended with either a summary of what has been covered or a conclusion drawn on the basis of what has been covered.

A summary is a brief review of the main points of the topic. A simple way to summarize any topic is to review the key points and sub-points of the topic outline. Do this by pointing to them on the pad as you mention each one briefly. Here, for example, is how a leader may summarize the topic outline shown in the previous section.

"Let's summarize what has been said. The question was, What is the procedure for the

lecture method of instruction? (Point to topic question.) There are four steps to the procedure. (Point to steps as you read them.)

1. Introduce the topic.
2. State the topic question.
3. Present the key points.
4. Summarize or conclude the topic.

"A good topic introduction, we said, should be (points to sub-points of the first step) brief; it should tell what follows; it should tie to previous topics" . . . and so on until the summary is complete.

A conclusion is a generalization based upon the facts or opinions brought out in the presentation of the topic. For example, suppose you have been discussing reasons why first-line supervisors should investigate all minor injury accidents. You might end your discussion something like this:

"We agreed that the first-line supervisor is the logical person to investigate all accidents that occur to employees. The supervisor knows the jobs, the workers, and the conditions under which they work. Also, the supervisor is the one who must learn about the causes of accidents."

Usually, a topic is ended with either a summary or a conclusion. End with a summary when your presentation has been primarily to tell, to give information. End with a conclusion when your presentation has been to convince, to impress a generalization.

The Question and Answer Discussion Method (Q & A)

General Description. With some topics there may be good reason to believe that the key points are known to the group as a whole, although no one person may know all of the separate points of the answer. In other words, the answers are there, waiting to be brought out. To promote active participation, the leader can draw the answers from the group through the use of skillful questioning and guidance. This is preferable to telling the group as a whole what they already know. In effect, the members of the group tell each other the answers. The leader is merely the catalyst who brings the answers out of the group.

General Procedure. The general procedure for the question and answer discussion method involves the following steps:

1. Introduce the topic.
2. State the topic question.
3. Draw out the answer key points.
4. Summarize or conclude the topic.

The following material explains each step in detail.

1. **How to introduce the topic.** The topic introduction for a question and answer discussion topic is no different from the way the topic is introduced for the SI method. The introduction should relate the topic to a topic discussed previously or to broader subject matter.
2. **How to state the topic question.** The topic question should be written out in block letters on one of the easel pads before the start of the training session. After you have completed your introduction, read the topic question slowly, distinctly, and with emphasis to the group. Repeat or rephrase the topic question if you feel additional emphasis is needed.

3. **How to draw out the answer key points.** Before you ask for answers to the topic question, write a heading on the second easel pad that ties in with the topic. For example, if the topic question is, What are the reasons why people work unsafely?, your heading might be, Why People Work Unsafely. Jot down the answer key points as you draw them from the group.

Ask the group for the answers. Call on someone whom you know is likely to have an answer if you get no immediate response. If several indicate they have something to say, recognize only one person at a time.

If what the person has to offer is an acceptable answer, record the key point on the pad. Record only a phrase that expresses the core of the idea. Strengthen the answer with your own comments and examples if you feel it needs such support. Handle this as a running commentary while you record the key points.

If what the person has to offer is unacceptable as an answer, don't say it is wrong. Instead, turn the answer over to the group. Ask the group for agreement or disagreement. Use questions to guide the group's thinking. Usually, you can count on the group to reject or at least cast doubt on the unacceptable answer.

An alternative way to handle an unacceptable answer is to rephrase the answer so that it is more acceptable without making a point of doing so. Then, if the answer needs further improvement, correct it when you record it on the easel pad. This requires a little tact, but it has the advantage of not making an issue of somebody's answer.

Proceed to draw out other answer points from the group in a similar manner. If the group fails to mention one that you feel should be included, throw your point out for the group's consideration. If it has merit, the point will be accepted, and can be added to the others.

4. **How to summarize or conclude the topic.** When you have drawn out the answers, and the group has no further points to offer, summarize the key points quickly. Use what you have recorded as a guide for your summary.

If the answers lead to a general conclusion that should be emphasized to the group, either draw the conclusion, or get the group to draw the conclusion through the use of leading questions.

The Leaderless Group Discussion Method (LG)

General Description. The question and answer discussion method (Q & A) uses the leader to evoke discussion. The leader's role is an active one of guiding or controlling the direction of the discussion.

The leaderless group discussion method (LG) permits the leader to be removed from the discussion. It works like this. The leader divides the large group into several smaller groups. Ideally, the smaller groups should consist of three or four people. The discussion question is given to the groups, and then the groups are turned loose to discuss the questions and develop the answer key points on their own. One person in each small group is asked to jot down ideas developed through the discussion. After a given period of time, usually five to ten minutes, the leader terminates the discussions and then calls on each group to give one point related to the topic question, continuing from group to group until all points have been picked up. Each point is recorded with appropriate comments as it is received from a group.

General Procedure. The general procedure involves the following steps:

1. Introduce the topic.
2. State the topic question.
3. Allow small group discussion.
4. Collect key points from small groups.
5. Summarize or conclude the topic.

The following material explains each step in detail.

1. **How to introduce the topic.** As part of your introduction, tell the group how you plan to proceed and what you expect them to do. Describe how you will break them up into small discussion groups, how much time you will give them to discuss the topic, and how someone should record answer points in each small group.
2. **How to state the topic question.** The topic question should be written out in block letters on one of the easel pads before the start of the training session. After you have completed your introduction, read the topic question slowly, distinctly, and with emphasis to the group. Repeat or rephrase the topic question if you feel additional emphasis is needed.
3. **How to initiate the small group discussions.** After the topic question has been stated, ask the people to break up into small groups as instructed. When they are all settled, ask each group to select one person to jot down answer points as they are developed in the group discussion. Tell them if they have any questions during their discussion they are free to call on you.

During the discussion period, it is a good idea to visit briefly with each discussion group to check whether or not they are proceeding as expected. Do not participate in the discussions during such visits except to help if the discussion is not going well.

4. **How to collect key points from small groups.** After you call a halt to the discussions, ask each group in turn for one answer point that was developed during the discussion. The recorder of each group is the person to give the answer. Record each answer key point on the pad.

Proceed from group to group until you have collected all of the answer points developed during the discussions. Handle questionable answers as described previously.

5. **How to summarize or draw topic conclusions.** When you have received all the answers developed by the small group discussions, and the groups have no further points to offer, summarize the key points quickly. Use what you have recorded as a guide for your summary.

If the answers lead to a general conclusion that should be emphasized to the total group, either draw the conclusion, or get the group to draw the conclusion through the use of leading questions.

General Hints For Good Discussion Leading

1. Prepare thoroughly for each discussion session.
 - Know your subject.
 - Know how you will present it.
2. Speak so you can be understood.
 - Don't talk too rapidly or slowly.
 - Avoid talking to the floor.

- Avoid talking to the easel or blackboard.
 - Use simple, everyday language.
 - Speak up so you can be heard.
3. Maintain good personal relations.
- Don't ridicule any ideas offered.
 - Help individuals to express their ideas.
 - Compliment a particularly good idea.
 - Don't play one participant against another.
 - Don't stifle complaints or gripes.
 - Don't "prove" someone is wrong.
 - Create a friendly atmosphere.
4. Explain your topics thoroughly.
- Use concrete examples to support ideas.
 - Don't assume people know more than they do.
 - Check the group's comprehension.
 - Use diagrams, sketches, pictures, etc.
5. Encourage active participation by all.
- Don't allow anyone to do all the talking.
 - Feed easy questions to non-participants.
 - Protect participants from ridicule by others.
 - Protect the right of minority opinion.
 - Don't argue against ideas offered.

IV. USE OF INSTRUCTOR'S GUIDE

For each of the 36 sections, there is an instruction guide. Each guide is headed with the same distinctive heading as the equivalent text section. A guide consists of four parts.

1. The Instruction Objective.
2. An Introductory Lead.
3. The Key Instruction Questions.
4. Alternative Discussion Questions.

Each is discussed briefly below.

1. **Instruction Objective.** The instruction objective is a short paragraph that describes or enumerates your objectives as an instructor for the section. Do not read the paragraph to your trainees. It is not for the purpose of orienting them. Its sole purpose is to remind you of the instruction goals of each section.
2. **Introductory Lead.** The introductory lead is an example of how you might introduce the section to the group. Each section should be given a proper introduction that orients the group on what is to come. A good introduction sets the stage for the instruction and discussion that follows.

The introductory lead is given as a quote. Do not make the mistake of reading the introductory lead to the group. That sounds too mechanical. Also, do not try to memorize it. It is provided merely to give you an idea of how you might introduce the section. Feel free to use a different type and style of introduction. If you do use the one given, put it in your own words.

3. **Key Instruction Questions.** The key instruction questions for each section are typed in CAPITAL LETTERS. Behind each question, there is the number of the text page on which the answers to the question can be found. Behind the page number, there is an abbreviation which tells the recommended method(s) for handling the instruction: (SI) stands for straight instruction, (Q & A) stands for question and answer discussion, and (LG) stands for leaderless group discussion.

Underneath the instruction question are suggestions for handling the question. Regard these suggestions as a blueprint for instruction. Feel free to add to what is suggested in order to tailor the answer to your particular group.

The instruction guides are printed on both sides of a page sheet. Insert a blank piece of ruled note paper between each printed sheet. With that you will have a blank page of note paper facing the instruction questions. Use the blank note page to develop your answer key points to each instruction question. Record your key points in outline form as shown in page 7. Do not elaborate, record just enough of each answer key point so that what you record will remind you of the complete answer key point. Don't record whole sentences. Record key phrases. For example, the answer key points to the question, What are the basic types of accidents?, can be written thusly:

BASIC TYPES OF ACCIDENTS

- | | | |
|-------------------|--------------------|-------------------------|
| 1. STRUCK BY | 5. CAUGHT IN | 9. DIFFERENT LEVEL FALL |
| 2. CONTACTED BY | 6. CAUGHT ON | 10. OVEREXERTION |
| 3. STRUCK AGAINST | 7. CAUGHT BETWEEN | 11. EXPOSURE |
| 4. CONTACT WITH | 8. SAME LEVEL FALL | |

The answer key points should be recorded in the same way as you intend to record them on the "answer" easel pad. That way you can prepare for a training session from the Instructor's Guide, and be confident that the same answer key points will be on the "answer" easel pad, ready to give you an assist if you need one.

WARNING: Do not rely on the "answer" chart as a substitute for studying and knowing the answers. It won't work. The answer chart is useful as (1) a prompter to get started and keep you on the track, and (2) a guide to summarizing. It will not do your instructing for you. It is no substitute for adequate preparation.

4. **Alternate Discussion Questions.** There are two methods of handling reading assignments. One way is to assign the trainees to read the text material that will be covered in the next training session. The other way is to assign them to read the text material that was covered in the just-completed training session.

With advance reading, some trainees will study and know the material well, particularly if they know they will be examined. In that case, it tends to be a little boring to have the instructor go over the same material as if they had not read it. On the other hand, one cannot assume they got it all by reading. The instructor still must cover the material. However, some of the instruction questions can be hit more lightly. That will leave time for alternative discussion questions.

The instruction questions that can be gone over lightly in view of advance readings are marked with an asterisk. Select from the alternative questions those which you think will stimulate discussion or action. You should determine in advance of each training session what alternative or additional discussion questions you will use.

An Introduction To Accident Prevention

Chapter

1

Industrial Safety History - Progress - Problems

Section

1

INSTRUCTION OBJECTIVE:

This section has several objectives: (1) to give supervision an idea of what the industrial accident problem was like before the safety movement got underway. (2) To show them how the safety movement got started. (3) To give them a background for appreciating the effectiveness of organized accident prevention. (4) To remind them that Armco has a long history of concern for employee safety. (5) To show supervisors how safety progress is measured. (6) To impress them with the tremendous progress that has resulted from organized accident prevention. (7) To convince them that accidents can be prevented and that there is no limit to improvement. (8) To review OSHA record keeping requirements and finally (9) To remind them there is still a considerable accident problem today.

INTRODUCTORY LEAD:

"In order to appreciate the progress that has been made through organized accident prevention, it is necessary to know what things were like before people made a serious effort to prevent accidents. That's what we will discuss now — how people felt about industrial accidents sixty years ago, how serious the accident problem was then, how the safety movement got underway, what has been the progress, and what are the problems ahead."

INSTRUCTION QUESTIONS:

1. WHAT WERE THE ATTITUDES AND BELIEFS PEOPLE HAD ABOUT INDUSTRIAL ACCIDENTS AROUND 1900? (p. 1) (SI or Q & A)

Read the quote on p. 1 with vigor and expression. Then ask the group if they think the attitude reflected in the quote was common. Ask what the attitudes of management personnel were in those years? Ask what the attitudes of workmen were in those years? Finally, ask them why people had such attitudes and beliefs about accidents.

2. WHAT DID COMPANIES DO AROUND 1900 TO PREVENT ACCIDENTS? DID THEY HAVE SAFETY PROGRAMS? (p. 2) (Q & A)

Develop the general answer by asking a series of specific questions, like: Did they have full-time safety personnel then? What kind of working conditions were the rule? Did they provide personal protective equipment? Did they investigate and report accidents? Conclude by emphasizing that very few companies did much of anything in the way of organized accident prevention.

3. HOW SERIOUS WAS THE ACCIDENT PROBLEM AROUND 1900? (p. 3) (SI)

Point out that no one really knew the answer to this question before the Pittsburgh Survey because companies didn't report or even keep accident statistics. Explain the Pittsburgh Survey: what it attempted to do, when it took place, how it was conducted.

Describe the findings. Direct attention to the Death Calendar on p. 4. Let them study it for a minute. Then ask: Do you think the accident problem was serious in those days? Read the quote on p. 4 aloud, with some feeling to make an impression. Conclude that there certainly was a serious problem. Point out that those facts represent only one industrial area. Ask them to think of what the national figures were.

4. HOW DID THE SAFETY MOVEMENT GET UNDERWAY IN THE UNITED STATES? (p. 5)
(SI and Q & A)

Explain how the public reacted to the findings of the Pittsburgh Survey. Give a brief account of how the federal government, the states, and many companies reacted. Explain that these things did not occur overnight, but within five years after the Pittsburgh Survey, the safety movement was well underway.

Clarify the basic idea of workman's compensation. Then, ask what the workman's compensation laws had to do with stimulating company safety programs.

5. WHAT ARE SOME OF THE HIGHLIGHTS OF ARMCO'S SAFETY HISTORY? (p. 6) (SI)

Have the key points listed on the answer pad. Go over each highlight briefly. Do not elaborate. This type of factual material does not need explanation. Do make a point of the fact that Armco does have a long history of concern for employee safety. Mention this course as another landmark in Armco's safety history.

6. WHAT ARE THE FOUR TYPES OF DISABLING INJURIES? (p. 7) (SI or Q & A)

Ask for the four types of disabling injuries, without any explanation of how they are defined. Expose the four types listed on the answer chart. Get different individuals to explain each. If necessary, help them with their explanations by restatement of the correct definitions. Explain non-disabling injuries. Encourage questions to facilitate clarification. Point out that progress is usually measured in terms of reduction in disabling injuries.

7. WHAT IS A DISABLING INJURY FREQUENCY RATE? (p. 8) (SI and Q & A)

Ask why one cannot compare a plant for two successive years merely on the basis of the number of disabling injury accidents. Clarify the idea that the man-hours worked must be taken into account.

Explain how a frequency rate is calculated, and how it is used to measure progress. Have some examples worked out on the answer chart. You may want to have the group calculate some easy-to-calculate frequency rates. Summarize by directing attention to Figure 2, p. 9.

8. WHAT IS A DISABLING INJURY SEVERITY RATE? (p. 10) (SI and Q & A)

Explain how the disabling frequency rate tells only part of the disabling injury story. (p. 11) The other part is told by the severity rate.

Explain how severity charges are made when disabling injuries occur. Use the examples given in the text. Point out the principles. (p. 10)

Explain how a severity rate is calculated. Use the example in the text (p. 10). Explain how a severity rate is used to measure safety progress. (Practice calculations are optional.) Interpret the trends in Figure 3, p. 11 for them.

Ask them why they think more emphasis is given to frequency rates than severity rates. Clarify with your own explanation if necessary.

Develop the severity rate trend for your plant for the past 10 years. Give them the figures. Discuss the interpretation of the figures.

9. WHAT ARE OSHA RECORD KEEPING REQUIREMENTS? (SI and Q & A)

Explain what an OSHA Occupational Injury and Illness is and the forms used to record experience.

Explain the difference between types of injury for the Armco and OSHA record keeping system. Use Figure 8, p. 17 to help you explain.

Explain the difference between Armco's Disabling Injury Frequency and Severity Rate and OSHA's lost workday case and lost workday rate.

10. HOW MUCH SAFETY PROGRESS HAS BEEN MADE SINCE THE DAYS OF THE PITTSBURGH SURVEY? (p. 17) (SI; some Q & A)

1. Direct attention to Figure 9, p. 18. Explain the bar diagram. Ask the group if these facts reflect progress. Emphasize that the tremendous improvement shown is despite a tripling of the work population.

2. Direct attention to Figure 10, p. 18. Explain the death rate trend. Again, emphasize these facts mean progress. Ask them to guess the number of lives saved that is reflected by the improvement.

3. Direct attention to Figure 11, p. 19. Emphasize the continuous downward trend in frequency and severity rates. Get some opinions as to why.

4. Direct attention to Figure 12, p. 19. Emphasize that (1) all industries have made substantial safety progress, and (2) some have made better progress than others. See if they can identify (1) the industry that shows the sharpest decrease in frequency rate, (2) the industry that seems to have leveled off, (3) the industry with the lowest rate today, and (4) the industry with the highest rate.

5. Finally, direct attention to Figure 13, p. 21. Use the figure to discuss Armco's safety performance thru the years. Develop similar data for your plant. Give them the facts of your plant's frequency rate trend.

11. WHAT ARE THE REASONS FOR THE PROGRESS MADE SINCE THE PITTSBURGH SURVEY? (LG)

The text does not enumerate the reasons. Get the group to identify the many factors that have contributed to the continual downward trend in disabling injury frequency rates. Emphasize the importance of plant accident prevention programs.

12. WHAT MAJOR CONCLUSIONS CAN BE DRAWN FROM THE TYPICAL FREQUENCY RATE TREND? (p. 20) (SI and Q & A)

Use Figure 13 as a typical trend of an industry leader. Point out the basic features of the trend, i.e. sharp improvement in the early years, periods of no apparent improvement followed by still further improvement, and finally a slower rate of improvement in recent years.

Ask them what major conclusions are supported by the facts. If necessary, use leading questions to bring out the three major conclusions. Emphasize the meaning or implications of each conclusion.

Ask them to challenge the conclusion: Do the progress facts really prove accidents can be prevented? Is it true improvement has no limit? If not, where is the limit?

13. WHAT IS THE MAGNITUDE OF THE INDUSTRIAL ACCIDENT PROBLEM TODAY? (p. 20)
(SI; some Q & A)

Have the five year "national" facts listed on the answer board. Point them out, and repeat them aloud. Ask the group whether they agree that there is still an industrial accident problem.

Do the same for the recent five year facts for Armco Steel. Also provide the trainees with the direct and indirect costs of the accidents. Point out the dollar value of products Armco must sell in order to recoup these costs.

Get the group to agree that despite the tremendous progress that has been made, accidents are still a major problem.

ADDITIONAL DISCUSSION QUESTIONS:

1. How does a workman's compensation operate in our state? Do the nature and causes of accidents have any bearing on injury compensation?
2. Is the annual toll of lives on U.S. highways in any way similar to the industrial accident problem before the Pittsburgh Survey? Who is responsible?
3. Armco pioneered the first 8-hour day in the steel industry. What bearing did that have on safety in the steel industry?
4. Are all accidents preventable? What's the danger of admitting that some are not preventable?
5. Are disabling injuries the only basis for measuring accident prevention progress? What other measures can be used to reflect progress?
6. Of the plant's last six disabling injuries or lost workday case, which were "unpreventable"? (Review each case. Get the group to identify the causes. Challenge them to show how each could have been prevented.)

An Introduction To Accident Prevention

Chapter

1

Armco Policy, Approach & Responsibilities

Section

2

*INSTRUCTION OBJECTIVES:

The objectives for this section are: (1) To acquaint supervisors with Armco's policy regarding employee safety and accident prevention. (2) To emphasize the concept of a team work approach to accident prevention, and what it requires. (3) To acquaint all levels of management with the basic responsibilities of all levels of management. (4) To encourage supervision to question the necessity for their assigned responsibilities.

INTRODUCTORY LEAD:

"We know that Armco has a long-standing concern for employee safety. Let's now see what the official corporate policy is on employee safety and accident prevention. Also, let's see what the basic approach to accident prevention is at Armco plants. Then, we'll take a look at the specific responsibilities of each level of management under the new corporate program."

INSTRUCTION QUESTIONS:

1. WHAT IS ARMCO'S POLICY ON ACCIDENT PREVENTION AND EMPLOYEE SAFETY? (p. 23) (SI; Q & A)

Direct the group's attention to p. 23 where the accident prevention objective is stated. Ask them to read it silently while you read it aloud with emphasis. Point out how that objective tells the story of Armco's policy.

Direct the group's attention to the Introduction Section in the APT Training Manual Binder. On the first page is printed a portion of Armco Policies. Ask them to read it then and there.

Ask the group if there is any evidence that such fine words (the policies) are not merely empty expressions for public consumption. What evidence is there that Armco really believes and acts upon its policies?

2. WHAT IS THE BASIC ARMCO APPROACH TO ACCIDENT PREVENTION? (p. 23) (SI)

Explain the concept of teamwork approach based upon each level of management doing what it best can do toward accident prevention. Point out that no one level of management can do the job alone. All must share in the action responsibilities. Ask the group if it can be any other way.

3. WHAT ARE THE FOUR REQUIREMENTS FOR ORGANIZED ACCIDENT PREVENTION BASED ON THE ARMCO APPROACH? (p. 23) (SI)

Have the 4 requirements on the answer pad. Take one at a time; explain it to the group. Then point out that the course was developed to ensure that these requirements were met.

*Instruct Sections 2 and 3 together. Examination for Section 2 contains questions on Section 3. There is no separate examination for Section 3.

4. WHAT IS GENERAL MANAGEMENT'S ROLE IN ACCIDENT PREVENTION? (p. 25) (LG)
Ask the group to discuss what they think general management should do on a continuing basis to promote accident prevention. Record all suggestions. Compare the group's recommendations with the text answer. (p. 25)
5. WHAT ARE THE MANAGER'S ACCIDENT PREVENTION RESPONSIBILITIES? (p. 25) (LG and Q & A)
Try the same approach as described for the preceding instruction question. Jot down all suggestions. The works or plant manager may like to see what other levels of management think he should be doing. Discuss the ideas once listed on the answer sheet. Get the group to identify the most practical ones. Check those.
6. WHAT ARE A SUPERINTENDENT'S ACCIDENT PREVENTION RESPONSIBILITIES? (p. 26) (SI and LG)
Have the key phrases indicating responsibilities listed on the answer pad. Explain each briefly. Then, ask the group in a LG discussion to decide if any are unnecessary or impractical. Also ask them to decide if some important responsibilities have been omitted. Determine what they are. Forward the suggestions to the plant program coordinator.
7. WHAT ARE A GENERAL SUPERVISOR'S ACCIDENT PREVENTION RESPONSIBILITIES? (p. 27) (SI and LG)
Use the same approach as described above. Get the group to question each responsibility. Determine what additional responsibilities should be added. Encourage free discussion. Expect complaints about lack of time, etc. Let them air their complaints.
8. WHAT ARE A FIRST-LINE SUPERVISOR'S RESPONSIBILITIES? (p. 28) (SI and LG)
Use the same approach as described above. Again, let complaints about lack of time be aired. Aim to get agreement on the importance of these responsibilities.
9. WHY IS THE FIRST-LINE SUPERVISOR SUCH A KEY FIGURE IN ACCIDENT PREVENTION? (p. 28) (LG)
Turn the question over to small group discussions. Ask them to identify specific reasons why the first-line supervisor is a key figure in the plant safety program.
10. WHAT ARE A SAFETY & INDUSTRIAL HYGIENE SUPERVISOR'S BASIC RESPONSIBILITIES? (p. 30) (LG and SI)
Try the approach of having them discuss and recommend what they think a safety and industrial hygiene supervisor should be doing. List the suggestions that the group accepts as sound. Then, briefly, enumerate the responsibilities indicated in the book.
Clarify the advisory and service role of the safety and industrial hygiene supervisor.
Direct the attention of the class to the specialized responsibilities of the safety engineer and industrial hygiene engineer.
11. DO DESCRIPTIONS OF RESPONSIBILITIES LIMIT INDIVIDUAL AND PLANT INITIATIVE (LG)
The answer is NO! See if by small group discussion they will arrive at the same conclusion. Have an open discussion of the problem.

ADDITIONAL DISCUSSION QUESTIONS:

1. What should the plant do to establish additional responsibility descriptions in accordance with local needs?
2. What responsibilities do non-supervisory employees have?
3. What responsibilities should employee representatives have?

An Introduction To Accident Prevention

Chapter

1

Armco's Responsibility Under Federal, State and Local Occupational Safety and Health Requirements

Section

3

***INSTRUCTION OBJECTIVES:**

The section objectives are: (1) To describe the Government's role in Occupational Safety & Health, (2) How Armco is complying with Government requirements, and (3) To outline the procedures for handling a Compliance Inspection.

INTRODUCTORY LEAD

In the past decade the disabling occupational injury frequency trend had flattened out and for the past several years the overall industry average has shown an upward trend. Workman's Compensation cost and lost man-hours to industry have skyrocketed. In an attempt to improve this experience, the Federal Government in 1970 established the Occupational Safety & Health Act. The purpose of the law was "to assure so far as possible every working man and woman in the nation safe and healthful working conditions." Armco fully endorses the Occupational Safety & Health Act.

INSTRUCTION QUESTIONS:

1. WHAT ARE THE KEY PROVISIONS OF THE ACT? (p. 34) (SI)

Cover the 9 provisions as outlined on p. 34.

2. HOW IS ARMCO'S SAFETY POLICY COMPATIBLE WITH OSHA OBJECTIVES? (p. 35) (SI)

Emphasize the fact that the law was established to accomplish what has always been one of Armco's major goals — to continually reduce our frequency and severity rates. Refer to Figure 13, p. 21 to reinforce this fact.

3. WHAT ARE THE PROCEDURES TO FOLLOW WHEN OSHA CONDUCTS A COMPLIANCE INSPECTION? (p. 35) (SI)

Emphasize to the class the first 3 steps on page 35 under Armco's Compliance Procedures. If someone in the group has been involved in an inspection, get the person to comment on their reaction.

*Instruct Sections 2 and 3 together. Examination for Section 2 contains questions on Section 3. There is no separate examination for Section 3.

The Nature, Causes, and Results of Accidents

Chapter

2

The Nature of Accidents

Section

4

INSTRUCTION OBJECTIVES:

The section objectives are: (1) To acquaint supervision with three basic concepts: personnel accident, equipment accident, and near-accident. (2) To show the significance related to the definition of each idea. (3) To point out the different basic types of accidents.

INTRODUCTORY LEAD:

"Different people have different ideas about what are accidents and near-accidents. So we all understand the difference, we'll adopt a working definition. Also we will analyze our definitions so you get a better appreciation of the nature of accidents. Finally, we will define 11 basic types of accidents. When we are through, you should know what it is we are trying to prevent."

INSTRUCTION QUESTIONS:

1. WHAT IS A PERSONNEL ACCIDENT? (p. 1) (SI; Q & A)

Read the definition aloud from the text. Have the group read the definition silently as you read it aloud.

Point to the three key elements written on the answer chart. Cite an accident, and show how it fits the three key points. (p. 1) Ask someone to cite an accident. Have the group identify the three basic elements in the accident cited.

Explain what is meant by "object", "substance", and "exposure" — or, ask someone from the group to volunteer an explanation.

2. WHAT IS AN EQUIPMENT ACCIDENT? (p. 1) (Q & A)

WHY ARE WE CONCERNED WITH SUCH ACCIDENTS? (p. 1) (Q & A)

Ask someone to volunteer an explanation of an equipment accident. Then, read aloud the text definition while the group reads silently with you. Point out the similarity to the personnel accident.

Draw the answer to the second question from the group. Once the general point is made, get them to cite some cases of equipment accidents that resulted in personnel accidents.

3. ACCIDENTS ARE UNEXPECTED! HOW DOES THE UNEXPECTEDNESS OF ACCIDENTS CAUSE ACCIDENTS? WHAT IS THE SIGNIFICANCE FOR ACCIDENT PREVENTION? (p. 2) (SI and Q & A)

Explain how accidents are caused because people do not expect them. The point is not easily explained. Use a good example to illustrate the point. Point out that even when people deliberately take a chance, they do not really expect to have an accident. If they did, they wouldn't take the chance.

Draw the two practical implications (p. 2) from the group. For example, "Why should we instruct employees so they know what might occur? Why should we convince them that the unexpected will occur if precautions are not taken?"

***4. ACCIDENTS ARE CONTACTS! WHAT'S THE ADVANTAGE OF THINKING OF ACCIDENTS AS CONTACTS? (p. 2) (SI)**

Explain how thinking of accidents as specific types of contacts, e.g. struck by, strike against, etc. helps us recognize potential accidents.

5. ACCIDENTS INTERRUPT WORK! IN WHAT WAYS DO ACCIDENTS REPRESENT PRODUCTION LOSSES? (p. 2) (LG)

By small group discussion, get the group to identify the many different ways that accidents result in production losses, either directly or indirectly. Have the key points on the answer chart for summarizing after the points have been derived from the group.

Explain why a point is made about the fact that accidents represent production losses. (p. 3)

6. DO ACCIDENTS NECESSARILY INVOLVE INJURIES? WHY SHOULD NON-INJURY ACCIDENTS BE INVESTIGATED? (p. 3) (Q & A) (LG)

Cite an example of a personnel accident that involved no injuries. Get agreement that it was an accident. Get the answer to the first question. Ask the second question. Allow 5 minutes of small group discussion to develop the answer.

7. WHAT IS A NEAR-ACCIDENT? WHY SHOULD NEAR-ACCIDENTS BE INVESTIGATED? (p. 3) (SI) (LG)

Explain the basic idea of a near-accident! Use the LG method for the second question. Allow 5 minutes.

8. WHAT ARE THE BASIC TYPES OF ACCIDENTS? (p. 4) (SI, Q & A)

Have the list of basic types recorded on the answer chart. Explain each by pointing out the principle. Explain the textbook case for each type. (Use slide or overhead projection of each case if slides are available or direct attention to the text illustrations.)

After each type is explained, get someone from the group to cite a second case. Point out they must be able to identify all cases according to the basic types. Chapter 4 discusses how to prevent each type.

If there are multiple types of accidents involved in an injury, the precipitative cause should be used to identify the type of accident.

ADDITIONAL DISCUSSION QUESTIONS:

1. Should equipment accidents be investigated? Should such accidents be made a matter of written report? Under what circumstances?
2. Should no-injury accidents be written up? Under what circumstances?
3. Should near-accidents be written up? Under what circumstances?
4. Can several basic types of accidents be involved in a single accident?

The Nature, Causes, and Results of Accidents

Chapter 2

The Causes of Accidents (I)

Section 5

INSTRUCTION OBJECTIVE:

The section objectives are: (1) To make supervision aware that cause analysis is the key to accident prevention. (2) To provide an understanding of what are causes, the sources of causes, and the principle of multiple causes. (3) To explain fully what supervisors should know about unsafe acts.

INTRODUCTORY LEAD:

"Accident prevention starts with the recognition that accidents are caused. To prevent accidents, we have to (1) know and recognize causes of accidents, and (2) take steps to eliminate recognized causes. That makes it important that you have a good understanding of accident causes in general. The more you understand about accident causes, the better will you be able to spot them before accidents happen; and to analyze them after they happen. The purpose of today's session is to introduce you to some basic ideas about accident causes."

INSTRUCTION QUESTIONS:

1. WHAT, IN GENERAL, IS AN ACCIDENT CAUSE? (p. 11) (Q & A)

Read aloud the definition given in the text. Get the group to agree that specific actions and conditions can be causes, by referring them to a list of the causes given on p. 11. Explain why a wide-open approach to cause analysis is the only practical approach. (You may wish to have the general definition recorded on the answer chart.)

2. WHAT ARE THE TWO DIRECT SOURCES OF ACCIDENT CAUSES? (p. 11) (SI) ARE MOST ACCIDENTS CAUSED BY THE PERSON WHO HAD THE ACCIDENT, THE ENVIRONMENT, OR A COMBINATION OF BOTH? (p. 11) (Q & A)

Point out the two direct sources of accident causes, i.e. the employee and the environment. Explain what is meant by an employee cause. (p. 11) Indicate what % of accidents are caused by employee actions.

Define what is meant by environment. Give a variety of examples. Explain the idea of an environmental cause. Get the group to cite some examples. Indicate what % of accidents are caused by environmental factors.

Ask the group what conclusion can be drawn when 85% of accidents are caused by the employee who had the accident and 75% are caused by environmental factors. BOTH KINDS OF CAUSES ARE USUALLY INVOLVED.

Use the cases illustrated in Section 4 to illustrate the principle. Focus the group's attention on each case. Get the group to identify the employee causes and the environmental causes. Select some of your own plant cases to nail down the principle.

3. WHAT IS THE PRINCIPLE OF MULTIPLE CAUSES? (p. 12) (SI)

Retell the case of John Doe. (p. 12) Ask the group to identify all the factors that contributed to John Doe's accident. When you have them all identified, use them to explain the principle of multiple causes.

Explain the fallacy of single cause thinking. Point out how it leads to incomplete understanding of accidents.

4. WHAT ARE THE FOUR MAJOR KINDS OF ACCIDENT CAUSES? (p. 12) (Q & A)

Use the John Doe case as follows to develop the four major kinds of causes: Explain each major type of cause in general terms. Have them diagrammed on the answer chart as below:

PERSONAL FACTOR

UNSAFE ACT

SOURCE CAUSE

UNSAFE CONDITION

Get the group to slot under each heading the causes of John Doe's accident. (p. 12) End by giving the group the alternative names for the four kinds of causes. (p. 13)

5. WHAT, IN GENERAL, IS AN UNSAFE ACT? (p. 13) (SI)

Have the definition recorded on the answer chart. Read it aloud. Explain the idea of a deviation that increases the chances of accidents. Get across the idea that unauthorized deviations from recommended practices are not acceptable. New approaches should be checked out with supervision first.

6. WHY MUST SUPERVISION BE CONCERNED WITH ALL UNSAFE ACTS, NOT MERELY THOSE THAT ARE RULE VIOLATIONS? (p. 14) (Q & A)

Get agreement that not all unsafe acts are rule violations. Cite a few examples. Then, draw the answer to the question above from the group.

7. WHAT ARE THE BASIC TYPES OF UNSAFE ACTS? (p. 14) (SI; Q & A)

Have basic types listed on answer chart. Instruct one at a time as follows: (1) Explain the idea or principle. (2) Ask the group to say why it is unsafe. (3) Draw specific examples of the unsafe act from the group. Be ready to cite additional examples if necessary. Try to evoke examples that the supervisors have actually observed, not stereotyped examples they have heard about. (4) Ask the group to cite an accident caused by the unsafe act.

*8. DO UNSAFE ACTS ALWAYS RESULT IN ACCIDENTS? HOW ABOUT IN THE LONG RUN? WHAT IS THE PRACTICAL IMPLICATION? (p. 16) (Q & A; SI)

Draw answers #1 and #2 from the group. Explain what the implication is when instructing people about unsafe practices. The key point is: There's no guarantee about the very next time.

9. ARE ALL UNSAFE ACTS EQUALLY UNSAFE FROM THE STANDPOINT OF (1) LIKELIHOOD OF ACCIDENTS, AND (2) LIKELIHOOD OF SERIOUS INJURY? WHAT IS THE PRACTICAL IMPLICATION? (p. 16) (Q & A or SI)

Try drawing the answers out with examples of unsafe acts. For example, cite two unsafe acts that are clearly unequal in a frequency sense of producing accidents. Ask if they are equal? (Or, ask how they are different.)

Draw out the idea that some deserve more training attention than others. But all must be corrected when observed! Ask the group why!

10. HOW DO UNSAFE ACTS BECOME HABITS? (p. 17) (SI; Q & A)

Explain how repetition of an unsafe act may result in a strongly entrenched work habit. Ask the group why supervision should correct all unsafe practices. Why should extra effort go into the initial correction of an unsafe practice? What is the harm in not correcting a "minor" unsafe practice now and then?

ADDITIONAL DISCUSSION QUESTIONS:

1. What does a supervisor risk when failing to correct all unsafe practices observed?
2. How can the basic list of unsafe practices be put to practical use by supervision?
3. Should a superintendent correct an employee observed working unsafely or should the employee's supervisor be notified?

The Nature, Causes, and Results of Accidents

Chapter

2

The Causes of Accidents (II)

Section

6

INSTRUCTION OBJECTIVE:

The section objectives are: (1) To give supervisors an understanding of the factors which cause or influence people to work unsafely. (2) To define the concept of an unsafe condition, and acquaint supervision with the basic types of unsafe conditions. (3) To identify the major sources of unsafe conditions.

INTRODUCTORY LEAD:

"This section continues our analysis of the direct and indirect causes of accidents. The previous section dealt with unsafe practices. Today, we will analyze the causes of unsafe practices. We will also discuss unsafe conditions and their causes. When we get through you should have a pretty good understanding of the direct and indirect causes of accidents."

INSTRUCTION QUESTIONS:

1. WHAT IS A PERSONAL FACTOR CAUSE? WHAT ARE THE MAJOR CAUSES OF UNSAFE ACTS? (p. 18-21) (SI; LG)

Have the definition of a personal factor cause written on the answer chart. Point at it. Read it with emphasis. Explain it with an example to illustrate the key point that personal factor causes are within the person.

Ask the group to identify the personal factors which cause or influence employees to act unsafely. After their discussion, instead of drawing the points from the participants, turn to the answer chart on which they are written, and briefly explain each. Get group participation by asking for examples or for personal factors to be added to the ones listed.

2. WHAT, IN GENERAL, IS AN UNSAFE CONDITION? (p. 22) WHY SHOULD SUPERVISION ALWAYS CALL A SPADE A SPADE WHERE UNSAFE CONDITIONS ARE CONCERNED? (SI; LG)

Have the definition written on the answer chart. Point at it. Read it aloud. Explain in your own words the basic idea of an unsafe condition. Cite some recent examples that have come to your attention. You may even want to look for some before this session.

Turn the second question over to the group. After discussion, bring out the ways it can backfire on management when unsafe conditions are ignored.

3. WHAT ARE THE BASIC TYPES OF UNSAFE CONDITIONS; (p. 22-24) (SI and Q & A)

Have the 12 basic types listed on the answer chart. Instruct each one as follows: (1) Explain the idea or principle. (2) Get the group to cite examples. Try to evoke examples that are of recent origin or ones that have been repetitive problems. (3) Try to get an accident case cited for each unsafe condition.

As a between session assignment, have all participants develop a list of conditions in their area of responsibility that they regard as unsafe and in need of correction. The list is to be handed in for review and discussion.

4. ARE ALL UNSAFE CONDITIONS EQUALLY UNSAFE? WHAT ARE THE IMPLICATIONS? (p. 24-25) (SI)

Explain how unsafe conditions differ in terms of degree of employee exposure, and what that means for corrective action. Get the group to cite examples of differences in exposure.

Explain how unsafe conditions differ in potential injury severity. Get the group to cite examples of differences in potential injury severity. Ask what the implications for corrective action are.

5. WHAT RELATIONSHIP DO UNSAFE CONDITIONS HAVE TO WORK OUTPUT? (p. 25) (LG)

Ask the group to identify by discussion unsafe conditions which can or might interfere with work output. Get some of the conditions cited for the benefit of all. Get across the key point: In general, as unsafe conditions increase, work output decreases. Give this as another reason why they should be concerned with eliminating unsafe conditions.

6. WHAT ARE THE COMMON SOURCES OF UNSAFE CONDITIONS? (p. 26-27) (Q & A)

Have the sources listed on the answer chart. Handle each as follows: (1) Explain it in a brief sentence or two. Do not overexplain. (2) Cite a choice example. (3) Try to get the group to cite at least two other examples. (4) Ask what supervision can do to reduce the number of unsafe conditions produced by each source.

ADDITIONAL DISCUSSION QUESTIONS:

1. Is it possible to eliminate unsafe conditions permanently, that is, once and for all times?
2. What are inherent hazards? Are inherent hazards different from unsafe conditions?
3. What are the consequences of neglecting to correct unsafe conditions?
4. What effect does management reluctance to correct unsafe conditions have upon employee morale?

The Nature, Causes, and Results of Accidents

Chapter

2

The Results of Accidents

Section

7

INSTRUCTION OBJECTIVE:

The purpose of this section is to impress supervision with the many direct and indirect consequences of accidents. A second purpose is to convince supervision of the importance of investigating minor injury and near-injury accidents.

INTRODUCTORY LEAD:

"In the previous session, we completed our analysis of accident causes. Now, let's look at the other side of accidents — the consequences. Let's see what the direct and indirect consequences of accidents are."

INSTRUCTION QUESTIONS:

1. WHAT ARE THE MAJOR DIRECT RESULTS OF ACCIDENTS? (p. 28) (LG)

Let the group identify by discussion the major direct consequences of accidents. After discussion, turn up an answer chart to a complete list of the direct results. Ask them if they feel any others should be added to the list. Make sure the list includes such consequences as product damage, equipment breakdown, and work stoppage. Summarize the direct results."

2. ARE THE DIRECT RESULTS PREDICTABLE FROM KNOWLEDGE OF CAUSES AND TYPE OF ACCIDENT? (p. 29) (Q & A; SI)

State that the direct results are not predictable. Read aloud the case of John Doe on p. 29. Ask the group if they can say for certain what the outcome was. Point out what the results could have been.

The key point is to emphasize the importance of investigating all accidents. Cite the case (or a local case) on page 29 to illustrate the point.

3. WHAT ARE THE MAJOR INDIRECT RESULTS OF ACCIDENTS? AS THEY AFFECT EMPLOYEES? AS THEY AFFECT THE COMPANY? (p. 30) (LG)

Have the group identify the indirect consequences via small group discussion. After getting the answers from the group, explain how these consequences make the job of being a supervisor more difficult. Try to show them how accidents affect them personally.

ADDITIONAL DISCUSSION QUESTIONS:

1. What can a department do to establish the true costs of its accidents?

NOTE: This training session may also be used to give supervisors actual cost data on plant accidents. Select specific cases for complete accident cost analysis. Cite the breakdown of costs

associated with such cases. If possible, select cases that involve several of the following costs.

1. Compensation costs.
2. Medical costs.
3. Equipment damage costs.
4. Product damage costs.
5. Administrative costs.
6. Equipment downtime costs.
7. Employee lost-time costs.
8. Investigation costs.
9. Wage loss costs.
10. And other relevant costs.

Basic Accident Prevention Principles & Procedures

Chapter
3

Principles for Establishing Accident Causes

Section
8

INSTRUCTION OBJECTIVE:

The objectives of this section are: (1) To acquaint supervision with the foundation principles of accident prevention. (2) To emphasize the principles for detecting potential causes and determining actual causes. (3) To show supervision what basic tools of accident prevention are related to the principles for establishing accident causes. Indirectly, this section aims at convincing supervision that accident prevention is best accomplished by applying the basic principles and procedures rather than resorting to gimmicks.

INTRODUCTORY LEAD:

"The purpose of this section is to remind you of the basic principles of accident prevention, and the tools used to put these principles to work. Sometimes people think there are quick and easy answers to accident prevention. That's why so many plants resort to gimmicks to arouse interest in safety. The real effort must be in putting the basic principles to work. Let's see what the principles are. But first let's make sure we understand the difference between principles and procedures.

INSTRUCTION QUESTIONS:

1. PRINCIPLES AND PROCEDURES! WHAT'S THE DIFFERENCE? (p. 1) (SI)

Explain the difference between principles and procedures as described in the text. Then, point out a sound accident prevention program concentrates on applying the basic principles, and the procedures called for by those principles. Get across the idea that there are no quick and easy answers to accident prevention; banners, contests, slogans — all these things are strictly secondary.

2. WHAT ARE THE TWO FOUNDATION PRINCIPLES OF ACCIDENT PREVENTION? (p. 1) (SI; Q & A)

Have the two principles written on the answer chart. Show how they derive from the basic fact that all accidents are caused. Explain that all accident prevention activities are an attempt to apply these two principles.

Ask them if these two principles apply to problems other than accidents. Cite an application to an everyday problem other than accidents.

3. POTENTIAL AND ACTUAL CAUSES! WHAT'S THE DIFFERENCE? HOW ARE THE TWO FOUNDATION PRINCIPLES CHANGED? (p. 2) (Q & A)

Get the group to cite several examples of potential and actual causes. Draw out the conclusion that there is no basic difference; one is before the fact of the accident and the other is after the fact of the accident.

Have the restated foundation principles (p. 2) written on the answer chart. Explain each briefly.

4. WHAT FOUR PRINCIPLES ARE CONCERNED WITH DETECTING POTENTIAL CAUSES?
(p. 2) (SI; Q & A)

Have the four principles written on the answer chart. Point to each. After restating each, ask "Why?" for each principle. Get group agreement that each principle is sound. Make sure you get good reasons in support of each.

5. WHAT BASIC PROCEDURES CARRY OUT EACH OF THE PRINCIPLES FOR DETECTING ACCIDENT CAUSES? (p. 3-6) (SI; Q & A)

Have the basic procedures listed on the answer chart under the applicable principle. Handle each as follows: (1) Explain the basic idea. (2) Ask the group whether the procedure should be adopted in their plant (or if the procedure is sound). Let there be free discussion. Get across the idea of *why* each procedure is a good idea.

6. WHAT FOUR PRINCIPLES CONCERN ESTABLISHING ACTUAL ACCIDENT CAUSES?
(p. 6) (SI; Q & A)

Have the four principles written on the answer chart. Instruct each principle as follows: (1) Read it aloud. (2) Explain it fully. (3) *Emphasize the key question* (shown in italics in the text). (4) Check for group understanding and agreement with appropriate question.

7. WHAT WEAKNESSES CHARACTERIZE MANY ACCIDENT INVESTIGATIONS? (p. 6-8)
(LG)

Restate the question several times to make sure the group understands. Allow 10 minutes of small group discussion. Draw the main points out of the group. Elaborate briefly on each main point as you get it. Do not reject ideas that go beyond the text.

ADDITIONAL DISCUSSION QUESTIONS:

1. Identify all plant safety activities that are not clearly related to the basic principles of accident prevention. Discuss the pros and cons of each.

Basic Accident Prevention Principles & Procedures

Chapter

3

Principles for Eliminating Accident Causes

Section

9

INSTRUCTION OBJECTIVE

This section aims to give supervisors an understanding of the principles related to eliminating unsafe practices and unsafe conditions. The emphasis is on what must be done. The details of how come later.

INTRODUCTORY LEAD:

"This last session concerned detection of potential accident causes. (Restate the four principles.) We also covered the principles for determining actual causes. (Restate the four principles.) Establishing accident causes is not enough. To prevent accidents, you have to eliminate them. That's what we will discuss today — the principles for eliminating accident causes."

INSTRUCTION QUESTIONS:

1. WHAT ARE THE PRINCIPLES FOR ELIMINATING UNSAFE PRACTICES CAUSED BY INSUFFICIENT AWARENESS, JOB KNOWLEDGE, OR JOB SKILL? (p. 10-11) (Q & A)

Have the five principles written on the answer chart. Handle the instruction of each as follows: (1) Point it out. Read it aloud with emphasis. (2) Ask the group how the principle will, if applied, prevent or eliminate unsafe practices caused by not knowing better. (3) Get group agreement that the principle is sound.

The following additional questions will bring out some of the text points related to the principles:

- a. Why is it important that initial job instructions be planned, thorough, and complete?
 - b. Why is asking the employee if instructions are understood a poor way to check understanding?
 - c. What are the side benefits of regular safety contacts?
 - d. What determines how most employees will react to being reinstructed for an unsafe practice?
 - e. What kinds of jobs call for pre-job safety instructions?
2. WHAT IS THE MOTIVATION PROBLEM? (p. 12) (SI)

This is a difficult instruction point. Be prepared! Draw the group's attention to the diagram on p. 12. (A projection of the diagram is best.) Explain each of the four key points listed on p. 13 in bold type as follows: (1) Point to the appropriate plus or minus sign. Explain that a plus means something is attracting and a minus means something is repelling the worker. (2) Use an example to illustrate what may attract (or repel) the worker. (3) Try to get another example, or even two from the group.

Once the four key points are covered, get across the idea that the person may be in a conflict between going in one direction or another. The choice made will depend on which alternative offers the worker the greatest gain.

3. WHAT ARE THE FOUR PRINCIPLES FOR ELIMINATING UNSAFE PRACTICES CAUSED BY CONFLICTING MOTIVATIONS? (p. 13) (SI or Q & A)

If handled as SI, have the four principles written on the answer chart. Explain each along the lines of the text.

An alternative method is to draw the principles out of the group by skillful questioning. For example: (Instructor points to + sign in safe way circle.) "What should be done about the things that may attract people to the safe way?" (Waits for response. If no response, continues.) "Do we want more of such things or less?" (Gets the response, "More!") "Alright, the principle, then, is to increase the advantages and satisfactions of working safely. Now, how about the things that repel people from the safe way? What should be done about them?"

When all points are drawn out, summarize by referring to the 4 principles written on an answer chart that has been covered until time for the summary. Check the analysis by directing group attention to Figure 2, p. 14.

4. WHAT, IN GENERAL, WILL REDUCE UNSAFE ACTIONS CAUSED OR INFLUENCED BY PHYSICAL OR MENTAL UNFITNESS? (p. 15) (SI and Q & A)

Have the principles written on the answer chart. Handle the instruction of each point as follows: (1) Point at the principle. Read it aloud with proper emphasis. (2) Explain the basic idea. (3) Ask group opinions.

Avoid going into details of how to apply the principles. The how will be dealt with in a later section. Aim for getting agreement that the principles are sound.

5. WHAT SIX PRINCIPLES APPLY TO ELIMINATING UNSAFE CONDITIONS ONCE SPOTTED? (p. 16) (Q & A)

Have the 6 principles, in shorter form, written on the answer chart. Handle the instruction of each as follows: (1) Explain the basic idea. (2) Ask what might occur if the principle is not applied. Allow free discussion. Point out that the six principles are the responsibilities of every level of supervision. They apply to all supervisors.

ADDITIONAL DISCUSSION QUESTIONS:

1. What should a supervisor do when reporting an unsafe condition and hears no more about it? (The condition is ignored.)
2. What should be done when many workers persist in a certain specific unsafe practice because they reject the safe alternative?
3. What fitness standards does the plant now apply when hiring new employees?

Preventing The Basic Types of Accidents

Chapter

4

Preventing Struck By And Contacted By Accidents

Section

10

INSTRUCTION OBJECTIVE:

This section aims (1) to acquaint supervisors with the basic work situations likely to produce struck by and contacted by accidents, and (2) to acquaint them with basic solutions that, in principle, will prevent such accidents. A third objective is to show supervisors how they can use Chapter 4 as a reference chapter for ideas to prevent different types of accidents.

INTRODUCTORY LEAD:

"In Chapter 2, 11 basic types of accidents were described. They were — — — (points and reads them aloud from answer chart.) In today's session, we'll identify the common situations that produce two types of accidents — struck by accidents and contacted by accidents. We will also discuss the basic solutions for preventing such accidents."

INSTRUCTION QUESTIONS:

1. NORMALLY MOVING OBJECTS AND NORMALLY STATIONARY OBJECTS!

WHAT'S THE DIFFERENCE? (p. 1) (SI)

Using examples, explain what normally moving and normally stationary objects are. Get the group to cite several things that fall into each category.

2. WHAT THREE SITUATIONS OFTEN RESULT IN STRUCK-BY-NORMALLY-MOVING-OBJECT ACCIDENTS? (p. 1)

Have the three situations identified on the answer chart. Briefly explain each. Cite an example. Get the group to cite a second example.

3. WHAT CAN BE DONE TO PREVENT WORKERS FROM STEPPING OR GETTING INTO THE PATH OF ON-COMING MOVING OBJECTS, AND BEING STRUCK? (p. 2)

Attention: All questions in Chapter 4 that ask for basic solutions, as does this question, are best instructed as described below. No additional suggestions will be given for such questions. They will be followed by the sentence, (Use case discussion method).

For each such question, search plant accident files for three or four cases that involved the basic situation to which the question refers. Select cases that might have or would have been prevented had the appropriate basic solutions listed in the text (p. 2 for the above question) been applied or in existence. Consult the plant Supervisor of Safety and Industrial Hygiene if there is one. Also, use the cases in Chapters 2 and 4.

Use the cases as follows: (1) Describe, and if possible, project a sketch of the case. (2) Get the group to identify (a) the employee actions and (b) the environmental factors that contributed to the accident. (3) By discussion, bring out the "solutions" for preventing repetition of the accident. (4) After several cases have been analyzed, summarize the basic solutions which, in

principle, apply to preventing such types of accidents. Include any of the text "solutions" which were not brought out by the discussion.

The case method of instruction leads to lively discussion, and is very effective and interesting. THE KEY IS PROPER SELECTION OF CASES.

4. WHAT CAN BE DONE TO PREVENT STRUCK BY ACCIDENTS AS A RESULT OF UNEXPECTED START-UP AND MOVEMENT? (Use case discussion method.) (p. 3)
5. WHAT CAN BE DONE TO PREVENT STRUCK BY ACCIDENTS AS A RESULT OF A MOVING OBJECT LEAVING ITS NORMAL PATH? (Use case discussion method.)
6. WHAT FOUR BASIC ACTIVITIES OFTEN RESULT IN STRUCK BY ACCIDENTS INVOLVING NORMALLY STATIONARY OBJECTS? (Handle same as No. 2.)
7. WHAT CAN BE DONE TO PREVENT STRUCK BY ACCIDENTS IN A MATERIAL TRANSPORTING SITUATION? (Use case discussion method.)
8. WHAT CAN BE DONE TO PREVENT STRUCK BY ACCIDENTS WHILE STORING, PILING, OR POSITIONING OBJECTS? (Use case discussion method.)
9. WHAT CAN BE DONE TO PREVENT STRUCK BY ACCIDENTS WHILE MANUALLY USING MATERIALS OR EQUIPMENT? (Use case discussion method.)
10. WHAT CAN BE DONE TO PREVENT STRUCK BY ACCIDENTS IN AN OVERHEAD WORK SITUATION?
11. WHAT ARE THREE SITUATIONS LIKELY TO PRODUCE CONTACTED BY ACCIDENTS? (Handle same as No. 2.)
12. HOW CAN CONTACTED BY ACCIDENTS BE PREVENTED WHERE INJURIOUS MATERIALS ARE MANUALLY HANDLED? (Use case discussion method.)
13. HOW CAN CONTACTED BY ACCIDENTS BE PREVENTED WHEN EQUIPMENT CONTAINING INJURIOUS MATERIALS MUST BE REPAIRED? (Use case discussion method.)
14. HOW CAN CONTACTED BY ACCIDENTS CAUSED BY PRESSURE EQUIPMENT FAILURES BE PREVENTED? (Use case discussion method.)

Preventing The Basic Types of Accidents

Chapter

4

Preventing Struck Against, Contact With and Caught In, On, and Between Accidents

Section

11

INSTRUCTION OBJECTIVE:

The section's objectives are to acquaint supervisors with (1) the basic situations likely to produce struck against, contacted with, and caught in, on, and between accidents, and (2) the basic solutions for preventing such accidents.

INTRODUCTORY LEAD:

"This session continues our analysis of basic types of accidents. We will follow the procedure of discussing actual cases to develop ideas for preventing struck against, contacted with, and caught in, on, and between accidents. Let's start our discussion with analyzing struck against accidents."

INSTRUCTION QUESTIONS:

1. WHAT FOUR COMMON SITUATIONS OFTEN PRODUCE STRUCK AGAINST ACCIDENTS? (p. 11) (SI)

Have the answer key points written on the answer chart. Instruct each as follows: (1) Explain it. (2) Cite an example. (3) Get the group to cite additional examples.

2. HOW CAN "STRUCK AGAINST, MOVABLE PROTRUDING OBJECT" ACCIDENTS BE PREVENTED? (p. 11) (Use case discussion method.)

3. HOW CAN "STRUCK AGAINST FIXED PROTRUDING OBJECT" ACCIDENTS BE PREVENTED? (p. 12) (Use case discussion method.)

4. WHAT ARE SOME SOLUTIONS FOR PREVENTING STRUCK AGAINST ACCIDENTS IN CONGESTED WORK AREAS? (p. 12) (Use case discussion method.)

5. WHAT ARE SOME SOLUTIONS FOR PREVENTING STRUCK AGAINST ACCIDENTS RESULTING FROM APPLICATION OF MANUAL FORCE? (p. 13) (Use case discussion method.)

6. WHAT THREE SITUATIONS OFTEN PRODUCE CONTACT WITH ACCIDENTS? (p. 13) (SI) (Handle same as Question 1 above.)

7. WHAT CAN BE DONE TO PREVENT CONTACT WITH ACCIDENTS AROUND ELECTRICAL EQUIPMENT? (p. 14) (Use case discussion method.)

8. WHAT CAN BE DONE TO PREVENT CONTACT WITH ACCIDENTS WORKING WITH OR NEAR HOT OBJECTS? (p. 15) (Use case discussion method.)

9. WHAT CAN BE DONE TO PREVENT CONTACT WITH ACCIDENTS WORKING WITH OR HANDLING CHEMICALS? (p. 15) (Use case discussion method.)
10. WHAT THREE SITUATIONS MAY PRODUCE CAUGHT IN ACCIDENTS? (SI)
WHAT IS THE ANSWER TO EACH? (p.15) (Use case discussion method.)
11. WHAT CAN BE DONE TO PREVENT CAUGHT IN ACCIDENTS INVOLVING SMALL DOOR OR GROUND OPENING AND VERY TIGHT PLACES? (p. 16-17) (Use case discussion method.)
12. WHAT TWO SITUATIONS OFTEN PRODUCE CAUGHT ON ACCIDENTS (p. 17) (SI)
(Handle same as Question 1 above.)
13. WHAT CAN BE DONE TO PREVENT CAUGHT ON ACCIDENTS INVOLVING STATIONARY PROJECTIVE OBJECTS? (p. 17) (Use case discussion method.)
14. WHAT CAN BE DONE TO PREVENT CAUGHT ON ACCIDENTS INVOLVING MOVING PROJECTING OBJECTS? (p. 18) (Use case discussion method.)
15. WHAT THREE BASIC SITUATIONS OFTEN PRODUCE CAUGHT BETWEEN ACCIDENTS? (p. 19) (SI) (Handle same as Question 1 above.)
16. HOW CAN CAUGHT BETWEEN-STATIONARY-AND-NORMALLY-MOVING OBJECT ACCIDENTS BE PREVENTED? (p. 19) (Use case discussion method.)
17. HOW CAN CAUGHT BETWEEN-NORMALLY-MOVING OBJECT ACCIDENTS BE PREVENTED? (p. 20) (Use case discussion method.)
18. HOW CAN STATIONARY-AND-MOVING-BUT-NORMALLY-STATIONARY-OBJECT ACCIDENTS BE PREVENTED? (p. 20) (Use case discussion method.)

Preventing The Basic Types of Accidents

Chapter
4

Preventing Falls, Overexertion, and Exposure Accidents

Section
12

INSTRUCTION OBJECTIVE:

This section's objectives are to acquaint supervision with (1) the basic work situations likely to produce falls, overexertion, and exposure accidents, and (2) the basic solutions that apply to preventing such accidents.

INTRODUCTORY LEAD:

"This session continues our analysis of basic types of accidents. Today, we will discuss actual cases to develop ideas about preventing falls, overexertion accidents, and exposure accidents. Let's start with an analysis of falls."

INSTRUCTION QUESTIONS:

1. WHAT ARE THE TWO KINDS OF UNSAFE CONDITIONS THAT PRODUCE MOST SAME LEVEL FALL ACCIDENTS? (p. 22) (SI)
Have the two conditions listed on the answer chart. Instruct each as follows: (1) Explain the basic idea. (2) Get the group to identify specific examples of the hazard.
2. HOW CAN SLIP AND FALL ACCIDENTS BE PREVENTED (p. 22)
HOW CAN TRIP AND FALL ACCIDENTS BE PREVENTED (p. 33) (Use case discussion method.)
3. WHAT TWO BASIC SITUATIONS OFTEN PRODUCE DIFFERENT LEVEL FALL ACCIDENTS? (p. 23) (SI) (Handle same as Question 1 above.)
4. HOW CAN FALLS BE PREVENTED IN OVERHEAD WORK SITUATIONS? (p. 24) (Use case discussion method.)
5. HOW CAN FALLS BE PREVENTED WHEN WORKING AROUND FLOOR OPENINGS? (p. 25) (Use case discussion method.)
6. WHAT COMMON WORK SITUATIONS OFTEN RESULT IN OVEREXERTION INJURIES? (p. 25) (SI) (Handle same as Question 1 above.)
7. HOW CAN OVEREXERTION INJURIES FROM MANUAL MATERIAL HANDLING BE PREVENTED? FROM EXERTING TO RELEASE STUCK OBJECTS? FROM EXERTING TO REGAIN CONTROL? (p. 26-27) (Use case discussion method.)

8. WHAT THREE SITUATIONS OFTEN PRODUCE FUME, GAS, OR VAPOR EXPOSURE ACCIDENTS? (p. 27) (SI)
WHAT ARE SOME PREVENTIVES FOR EACH SITUATION? (p. 27-29) (Use case discussion method.)
9. WHAT OTHER TYPE OF EXPOSURE ACCIDENTS MAY BE A PROBLEM?
HOW CAN SUCH EXPOSURE INJURIES BE PREVENTED? (p. 29-30)(Use case discussion method.)

INSTRUCTION OBJECTIVE:

The objectives of this section are to give supervisors an understanding of (1) the meaning of the term "job" as it is used for JSA purposes, (2) the basic steps for doing a JSA, and what each step involves, and (3) how cost reduction can be combined with JSA work.

INTRODUCTORY LEAD:

"Up until this session, we have been concerned with understanding principles. Now we are ready for our first accident prevention tool — job safety analysis. Job safety analysis — or JSA as we shall call it — is a proven tool in accident prevention. Properly done and used, JSA's reduce accidents. JSA's can also be a waste of time if they are not done right, or if they are not used after completion."

INSTRUCTION QUESTIONS:

1. WHAT IS THE BASIC IDEA OF A JOB? WHAT IS THE DISTINCTION BETWEEN "JOBS" AND POSITIONS"? (p. 1) (SI)

Have a list of 6-12 jobs on the answer chart. Use the list to explain the concept of a job. Explain how "job" and "position" are different. Get the group to cite many examples of jobs and positions. After each, ask whether it is a job or position. Stop when you feel the group has the idea.

2. WHAT MUST BE DONE IN PRINCIPLE TO MAKE A JOB SAFE TO WORK (p. 1) (SI and Q & A)

Direct attention to Figure 1, p. 1 (Or, better reproduce the diagram on the answer chart. Use the diagram to explain (1) that jobs consist of basic steps, (2) that the hazards associated with each step may vary in number and potential severity, (3) that a job cannot be made safe to work unless the hazards are known, and (4) that it cannot be made safe unless there is a solution for the known hazards. Get the group to state what has to be done to make a job safe to work.

3. WHAT IS A JOB SAFETY ANALYSIS (p. 2) (SI)

Explain the JSA as a method of (1) identifying hazards of each job step, and (2) developing solutions that will eliminate or nullify such hazards. Direct attention to the completed JSA shown in Figure 2, p. 3. Let them study it for a few minutes. Indicate that what they see is a completed JSA. Point out the main features, e.g. what is in the three columns.

4. WHAT ARE THE FOUR BASIC STEPS FOR DOING A JSA? (p. 2) (SI)

Have steps recorded on answer chart. Read them aloud, but do not explain. Indicate that each step will be discussed separately.

5. HOW ARE JOBS SELECTED FOR JOB SAFETY ANALYSIS? (p. 2) (Q & A)

Ask the group to guess at the number of jobs there are in their plant (or department). Then ask, which of that many jobs should be subject to JSA. Ask, what should be taken into account when selecting a job for JSA. When the answer key points have been drawn out, summarize by turning over an answer chart to expose the key points. Emphasize each.

Show how making a list of jobs requiring special emphasis on safety (p. 4-5, Fig. 3) can help in deciding what jobs to write JSA's. Point out also how this system will help to code and identify JSA's for easy reference. Point out this system will be used when conducting planned safety observations. (Chapter 6)

6. HOW ARE JOBS BROKEN DOWN INTO BASIC STEPS (p. 4) (SI plus assigned exercise.)

Get a step by step breakdown of "planting a tree" by pulling the ideas from the group, e.g. "What's the very first step?" Record or have someone else record each step on the answer chart as it is volunteered and accepted. Point out any plant job can be broken down in the same way. Explain the purpose of breaking down a job into basic steps, and why the steps must be neither too "fine" or too "broad".

Next, have each supervisor select a job (preferably a relatively short, repetitive job) that he will analyze. Give them a blank JSA worksheet. Tell them to break the job down into basic steps. Allow about 10 minutes. Check their work. Ask someone to volunteer his "breakdown". Discuss the breakdown. Resolve any differences of opinion. Ask the group to be prepared to hand in their completed "breakdown" at the next session.

7. HOW ARE JOB STEP HAZARDS IDENTIFIED? (p. 6) (SI; Q & A)

Acquaint the group with the general approach, for example, "What can happen to the man?" Next tackle the specific approach, for example, "Can he be struck by anything?" Ask the group which approach they think will turn up more potential accidents.

Explain briefly the idea of observing a job in action to get ideas about potential accidents.

8. WHAT ARE THE DIFFERENT TYPE OF SOLUTIONS FOR POTENTIAL ACCIDENTS? (p. 6) (SI and Q & A)

Have the answer key points listed on the answer chart. Handle each as follows: (1) Explain the basic idea. (2) Cite a concrete example. (3) Get the group to cite other examples.

Point out that a JSA may involve more than one type of solution.

9. HOW CAN COST REDUCTION BE COMBINED WITH JSA? (p. 7) (SI)

Explain the two basic steps. Then proceed as follows: For each asterisked item listed on p. 6-8, ask the group if they can recall a job that involved a methods improvement as a result of someone raising the question. (You may only wish to cover a few items in each category.) Conclude by emphasizing that these questions do result in dollar saving ideas.

10. IN WHAT WAYS CAN COMPLETED JSA'S BE USED? (p. 9) (LG)

Allow 5-10 minutes of small group discussion to develop the answers. Pull key points from group. Record. Summarize.

ADDITIONAL DISCUSSION QUESTIONS:

1. Does JSA apply to maintenance jobs?
2. Can the JSA approach be applied to hazardous jobs that will be done only once?
3. Can JSA be applied to the basic procedures for using tools and equipment, such as a cutting torch?

INSTRUCTION OBJECTIVE:

The section's objectives are to acquaint supervision with the details of doing a JSA by (1) observation, (2) discussion, and (3) recall.

INTRODUCTORY LEAD:

"In our last session, we discussed the basic steps for doing a JSA. Today, we will discuss three methods for carrying out three of the basic steps. They are called (1) the Observation Method, (2) the Group Discussion Method, and (3) the Recall and Check Method. Each has its advantages and limitations."

INSTRUCTION QUESTIONS:

1. WHAT IS THE OBSERVATION METHOD FOR DOING A JSA? ADVANTAGES AND DISADVANTAGES? (p. 11) (SI and LG)

Explain the method generally. Use the LG discussion to develop the advantages. Bring out where this method cannot be readily applied. (p. 10)

2. WHAT IS THE DISCUSSION METHOD OF DOING THE JSA? ADVANTAGES AND DISADVANTAGES? (p. 11) (SI and LG)

Explain the method generally. Use LG discussion to develop the advantages. Emphasize the principal disadvantage.

3. WHAT IS THE RECALL AND CHECK METHOD OF DOING A JSA? (p. 12) (SI)

Explain the method. Ask the group what the main advantage and disadvantage are with this method. Emphasize that it is the least preferred method.

4. WHAT ARE THE ADVANTAGES AND DISADVANTAGES OF USING HOURLY EMPLOYEES TO DEVELOP JSA'S JOINTLY WITH SUPERVISORS? (p. 13) (LG)

Make sure the question is understood before it is turned over to discussion. After the advantages and disadvantages have been received and recorded, ask the group to reconsider the so-called disadvantages. Are they really disadvantages? How many agree that they are? (Ask for show of hands.)

5. OBSERVATION METHOD: HOW SHOULD THE JOB BE BROKEN DOWN INTO STEPS (p. 13) (SI and Q & A)

Have the key points recorded on answer chart. Instruct each as follows: (1) Read it aloud. (2) Explain the basic idea, without telling the underlying reason. (3) Ask the group to explain the why of what should be done, e.g. Why is it important to select the right one? To explain what is intended? To observe more than once? To check the breakdown with the individual?

6. OBSERVATION METHOD: HOW ARE POTENTIAL ACCIDENTS IDENTIFIED BY THE OBSERVATION METHOD? (p. 14) (SI & Q & A)

Have the key points recorded on the answer chart. Instruct each as follows: (1) Read it aloud. (2) Explain the basic idea of the key point. (3) Ask the group why it should be done that way.

Explain how potential accidents should be recorded. Show them how to fold the JSA worksheet so they can palm it for recording at the job site.

7. OBSERVATION METHOD: HOW ARE SOLUTIONS DEVELOPED (p. 15) (SI and Q & A)

Have the key points recorded on the answer chart. Instruct each as follows: (1) Review the basic idea. (2) Where there are details of HOW something should be done, explain how.

Ask them how they think observation will improve getting ideas for solutions.

8. HOW IS THE JSA DONE BY THE GROUP DISCUSSION METHOD? (p. 17) (Q & A)

The best way to instruct this question is to do a JSA by the discussion method. Select a job that the group will be familiar with, and follow the procedure described in the text. Try to complete at least a substantial portion of the JSA.

Managing a Job Safety Analysis Program

Chapter
5

Job Safety Analysis

Section
15

This section is written for the guidance of department heads. It should be given as a reading assignment to all supervisors. However, it is not instructed as are other sections. Instead, it is put into action by the department heads during the period when the basic tool, Job Safety Analysis, is to be initiated in the plant.

Department heads may wish to discuss certain features of the section with their supervisors before and during the period of installing the basic tool.

(Note: There is no examination for this section.)

INSTRUCTION OBJECTIVE:

This section has the following objectives: (1) To acquaint supervision with the different kinds of safety observations. (2) To convince supervision that all employees benefit from safety observations. (3) To show them how to use a list of the jobs that warrant planned safety observations as discussed in Chapter 5. (4) To develop awareness of the benefits of safety observations.

INTRODUCTORY LEAD:

"Supervisors sometimes complain about the many activities that interfere with observing their employee's at work. Today, we will take up an accident prevention tool that requires supervisors to observe their employees in action. It is called, the safety observation. We will consider the different types of observations, the kind of employees and jobs that should be observed, and the benefits of such observations."

INSTRUCTION QUESTIONS:

1. WHAT IS THE BASIC IDEA OF A SAFETY OBSERVATION? WHAT ARE THE THREE KINDS OF OBSERVATIONS? (p. 1) (SI and Q & A)

Explain the basic idea of the safety observation. Have the three types of observations written on the answer board. Explain the basic idea of each. Ask the group which is most effective in detecting unsafe practices. Ask if all three types of observations are desirable? What are the arguments for each? Be prepared to explain the key points if you can't draw them from the group.

Ask for a show of hands on how many practice each type of observation. Emphasize that planned observations are the least practiced. Therefore, the future emphasis must be on planned observations.

2. WHAT KINDS OF EMPLOYEES SHOULD BE GIVEN THE BENEFIT OF PLANNED OBSERVATIONS? (p. 2) (Q & A) or (LG)

The text identifies 5 types of employees who should be given observations. Have each type listed on the answer chart. For each, ask the group for reasons why such employees should be given observations. Ask also what other kinds of employees should be checked out with planned safety observations.

3. WHAT JOBS SHOULD BE SUBJECT TO SAFETY OBSERVATIONS? (p. 4) (SI) (Assigned Work)

Explain that observations should be concentrated on jobs that are known to be hazardous, that is, jobs that have involved accidents in the past or those that have a potential for producing serious injury accidents.

Refer to Chapter 5, p. 4-5 to explain to the class how this list can be used to guide a supervisor in the selection of a job to observe.

4. WHAT ARE THE BENEFITS OF PLANNED SAFETY OBSERVATIONS? (p. 5) (LG)

Have the benefits listed in the text (p. 5) listed on the answer chart. Do not expose the chart until ready. Ask the group to develop by discussion the possible benefits of observations. After 10 minutes of discussion, direct attention to the answer chart. Explain each point briefly. Ask the group if they came up with any additional benefits. Acknowledge all reasonable ideas.

ADDITIONAL DISCUSSION QUESTIONS:

1. Should hourly employees be consulted on developing lists of what jobs require special emphasis on safety? Why?
2. What kinds of jobs should be listed for repair and maintenance employees?
3. Why should employees who have returned to work after an extended "lay-off", illness, or sabbatical be subject to planned safety observations?
4. Should all employees be given an equal number of safety observations per period, e.g. month, quarter, or year? Why?
5. Should all jobs be given an equal number of "observations"? Why?

INSTRUCTION OBJECTIVE:

The objective of this section gives supervision the know-how necessary to conduct planned safety observations. A second objective is to acquaint supervision with a four step method for reinstructing employees observed working unsafely, when it is likely that they did not know better.

INTRODUCTORY LEAD:

"In our last session, you became acquainted generally with the idea of planned safety observations. Today, we will discuss the details of how to plan, make, and record such observations. We will also discuss how to reinstruct the employee observed working unsafely when reinstruction is called for rather than some other method of correction."

INSTRUCTION QUESTIONS:

1. SHOULD EMPLOYEES BE TOLD IN ADVANCE OR NOT IN ADVANCE THAT THEY ARE ABOUT TO BE OBSERVED? (p. 7) (Q & A)

Put the question to the group. Ask for a show of hands of those who believe employees should be told in advance. Then, ask for the hands of those who believe employees should not be told in advance. Then, ask for the hands of those who say it depends upon the purpose of the observation.

When should employees be told in advance? Draw the answer from the group. When should employees not be told in advance? Again, draw the answer from the group. If necessary, help with additional explanation. Check understanding by asking what they would do if they planned to observe (1) the "new" employee, (2) the accident repeater, (3) the "experienced" employee, (4) the transferred employee, (5) the "suspected unfit" employee, (6) the known chance-taker, and (7) the recently corrected employee.

2. SHOULD SUPERVISION MAKE A SPECIAL EFFORT TO CONCEAL THEMSELVES WHEN MAKING PLANNED OBSERVATIONS? (p. 8) (Q & A)

Cite an exaggerated example of concealment. Ask if they think supervision should do things like that. Ask why not. Get across the idea that concealment is not necessary.

3. HOW SHOULD PLANNED SAFETY OBSERVATIONS BE CONDUCTED? (p. 10) (SI)

Have the 4 basic steps and their sub-steps outlined on the answer chart. Explain the steps as follows:

PREPARING FOR OBSERVATION:

1. Deciding what employee. Direct attention to Figure 2, p. 12. Explain the observations recorded for John Doe. Have them duplicate the record of John Doe on a blank Safety Contact Record, so they get the idea of how observations are recorded. Then, ask them to

decide from looking at Figure 2, p. 12, which of the three employees they would select for observation, if there was no special reason for observing a particular employee. Explain that deciding the person is merely a matter of looking at the records for unmarked lower diagonal spaces.

Ask the group how else a supervisor may decide on the employee to observe.

2. Deciding what job. Explain how the record shown in Figure 1, p. 9, can be used to decide what job to observe the employee doing. Ans.: Any job not yet observed, unless there are special reasons for observing a particular job.
3. Reviewing what to observe for. Explain why it is a good idea to review the JSA if there is one and it has not been reviewed in a long time.

MAKING THE OBSERVATION:

1. Telling the employee in advance. Explain what and how as per text book.
2. Observing the employee. Ask these questions: Where should the supervisor stand? What specifically should the supervisor observe for? Should the supervisor interrupt the employee? Under what circumstances?

CONTACTING THE EMPLOYEE:

Explain how the employee should be corrected. Explain when a compliment is due.

RECORDING THE OBSERVATION:

Read off observations that you want recorded, e.g. "John Doe was observed doing the four steps of job 29-6 on July 7, and he performed safely on this four step job. Record the facts. Make all required entries." Emphasize that all entries must be initialed by the recording supervisor.

4. HOW SHOULD AN EMPLOYEE BE REINSTRUCTED FOR WORKING UNSAFELY ASSUMING OTHER METHODS OF CORRECTION ARE NOT CALLED FOR? (p. 13) (SI and Q & A)

Explain (or get the group to explain) when simple reinstruction is called for. Have the 4 steps of reinstruction written on the chart. Handle each as follows: (1) Explain it briefly. (2) Read aloud the italics (p. 13). (3) Ask the group to explain why it should be done that way.

Get the group to voice an opinion about this approach of reinstruction.

ADDITIONAL DISCUSSION QUESTIONS:

1. Can planned observations be conducted without keeping records? What are the advantages of keeping records?
2. What should be done with the record when an employee transfers to another department?
3. Is the record suitable for employees who go from a general labor pool to different departments as needed? Should such employees be observed?

Planned Safety Observations

**Chapter
6**

Managing a Safety Observation Program

**Section
18**

This section is written for the guidance of department heads. It should be given as a reading assignment to all supervisors. However, it is not instructed as are other sections. Instead, it is put into action by the department heads during the period when the basic tool, Planned Safety Observations is to be initiated in the plant.

Department heads may wish to discuss certain features of the section with their supervisors before and during the period of installing the basic tool.

(Note: There is no examination for this section.)

INSTRUCTION OBJECTIVE:

The objectives of this section are (1) to convince supervision that inspection for unsafe conditions must be put on a regular and planned basis, and (2) to show them how to conduct a safety inspection inventory in order to establish the inspection requirements for areas assigned to them for inspection purposes.

INTRODUCTORY LEAD:

"Earlier, we pointed out that unsafe conditions are always in the process of being created by normal wear and tear and by the actions of workers. That being so, considerable emphasis must be placed upon safety inspections to ferret out unsafe conditions before they cause accidents. In this section, the importance of planned inspections will be emphasized. However, before there can be planned inspections, there has to be an analysis of the inspection problem. That's the focal point of today's instruction — how to do a safety inspection requirements analysis."

INSTRUCTION QUESTIONS:

1. WHY ARE REGULAR SAFETY INSPECTIONS NECESSARY? (Review) (p. 1) (Q & A)

Review the sources of unsafe conditions, e.g. normal wear, actions of workers, purchasing practices, repair and maintenance work, etc. (Have the points listed on the answer chart.) Point out that casual inspection is too ineffective; that's why there must be periodic inspections. Get group agreement that some plan of periodic inspections is necessary, that management cannot leave it to chance to find unsafe conditions.

2. INCIDENTAL AND PLANNED INSPECTIONS! WHAT'S THE DIFFERENCE? ARE BOTH NECESSARY? (p. 1-2) (SI and Q & A)

Have the two kinds of inspection listed on the answer chart. Explain each. Ask the group whether both kinds are necessary.

3. WHAT IS A PLANNED SAFETY INSPECTION PROGRAM? WHAT MUST BE DONE BEFORE SUCH A PROGRAM CAN BE APPLIED? (p. 2) (SI)

Explain the planned safety inspection program as a division of a department into specific areas for which supervisors are made responsible for carrying out periodic, planned inspections, the results of which are made a matter of record and report to higher supervision.

Before such a program can be activated, it is necessary to analyze the inspection requirements of each departmental area. Point out one needs to know what the inspection requirements are before planned inspections are carried out.

4. WHAT ARE THE BASIC STEPS OF A SAFETY INSPECTION INVENTORY? (p. 2) (SI plus Q & A)

Have the 6 basic steps listed on the answer chart. Explain each step generally to give the group the basic idea of what the safety inspection inventory involves, and why each step is necessary. Do not go into the details of how each step is carried out. In addition, consider the following suggestions for the basic steps:

STEP 1. Have a floor plan of a department on a slide or enlarged blueprint. With the aid of group discussion, subdivide the department into specific suggestion areas, so each first-line supervisor has an assigned area.

STEP 2. Direct attention to the list of inspection categories. Read aloud and explain each category. Have members of the class check those categories that they would be concerned with in their present area of responsibility.

STEP 3. Use LG discussion to identify the kinds of parts that should be inspected regularly. See if the group can add additional categories to the eight listed on p. 4.

STEP 4. Ask why it is necessary to define precisely what conditions should be inspected for.

STEP 5. Ask what factors govern how frequently certain items should be inspected.

STEP 6. Ask why it is necessary to decide who should inspect each item that requires regular inspection.

5. HOW IS THE SAFETY INSPECTION INVENTORY FORM USED? (p. 5) (SI plus class exercise)

Distribute blank inventory forms. Have the group open their text to p. 5. Explain each step of the inventory analysis form. Refer to the form shown in Figure 2, p. 6, to illustrate your explanation.

Then, have each person start on the actual analysis of his or her assigned area. (If areas have not been assigned, let each person do an area that he or she is familiar with for the purposes of the class exercise.) Have them complete the identification of inspection categories (Item 1). Check to make certain they are proceeding correctly. Then, have them complete the analysis for as many items as it takes to complete the front and back of the inventory form. Completed work is to be handed in for a check. Ask each person to identify the analysis by completing the upper portion, e.g. department, area, and name. (Return forms with comments in the next session.)

6. WHAT ARE THE USES TO WHICH THE COMPLETED INSPECTION INVENTORY FORMS MAY BE PUT? (p. 7) (LG)

Turn the question over to LG discussion. Challenge them to identify all of the many possible uses for the completed inventory analysis. Collect ideas. Record on the recording chart. Impress the group that there are multiple benefits.

ADDITIONAL DISCUSSION QUESTIONS:

1. Is the safety inspection inventory applicable to areas assigned to maintenance supervisors, such as shops?
2. Can the safety inspection inventory be broadened to include items (parts) that should be inspected from the standpoint of production or product quality?
3. What is the advantage of having two supervisors independently "inventory" the same area?

4. Who should approve the "inventory" work done by first-line supervisors?
5. What role should the plant safety engineer have in the safety inspection inventory analysis?
6. Is it possible that the inventory will result in differences of opinion between operating departments and maintenance departments about who should inspect what? How should such differences be resolved?

INSTRUCTION OBJECTIVE:

The objectives of this section are (1) to convince supervisors of the advantages of using an inspection checklist, (2) to show them how to develop and use the type of checklist recommended in the text, and (3) to acquaint them with general standards of housekeeping.

INTRODUCTORY LEAD:

"In our last session, we discussed how to do an analysis of an area's inspection requirements. We also got started on such an analysis for your areas. Today, I want to review the results of checking your work. Then, we will discuss the pros and cons of using a checklist to guide your inspection activities. We will discuss a particular type of checklist. You will get an opportunity to start such a checklist for your assigned (or present area) area, and we will discuss how to use the checklist.

INSTRUCTION QUESTIONS:

1. WHAT ARE THE ADVANTAGES OF USING AN INSPECTION CHECKLIST? (p. 9) (LG)

Explain the basic idea of a checklist, e.g. a list of items that require inspection in the space to indicate the items have been inspected and found satisfactory or in need of some type of corrective action.

Turn the question over to LG discussion. Challenge the group to identify both the advantages and disadvantages of using a checklist. List both advantages and disadvantages on the recording pad. Get group agreement that the advantages far outweigh the disadvantages.

2. HOW IS THE RECOMMENDED TYPE OF INSPECTION CHECKLIST PREPARED? (p. 10) (SI plus class exercise)

Explain the mechanics of the recommended checklist by referring to Figure 3 (p. 9) and Figure 4 (p. 10).

Explain how the overlay is prepared from the Safety Inspection Inventory forms. Have each person prepare an overlay, as shown in Figure 3, from a partially completed inventory form. Check individual work to see that your instructions were understood. Make certain all persons understand how the overlays are derived from the Safety Inspection Inventory forms.

3. HOW IS THE RECOMMENDED TYPE OF CHECKLIST USED? (p. 11-12) (SI plus class exercise)

Cover the following points: (1) Use of a daily checklist. (2) Use of a weekly checklist. (3) Use of a monthly checklist. (4) Recording inspection findings. (5) Turning in underlays to higher supervision. Have the members place their prepared overlays on a blank underlay. Have them make entries to indicate findings that require (1) safe arrangement, (2) repair or replacement, (3) maintenance service, (4) general clean-up, and (5) no action. Have them exchange checklists,

so each person's will be checked over by another class member. Answer questions to resolve differences and clarify understanding.

4. WHO, OTHER THAN SUPERVISORS, CAN AND SHOULD MAKE USE OF AREA INSPECTION CHECKLISTS? (p. 12) (Q & A)

Draw the answers from the group. Expand and emphasize each answer key point as you get it from a volunteer. If you don't get the answers readily, use leading questions, e.g. Should a department superintendent use such area checklists? How?

5. WHAT GENERAL HOUSEKEEPING STANDARDS SHOULD SUPERVISORS APPLY TO THEIR ASSIGNED AREAS? (p. 12) (SI and Q & A)

Explain the importance of good housekeeping for safety and efficiency. Explain the principles of (1) orderliness and (2) cleanliness (p. 12).

Have a list of key words written on the answer chart that are the focal points of poor housekeeping, e.g. walkways, stairs, windowsills, storage racks, supply bins, yard storage areas, etc. (Get ideas from p. 13-15, and add your own.) Take up one key word at a time as follows: (1) Ask for a show of hands on how many have the item as a potential housekeeping problem. (2) Ask what some of the past housekeeping problems have been with the item. (3) Ask what standards apply for the item.

6. WHAT STEPS SHOULD A SUPERVISOR TAKE IN REGARD TO CORRECTION OF UNSAFE CONDITIONS? (p. 15) (LG)

This is a REVIEW item. List the six points (p. 15) on the answer chart. Explain the what and why of each point along the lines of the text.

7. WHO, BESIDES SUPERVISORS, SHOULD CONDUCT PLANNED SAFETY INSPECTIONS? (p. 15) (LG)

Let the group discuss the question for 5-10 minutes. Record their ideas as to who on the recording pad. Discuss each answer key point in terms of why. Point out that the plant has assigned inspection responsibilities to specialists, safety personnel, superintendents, etc. The idea is to convince supervisors that they are not alone in the planned search for unsafe conditions.

ADDITIONAL DISCUSSION QUESTIONS:

1. What are the arguments for and against labor-management safety inspection committees?
2. What are the arguments for and against employee representative inspection committees?
3. Is there any advantage in establishing housekeeping standards for assigned areas in writing?
4. What can a department head do to control a planned safety inspection program?

Planned Safety Inspections

Chapter

7

Managing a Safety Inspection Program

Section

21

This section is written for the guidance of department heads. It should be given as a reading assignment to all supervisors. However, it is not instructed as are other sections. Instead, it is put into action by the department heads during the period when the basic tool, Planned Safety Inspections, is to be initiated in the plant.

Department heads may wish to discuss certain features of the section with their supervisors before and during the period of installing the basic tool.

(Note: There is no examination for this section.)

The Investigation of Accidents.

Chapter
8

Introduction to Accident Investigation.

Section
22

INSTRUCTION OBJECTIVE:

The objectives of this section are (1) to acquaint supervision with the nature, purpose, and timing of accident investigations, (2) to convince them that first-line supervisors should investigate accidents occurring to their employees, and (3) to give them an understanding of why it is a problem when employees fail to report minor injuries, and what can be done to encourage such reporting.

INTRODUCTORY LEAD:

"Before we take up the subject of how to investigate accidents, there are some introductory topics to discuss. In this session, we will discuss why it is a management problem when employees fail to report minor injuries and what you can do to encourage them to report minors. Then, we will discuss the nature and purpose of accident investigation, and the proper timing of accident investigations. Lastly, we will discuss the role of first-line supervisors and higher plant management in accident investigation."

INSTRUCTION QUESTIONS:

1. WHY IS IT A PROBLEM WHEN EMPLOYEES FAIL TO REPORT MINOR INJURIES? (p. 1-2) (LG)

Have the four key points listed but covered on the answer pad. Use small group discussion to establish the answer key points. Draw the key points out of the groups. Summarize by turning to the key points listed on the answer pad.

Try to have actual accident cases to illustrate why failure to report is a problem. Include an infection and/or aggravation of injury case.

2. WHY DO EMPLOYEES FAIL TO REPORT MINOR INJURIES? IN GENERAL, WHAT ARE THE REASONS? (p. 2) (Q & A)

Read aloud the question. Start the group thinking by citing one reason why an employee may not report a minor injury. Ask for other reasons. Respond affirmatively to each acceptable reason. Have someone record each accepted reason on the recording pad. When you have them all, summarize quickly from the recording pad. Star those that are under the control of supervision. Get the group to indicate which are under the control of supervision.

3. WHAT CAN SUPERVISORS DO TO ENCOURAGE THEIR EMPLOYEES TO REPORT MINOR INJURIES? (p. 2) LG)

Turn the question over to the small group discussion. Allow about 10 minutes of discussion. Draw out and expand upon the answer key points. Emphasize the importance of frequent reminders to employees to encourage them to report minor injuries.

Discuss what constitutes a delayed report or neglected injury.

4. WHAT IS AN ACCIDENT INVESTIGATION? (p. 3)
WHAT IS THE ROLE OF THE ACCIDENT INVESTIGATOR? (p. 3) (SI)

Explain the accident investigation as a systematic effort to establish the facts of how an accident occurred and the causes of the accident.

The investigator, point out, is more than a mere collector of information. The supervisor must assess and evaluate all relevant information. The supervisor uses judgment to determine what occurred, how it occurred, why it occurred, and so on, based upon all available information. Knock out the idea that the investigator merely reports what has been told.

5. WHAT ARE TWO MISTAKEN VIEWPOINTS ABOUT WHY ACCIDENTS ARE INVESTIGATED? WHAT IS THE TRUE PURPOSE OF INVESTIGATING ACCIDENTS? (p. 3) (SI and Q & A)

Explain the two mistaken viewpoints about accident investigation. Draw the answer to the second question from the group. Emphasize that plant management wants all employees to understand the constructive purpose of accident investigation.

6. HOW SOON AFTER ACCIDENTS OCCUR SHOULD THEY BE INVESTIGATED? WHY? (p. 3) UNDER WHAT CIRCUMSTANCES SHOULD QUESTIONING OF THE EMPLOYEE WHO HAD THE ACCIDENT BE DELAYED? (p. 4) (Q & A)

Draw the basic answers from the group. Expand upon the answer key points sufficiently to cover all aspects of each answer. Be prepared to use leading questions to draw out the answers. Be sure to establish the reason (why?) for each answer.

7. WHY ARE FIRST-LINE SUPERVISORS REQUIRED TO INVESTIGATE ALL ACCIDENTS THAT OCCUR UNDER THEIR SUPERVISION? (p. 4) (LG)

Ask the group for all the reasons that add up to the fact that first-line supervisors are required to investigate all accidents occurring under their supervision. After 10 minutes discussion, draw out the answer key points. Ask why it would be impractical to have the safety department investigate all accidents. Emphasize that non-injury accidents are just as important to investigate as injury accidents. Explain why.

8. WHY SHOULD A SUPERINTENDENT PARTICIPATE ACTIVELY IN INVESTIGATING DISABLING INJURY AND ALSO NEAR-DISABLING INJURY ACCIDENTS? (p. 5) WHAT ARE THE ADVANTAGES OF A COMMITTEE INVESTIGATION FOR SUCH ACCIDENTS? (p. 5) (SI and Q & A)

Have the 3 answer key points to the first question listed on the answer pad. Explain each key point.

Draw the answers for the second question from the group.

9. WHAT CAN A DEPARTMENT SUPERINTENDENT DO TO IMPROVE THE QUALITY OF ACCIDENT INVESTIGATION AND REPORTING? (p. 6) (LG)

Turn the question over to 10 minutes of LG discussion. Draw the answers from the group. If you are the Department Superintendent, point out what you will do to improve the quality of accident reporting in your department. Be guided by the suggestions of the text.

10. WHAT CAN A DEPARTMENT SUPERINTENDENT DO TO MAKE CERTAIN PLANNED CORRECTIVE ACTIONS ARE APPLIED AFTER THE INVESTIGATION? (p. 6) (LG)

Turn the question over to 10 minutes of LG discussion. Draw the answers from the group. If you are the Department Superintendent, let the group know what you will do to control necessary corrective actions.

11. WHAT ARE THE PROCEDURES TO FOLLOW WHEN A FATALITY OCCURS? (p. 7) (SI)

Point out executive management's role in a fatal investigation.

ADDITIONAL DISCUSSION QUESTIONS:

1. What can the effect of a policy of disciplinary penalties for rule violations that have resulted in accidental self-injury have upon the accuracy of future investigations?
2. Why should Department Superintendents review all accident reports originating with their supervisors?
3. Why is it poor policy to rewrite a supervisor's accident report because it was badly written?
4. Why is it poor policy to exclude the responsible first-line supervisor from a committee assigned to investigate a disabling or near-disabling injury accident?

The Investigation of Accidents.

Chapter
8

Methods of Getting Accident Facts.

Section
23

INSTRUCTION OBJECTIVE:

The objective of this section is to give supervisors an understanding of how to investigate accidents. The emphasis is on the correct methods for interviewing persons who have had accidents and witnesses to accidents.

INTRODUCTORY LEAD:

"In our last session, we covered the purpose of accident investigations. We also said that accident investigation was a matter of getting and evaluating accident facts. Today, we will discuss how to get accident facts. The most frequent source of information is the employee who had the accident. If the employee is not interviewed correctly, the facts are apt to be distorted or covered up. That's the main point of today's discussion — how to interview the employee who had the accident. We will also discuss how to interview witnesses and how to reenact an accident."

INSTRUCTION QUESTIONS:

1. WHAT IS THE BASIC PROBLEM CONFRONTING THE SUPERVISOR WHEN THE SUPERVISOR TRIES TO GET THE ACCIDENT FACTS FROM THE EMPLOYEE WHO HAD THE ACCIDENT? (p. 8) (SI and Q & A)

The basic problem is getting the employee to cooperate by telling the truth as the employee knows it. Explain that; then ask the group why persons may be reluctant to tell all they know. Try to identify many reasons why employees will distort or omit facts. Point out that most reasons boil down to some form of fear.

Explain the significance: The investigator's conduct must be controlled so as to dispel fear and reluctance to cooperate.

2. WHAT IS THE RECOMMENDED METHOD FOR INTERVIEWING THE EMPLOYEE WHO HAD THE ACCIDENT? (p. 8-9) (SI and Q & A)

Have the five basic steps listed on the answer pad. Handle the instruction of each step as follows: (1) Explain what should be done and how it should be done. (2) Get the group to explain why it should be done that way. (Ask)

Ask the group why it is a poor practice to try to write up the accident report while interviewing the person who had the accident.

3. WHAT IS THE WRONG AND RIGHT WAY TO INTERVIEW THE EMPLOYEE WHO HAD THE ACCIDENT? (p. 10-12) (Q & A)

Get the right person to volunteer to read aloud the role of John. You read aloud the role of the Foreman. Act out the "wrong way" first. Then, ask the group to identify all the things the foreman did wrong. (See p. 10-11) Be prepared to prompt the group, e.g. Did he show an

interest in the man's injury?, Did he really listen to the man?, Did he put the man on the defensive?, etc. Summarize the do's and don'ts; then act out the "right way" to interview. Then, get the group to identify what the supervisor did correctly.

Ask the group if there is any reason why an accident investigation cannot be conducted on a friendly basis.

4. HOW SHOULD ACCIDENT WITNESSES BE INTERVIEWED? (p. 12-13) (SI and Q & A)

Have the five steps written on the answer pad. Instruct each as follows: (1) Read aloud the step. (2) Explain the step fully. (3) Where appropriate, get the group to explain why something should be done as suggested.

Have the general do's and don'ts listed on the answer pad. Go over each one briefly because they are almost self-explanatory. For each, get someone in the group to explain the reason for the do or don't.

5. WHEN SHOULD ACCIDENTS BE REENACTED? WHAT PRECAUTIONS SHOULD BE TAKEN? (p. 13) (SI and Q & A)

Have the 4 answers to the question, When should accidents be reenacted?, written on the answer pad. Explain each. Emphasize that reenactment is not necessary in the majority of cases.

Draw the answers of the second question from the group. If necessary, use leading questions.

ADDITIONAL DISCUSSION QUESTIONS:

1. Should an employee who has been seriously injured as a result of violating a safety rule be disciplined with a penalty? Suppose the injury the employee suffered was a minor one. Would that make a difference?
2. What effect will frequent issuance of disciplinary measures for accidents caused by unsafe practices have upon the effectiveness of accident investigations?
3. Why is it best to interview an employee at the source of the accident?

The Investigation of Accidents

Chapter
8

Reporting the Accident Facts

Section
24

INSTRUCTION OBJECTIVE:

The objective is to show supervisors how to complete the new accident and illness report form, and to give them some supervised experience with the new report form.

INTRODUCTORY LEAD:

"Today, we will discuss the new accident and illness report form. From here on, we will use one report form for reporting all minor injuries, disabling injuries, occupational illnesses, or serious equipment damage. The same report form can be used for preliminary investigations as well as final reports of all cases. It is more than an accident and illness report form. It is a guide to proper investigation.

INSTRUCTION QUESTIONS:

1. HOW SHOULD THE NEW ACCIDENT AND ILLNESS REPORT FORM BE COMPLETED?
(p. 14-20) (SI)

Have each person turn to the accident and illness report form on p. 17-18. Ask them to read the instructions at the top of the form. Then, using a completed form as a guide, explain each item. Indicate what information is wanted, how it is to be recorded, why it is wanted, and if appropriate, how the information is to be obtained. After each numbered item has been explained, ask for questions. Be sure to encourage them to raise questions.

When you have completed the discussion of the form, explain the distribution of the form for your plant.

Distribute blank accident and illness report forms to the group. Then, proceed as follows:

1. Assume that you have had an accident. Get the facts of the case clearly in mind. Select (or make up) a case that will result in all items on the form being completed when the case is written up.
2. Get a volunteer to interview you to establish the accident facts. The person should follow the 5 step approach described in the previous section. Answer the person's questions. Let the person's questioning develop the accident facts, instead of telling everything. The rest of the group should be listening to get the facts prior to completing the blank report form.
3. When the volunteer has completed the interview, allow members of the group to ask additional questions to bring out additional accident facts.
4. When there are no further questions, request each person to write-up the facts on the new form. Tell them to consult the instructions on p. 15-21. They are to hand in the completed form with their name written in as investigator.
5. Review the completed forms between training sessions. Red pencil each item that is incorrectly written or in need of improvement. Discuss the red penciled items in the next training session.

ADDITIONAL DISCUSSION QUESTIONS:

1. Can the new accident and illness report be used for equipment accidents? For near accidents?
2. Many cases are more simple than the case shown on p. 15. What is done when items on the new report form don't apply to the case investigated?
3. What role should the safety department play in getting the quality of accident reporting improved?
4. What should departments do with their copies of reports? How can the copies be used long after the individual case has been closed?

INSTRUCTION OBJECTIVE:

The objectives of this section are (1) to convince supervisors that job safety training must be planned, organized, and controlled to be effective, and (2) to show them how to conduct the different basic types of job safety training.

INTRODUCTORY LEAD:

"An employee has the right to know how to work the job safely — and we have the obligation to train the employee so that the employee does know. In this session, we will discuss four basic kinds of job safety training. You will be responsible for carrying out these kinds of job safety training in the future. They are: (1) position safety orientation; (2) initial job instruction; (3) pre-job safety instructions; and (4) planned personal safety contacts.

INSTRUCTION QUESTIONS:

1. WHY IS JOB SAFETY TRAINING SO ALL-IMPORTANT IN ACCIDENT PREVENTION? (p. 1) (LG and SI)

Ask the group to identify a number of serious accidents that resulted from inadequate training of employees, that is, accidents caused by employees not knowing. Allow 10 to 15 minutes discussion on this.

After the discussion, have several of the cases explained by different members of the group. Use these cases, plus others that you have developed with the aid of the plant safety supervisor, to convince the group of the importance of proper job safety training.

2. WHAT ARE THE FIVE KINDS OF JOB SAFETY TRAINING ALL SUPERVISORS SHOULD PRACTICE? (p. 1-13) (SI)

This question merely sets the stage for the details. Have the five kinds of job safety training listed on the answer pad. Explain the basic idea of each — the what not the why, when, and how — without going into details.

3. POSITION SAFETY ORIENTATION! WHY? WHEN? WHERE? WHAT TOPICS? (p. 1-3) (Q & A plus exercise)

Draw the answers to the following questions from the group: What is the purpose of the position safety orientation? Who should be given position safety orientations? How soon after the employee is assigned to a position should the employee be oriented? Where should the orientation be conducted? What topics should be covered?

As an exercise, have class members plan a position safety orientation for one position under their supervision. Distribute blank position safety orientation forms. Let them start on it in class, but complete the form between training sessions. Each person's immediate supervisor should review and approve the trial position safety orientation outline.

4. INITIAL JOB INSTRUCTION! WHAT ARE THE BASIC STEPS? HOW ARE THEY CARRIED OUT? (p. 2-5) (SI plus demonstration)

Have an outline of the answer recorded on the answer pad. (The outline should consist of the bold type on p. 2-5.) If you think it will help your presentation, you can also list the key points under the steps. For example:

A. PREPARATION

- 1. PREPARE YOURSELF**
 - Review the JSA
 - Don't memorize
- 2. PREPARE THE JOB SITUATION**
 - Assemble tools, equipment, etc.
 - Have protective equipment on hand
 - Have employee on hand for arrangement

Use the outline to guide and prompt your explanation of how initial job instruction should be carried out. Point out it is necessary to deviate from this basic procedure on some jobs.

If possible, have someone who has prepared in advance put on a demonstration of how to train an employee on a job involving the use of equipment. Select a "job" that can be demonstrated in class, e.g. lifting a box, up-ending a drum, etc. The person putting on the demonstration should follow the text. The demonstration should be practiced with a volunteer in advance of the class to ensure that it goes smoothly.

5. PRE-JOB SAFETY INSTRUCTIONS! FOR WHAT KINDS OF JOBS? WHAT TOPICS? HOW CAN JAS'S BE USED FOR THIS PURPOSE? (p. 5) (Q & A)

Draw the answers to the above questions from the group. If necessary, use leading questions. Expand on each key point as you draw it from the group.

6. PLANNED SAFETY CONTACTS! WHAT IS THE MAIN PURPOSE OF SUCH CONTACTS? HOW ARE THEY RELATED TO SHAPING EMPLOYEE SAFETY ATTITUDES? (p. 5) (SI plus Q & A)

Explain the main purpose of the planned contact as a reminder to ensure people are aware of the hazards, safe job procedures, and safety rules associated with their work.

Draw the answer to the second question from the group. Expand upon the answer until it is clear that regular planned safety contacts are a way to develop attitudes of acceptance of safe working procedures. Ask them what other benefits may come as by-products of planned safety contacts.

7. WHAT IS A PERSONAL SAFETY CONTACT? WHY ARE SUCH CONTACTS GENERALLY MORE EFFECTIVE THAN GROUP SAFETY CONTACTS? (p. 6) (SI and Q & A)

Explain the personal contact as an "instructional" contact between the supervisor and one, two, at the most three employees. Usually it is one employee.

Develop the reasons why personal contacts are superior to group contacts by drawing the key points from different members of the group.

8. WHAT KINDS OF TOPICS ARE SUITABLE FOR PERSONAL SAFETY CONTACTS? (p. 6) (Q & A)

Draw the answers from the group. Guide them so they identify the types of topics, e.g. safety rules, accident cases, JSA's, seasonal hazards, new protective equipment, temporary hazards, etc.

Explain why the main emphasis should be on safety rules and safe job procedures.

9. WHAT ARE THE BASIC STEPS FOR CONDUCTING PERSONAL SAFETY CONTACTS? HOW IS EACH STEP CONDUCTED WHEN SAFETY RULES ARE THE TOPIC? WHEN JOB PROCEDURES ARE THE TOPIC? (p. 6-10) (SI)

Have the four steps recorded on the answer pad. Explain their application to safety rules as follows:

1. **Decide the topic.** Explain why, in the absence of selecting a particular safety rule for a particular employee, there must be a basis for selecting what rules to discuss. To illustrate how the safety contact record is used to select rule topics, you will first have to explain how rule topics are recorded on the record. Direct attention to Figure 2, p. 7. Explain the contact entries under the heading "Safety Rules". Have them duplicate those entries on a blank contact form. Then, ask them to decide from looking at the record, what safety rules (codes) could be selected for a contact. Get across the objective: Every applicable safety rule is to be discussed with the employee in as many contacts as are necessary to accomplish the objective.
2. **Prepare the contact.** Explain what preparation may involve at a minimum and a maximum. Get the group to agree that a minimum preparation is desirable.
3. **Make the contact.** Have the three sub-steps recorded on the answer pad. (See bold type headings on p. 8-9.) Explain each. Get group agreement that if rules are explained that way people will understand them.
4. **Record the contact.** Give them some contacts verbally, and have them record them on the form.

NOTE: Follow the same basic procedure as described above for personal contacts covering safe job procedures.

Assign each person to prepare to demonstrate a personal safety contact at the next training session. The topic should be a major safety rule or some portion of a JSA. Select six persons at that session from the group to demonstrate their preparation. Have the group analyze each presentation critically, e.g. what was done well and what needs improvement.

10. WHAT ARE SOME "NATURAL" VARIATIONS OF PERSONAL SAFETY CONTACTS? (p. 10-11) (SI)

Have the five variations listed on the answer pad. Explain each fully. Answer any questions. Get group agreement that such informal contacts are instructional.

11. HOW IS THE REVERSE SIDE OF THE SAFETY CONTACT RECORD USED? (p. 11-13) (SI)

Direct attention to Figure 3, p. 12. Explain how the record is used to record (1) safety rule violations, (2) departmental safety codes, (3) accidents, (4) neglected injuries, (5) safety meeting attendance, (6) position safety orientation, and (7) job safety contacts.

ADDITIONAL DISCUSSION QUESTIONS:

1. Discuss and arrive at a plan of how the safety contact records will be stored so as to be accessible to supervisors.
2. Why is it necessary to maintain a record of safety contacts?
3. Discuss and arrive at a plan for tabulating safety contacts recorded on individual records for a monthly departmental report.

INSTRUCTION OBJECTIVE:

The objective of this section is to acquaint supervisors with the different types of planned group safety contacts.

INTRODUCTORY LEAD:

"In our last session, we emphasized that personal safety contacts are preferred over group safety contacts. That does not mean you cannot use group safety contacts. Properly conducted, they are effective. There are even certain situations that call for group safety contacts. Let's see when such contacts are useful, and how they should be conducted."

INSTRUCTION QUESTIONS:

1. WHEN ARE GROUP SAFETY CONTACTS APPROPRIATE? (p. 14) (SI)

Have the six answer points (p. 14) listed on the answer pad. Explain each. Get the group to give specific examples.

Discuss any particular problems the group may have in conducting group contacts.

2. WHAT IS THE RECOMMENDED WAY TO INSTRUCT JOB PROCEDURES IN A GROUP CONTACT? WHAT ARE SOME VARIATIONS ON THE STANDARD PROCEDURE? (p. 15-16) (SI & LG)

Have an outline of the answer recorded on the answer pad. (The bold type in the text is the basis for the outline.) Use the outline to guide your discussion.

Ask the group how variations may be employed to make for more active participation of the employees. Give them 10 minutes. Add the "variations" mentioned in the text to their list of ideas if they have not already done so.

3. WHAT IS THE RECOMMENDED WAY TO INSTRUCT SAFETY RULES IN A GROUP CONTACT? WHAT ARE SOME VARIATIONS ON THE STANDARD PROCEDURE? (p. 16-18) (SI and LG)

Follow instruction guide for Question 2 above.

4. WHAT IS THE RECOMMENDED WAY TO DISCUSS AN ACCIDENT CASE IN A GROUP CONTACT? WHAT ARE SOME VARIATIONS ON THE STANDARD PROCEDURE? (p. 18-19) (SI and LG)

Follow instruction guide for Question 2 above.

5. WHAT IS AN OBSERVED PRACTICES AND CONDITIONS GROUP CONTACT? HOW IS SUCH A GROUP CONTACT CONDUCTED? (p. 20-21) (SI)

Follow instruction guide for Question 2 above. In addition, give the group blank copies of the forms shown in Figures 4 and 4a. Give them the assignment to look for and keep a record of unsafe practices and conditions observed between this and the next training session. Set a definite date on which the forms are to be handed in. Challenge them to spot as many practices and conditions as possible by deliberately looking for them. At the next session, tally the results to (1) show how different supervisors (without naming anyone) will spot more than others, (2) point out the total number of unsafe practices and conditions found, and (3) try to catalog them by type. Emphasize that use of the record is optional with supervision.

Methods of Job Safety Training

**Chapter
9**

Managing a Safety Training Program

**Section
27**

This section is written for the guidance of department heads. It should be given as a reading assignment to all supervisors. However, it is not instructed as are other sections. Instead, it is put into action by the department heads during the period when the different types of job safety training are to be initiated in the plant.

(Note: There is no examination for this section.)

INSTRUCTION OBJECTIVE:

The objectives of this section are to (1) provide supervision with a basic strategy for motivating employees to work safely, (2) acquaint them with important psychological wants of people, and (3) give them an understanding of how acting in harmony with these wants will result in greater employee cooperation.

INTRODUCTORY LEAD:

"Training employees so they know how to work safely does not guarantee that they will work safely. They must be motivated to apply what they know. That brings us to a major problem that confronts supervision. How do you motivate employees to work safely? What can a supervisor do to make it more likely that his employees will do what they know from past instruction they should do?" Before we answer those questions, let's review the motivation problem, and develop a strategy for motivating employees to work safely."

INSTRUCTION QUESTIONS:

1. WHAT IS THE MOTIVATION PROBLEM? (REVIEW) (p. 1) (SI)

Explain the idea of a person being motivated; motivation means wanting something and doing something to get it. (See text)

Explain that the motivation problem exists when employees are not willing to do what they know they should for the sake of safety, when they are willing to risk unsafe practices.

Explain that the problem involves almost all employees at different times. Some, however, are chronic problems.

2. WHY IS THERE A MOTIVATION PROBLEM? IN OTHER WORDS, WHY DO PEOPLE RISK UNSAFE PRACTICES (p. 1) (Q & A)

This question was discussed in Sections 5 and 9. The general answer is: conflicting motivations. Explain the general answer; then draw specific examples from the group to refresh their understanding of the motivation problem.

3. WHAT IS THE GENERAL STRATEGY FOR MOTIVATING EMPLOYEES TO WORK SAFELY? (p. 2-3) (SI and Q & A)

Have the 5 principles that comprise the strategy written on the answer pad. Instruct each as follows: (1) Explain the principle in general terms. DO NOT GO INTO DETAILS OF HOW. (2) Check for group agreement. Discuss relevant questions at this point, but defer any answers on details. The details of how to apply the principles come later.

4. A BASIC VIEWPOINT ABOUT PEOPLE: WHAT ARE THE IMPLICATIONS FOR SUPERVISION? (p. 3-4) (Q & A)

Have the group read this section in class. After it has been read, draw the two implications from the group. Allow questions to be raised about the two points. Get agreement that the two implications are sound advice to supervision.

5. WHAT ARE FIVE IMPORTANT PSYCHOLOGICAL WANTS SHAPED BY VIRTUALLY ALL PEOPLE? (p. 4-6) (LG)

Have the 5 wants written on the answer pad. Handle each one as follows: (1) Ask the group to establish by small group discussion what each means. (2) Allow 5 minutes discussion for each. (3) Draw different interpretations of the want from the group.

Summarize the 5 wants. Point out that people don't outgrow such wants.

ADDITIONAL DISCUSSION QUESTIONS:

1. What are some things a supervisor might do that would conflict with employees' desire for approval and acceptance as a person? (LG)
2. What are some things a supervisor might do that would conflict with an employee's desire for recognition? (LG)
3. What are some things a supervisor might do that would conflict with an employee's desire for security thru knowing what to expect? (LG)
4. What are some things a supervisor might do that would conflict with an employee's self-respect? (LG)
5. What are some things supervisors might do that would make their employees feel like they were overly supervised? (LG)

Motivating Employees To Work Safely

Chapter 10

Developing a Foundation for Cooperation

Section 29

INSTRUCTION OBJECTIVE:

The objectives of this section are (1) to acquaint supervisors with the way people react when their major psychological wants are frustrated, and (2) to give supervisors specific suggestions on what they can do toward satisfying such wants.

INTRODUCTORY LEAD:

"In our last session, we identified 5 important psychological wants shared by almost all employees. We also said that supervision had a stake in trying to harmonize with these basic desires of employees. Satisfaction of such wants is the key to developing a foundation for cooperation.

Today we will discuss how employees react when their wants are chronically unsatisfied on the job. Then, we will see what supervision can do toward satisfying such psychological wants — at least, in some reasonable degree."

INSTRUCTION QUESTIONS:

1. HOW DO EMPLOYEES REACT WHEN THEIR NON-MATERIAL WANTS GO CHRONICALLY UNSATISFIED? WHAT ARE THE END RESULTS OF SUCH REACTIONS? (p. 8) (LG)

Allow the group 10 minutes to develop by discussion the answers to the two questions. At the end of that time, draw the answers from the group. Have someone record the answer key points upon cue from you. (Two words are sufficient to record each answer point, e.g. "apathy and indifference", "excessive criticism", "active trouble making".

Get across the idea that such reactions create problems for supervisors. Also, acknowledge that supervisors do not have anything near 100% control over the satisfactions and frustrations of their employees.

2. WHAT CAN SUPERVISORS DO TO SHOW THEIR EMPLOYEES THAT THEY ARE ACCEPTED AS PEOPLE? (p. 10) (LG)

Rephrase the question once or twice to make certain the group understands. Ask them to develop a list of things a supervisor should do (or not do) to show that employees accepted as individuals. Allow 5-10 minutes discussion. Then, draw out and record the key points, e.g. "friendly greetings", "personal interest", "listen to them", etc. DO NOT LIMIT THE LIST TO THE IDEAS OF THE TEXT.

3. WHAT CAN A SUPERVISOR DO TO SHOW RECOGNITION FOR EFFORT AND ACCOMPLISHMENT? WHAT ARE SOME THINGS SUPERVISORS CAN COMPLIMENT THEIR EMPLOYEES ABOUT? (p. 10) (LG)

Follow the instruction guide for Question 2 above. In addition, give the simple rules for complimenting people.

4. WHAT CAN SUPERVISORS DO TO LET THEIR EMPLOYEES KNOW WHAT TO EXPECT? (p. 11) (LG)

Follow the instruction guide for Question 2 above.

5. WHAT CAN SUPERVISORS DO TO HARMONIZE WITH THEIR EMPLOYEES NEED FOR MAINTAINING SELF-RESPECT? (p. 11) (LG)

Follow the instruction guide for Question 2 above.

6. WHAT CAN SUPERVISORS DO TO GIVE THEIR EMPLOYEES A FEELING OF FREEDOM FROM EXCESSIVE DOMINATION? (p. 12) (LG)

Follow the instruction guide for Question 2 above.

7. PEOPLE ARE DIFFERENT! IN WHAT WAYS ARE THEY DIFFERENT? WHAT IS THE SIGNIFICANCE OF SUCH DIFFERENCES FOR SUPERVISION? WHAT CAN SUPERVISORS DO TO GET TO KNOW THEIR EMPLOYEES BETTER? (p. 12-14) (Q & A and SI)

Try to draw the answers to the first two questions from the group. Record the ways people are different on the recording pad. Develop a goal list. Review the completed list. Then, ask the second question.

Have the three points that answer the third question written on the answer pad. Explain each thoroughly. Encourage questions and discussion.

Ask them if they have some other ideas on how supervisors can get to know their employees better.

8. DO SUPERVISORS HAVE TO COMPROMISE MANAGEMENT OBJECTIVES TO APPLY A "HUMAN RELATIONS" APPROACH TO THEIR EMPLOYEES? (p. 14) (LG)

Explain the basic idea of a human relations approach, e.g. acting to harmonize with employee basic wants. Then, allow 10 minutes discussion. After the discussion, get different individuals to express their opinions.

Motivating Employees To Work Safely

Chapter
10

Incentives, Deterrents, and Attitudes

Section
30

INSTRUCTION OBJECTIVE:

This section's objectives are (1) to make supervisors aware of what they can do to provide employees with incentives to work safely and deterrents against working unsafely, and (2) to give them an understanding of how attitudes develop, and what they can do to develop favorable attitudes by setting the right example.

INTRODUCTORY LEAD:

"In our last session, we discussed what supervision can do to develop a foundation for cooperation. That was the first point of our five point strategy for motivating employees to work safely. In this session, we will discuss three additional points of the strategy. They are (1) providing incentives for safe work, (2) providing deterrents against working unsafely, and (3) setting the right example."

INSTRUCTION QUESTIONS:

1. THE FOUR PRINCIPLES FOR SOLVING THE MOTIVATION PROBLEM. (A REVIEW)
(p. 16) (SI)

Have the four principles listed on p. 16 and 17 written on the answer pad. Direct attention to the sketch on p. 16. Use the sketch to review the idea of conflicting motivations which many influence the employee to choose the unsafe alternative. Explain the idea of a general readiness to go one way or the other. (See text)

Turn to the four principles. Read each one aloud, and explain it generally.

2. WHAT CAN SUPERVISION DO TO INCREASE THE INCENTIVE TO WORK SAFELY?
(p. 17) (LG and Q & A)

The question is sometimes misunderstood. Ask the group to develop by discussion a list of things that can be done to attract employees more to working safely. Start them out by giving an example: "Compliment safe work". Explain how complimenting employees for working safely acts as an incentive to work safely. Allow 10 or more minutes of discussion.

When you draw the answers from the group, always ask, "How will that increase their incentive to work safely?"

3. WHAT CAN SUPERVISION DO TO ELIMINATE THE DETERRENTS AGAINST WORKING SAFELY? (p. 18) (SI and Q & A)

Have the four step approach listed on the answer pad. Explain the basic principle of each step.

Ask the group to identify unsafe practices that are influenced because the safe alternative takes too much time or effort. Select one or two situations. Discuss possible ways of reducing the time and effort acquired by the safe alternative.

In advance of the session, develop some good examples of how a revision of a safe alternative resulted in a safe way that required less time, or less effort, or less discomfort. Cite these as examples of "eliminating deterrents against working safely".

4. WHAT CAN SUPERVISION DO TO INCREASE DETERRENTS AGAINST WORKING UNSAFELY? (p. 18) (Q & A)

Have the seven points given in the text written on the answer pad. Discuss each one as follows: (1) Point at it; read it aloud. (2) Explain the basic idea. (3) Ask how doing that will increase the deterrents against working unsafely. (4) Expand on the answer as necessary to get the point across.

5. WHAT CAN SUPERVISION DO TO ELIMINATE INCENTIVES TO WORK UNSAFELY? (p. 19) (LG and SI)

Give them some specific examples to discuss, e.g. an employee who works unsafely to attract attention. Ask them to discuss how they would handle such an employee. At the conclusion of the discussion, point out the two principles on p. 20 for handling "employee-related incentives to work unsafely".

Explain how job-related incentives to work unsafely can be eliminated by eliminating the "penalties", e.g. more time, more effort, etc. associated with the safe alternatives.

NOTE: It should be pointed out that the ideas developed under the heading of "Applying the incentive-deterrent strategy" are most effective when all are applied as a total approach to the problem. Individually, each suggestion may be of small value. Their strength lies in their collective use.

6. WHAT IS AN ATTITUDE? WHY MUST SUPERVISORS BE CONCERNED WITH THE ATTITUDES THEIR EMPLOYEES DEVELOP? (p. 20) (SI and Q & A)

Have the definition of an attitude written on the answer pad. Read it aloud, and emphasize the key parts. Then, explain each of the key points.

Ask why supervisors must be concerned with the attitudes their employees develop. Bring out the idea that attitudes can influence behavior, for better or worse. Many of supervisors' problems are attributable to undesirable attitudes their employees may develop toward their work, their equipment, their supervision, the company, etc.

7. HOW DO EMPLOYEES DEVELOP ATTITUDES? (p. 21) (Q & A) or (SI)

Have the 4 ways employees develop attitudes listed on the answer pad. Get a different volunteer from the group to explain each way. (Use this approach if the group has been assigned to read the text before the session; otherwise, you will have to explain how the four attitudes develop.)

8. WHAT IS THE IDEAL SAFETY ATTITUDE? HOW, IN PRINCIPLE, CAN SUCH AN ATTITUDE BE DEVELOPED? (p. 22) (Q & A and SI)

Ask the group to develop a list of how they would like all their employees to act, e.g. willingness to comply with safety rules, to follow recommended safe work procedures, to avoid creating unsafe conditions, etc. (See text) These ideas can be drawn from the group with leading questions.

When you have the list developed, point out that the employee who does all these things regularly is the employee with an ideal safety attitude.

The way to instill such attitudes is to (1) develop a foundation for cooperation, (2) apply the four principles of the motivation strategy, and (3) SET THE RIGHT EXAMPLE. (That brings you to the next question.)

9. WHY IS IT ABSOLUTELY ESSENTIAL THAT SUPERVISORS SET THE RIGHT EXAMPLE WHEN IT COMES TO SAFETY? (p. 22) (Q & A)
WHAT SHOULD SUPERVISORS DO (OR NOT DO) TO SET THE RIGHT EXAMPLE? (p. 22-23) (LG)

Draw the following points from the group to answer the first question: (1) Setting the wrong example ensures that employees will follow suit. (2) One wrong example can cancel out the benefit of months of setting the right example.

Ask the group to recall some cases in which supervisors have set a wrong example. (No names should be mentioned.)

Give the group 10 minutes to develop a list of things supervisors should do (and not do) to set a right example. Ask them to be specific. Record each idea on the recording pad. Expand and emphasize each idea as you draw it from the group after the LG discussion period is over. Be sure your list covers the 6 points made in the text.

Make an effort to convince the supervisors that they must, without fail, set the right example in all the ways discussed.

INSTRUCTION OBJECTIVE:

The objectives of this section are (1) to acquaint supervisors with the different types of physical and mental conditions which may cause employees to work unsafely, and (2) to give them guidelines for handling such cases.

INTRODUCTORY LEAD:

"Accidents are often caused indirectly by temporary and sometimes chronic conditions of physical or mental impairment of employees. You all have probably experienced employees who worried you because you thought they were physically or mentally unfit to work safely. This is a difficult problem for a supervisor to face because there are limitations on what you can do in such cases. The purpose of today's session is to discuss the more commonly occurring conditions of physical and mental impairments. Some are temporary; others are permanent. We will discuss what can be done about this problem."

INSTRUCTION QUESTIONS:

1. HOW DO TEMPORARY PHYSICAL OR MENTAL IMPAIRMENTS SOMETIMES CAUSE ACCIDENTS? (REVIEW QUESTION) (p. 1) (SI)

Have listed on the answer pad the impairments, e.g. decreased stamina, strength, dexterity, coordination, concentration, etc. (see p. 1) which are the result of temporary conditions such as illnesses, intoxication, emotional states, etc. Point out that accidents are caused or influenced by such impairments.

2. WHAT ARE SOME TEMPORARY PHYSICAL AND MENTAL CONDITIONS FOR WHICH SUPERVISORS SHOULD BE ON THE LOOKOUT. (p. 1-3) (Q & A; SI)

Have the 7 conditions given in the text book listed on the answer pad. Instruct each as follows: (1) Ask how the condition can result in an accident. Ask if anyone knows of an accident so caused. (2) Explain the "signs" to look for. (You may wish to have these listed on the answer pad also because they are many, and pose an instruction problem.)

Be sure to explain that many of the "signs" of such conditions may be normal in some employees. Also, the presence of such "signs" does not necessarily mean the employee is a safety problem.

3. WHAT CAN THE SUPERVISOR DO WHEN AN EMPLOYEE IS SUSPECTED TO BE UNFIT TO WORK BECAUSE OF A TEMPORARY PHYSICAL OR MENTAL CONDITION? (p. 3-4) (SI; Q & A)

Emphasize that the approach taken depends upon (1) the condition of the employee, (2) what is known about the employee, (3) the nature of the employee's work, and (4) established plant practices.

Have the six courses of action given in the text listed on the answer pad. Present the first two (p. 3) as the recommended normal procedure.

Conduct an open group discussion on the other four courses of action. Discuss (1) when the course of action is in order, (2) what problems are involved in the course of action, and, if appropriate, (3) what risks are involved.

4. WHAT ARE SOME CHRONIC PHYSICAL OR MENTAL CONDITIONS FOR WHICH SUPERVISORS SHOULD BE ON THE LOOKOUT? (p. 5-6) (Q & A; SI)

(Follow the Instruction Guide for Question 2)

5. WHAT CAN A SUPERVISOR DO WHEN AN EMPLOYEE IS SUSPECTED TO BE UNFIT TO WORK BECAUSE OF A CHRONIC PHYSICAL OR MENTAL CONDITION? (p. 6)

Emphasize that each case is an individual problem, and must be dealt with on the basis of the facts. Point out or get the group to point out what kinds of facts have a bearing on how the employee is dealt with.

Have the four suggested general actions given in the text (p. 6-7) listed on the board. For each, (1) explain the basic idea, (2) ask the group how the idea can be implemented, and (3) allow discussion to clarify questions.

Also, ask the class if they have any cases now which are problems. Discuss each such case as follows: (1) What is the evidence that the employee is a safety problem? Is the evidence conclusive? (2) What are some alternatives of action that might work? (3) What should be done to get action started?

ADDITIONAL DISCUSSION QUESTIONS:

1. How should a supervisor handle an employee who is under the influence of intoxicants? (LG)
2. In what sense is a supervisor doing a disservice to an employee when the employee's condition of unfitness to work safely is ignored?
3. What community agencies are there that employees could be referred to for professional help with either chronic physical or emotional problems?

INSTRUCTION OBJECTIVE:

This section has several objectives: (1) To provide supervisors with a proper understanding of the concept of discipline. (2) To distinguish between preventive and corrective disciplinary measures. (3) To provide supervisors with a sequence of corrective measures for dealing with uncooperative employees.

INTRODUCTORY LEAD:

"All supervisors must sooner or later deal with employees who are uncooperative about working safely. If supervisors turn their back on the problem, they run the risk of losing respect and inviting more of the same. They have no alternative but to take an appropriate measure of corrective action. That brings us to the subject of discipline. Most supervisors confuse discipline with penalties. There's more to it than that. That's what we will discuss today — discipline and disciplinary measures.

INSTRUCTION QUESTIONS:

1. WHAT ARE SOME REASONS WHY SUPERVISORS HAVE HANDLED DISCIPLINARY PROBLEMS INADEQUATELY IN THE PAST? (p. 8) (LG)

Use the first paragraph under the heading "The Discipline Problem Today" as a means of introducing this question. Ask the group to develop by discussion some of the reasons why supervisors have handled disciplinary problems inadequately in the past. Allow about 15 minutes of discussion. Get different volunteers to give the "reasons". If they were not included, add and explain the three answer key points given in the text.

2. WHAT ARE THE TWO MEANINGS OF DISCIPLINE? (p. 8) (SI)

Prepare thoroughly for this question. Handle it by straight instruction. Have the two basic ideas listed on the answer pad, e.g. (1) Discipline is an attitude of readiness to do what is required. (2) Discipline is any action that helps develop the attitude of readiness

Break up the idea that discipline merely means punishment for wrongdoing. Point out the significance of the viewpoint that there are two meanings of discipline.

3. WHAT IS PREVENTIVE DISCIPLINE? HOW IS IT DIFFERENT FROM CORRECTIVE DISCIPLINE? WHAT ARE SOME SPECIFIC PREVENTIVE DISCIPLINARY MEASURES? (p. 9) (Q & A; LG)

Either explain or get someone from the group to explain the concept of preventive discipline. Do the same for the concept of corrective discipline.

When you are confident the group understands the difference, ask the group to identify by LG discussion, specific kinds of preventive disciplinary measures. Record on the appropriate pad the answer key points. Conclude by emphasizing that preventive disciplinary measures are the best way to build a sense of discipline.

4. WHAT ARE THE SIX BASIC PROCEDURES FOR CORRECTING SAFETY VIOLATIONS? WHAT IS THEIR NORMAL SEQUENCE OF APPLICATION? (p. 9)

Either project Figure 1 or direct attention to it in the text. Explain or get volunteers from the group to explain the main idea, not the details, of each type of correction shown in the diagram. Deal with them in the normal sequence of occurrence. Explain the idea of what is meant by the normal sequence of occurrence.

5. UNDER WHAT CONDITIONS IS IT REASONABLE TO DEVIATE FROM THE NORMAL SEQUENCE OF CORRECTIVE ACTIONS? (p. 11-13) (Q & A)

Again, work with Figure 1. Point out deviation No. 1. Ask what might the circumstances be that call for such a deviation. Do the same for the other deviations. Where there are serious differences of opinion, use small group LG discussions to get a resolution of the differences. If they are not resolved, give the "official" viewpoint.

Point out the factors that should be taken into consideration when determining that course of corrective action to take. You may want to have the five points (see p. 11-12) written on the answer pad.

ADDITIONAL DISCUSSION QUESTIONS:

1. Ask if any supervisor present has a problem employee now. Have the problem described without mentioning names. Get the group to discuss how they would handle the case.

INSTRUCTION OBJECTIVE:

The objectives of this section are to give supervisors an understanding of (1) how to apply correction by persuasion or warning, (2) how to handle a corrective interview, and (3) the principles of applying disciplinary penalties.

INTRODUCTORY LEAD:

"In our last session, we discussed six kinds of corrective disciplinary measures. Furthermore, a normal sequence of corrective action was indicated — first reinstruction, then correction by persuasion or warning, then a corrective interview, and finally, as a last resort correction by disciplinary penalty. Today, we will discuss in detail the last three."

INSTRUCTION QUESTIONS:

1. HOW SHOULD THE STEPPED UP CORRECTION BY PERSUASION OR WARNING BE HANDLED? (p. 14-16) (SI)

Explain when this type of correction is in order (p. 14).

Have the six basic steps written on the answer pad. Handle each step as follows: (1) Explain the basic idea of what should be done. (2) Get the group to give reasons why it should be done that way. (3) Read aloud the textbook italicized sections as an example.

When you have covered each step, explain that the details of how each step is applied depends on the employee, the supervisor, and the nature of the unsafe problem.

The book lists five ways to persuade an employee through the use of appeals. Have each appeal written on the answer pad. Explain each. Have a volunteer from the group read the italicized sections (p. 15-16) to illustrate the different appeals. Allow an additional five minutes discussion to develop additional "appeals". Be sure to explain that an appeal does not mean a "bended-knee" approach.

If time permits, try role-playing this type of correction. Give the group the facts of a problem employee. Request them to plan how they would correct such an employee. Ask at least two volunteers to demonstrate by role-playing how they would correct the employee. Play the role of the problem employee. Respond to the person playing the role of the supervisor as you suppose the normal employee may respond to what is being said. Get the group's reaction to each role-playing.

2. HOW SHOULD THE CORRECTIVE INTERVIEW BE CONDUCTED? (p. 16-20) (SI)

Have a step by step outline of the corrective interview written on the answer pad. (The outline consists of the bold type headings and sub-headings in the text.)

Explain the corrective interview as a last effort to straighten out a problem employee without resort to penalty. Using the outline as a guide, explain each step in terms of what, why, and how. (It will require thorough study of the text to instruct this type of correction.) Where a basic step is illustrated in the text by an italicized quote, read or have someone else read the quote aloud. When the text illustrates a conversation between the supervisor and the employee, have each part read by a different person.

After each step, check for questions before going on. Allow for discussion on any points of disagreement.

If time permits, the corrective interview should be role-played in the manner suggested for Question 2.

3. WHAT CASE CAN BE MADE FOR THE USE OF PENALTIES AS A LAST RESORT? WHAT ARE THE CONSEQUENCES OF FAILING TO RESORT TO PENALTY TYPE DISCIPLINE WHEN CALLED FOR? (p. 20) (LG)

Allow a full ten minute discussion of these questions. Do not participate. Small group discussion will invariably develop the correct answer, and persuade the doubters in the process.

4. DOES A DISCIPLINARY PENALTY USUALLY RESULT IN A PERMANENTLY DISGRUNTLED EMPLOYEE? (p. 21) (LG)

Ask the group to develop the answer by discussion. Ask them to try to recall actual cases, giving the facts of the case, the penalty, and the employee's reaction in time. Ask them to cite experiences they may have had with employees they caused to be disciplined with a penalty.

5. WHAT ARE THE PRINCIPLES THAT SHOULD GOVERN THE USE OF DISCIPLINARY PENALTIES? (p. 21-22) (Q & A)

Have the eight principles written on the answer pad. Cover each point as follows: (1) Read it aloud. (2) Ask for a volunteer to explain why it is a sound principle. If the answer is off the mark, ask for several other interpretations. (3) Encourage questions after each point.

ADDITIONAL DISCUSSION QUESTIONS:

1. Ask the group to discuss whether or not discipline is lax among employees now. (LG) If so, what can be done about it?
2. Why is the department head the employee who normally should conduct a corrective interview?
3. What authority should the person who conducts a corrective interview have?
4. Why is a written record of past offenses essential to the strategy of the corrective interview?

Controlling Physical Hazards

Chapter
12

Controlling Machinery & Handtool Hazards

Section
34

INSTRUCTION OBJECTIVE:

The objective of this section is to acquaint supervisors with the basic methods of controlling machinery, equipment, and handtool accidents.

INTRODUCTORY LEAD:

"This is the first of two sessions on methods for controlling physical hazards. Two common sources of physical hazards are machines and handtools. All of you have employees who either operate or work around machines or who use handtools. That's why we will stress the common machinery hazards and the basic methods of safeguarding machines. We will also discuss what can be done to control handtool and power tool hazards. The purpose of this session is not to make safety engineers out of supervisors. It is to acquaint you with the basics of controlling two repetitive sources of accidents — machines and handtools.

INSTRUCTION QUESTIONS:

1. WHAT IS THE BROAD CONCEPT OF MACHINE SAFEGUARDING? WHAT ARE THE MOST COMMON CAUSES OF MACHINERY ACCIDENTS? (p. 1) (SI)

Explain the answer to the first question as stated in the text. For the second question, have the causes written on the answer pad. Explain each. Ask the group to cite either an accident or a current condition that needs correction for each item. Be prepared to cite accidents if the group does not recall any. Ask the plant safety and industrial hygiene supervisor to identify appropriate cases for you before this session.

2. WHAT ARE THE CRITICAL PARTS OF MACHINERY THAT SHOULD BE SAFEGUARDED? (p. 2) (SI plus assignment)

Use Figure 1 to point out the machinery hazards. Either direct the group's attention to the text figure or, better, project the figure via slides, an opaque, or overhead projector. For each item, point at the unsafe condition. Ask why it is unsafe. What could occur? Point at the heading to emphasize the hazard. Direct attention to the method of safeguarding used.

Give the group the assignment to check their area for machinery hazards that are unguarded or poorly guarded. Ask for the hazards to be identified in writing by the next session.

3. WHAT ARE THE BASIC PRINCIPLES FOR SAFEGUARDING HAZARDOUS MACHINERY? (p. 2-6) (Q & A)

Have the bold headings of the principles listed on the answer pad. (See p. 2-6.) Ask a different person to explain each one, e.g. the basic idea and where it is most appropriately applied. (Not all of the principles may apply to machines under the supervision of your group. Emphasize the ones that do.)

Point out the design requirements for mechanical safeguards. (Direct the group's attention to the text (p. 5-6) or have the requirements listed on the answer pad.) Discuss each one. Ask the group if they know of any safeguards that fail to meet the design requirements. Try to develop a list to turn over to the plant safety and industrial hygiene supervisor for further study.

4. WHAT ARE THE MAJOR CAUSES OF HANDTOOL ACCIDENTS? WHAT CAN SUPERVISION DO TO CONTROL HANDTOOL ACCIDENTS? (p. 6-10) (LG)

Have the answer key points (see p. 6-10) to the two questions written on the answer pad, but do not expose. Turn the questions over to the group to develop the answers by discussion. After discussion, reveal the answer key points. Explain each briefly. Ask the group if they developed additional ideas in their discussion.

Discuss any problems with impact to (1) unavailability of proper tools, (2) inadequate tool storage facilities, (43) inadequate servicing of handtools.

(OPTIONAL) Develop a list of handtools used by the employees under the supervision of those present. Record each on the recording pad. After the list is developed, identify common unsafe conditions and practices associated with each handtool.

ADDITIONAL DISCUSSION QUESTIONS:

1. How can written safe handtool practices be established for currently used handtools?
2. Discuss a selection of machinery accidents that occurred over the past year or so. What were the causes? How was recurrence prevented? Are the corrective actions that were taken sufficient?

Controlling Physical Hazards

Chapter
12

Controlling Material & Related Hazards

Section
35

INSTRUCTION OBJECTIVE:

This section's objectives are: (1) To acquaint supervisors with the principles of fire prevention and control. (2) To show them how to control manual material handling hazards. (3) To acquaint them with safe storage practices for different types of materials.

INTRODUCTORY LEAD:

"This is the second of two sessions on controlling physical hazards. Today, we will cover fire prevention and control, manual material handling, and safe storage practices. Not all of the information covered in the text applies to your operations. Where it does, you should know it thoroughly because it is the kind of information that must be gotten across to our hourly employees — and you are the ones who have to get it across."

INSTRUCTION QUESTIONS:

1. WHAT ARE THE BASIC PRINCIPLES FOR PREVENTING FIRES? WHAT ARE THE BASIC PRINCIPLES FOR PUTTING OUT FIRES? (p. 11-12) (SI)

Direct attention to the fire triangle in the text or drawing on the answer chart. Explain how the three elements are necessary to have a fire. Derive the three principles for fire prevention from the fire triangle. Write them on the recording pad. Explain each. Get the group to cite examples of applying the three principles. Do the same for the three principles (p. 13) for putting out fires.

2. FIRE PREVENTION: WHAT CAN BE DONE TO ELIMINATE OR CONTROL FUEL SOURCES? (p. 12) (LG)

Have the types of fuels (p. 12-13) heading the top of three answer pad pages, e.g. "ordinary combustibles", "liquid flammables", and "flammable gases, vapors, dusts". Get the group to identify specific items in each category that are to be found in their areas.

Have the group develop specific do's and don'ts for the elimination or control of each class of combustibles. (If the plant has a qualified fire crew, a member may be invited to discuss control of combustibles. Also, consult your plant safety and industrial hygiene supervisor about films on the subject.)

3. FIRE PREVENTION: WHAT CAN BE DONE TO ELIMINATE OR CONTROL POTENTIAL IGNITION SOURCES? (p. 13) (Q & A)

Ask the group to identify potential sources of ignition, e.g. electrical equipment, friction sources, open flame equipment, etc. List them on the answer pad. For each category, ask the question, "How can we avoid _____ from becoming an ignition source?" Make sure the major key points suggested in the text are brought out.

4. WHAT SHOULD SUPERVISION KNOW ABOUT FIRE EXTINGUISHERS? (p. 14) (SI; if practical demonstration)

List the four main points on the answer pad. Discuss (1) strategic location, (2) maintenance of readiness, (3) selection of right extinguisher, and (4) extinguisher use. Have a display of the different types of extinguishers for (3) and (4) above.

If practical, have an outdoor demonstration of extinguisher use. (There are excellent films available on selection and use of extinguishers; consult your plant safety and industrial hygiene supervisor.)

5. WHAT ARE SOME ELEMENTARY PRECAUTIONS ABOUT MANUAL MATERIAL HANDLING? (p. 16) (Q & A)

Have the basic material handling actions listed on the answer pad. For each, draw a list of do's and don'ts from the group. After each ask, "why?". Demonstrate how to lift and set down objects.

6. WHAT ARE THE HANDLING PRECAUTIONS THAT APPLY TO (1) BOXES AND CARTONS, (2) SACKS AND BAGS, (3) BARRELS AND DRUMS, (4) SHEET METAL, (5) SCRAP METAL, (6) LENGTHY OBJECTS, (7) MOLTEN MATERIALS, (8) ACIDS AND CAUSTICS AND (9) TOXIC CHEMICALS? (p. 17-19) (SI and Q & A)

Omit any of the above that do not apply to your group's operations. Add missing items that do.

Focus the group's attention on each category. For each explain the do's and don'ts of lifting, moving, etc. Get group participation of asking for explanations of why. Where appropriate, demonstrate.

Get the group to recall accidents that resulted from faulty material handling. Get the members to suggest the appropriate precautions.

Select safety rules that have to do with manual material handling. Get volunteers to explain the reason for each such rule.

7. HOW SHOULD THE FOLLOWING ITEMS BE STORED? (1) BOXES AND CARTONS, (2) BARRELS AND DRUMS, (3) BAGS AND SACKS, (4) LUMBER STOCK, (5) PIPING AND BAR STOCK, (6) SHEET METAL, (7) WIRE AND CABLE, ETC. (p. 20-23) (Q & A)

Omit any of the above that do not apply to your group's operations. Add missing items that do.

Develop by discussion and/or instruction proper procedures for the storage of the listed items. Use photographs, sketches, or films to illustrate correct and incorrect storage methods. If you have some appropriate accident cases related to poor storage, cite them. Get the group to identify the causes and indicate the necessary corrections.

End with a LG discussion to identify storage problems that exist in the group's operations. Develop a list. Discuss possible solutions.

INDEX for ACCIDENT PREVENTION FUNDAMENTALS MANUAL

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