

~~CONFIDENTIAL~~

SUPERVISORY SAFETY TRAINING

MANUAL NO. 2

SUPPLEMENT TO MANUAL NO. 139

- SUPERVISION
- ACCIDENT REPORTS, RECORDS, AND INVESTIGATION
- SAFETY INSPECTION PROCEDURES
- JOB HAZARD ANALYSIS
- PROMOTING WORKER INTEREST

~~S. I. P. HISTORICAL AND
TECHNICAL ASSISTANCE
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WITHDRAWN

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SUGGESTIONS FOR THE CONFERENCE LEADER

INTRODUCTION

This basic "Supervisory Safety Training Manual," the second of a new training series, was prepared as a result of requests from Agency for International Development Missions. It conforms to the general concepts of the Job Instruction Training, Job Methods Training, and Job Relations Training series that are now being used for the training of supervisors in countries outside the United States. This manual should not be construed as a complete course in industrial safety. Rather, it has been developed as a short course for supervisors working at the same level, and is designed only to acquaint them with the basic concepts of industrial safety.

PURPOSE OF COURSE

The purpose of the course is to provide basic accident prevention information for training key supervisory personnel in other countries so they will (1) be able to recognize the type of conditions that result in accidents, and to select and apply effective corrective measures; (2) be familiar with the ways and means by which safe performance is assured; and (3) have a better understanding of the scope of accident prevention, and the types of study needed for a more complete knowledge of the field. To be effective and to permit the students to derive greater benefit from the course, classes should be limited from 15 to 20 participants.

EXHIBITS, VISUAL AIDS, AND TEACHING MATERIALS

The efficient use of safety charts, blackboard, safety equipment, and other demonstration materials will greatly assist the instructor in teaching this course. At the end of the course, plant visits should be made to selected areas of a factory. On these visits, the trainees can view, first hand, the principles discussed in the course.

TRAINING METHODS

The discussion-conference method of presentation of the subject matter is to be used, with basic concepts of JIT procedures.

There will be an orderly presentation of facts in accordance with a carefully prepared outline, followed by open forum discussion--a free exchange of ideas to develop all possible viewpoints.

The position of the instructor is that of a moderator, chairman, or leader in the conference phase. For this type of teaching to be effective, it is necessary that the group have some knowledge

of the subject and have satisfactorily completed at least the regular JIT course of instruction prior to undertaking this safety series.

REFERENCE MATERIAL

Outside study and independent thinking are prerequisite for successful training. The recommended text material is but a small segment of the total literature on industrial safety.

The following publications should be made available to the students for independent study outside the classroom:

1. Supervisor's Safety Manual - National Safety Council.
2. Supplemental material included with each outline.

INSTRUCTOR PREPARATION

The instructor should have completed as a minimum one or more of the JIT, JMT, and JRT series and the full Accident Prevention Course as covered in TAB Training Manuals 73-80, Industrial Safety Instructors Guides, Series A-H, inclusive, which he studied under an instructor of the International Division of the Bureau of Labor Standards.

He should have and be familiar with all student "handout" material of that latter course, including Bureau of Labor Standards Bulletin 67, "Safety Subjects."

The instructor should know how to win and hold the interest of the students, and how to utilize their interest to develop usable knowledge through active participation. Through personal contact and interviews (including visits to places of employment, if possible), the instructor must become acquainted with the natural ability, educational and industrial background, and the desires, interests, and objectives of his students.

He is responsible for obtaining equipment and supplies needed for teaching the classes, such as handout material, visual aids, special demonstration equipment, as well as for indicated plant visits. This should be done well in advance, especially in overseas classes, since such material or equipment cannot be obtained on short notice.

SAFETY TRAINING TECHNIQUES

It is of utmost importance that the instructor become acquainted with some of the basic training techniques to better prepare himself to conduct the course successfully.

Planning

1. The instructor should have such visual aids as are pertinent to the subject-matter of the course, and these should be set up in the proper sequence. A note on the margin of the instructor's

outline could be very helpful to alert him when to use a particular visual aid.

2. The course outline as well as the handout material and the visual aids should be checked at regular intervals. This should be done by the instructor in order to revise, improve, and modernize the course presentation. The material should also be checked to make sure that it conforms with policies of labor and management in the country where it will be presented.

3. The instructor should adapt the outline to his particular method of presentation, keeping in mind that this is a discussion-conference type session.

4. The instructor would do well to get a list in advance of the students who will participate and their positions and background. A study of such information could be very helpful when he faces his class.

Preparation of Classroom

Many conferences and courses have failed simply because no advance preparation was made for classroom facilities.

1. The classroom should be located where there is the least amount of noise or distraction.

2. Good ventilation, lighting, and sufficient room are important.

3. The seats and seating arrangement should be comfortable as well as informal. A round-table seating arrangement is the most effective for discussion-conference sessions.

4. The room should be equipped with a good blackboard, sufficient chalk, and a clean eraser. A stand should be available for mounting charts and visual aids to be used during the conference. A 35-mm. slide projector should be available.

Teaching

1. An official of the organization should open the first session with a statement regarding the general objectives of the course. He then should introduce the instructor to give him the proper prestige in relation to the group he will teach.

2. At the first session the instructor should open with an explanation of the course objectives and its method of presentation. At that time he should draw upon his experiences to relate an illustrative incident that will bring him in closer relationship with the group and, at the same time, enable him to introduce the theme of the first session.

3. The course should be presented by employing the discussion-conference method.

4. The instructor should have the class follow a predetermined schedule and he should maintain order at all times. Only one participant at a time should be permitted to give his viewpoint. The instructor should keep the class discussion within the subject matter as contained in the instructor's outline.

5. If possible, an official should be asked to speak at the termination of the course.

Tips for the Instructor

Learning is actually the acquisition of new ideas, abilities, and skills through the senses of hearing, seeing, and feeling (touch).

1. New ideas are conveyed through the presentation of information, and the student's thoughts are stimulated through his sense of hearing.

Abilities and skills are presented through the media of telling, demonstrating, and having the student demonstrate under the supervision of the instructor. The student acquires abilities and skills via the senses of hearing, seeing, and feeling (touch).

2. The instructor should remember that the student absorbs more when he participates; therefore he should strive to get 100-percent class participation.

3. The instructor should become aware of outstanding characteristics of his students. This could be very helpful when leading discussions. For example, some may--

- a. Be more mature.
- b. Have a knowledge of safety.
- c. Have actual experience to draw upon.
- d. Have a faster learning speed.
- e. Be "stallers" who can slow down the discussion.
- f. Be aggressive and want to monopolize the discussion.
- g. Be a "know it all," who must be properly controlled.
- h. Be constant latecomers who ask questions about previous discussions, delaying the class.

4. The teaching process consists of:

- a. Telling--This means giving background information to introduce a subject.
- b. Showing--A demonstration of some equipment pertaining to the subject to be discussed is very impressive.

- c. Illustrating--Using charts, blackboard, slides or films is very helpful to highlight specific points in the discussion.
- d. Discussion Conference--The participation of the students in formulating their thinking about the subject under discussion is fundamental to getting the most out of the session.
- e. Conclusion--The instructor's summation of the session should weave together points discussed during the session, and should include other important details that may have been overlooked by the group.
- f. Questions--During the session, the instructor should ask pertinent questions to stimulate discussion, and to help bring the discussion back to the subject if it has strayed.

GUEST INSTRUCTORS

The instructor should be granted full responsibility for conduct of the class; at times, however, he may wish to invite an expert in a particular field as a guest instructor (or lecturer). In such event, it is essential that the instructor maintain control of the course.

The instructor must tie in the work of the guest instructor with the remainder of the course; he must outline the phase of the subject to be covered by the guest and satisfy himself that the guest limits himself to the field as outlined; he should summarize the guest's contribution, pointing out its relative importance in the field of accident prevention. While use of a few guest instructors (properly utilized) can add to the effectiveness of the course, a series of "lecturers" whose topics are not correlated will inevitably result in confusion.

It is recommended that "guest experts" be used only for supplementary training, and not to replace even part of this course which should be taught by one instructor.

SESSION I

SUPERVISION

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INTRODUCTION TO THE COURSE

Note: Check to see that visual aids and other course materials are in order and ready to use.

Introduction by official.	Confer with official prior to opening to be sure what he is going to say.
Discuss course schedule.	15 hours total. 3 hours per day, with 15-minute breaks after 1-1/2 hours.
Handout registration cards.	Have each participant fill in his name, title, company, previous training in safety, etc.
Discuss class procedures.	
Informal	Discussion-conference sessions.
Class participation	Instructor acts as leader of discussion. Students participate in discussion.
Assigned study material	References: Supervisor's Safety Manual and the daily student handout material.
Certificate	At this point, indicate if a certificate will be issued for completion of course.
Previous courses	Cite value of other supervisory courses, including Training Manual No. 139, JIT, JMT, and JRT and lead into first subject.

SUPERVISION

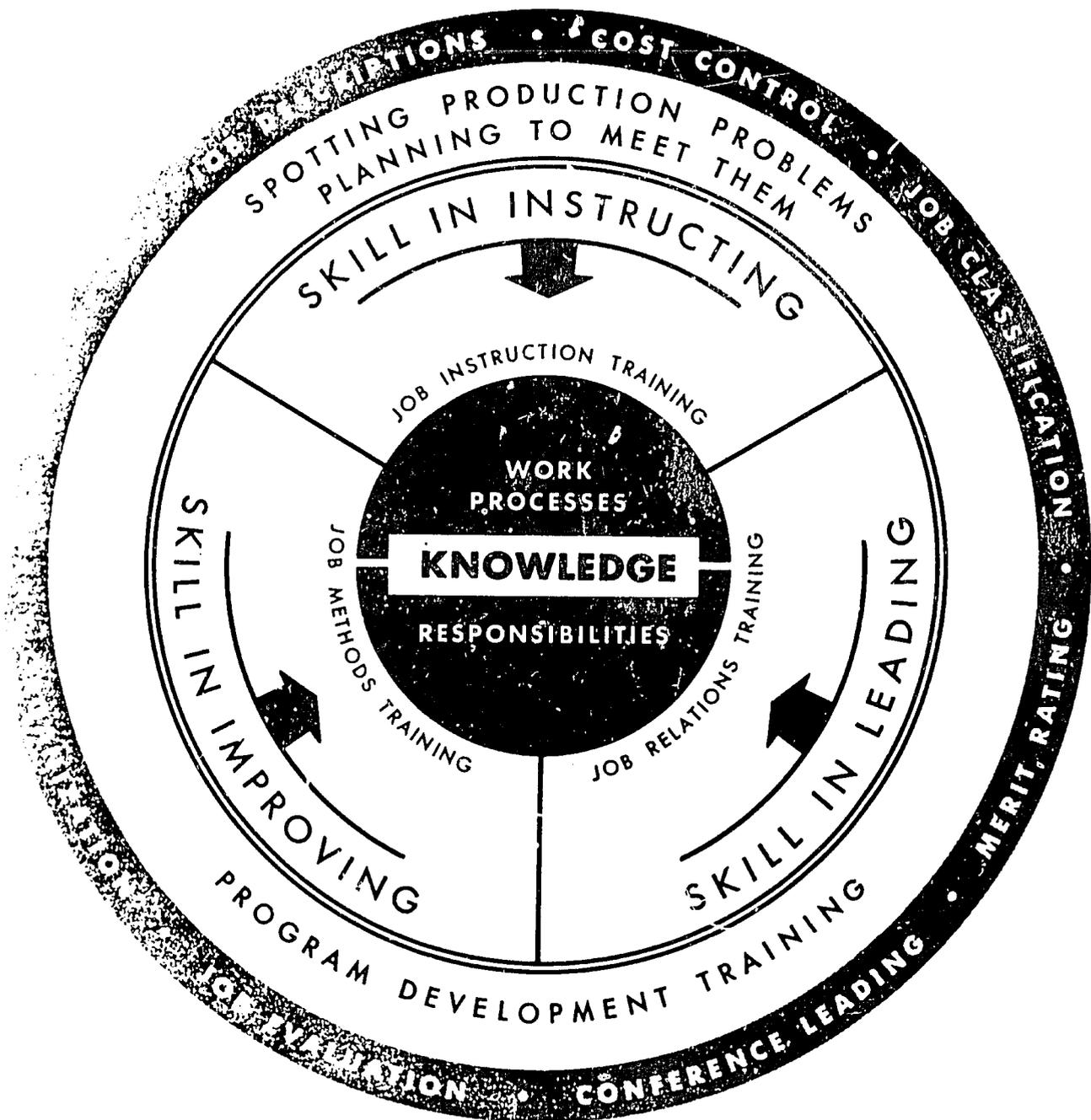
WHAT IS A SUPERVISOR?	The term supervisor designates the person responsible for directing the work of others.
WHAT IS MANAGEMENT?	Various levels of supervision working together constitute management, the functions differing only in degree from one level to the next. To the worker, his supervisor <u>is</u> management.
MODERN SUPERVISOR	The modern supervisor is a leader, selected because he shows that he has the ability to motivate others to work with him willingly under his direction.
GOOD SUPERVISION	<ol style="list-style-type: none"> 1. A complete knowledge of responsibilities. 2. Quality service at minimum cost. 3. Good management, delegation of responsibility, and reasonable use of authority. 4. Maintains good employee relations by winning their respect and confidence. 5. Ability to train workers to perform new operations. 6. Good knowledge of accident prevention and its application.

Distribute "A Supervisor's Self Analysis." Have group answer the questions, then generally discuss the possible answers.

GOOD LEADERSHIP	
KNOW YOUR JOB	Know everything about your division, including the operations, machinery, electrical equipment, as well as the division's safety requirements. Also know the production requirements, the company regulations, and the State laws

	regarding hours and working conditions.
DO YOUR JOB	Constantly improve your planning as well as the work methods in your division. Keep an orderly shop to promote efficiency and safety.
DON'T BE A "KNOW IT ALL"	No matter how smart you may be, don't give others the impression that you know all the answers. Don't be afraid to admit that you do not know or are in doubt. A man who actually works on a machine or performs an operation day after day gets to know more about it than the supervisor.
GIVE INSTRUCTIONS, NOT ORDERS	Make the worker feel that his job is important. Ask for his cooperation to turn out a good quality job. Don't order him to do this.
DON'T BE A BACK-SLAPPER OR A SNOB	Don't become too friendly with your men; this could lead to partiality. On the other hand, don't act aloof or superior to them.
RESPECT YOUR WORKERS	Treat their work as a matter of importance. Keep them in good spirits and full of enthusiasm for their work. When a worker feels that he is successfully doing a worthwhile job, he has a feeling of pride and satisfaction that can only be instilled by respect and praise.
BE INTERESTED IN YOUR WORKERS	Greet them pleasantly; talk to them about their families and their problems. Make them feel that they belong in your working family group.
BE FAIR IN YOUR DECISIONS	Don't pick favorites; treat all workers alike. Don't jump to conclusions--listen to both sides of the problem. Weigh your conclusions carefully before making a decision.
GIVE CREDIT WHERE DUE	When a suggestion is accepted, give the worker credit and he will return with other suggestions.
LET YOUR WORKERS KNOW WHEN THEY ARE WRONG	Bad work, unsafe actions, and excessive absenteeism should be called to the workers' attention. Don't do this in anger; reason with them and instruct them to do better.

SET A GOOD EXAMPLE	If you want your workers to wear safety goggles, you must wear them also. If you want your men to come to work on time, you should be on time.
SHOW RESPECT AND LOYALTY TO YOUR SUPERIORS	Reflect their interests when doing your job. Participate in the plant safety program and promote the workers' interest in safe work practices.
KEEP YOUR GROUP INFORMED	Let them know about changes in equipment, methods, and procedures. Give them an opportunity to discuss and approve new safety rules which they will be required to follow.
ENFORCE SAFETY RULES	Enforce all safety rules; but if a rule cannot be enforced, it should be revoked or changed.
LEARN MORE ABOUT SAFETY	Participate actively in safety committees and learn more about the techniques of accident prevention.
INCREASE YOUR SAFETY KNOWLEDGE	Attend courses and learn about accident reports, records and investigation, safety inspection procedures, job hazard analysis, and how to promote worker interest in safety.



BASIC NEEDS OF A SUPERVISOR

CHART 1

<p>BASIC KNOWLEDGE OF A SUPERVISOR</p>	<p>A supervisor should know the work processes in his shop and the responsibilities of his job.</p>
<p>WORK PROCESSES</p>	<p>The supervisor should maintain an up-to-date knowledge of the mechanical and technical techniques of the work done in his shop. This includes:</p> <ol style="list-style-type: none"> 1. Retention of considerable skill in operating some of the machines. 2. Knowledge of the capacity of all such machines. 3. An understanding on how to improve methods for the operation of the machine. 4. Knowledge of the mechanical safeguards for such machinery. 5. An understanding of routing and scheduling work in his shop.
<p>RESPONSIBILITIES</p>	<p>The supervisor has the same responsibilities as his general manager, within the limits of his shop. This includes:</p> <ol style="list-style-type: none"> 1. Producing the required quantity and quality of goods in a specific length of time. 2. Reducing costs of production. 3. Maintaining safe and efficient working conditions. 4. Keeping harmonious relations with his workers while instilling job enthusiasm through good leadership. 5. Training workers to improve their skills. 6. Keeping records and reports.
<p>SUPERVISORY TRAINING</p>	<p>An important part of the supervisor's training should include:</p> <ol style="list-style-type: none"> 1. Safety Training - Preventing accidents by correcting unsafe conditions and unsafe acts via safety inspections, job hazard

analysis, and promoting worker interest.

2. Job Instruction Training - Teaching the worker how to improve his skills.
 3. Job Relations Training - How to develop leadership skills.
 4. Job Methods Training - How to improve methods of operation.
-

A SUPERVISOR'S SELF ANALYSIS

The human factors a supervisor learns in any supervisory program helps him to understand people and how to deal with them in accordance with their individual temperament.

The first step in any program of self-development is self-analysis--how well am I doing--how can I do it better? This questionnaire is designed to assist a supervisor in making this analysis and to help him evolve a plan for his development as a leader.

How Well Do I Supervise People?

	<u>Yes</u>	<u>No</u>
Is each of my employees on the right job?	—	—
Does each of my employees know why his job is important?	—	—
Do my employees know the why of any changes that are made?	—	—
Do my employees know the why of organization and safety rules?	—	—
Do my employees know how to work safely?	—	—
Do my employees have few or no accidents?	—	—
Is there little tardiness or absenteeism in my department?	—	—
Do my employees make good safety suggestions?	—	—
Do my employees turn in few petty grievances?	—	—
Do my employees give me their full cooperation?	—	—
Does each of my employees perform his job to the best of his ability?	—	—

How Can I Do Better?

Now that I have analyzed how well I supervise people, what do I need to know or do to help me do a better job?

	Yes	No	?
Do I need to know more about:			
Human personality?	—	—	—
Selection and placement?	—	—	—
Individual motivation?	—	—	—
Accident prevention?	—	—	—

	Yes	No	?
The suggestion system?	—	—	—
Grievance handling?	—	—	—
Work procedures in other departments?	—	—	—
Job instruction?	—	—	—
Training methods?	—	—	—
Rating employees?	—	—	—

SESSION II

ACCIDENT REPORTS, RECORDS, AND INVESTIGATION

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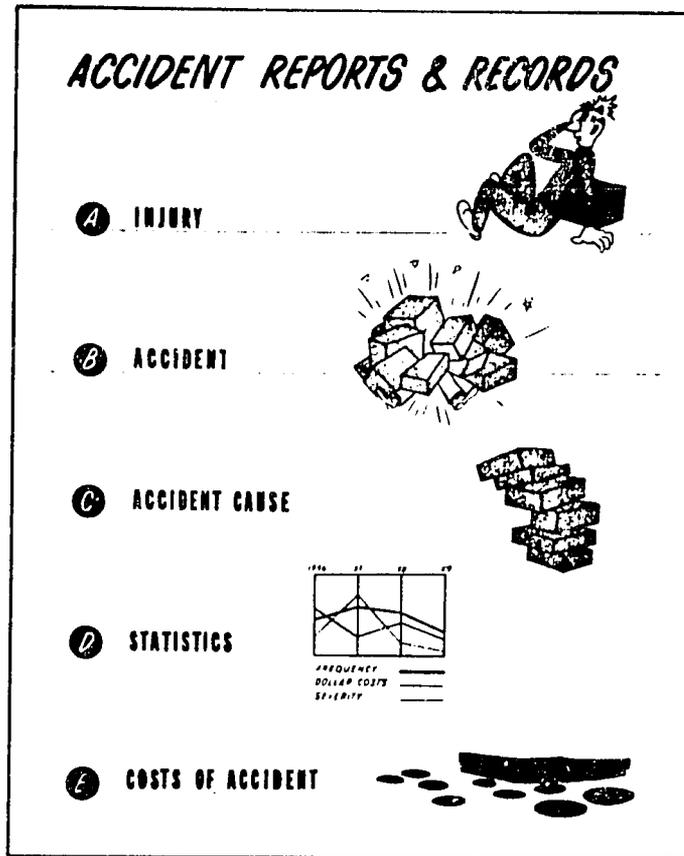


CHART 2

<p>PURPOSES OF ACCIDENT REPORTS AND RECORDS</p>	<p>Records of accidents are essential to efficient and successful safety work. Their primary purpose can be divided into three main categories:</p> <ol style="list-style-type: none"> 1. To serve as a guide for the prevention of similar accidents. 2. To furnish information necessary for the compensation of the injured person. 3. To assist in determining costs of accidents.
<p>FOUNDATION OF SCIENTIFIC APPROACH</p>	<p>Records are the foundation of a scientific approach to accident prevention.</p> <p>They supply the information necessary to transform haphazard, costly, ineffective safety work into a planned safety program.</p>

RECORDS KEPT BY STANDARD METHOD	When the records are kept in accordance with a standard method, they provide the safety director and the supervisor with means for an objective evaluation of his safety program.
MORE SPECIFICALLY, RECORDS MAY BE USED TO--	<ol style="list-style-type: none"> 1. Create interest in safety among supervisors by furnishing them with the information about the accident experience of their departments. 2. Determine the principal accident sources and provide supervisors and safety committees with information about the most frequent unsafe practices and unsafe conditions so that their efforts may be concentrated where the largest reduction in accidents can be effected. 3. Judge the effectiveness of the safety program by showing whether the accident experience is getting better or worse, and by providing comparisons with the experience of similar organizations and among various departments in the company.
IMPORTANT STEPS IN DEVELOPING ACCIDENT EXPERIENCE	
INJURY	<p>A report on every injury including medical treatment cases should be obtained.</p> <p>The primary purpose of an accident report is to give information, not to fix blame.</p>
ACCIDENT (AND CAUSE)	<p>Accurate information is necessary to assist in the determination of the cause of the accident and highlighting answers to these questions:</p> <ol style="list-style-type: none"> 1. What was the worker doing just before the accident occurred? 2. What happened? 3. What was the result? 4. What were the causes of the accident? (Not who was to blame)

STATISTICS	This information should be accurate to point up the frequency and severity rates. Comparisons can be made with national and local rates or plant statistics.
ACCIDENT COSTS	<ol style="list-style-type: none"><li data-bbox="671 359 1442 461">1. Medical and compensation: Information contained here should assist in determining medical and compensation costs.<li data-bbox="671 492 1423 666">2. In addition, accident reports should contain information on the extent of damage to material, machines, equipment, and loss of production time (of men and machines) incurred as a result of the accident.

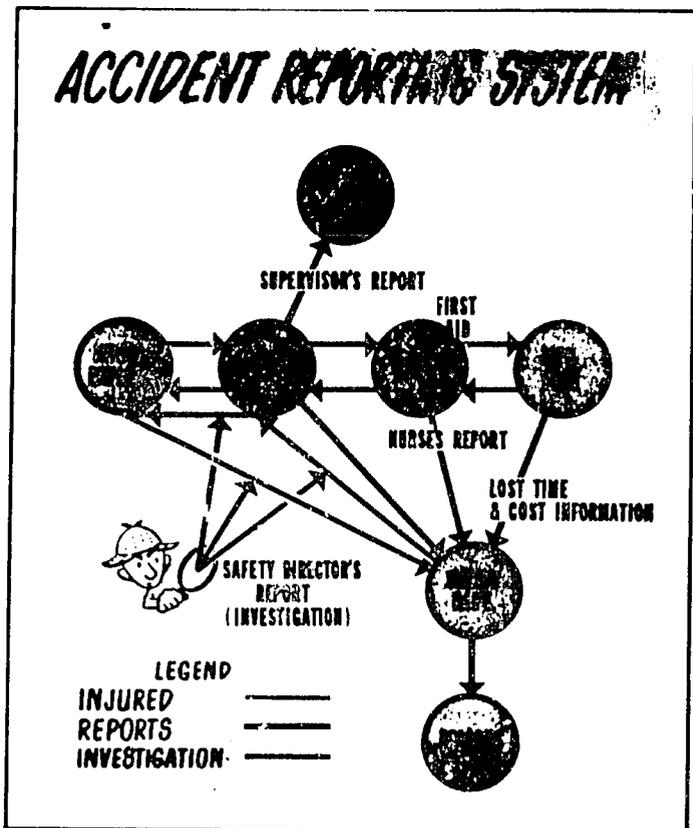


CHART 3

<p>ACCIDENT REPORTS</p>	<p>Since all permanent records must be based on accurate information, it is important to design carefully the forms on which original reports of accidents are to be made. These reports must furnish all essential data in such a manner that the accident prevention engineer and management can interpret and record the information.</p>
<p>ACCIDENT REPORTING SYSTEM</p>	<p>Every establishment should have a standardized system of handling accident reporting.</p>
<p>INJURED EMPLOYEE</p>	<p>When an employee is injured, it is the first responsibility of the foreman concerned to see that the injured person receives prompt first-aid care. It is the responsibility of the person administering first-aid treatment to see that the injured worker is treated properly and that he either returns to his foreman to continue work or is taken to a medical doctor or</p>

	to a hospital for further care, if indicated.
THE ACCIDENT	The safety department should be notified promptly by the foreman or supervisor, and the person designated by it should make an immediate investigation to ascertain the cause of the accident and to make recommendations for the prevention of a recurrence. The area around the accident site should not be disturbed until the investigation is complete.
REPORTS	<p>The reports of the supervisor and the injured employee should be checked at the time of the investigation by the safety director, who should interview all involved together with any eye witnesses and others having pertinent information. Many times it is necessary to reenact the action and conditions which led up to the accident. Reports are also sent to the department head (the supervisor's report as a minimum).</p> <p>The safety department receives the reports from first aid and medical personnel (extent of injury, medical, costs, etc.). The insurance company (if any) reports compensation, medical, and detailed information on specific injuries, etc.</p>
TYPES OF REPORT FORMS	
FIRST REPORT OF INJURY	The information necessary for purposes of compensation is determined by the requirements of the Workmen's Compensation Act of the government agency.

Distribute sample of First Report of Injury Form and discuss with class.

FACTS OF INJURY	The report should include date and time of injury, extent of injury, medical first aid treatment, doctor assigned to case, and time lost from work.
SOURCE OF ACCIDENT	The report should include machine, material, and equipment involved in accident, as well as location of the accident.
DESCRIPTION OF ACCIDENT	The report should also include a description of the accident, including information about what employee was doing, what happened, and the result.

FOREMAN'S
INVESTIGATION FORM

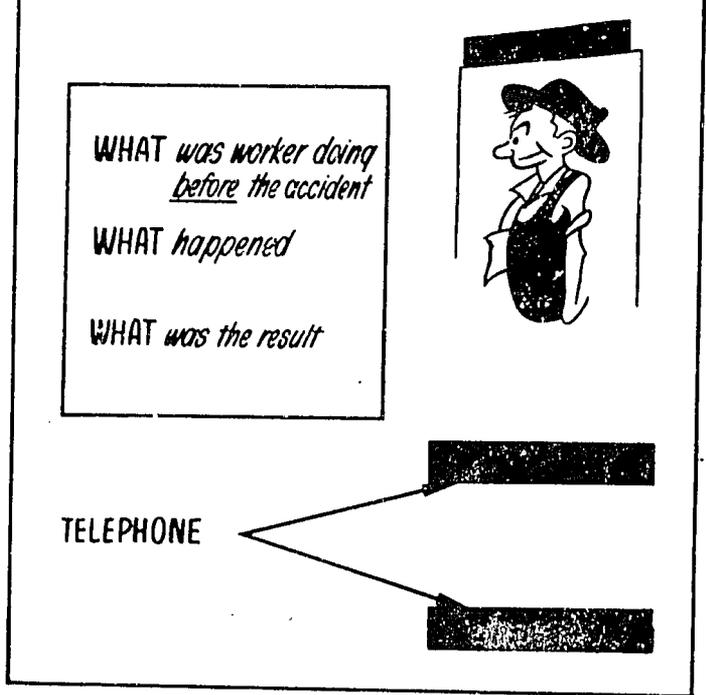


CHART 4

<p>PURPOSE OF INVESTIGATION</p>	<p>The principal purpose of accident investigation is to obtain information that will help prevent accidents. To fulfill this purpose, investigations should be objective, factual, and free of disciplinary implications. If there is a feeling that they will be used to establish guilt, it will be hard to obtain all the facts.</p>
<p>WHAT ACCIDENTS SHOULD BE INVESTIGATED</p>	<p>All accidents, whether resulting in injury or not, should be investigated. All are potentially serious.</p>
<p>NEAR AND MINOR INJURY ACCIDENTS</p>	<p>Obviously, an accident causing death or serious injury should be investigated. The near-accident that might have caused death or serious injury is equally important and should be investigated, too.</p>

	<p>An epidemic of minor injuries demands study. The chief value in such investigations lies in uncovering contributing causes. The energetic safety engineer is constantly alert to the advantage of this kind of accident investigation which may prove more valuable, though less spectacular, than the "inquest" following a fatal injury.</p>
<p>WHEN SHOULD INVESTIGATION BE MADE?</p>	<p>The investigation may be made at the time of preparing the first report of injury, or, if necessary, it can be made later. If the accident is serious or complex to warrant investigation by a committee, action may be delayed until the committee can be called together. In either case, the investigation should be made as soon after the accident as possible. A delay of only a few hours may permit evidence to be removed, destroyed, or forgotten--intentionally or unintentionally.</p>
<p>FOREMAN'S INSTRUCTIONS</p>	<p>The foreman should immediately issue instructions against disturbing the site of the accident, the machine (if involved), the equipment, and all conditions existing at the time of the accident, after any fire, leaks, running machinery, etc., are under control or shut off to prevent further damages.</p>
<p>FOREMAN'S INVESTIGATION</p>	<p>The foreman should then start his own investigation to determine:</p> <ol style="list-style-type: none"> 1. The situation prior to the accident. 2. What happened? 3. The result.
<p>ELEMENTS OF PRODUCTION-- ACCIDENT COST FORM</p>	<p>The supervisor should complete an "Elements of Production--Accident Cost Form."</p> <p>He can report the history of the accident and injury as well as information under:</p> <ol style="list-style-type: none"> 1. Manpower. 2. Machinery. 3. Equipment. <p>The information should include a description</p>

of extent of damage and loss of production time for each. The accounting department will complete the cost of each.

(See outline "Cost Control" in Manual 139.)

Distribute copies of the "Elements of Production--Accident Cost Form" and discuss with the group.

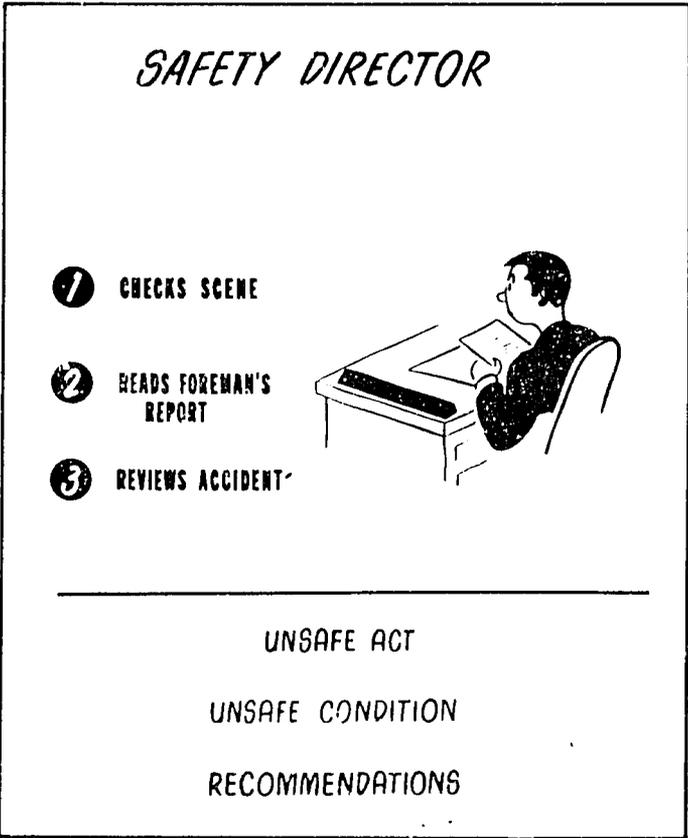


CHART 5

SAFETY
ENGINEER'S
INVESTIGATION

A representative of the accident prevention department should investigate every significant accident for his own information and, in most cases, make a written report to the proper official or to the general safety committee.

He should determine the unsafe physical conditions or the unsafe acts or both which were responsible for the accident. He should then determine what steps should be taken to prevent a recurrence and make definite recommendations to that end. These recommendations should also receive the approval of the foreman, especially if changes in policy, process, or rules are involved. At this point, the scene of the accident may be cleaned up and repairs made.

SAFETY
ENGINEER'S
VALUE

Nowhere is the safety engineer's value and ability better shown than in the study of an accident. His specialized training and analytical experience enable him to get all the facts, both apparent and hidden, and to submit a report free from bias or prejudice. He has no interest in the investigation other than to get information which can be used to prevent similar accidents.

THE
WORKMEN'S
SAFETY
COMMITTEE

In some companies, one function of the workmen's safety committee is to investigate and report on all serious injury accidents, usually with the technical assistance of the safety department. This function is particularly important where a contributing factor was an unsafe act on the part of the worker, because a statement to this effect made by this committee will create a much deeper impression among the workers than a similar statement made by the foreman or the safety engineer.

THE GENERAL
SAFETY
COMMITTEE

In many companies, especially those of small or moderate size, all accident prevention activities are headed by a general safety committee, one whose activities are accident investigation.

Regardless of what individual or group of individuals makes the investigation, fairness is absolutely essential. No one should be assigned to investigation work unless he has earned a reputation for fairness and is prac-

	tical in gathering evidence.
HOW SHOULD THE INFORMATION BE USED?	Information through investigations will not stop accidents unless put to use. First, the results of the inquiry have educational value for workmen and supervisors and should be distributed promptly.
PROGRAM FOR ACCIDENT PREVENTION	<p>Based on findings, a definite program should be set up which will:</p> <ol style="list-style-type: none"> 1. Correct the conditions or circumstances which contributed to the accident under investigation. 2. Correct similar conditions or circumstances existing elsewhere in the plant. 3. Describe the accident and methods of preventing a recurrence on bulletin boards, in special reports, by use of posters, etc. 4. Discuss the accident in accident prevention meetings and in talks with employees. 5. Periodically, summarize and analyze all reports of accidents to focus attention on the circumstances which are causing repeated accidents.
INVESTIGATION VS. INSPECTION	<p>The work of accident investigation and that of inspection should be closely correlated.</p> <p>Inspection should be a continuing activity scheduled to cover plant and equipment as frequently as may be necessary.</p> <p>Investigation is a one-time duty scheduled for one particular thing at one particular time.</p>
INVESTIGATION SHOULD BE THOROUGH	Thoroughness should characterize every investigation. There is a constant temptation to carry the investigation only so far as is necessary to discover one means of prevention. However, in many accidents, more than one hazardous condition or practice is involved.
CORRECTIVE ACTION	Since the sole purpose of accident investigation is to guide prevention, action must be prompt and thorough; otherwise, it will be

largely wasted. Certain things are vital, namely:

1. Prompt consideration of every recommendation and immediate compliance with those accepted.
2. Full explanation of reasons for the rejection of recommendations not followed.
3. Full explanation of any necessary delays in corrective action.
4. Inspection of the entire plant for similar hazards.
5. Recognition of each discovery of a hazardous practice or procedure as a warning that similar practices may be in use by other workers.

ALL INFORMATION
SHOULD BE USED

No pertinent information should be withheld. An attitude of discovering and making use of facts for the sole purpose of prevention is vital and should be maintained at all times. While the discovery of unsafe conditions and/or unsafe practices responsible for the accident should, of course, be made the main purpose of every investigation, all unsafe conditions, and unsafe practices uncovered in the course of the investigation (even though they were not involved in the accident) should be reported and action taken to correct them before they cause an accident.

ACCIDENT
INVESTIGATION
REPORT

An accident investigation form should be used to facilitate the orderly reporting of the information gathered during the investigation.

ACCIDENT
HISTORY

The accident history should include information concerning the accident occurrence and its causes (unsafe conditions, unsafe actions).

ACCIDENT
COST DATA

The report should also include a description of damage to machinery, material, or equipment as well as lost production time resulting from accident.

SUGGEST
CORRECTIONS

The report should also include suggested corrections to prevent similar accidents as well

as action to be taken and by whom.

ACCIDENT FACTOR ANALYSIS FORM	This form is used to compile information to assist with the orderly analysis of the causes of accidents and their correction.
TYPE OF ACCIDENT	He should also include a column for recording types of accidents, such as falls, struck by, striking against, and caught in or between.
UNSAFE CONDITION	One column should be devoted to unsafe conditions, such as defective equipment, unguarded machinery, poor lighting, and poor ventilation.
UNSAFE ACT	A column should be devoted to recording the unsafe acts, such as failure to use safety equipment and operating unguarded machinery.
PERSONAL FACTOR	A column should be devoted to personal factors, such as lack of knowledge, poor attitude, and mental or physical handicap.

Distribute unsafe condition form and discuss with class.

UNSAFE CONDITION REPORTING FORM	This form is used to report unsafe conditions discovered during an inspection or during the regular course of work.
PHYSICAL HAZARD	The form should include a guide for a description of the unsafe physical hazard and its location.
CORRECTION	It should also include space for a description of the correction needed to eliminate or control the unsafe condition.
ACTION TAKEN	An important item on the form should designate the action to be taken and by whom as well as

dates of completion of the correction.

Distribute "Accident Factor Analysis," "Recording Employee Injuries," and "How To Investigate Accidents."

(Name and Address of Workmen's Compensation Board)

EMPLOYER'S FIRST REPORT OF WORK INJURY
(Answer every question fully to avoid further correspondence)

SEE INSTRUCTIONS ON OTHER SIDE

EMPLOYER		Unemployment Compensation Account No.	DO NOT WRITE IN THIS COLUMN
1. Name	(Give name under which concern does business)		
2. Mail address	(No. and street) (City or town) (State)	Phone:	
3. Nature of business	(Manufacturing shoes, retailing men's clothes, trucking for hire, etc.)		
INJURED EMPLOYEE			
4. Name	(First name) (Middle name) (Last name)	Social Security No.	
5. Home address	(No. and street) (City or Town) (State)		
6. Age	7. Sex: Male <input type="checkbox"/> Female <input type="checkbox"/>	8. Marital status: Married <input type="checkbox"/> Single <input type="checkbox"/>	
9. Occupation (job title)		Department	
10. No. of hours worked per day		No. of days worked per week	
11. Wages: \$	per hour; or \$ per day; or \$ per week. If paid on other than a time basis, such as piece work or commission, enter actual average weekly earnings during last weeks: \$ per week.		
12. If board, lodging, or other advantages were furnished in addition to wages, state estimated weekly value: \$	per week.		
THE ACCIDENT OR EXPOSURE TO OCCUPATIONAL DISEASE			
13. Place of accident or exposure	(Number and street) (City or town) (County)	Was it on employer's premises?	
14. What was the employee doing when injured?	(Be specific. If he was using tools or equipment or handling material, name them and tell what he was doing with them.)		
15. How did the accident occur?	(Describe fully the events which resulted in the injury or occupational disease. Tell what happened and how it happened. Name any objects or substances involved and tell how they were involved. Give full details on all factors which led or contributed to the accident. Use separate sheet for additional space.)		
INJURY OR OCCUPATIONAL DISEASE			
16. Describe the injury or disease in detail and indicate the part of body affected.	(e. g.: amputation of right index finger at second joint; fracture of ribs; lead poisoning; dermatitis of left hand, etc.)		
17. Name the object or substance which directly injured the employee. (For example, the machine or thing he struck against or which struck him; the vapor or poison he inhaled or swallowed; the chemical or radiation which irritated his skin; or in cases of strains, hernias, etc., the thing he was lifting, pulling, pushing, etc.)			
18. Date of injury or occupational disease: (Date) . Hour of day _____ a.m. Was employee paid in full for this day? _____ p.m.			
19. Was employee unable to work because of the injury or disease on any day after the day of injury (including Sunday or any other day on which he would not usually work)? _____ If yes, give date last worked: Date: _____			
20. Has employee returned to work? _____ If yes, give date: _____ . At what wage? \$ _____ per hour; or \$ _____ per day; or \$ _____ per week.			
21. Did employee die? Yes <input type="checkbox"/> No <input type="checkbox"/> (Check/one) . If yes, give date of death _____ , and name and address of nearest relative.			
22. Name and address of physician _____			
23. If hospitalized, name and address of hospital _____			
24. Name of workmen's compensation insurance company _____			
Date of report _____	Prepared by _____		
	Official position _____		

9/28/58

INSTRUCTIONS

ITEM

EMPLOYER

1. Employer's name—Self-explanatory.
Unemployment Compensation Account No.—This is the identification number used by the employer in paying his unemployment compensation tax for the location where the injured person is employed. Please enter the full account number.
2. Mail address—The address to which communications about this report should be sent.
3. Nature of business—Describe the kind of business carried on at the location where the injured person is employed.

INJURED EMPLOYEE

4. Name—Give full name as carried on payroll. Avoid initials, if possible.
5. Enter employee's current address to which communications about this case may be sent.
8. If widowed or divorced, check "single."
9. Occupation—Enter here the employee's regular job title, not the specific activity he was performing at the time of injury.
Department—Enter the name of the department or division of the establishment in which the injured person is regularly employed even though he may have been temporarily working in another department at the time of injury.
10. Hours per day and days per week—Enter here the regular work schedule of the employee.

THE ACCIDENT OR EXPOSURE TO OCCUPATIONAL DISEASE

13. Place—If accident or exposure occurred on employer's premises, give address of plant or establishment in which it occurred. Do not indicate department or division within the plant or establishment. If accident occurred outside employer's premises at an identifiable address, give that address. If it occurred on a public highway or at any other place which cannot be identified by number and street, please provide place references locating the place of injury as accurately as possible.
14. Activity at time of injury—Do not use job titles or broad descriptive phrases. Describe specifically the particular task or activity being performed at time of injury. For example: Do not say "Was loading hand truck." Instead, say: "Was lifting a box of metal parts, weighing about 75 pounds, from the floor onto a four-wheeled hand truck. This involved raising the box about 10 inches and sliding it onto the truck."
15. How did the accident occur?—Please describe what happened in as much detail as possible. For example: "The hand truck was not blocked to prevent its moving. When he lifted the box and attempted to slide it onto the truck, the edge of the box struck the edge of the truck bed and the truck moved away. This threw him off balance and he dropped the box about 8 inches onto his left foot."

INJURY OR OCCUPATIONAL DISEASE

16. Describe the injury or disease—Please be as specific as possible, indicating all that is known about the injury at the time the report is prepared.
17. The object or substance which directly injured the employee—Name here the specific thing which inflicted the injury. For example: If the injury was a steam burn inflicted by steam escaping from a broken connection in a high-pressure steam line, name the steam as the thing which produced the injury, not the steam line or the broken connection.
19. Was employee unable to work because of the injury or disease on any day after the day of injury?—Note that this refers to the employee's physical ability to work regardless of the availability of work. For example: An employee in an establishment, which is regularly closed on Saturday and Sunday, is injured on Friday. If on Saturday, because of his injury, he is in fact unable to perform the duties of his job, the answer to this question should be "yes" even though he recovers in time to resume work at the regular starting time on Monday.

ELEMENTS OF PRODUCTION - ACCIDENT COST FORM

Name of Employee _____ Dept. _____ Job
Directly Involved _____ Title _____

Injury if any _____
When Injured _____ Lost Time _____ First Aid _____ No Injury _____

What was Employee Doing Before Accident _____

What Happened _____

MANPOWER

Returned to Job _____ Compensation Payments _____
Days on Compensation _____ All Medical Expenses _____

TOTAL Compensation and Medical Costs _____

Injured Worker's Wage _____/Hour

Time lost on day of injury _____ Hours _____ Minutes _____

Time lost on subsequent days _____ Hours _____ Minutes _____
(Treatment or other reasons)

Time on light work or
reduced output _____ Days _____ % Output
Decreased _____

Wages paid other than compensation during disability _____

Medical costs other than those covered by Compensation
Insurance _____

TOTAL MANPOWER COSTS _____

MACHINERY

Damage to Machinery - (Describe)

Cost of Repair or Replacement _____

Lost Production Time _____ Cost _____

MATERIAL

Damage to Material - (Describe)

Cost of Repair or Replacement _____

Lost Production Time _____ Cost _____

EQUIPMENT

Damage to Equipment - (Describe)

Cost of Repair or Replacement _____

Lost Production Time _____ Cost _____

TOTAL COST OF ACCIDENT

=====



STUDENT WORK SHEET

DEPARTMENT OF LABOR SAFETY TRAINING PROGRAMS

SWS LS-240

005 8.65

Accident Factor Analysis



THIS FORM IS DESIGNED FOR USE IN ACCIDENT CAUSE ANALYSIS AS AN AID IN RECORDING THE SPECIFIC FACTORS OR UNSAFE CONDITIONS, ACCIDENT TYPE, AND UNSAFE ACTS. IN ADDITION, THE FORM SERVES AS A REFERENCE FOR DETERMINING ACCIDENT POTENTIALS WHEN USED IN CONNECTION WITH A SAFETY INSPECTION.

DESCRIPTION OF ACCIDENT

AGENCY CLASSIFICATION

Machines

Prime movers and pumps

Elevators

Hoisting apparatus

Conveyors

Boiler and pressure vessels

Vehicles

Animals

Mechanical power transmission apparatus

Electrical apparatus

Handtools

Chemicals

Highly flammable and hot substances

Dusts

Radiations and radiating substances

Working surfaces not elsewhere classified

Miscellaneous agencies

ACCIDENT TYPE

Striking against

Struck by

Caught in, on, or between

Fall on same level

Fall to different level

Slip (not fall) or overexertion

Exposure to temperature extremes

Inhalation, absorption, ingestion

Contact with electric current

SPECIFIC AGENCY	

AGENCY PART	

UNSAFE MECHANICAL OR PHYSICAL CONDITION	
	Improperly guarded agencies
	Defective agencies
	Hazardous arrangements or procedures in, on, or around the selected agency
	Improper illumination
	Improper ventilation
	Unsafe dress or apparel

UNSAFE ACT	
	Operating without authority, failure to secure or warn
	Operating or working at unsafe speeds
	Making safety devices inoperative
	Using unsafe equipment, using hands instead of equipment, or using equipment unsafely
	Taking unsafe position or posture
	Working on moving or dangerous equipment
	Distracting, teasing, abusing, startling
	Failure to use safe attire or personal protective devices
	Unsafe act not elsewhere classified

PERSON	
	Injured
	Fellow worker
	Supervisor
	Unknown

UNSAFE PERSONAL FACTOR	
	Improper attitude
	Lack of knowledge or skill
	Bodily impairment

SUMMARY AND RECOMMENDATIONS

CORRECTIVE OR PREVENTIVE ACTIONS

Conditions:

Acts of Persons:

UNSAFE CONDITION REPORT FORM

DATE

LOCATION

PREPARED BY

UNSAFE PHYSICAL HAZARD

SUGGESTED CORRECTION

ACTION TAKEN

DATE BY WHOM

DATE CORRECTED



OCCUPATIONAL SAFETY AID

U. S. DEPARTMENT OF LABOR SAFETY TRAINING PROGRAMS

OSA LS-174

OOS 2.66

RECORDING EMPLOYEE INJURIES

Records of accidents are essential to efficient and successful safety work just as records of other business activities are essential to efficient and successful operation.

The keeping of accident records is important because they provide information as to how many accidents are occurring, where and how they happen, and their severity and cost. These data facilitate the estimation of accident costs, computation of accident frequency and severity rates, disclose the departments and work activities where accidents occur, and serve as a basis for determining the causes of accidents so that effective corrective action can be applied to prevent their recurrence.

The accident record system in any plant usually varies according to the size and type of plant, nature of the safety program, ideas of the safety man, and other factors. This bulletin is intended to present only one simple type of injury record form which is easy to prepare and use, and is suitable for use as a first step in setting up an accident record system. The procedure for preparing this employee injury record follows, and the individual items listed are illustrated in the sample of the form shown on page 3.

HOW TO KEEP A RECORD OF INJURIES

COLUMN HEADING

- INJURY RECORD:** Each injury should be numbered for identification. The numbers should run in sequence as the injuries are reported. The injured person's name is helpful in recalling specific cases.
- DATE OF INJURY:** This column may also include the time of injury or the shift on which it occurred.
- OCCUPATION:** This information is helpful in highlighting the types of occupations involved in relation to the types of injury exposures that may require corrective attention.
- WHERE IT HAPPENED:** This column may include the shop in which the accident happened, or the physical location where it happened.

NATURE OF INJURY: This column describes the injury sustained by the victim. Do not confuse it with the details of the accident.

HOW INJURY OCCURRED: This column should give a brief but accurate description of the accident. Details may be obtained from the accident report.

CODE: This column is reserved for a code letter to indicate the classification of injury according to the American Standards Association Standard, Z16.1

Code

- FA First Aid Case - No lost time
- TTD A TEMPORARY TOTAL DISABILITY is any injury which renders the injured person unable to perform a regularly established job which is open and available to him during the entire time interval corresponding to the hours of his regular shift on any one or more days subsequent to the date of injury.
- PPD Permanent Partial Disability is any injury which involves the loss of, or loss of use of a part or all, of a member or members of the body; any permanent impairment not serious enough to be classified as permanent total disability..
- PTD Permanent Total Disability - Any injury other than death which permanently and totally prevents a person from following a gainful occupation, or which results in the loss, or loss of use of any of the following members in one accident:
1. Both eyes.
 2. One eye and one hand, or arm, or leg, or foot.
 3. Any two of the following not on the same limb: hand, arm, foot, or leg.
- DPTD Death. Deaths are classified with permanent total disabilities regardless of the lapse of time between the date of injury and death.

If any injury requires reclassification according to this code, remove the original entry and re-enter with the new code to prevent duplication.

TIME LOST OR
CHARGED (DAYS):

This column is used to enter actual time lost in days or the time charged to the injury due to a permanent disability, according to the ASA Code, "Scale of Time Charges," Z16.1.

COSTS:

- A. Enter the amount of money paid the employee while he is off the job because of injury through compensation.
- B. Enter cost of medical treatment, ambulance, etc., that is paid either through insurance or company funds.
- C. Enter uninsured costs. This is an estimated figure on loss of business resulting from the accident, loss of time by other employees, loss of use of specialized labor, training new employee, loss of production, damaged materials and equipment, etc.

The information suggested here is not intended to exhaust the possible breakdown of information and data for injury record keeping.

Organizations sustaining a large number of accidents may wish to include data such as frequency and severity rates, total costs column, estimated cost column; or such information as the basic cause of the accident and corrective action taken.

The period of time covered by a reporting system may vary, according to the number of accidents occurring within a week, month, quarter, or year; and the reporting system most helpful to the company involved.

The following items should be remembered:

1. Record all employee injuries even though they are slight and involve only first aid treatment.
2. In computing time lost through temporary total disabilities, do not count the day of the injury or the day injured returns as lost time. However, be sure to count Saturdays, Sundays and holidays even though no work was scheduled on those days if the injured was in fact incapable of working on those days because of his injury.
3. Familiarize yourself with the method of computing injury frequency and severity rates and use this form to record them.

For further information read:

Bulletin No. 67, United States Department of Labor,
Bureau of Labor Standards.

USA Standard Method of Recording and Measuring
Work Injury Experience. Standard Z16.1

USA Standards Institute

Period From January 1

EMPLOYEE INJURY RECORD FORM

To January 31

A & C Company
(Company)

Middleville, Ohio
(Address)

87

INJURY RECORD		DATE OF INJURY	OCCUPATION	WHERE IT HAPPENED	NATURE OF INJURY	HOW INJURY OCCURRED	CODE	TIME LOST OR CHGD (DAYS)	COSTS		
NO.	NAME								A	B	C
								COMP.	MEDICAL	UNINSURED	
1	Smith	1/5	Carpenter	Carpenter shop	Punctured left foot	Stepped on nail	FA	0	n/c	\$5.00	\$5.00
2	Black	1/9	Laborer	Cement Warehouse	Strained back	Lifting cement bags	TTD	2	\$24	5.00	10.00
3	Jones	1/17	Helper	Carpenter shop	Amputated little finger of left hand at second joint	Finger caught in power saw	PPD	100	417.60	50.00	25.00
4	Green	1/22	Engineer	Quarry #3	Rock fragments in both eyes; sight of both eyes lost	Hit by flying rock fragments of dynamite blast	PTD	6,000	21,750	600.00	5,000
5	Dean	1/29	Plant truck operator	Loading dock	Fatal, due to crushed head and chest	Drove off of loading dock; pinned by overturned tractor	DPTD	6,000	11,200	400.00	3,000



OSA-LS 169

OOS I. 66

HOW TO INVESTIGATE ACCIDENTS

PURPOSE OF ACCIDENT INVESTIGATION

To obtain information through which recommendations for corrective action can be developed for the prevention of similar, or other accidents, either in the area affected or elsewhere in the organization. This is done by:

Determining accident causes	Seeking out the elements and sources from which the accident developed.
Determining corrective measures	Analyzing the cause factors and making recommendations for their elimination.
Developing educational materials	Producing information which will guide personnel into developing a "Safety Consciousness" and knowledge of safe conditions and safe work methods.

WHICH ACCIDENTS SHOULD BE INVESTIGATED?

All accidents are potentially serious. All are important regardless of the degree of seriousness of any resulting injury, since the "injury-result" of any set of accident-producing circumstances is impossible to predict.

EVERY accident should be properly investigated, bearing in mind the following order of importance:

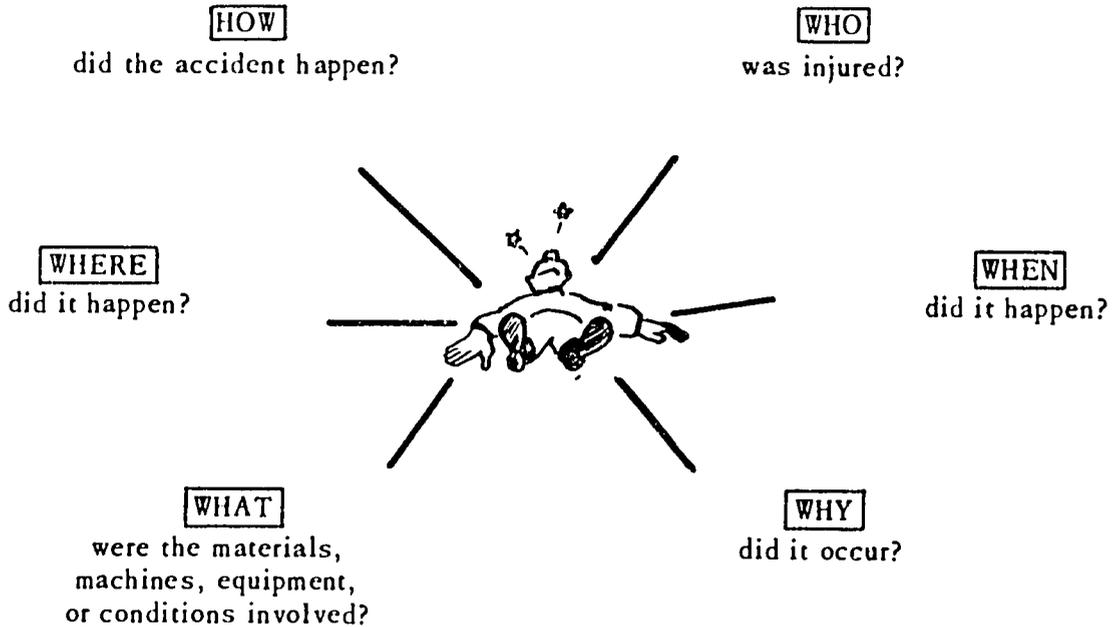
1. Deaths, or other catastrophes.
2. Permanent disabilities.
3. Temporary disabilities.

WHEN SHOULD ACCIDENT INVESTIGATIONS BE MADE?

As soon as possible after the accident.

Delays—even those of only a few hours—can permit information or items of importance to be removed, destroyed, or forgotten.

SIX QUESTIONS TO ANSWER AS THE BASIS OF ACCIDENT INVESTIGATION



WHAT SPECIFIC INFORMATION SHOULD BE OBTAINED?

OCCUPATION	What work was injured doing?
SEX	State whether male or female.
AGE	Exact if possible; otherwise approximate.
DATE	Show day—and hour—of occurrence.
PLACE	Give the specific location.
TYPE	What type accident—fall, struck by, caught in, burned?
EQUIPMENT	What materials, machines involved?

IN ADDITION to these fundamental and basic points, the following items should receive appropriate attention, depending upon the circumstances in each case:

DESCRIPTIONS BY WITNESSES

Get various accounts of the accident—the worker's, his supervisor's, and other witnesses.

UNSAFE CONDITIONS

State what unsafe condition contributed to the accident. Give reasons for its existence, if possible.

UNSAFE ACTS

List any unsafe acts involved. Why did they occur—lack of skill, poor attitude, misunderstanding?

CORRECTIVE ACTION

What has been done to prevent recurrence of the accident?

BRING OUT ALL THE FACTS

1. DESCRIPTIONS BY WITNESSES
2. UNSAFE CONDITIONS
3. UNSAFE ACTS
4. CORRECTIVE ACTION

OTHER INFORMATION

You can't get too much information about an accident. What may appear to have been a simple accident, may have contributing circumstances which are quite involved. Underlying causes must be sought.

A report that a worker "got a particle in his eye," or that "he was not wearing his goggles," gives no clue as to how or why the accident happened. Determine where the particle came from, and how. Why wasn't the worker wearing his goggles? Get the whole story.

Never say a worker was "careless." This is an effect, not a cause. If you think he was careless, find out why—there always is a reason.

WHO SHOULD INVESTIGATE?

The person, or persons, making the investigation should have some knowledge of accident sources and causes, the work processes, and equipment or machines involved.

Depending upon the circumstances, one or more of the following people should make the investigation:

The immediate supervisor(s) of the injured person.

A representative of the Safety Department.

A member of the Safety Committee; or subcommittee for accident investigation, if there is one.

Insurance company safety engineer.



PRINCIPLES WHICH SHOULD BE OBSERVED

1. USE COMMON SENSE—Stick to the facts, weigh their value, reach justified conclusions.
2. INVESTIGATE EACH CLUE—An apparently reasonable conclusion will often be changed by exploring factors which may not appear to be important.
3. CHECK FOR UNSAFE CONDITIONS AND ACTS—Both are present in the great majority of accidents.
4. MAKE RECOMMENDATIONS—No investigation is complete unless corrective action is suggested.
5. INVESTIGATE ALL ACCIDENTS—Chance is often the sole difference between a trivial accident and a serious one. Results cannot be predicted.
6. PREPARE REPORT—Written reports are helpful tools for study and analysis, to determine specific areas or operations in which accidents are occurring, and for followup action on recommendations.

SESSION III

SAFETY INSPECTION PROCEDURES

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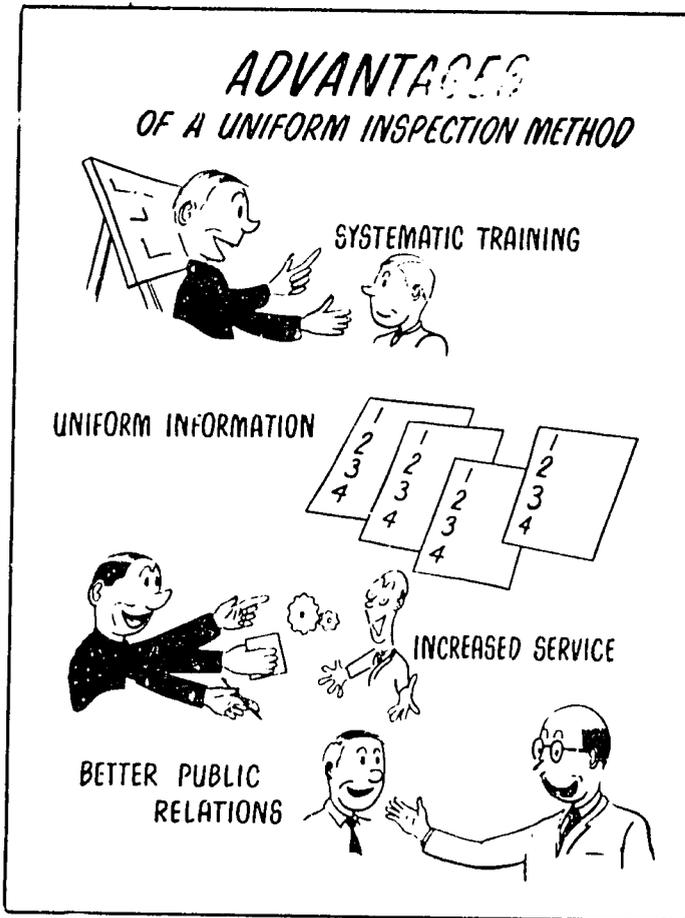


CHART 6

<p>SAFETY INSPECTIONS</p>	<p>Every industrial plant and each occupational function or operation harbors some existing or potential hazards which arise through normal working or production procedures and through changes due to deletion or introduction of machines, materials, processes or methods, or structural changes due to construction. This points up the need for an effective method of hazard appraisal through inspections.</p>
<p>PURPOSE OF INSPECTION</p>	<p>The basic purpose of inspection is to detect potential accident causes so they may be corrected and to prevent an accident from occurring. Through inspection it is possible to determine</p>
<p>INSPECTIONS ARE A NECESSARY ACTIVITY IN A SAFETY PROGRAM</p>	
<p>TO DETECT ACCIDENT CAUSES</p>	

	<p>those deficiencies which need to be corrected or improved to bring the plant or operation up to at least minimum accepted standards both from a safety and operational standpoint.</p>
SYSTEMATIC PROTECTION	<p>Methodical and well-performed safety inspections, done periodically, are an unequalled medium for determining accident-prevention needs. A definite, planned system is necessary for safety inspection as for any other procedure.</p>
UNIFORM INFORMATION	<p>The use of standard or specially developed forms and procedures results in uniform information for use in checking against previous inspections or inspections of other area plants, jobs, or companies.</p> <p>With uniform information, repeatedly finding the same unsafe condition will be recognized and further necessary action can be taken.</p>
CORRECTIVE ACTION	<p>The practical value of inspection comes through corrective action being accomplished as soon as possible. The extent of hazard indicated for each item reported must be weighed to determine if immediate action is required or if some delay is necessary to obtain materials, etc. It is possible that temporary corrective action may be substituted until final action can be taken.</p>
INCREASED EFFICIENCY	<p>Good safe inspections often produce safer as well as more efficient methods.</p> <p>Methodically, uniformly planned and conducted safety inspections may be examples of efficient operations.</p>
INSPECTIONS EXPRESS A TRUE INTEREST IN SAFETY	<p>Coupled with effective corrective action as a result of recommendations, safety inspection is one of the best methods by which management can demonstrate its sincerity regarding accident prevention.</p>
OTHER SPECIFIC RESULTS ARE ACHIEVABLE	<p>Other benefits which are shared by both management and the workers as a result of safety inspections include increased efficiency and better public and employee relations.</p>

BETTER PUBLIC
AND EMPLOYEE
RELATIONS

Safety and efficiency always bring their own reward in better personnel and public relations. Employees usually prefer working in a safe plant, and the reputation of a company is usually judged by reports of accidents and injuries.

Astute management which encourages or requires safety inspections realizes that good will and morale values can be obtained in no other way.

SAFETY
TRAINING FOR
EMPLOYEES

Safety inspections can be valuable in pointing out areas, operations, or methods which require emphasis in supervisor or employee training.

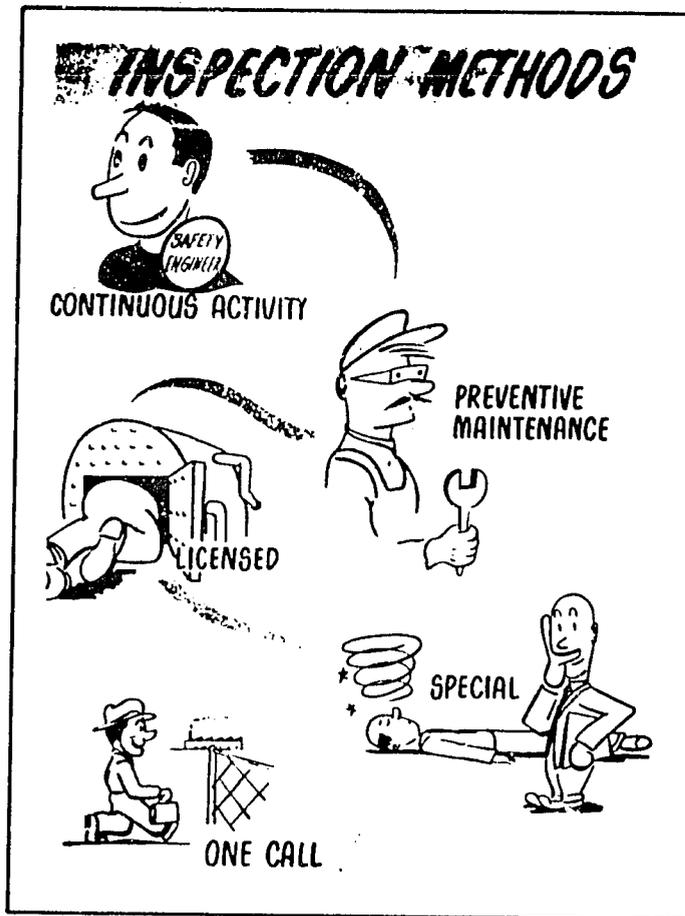


CHART 7

INSPECTION METHODS	
CLASSES OF SURVEYS	<p>There are two fundamental classes of surveys: (1) those made or requested by the organization surveyed or some segment thereof as a function of an internal safety effort; and (2) those made by an "outside" agency or organization. These two classes are composed of five basic types. They are as follows:</p>
CONTINUAL ACTIVITY SURVEYS	<p>These are regular periodic surveys made by safety engineers, safety directors, or their staffs. It includes safety committee surveys also, when such committees include weekly or monthly inspections in their activities. The advantages of this method include: a regular, planned program of inspection designed to cover all areas and subjects; familiarity by the staff and safety committee inspectors with the operations and procedures; early detection of</p>

changes in operations or equipment; follow-up of recommendations.

PREVENTIVE MAINTENANCE SURVEYS	These cover scheduled or continuing surveys by designated plant personnel, such as electricians, mechanics, and maintenance men. They include both safety surveys and those performed for mechanical functioning, lubrications, etc. Progressive plants schedule surveys at regular intervals, keyed to maintenance records of machinery and other equipment. Thus, potential machine, power, or other failures are sought out before they happen, thereby preventing damage, breakdowns, and injury-producing accidents.
LICENSED SURVEYS	These represent surveys made by specially trained certified or licensed inspectors, usually not part of the organization being inspected. Boiler, elevator, and electrical surveys are illustrations of this type. These surveys and the tests which are usually a part of them, are very exacting and are made at specified times and intervals.
SPECIAL SURVEYS	These surveys are made for special purposes, usually at the request of management, employee groups, or unions. In some cases, they are made by a political subdivision, such as a State or municipality, and are sometimes required by law. Such surveys may be made to investigate a serious fire, explosion, or a serious accident. Many disabling injuries (in some States, any accident involving machinery or any type of permanent disability) and all deaths by accident may be subject to a special survey.
ONE-CALL SURVEYS	These surveys are made according to a predetermined schedule by "outside" inspectors, for example, State agency surveys. This type is generally performed on an annual or semiannual basis, since the usually small safety staffs and large coverage make it impossible for State, insurance, and similar engineers to do so more often. This method is termed "one-call" because there is seldom a personal follow-up on recommendations or orders issued, this being done by mail, if at all.

WHO MAKES SAFETY INSPECTIONS?

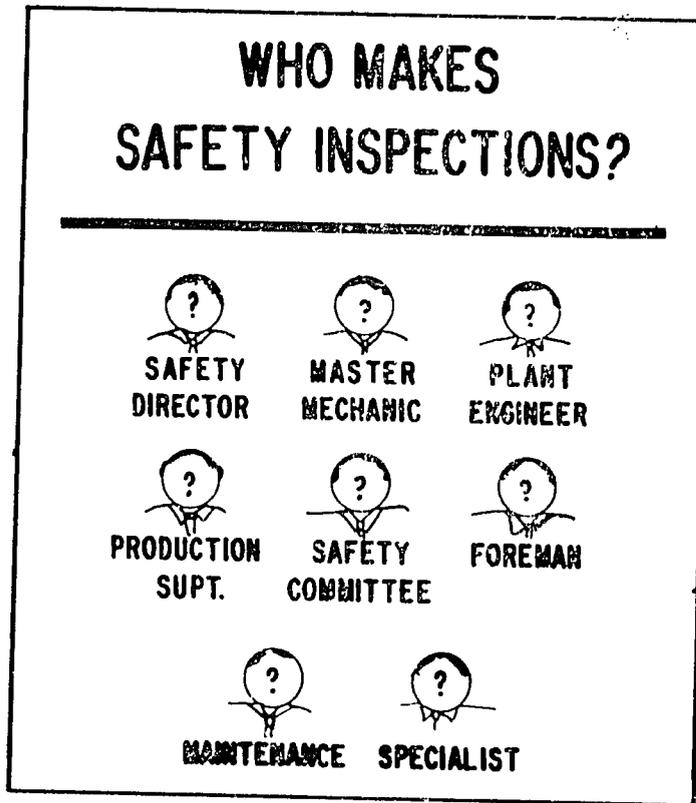


CHART 8

<p>INTERNAL PLANT INSPECTIONS</p>	
<p>WHO SHOULD MAKE SAFETY INSPECTIONS?</p>	<p>There are several possibilities: the safety engineer, the supervisor, the safety committee, a specialist in the operation affected, or someone from the boss' office.</p>
<p>SAFETY ENGINEER</p>	<p>Where an organization has a safety engineer, safety director, or whatever his title might be, part of his responsibility is conducting safety inspections. He determines the frequency of his inspections depending upon the other factors involved.</p> <p>If there are great variations in conditions, such as a construction project, he may devote a part of each day to safety inspection. Distance between jobs or plants or other considerations may require that his inspections be made weekly or monthly. New construction, in-</p>

stallations, or changes in processes or materials being used may require that he make special, unscheduled inspections to make certain that safety requirements are met in making the changes and in preparation for putting the new equipment or process into operation.

SUPERVISOR

Part of the answer to "Who inspects?" is based upon the fact that, in most cases, there should be more than one type of safety inspection. Depending upon the size of plant, type, or circumstances involved in each case, safety inspections by several persons might be necessary. The supervisor should be making a constant safety inspection as he makes his rounds--always alert to changing conditions or work methods. In some types of work (especially special or unusual work for his men), he may need to make hourly checks and inspections to be certain that all safety precautions are being taken. It is at that time that the supervisor can determine if the worker should be given special instruction, counseling, or be transferred to a job where he will not create a hazard to himself or to others. In some cases, the supervisor is instructed to make a daily inspection at the beginning of the shift to be sure there are no existing unsafe conditions or unsafe practices.

WHO INSPECTS SAFETY COMMITTEE



Monthly Bi-monthly

CHART 9

SAFETY
COMMITTEE

Inspections by the members of a safety committee may reveal hazards which might be overlooked by persons less familiar with the work. Also, inspections serve as a training medium by providing an opportunity for thinking and concentrating on safety as a group. By actually seeing conditions and work methods, members of the committee can conduct more intelligent and knowledgeable discussions in their meetings.

Depending upon the size and complications of the operation, installation, or plant, varying schedules may be established. Some committees make inspections each month; others inspect every other month, holding meetings only once a month.

MORE THAN
ONE PERSON

In almost all cases (a very small plant might be an exception), more than one person should make the safety inspections.

Although the safety director should have charge

	<p>of regular, functional-type safety inspections, inspections may be done under the direction of either the master mechanic, plant engineer, production superintendent, or other similar functionary. The important point is that such inspections should be under the direction of a responsible executive who can and will give the supervision necessary to assure effectiveness to prevent these inspections from becoming meaningless, perfunctory, routine gestures and functions.</p>
<p>THEY ALL SHARE THE DUTY</p>	<p>As the needs of an organization dictate, circumstances, times, and situations may arise when the safety director or one of his staff should make safety inspections.</p> <p>So, too, recurring occasions may arise when safety inspections should be made by other person or groups: management representatives, supervisors, committees or their members, "specialists," or maintenance personnel.</p> <p>This is not meant to favor one of these in lieu of any of the others. For example, the "safety man's" regular inspections could be supplemented by regular inspections of the safety committee.</p> <p>No individual or group should have exclusive responsibility for safety inspections.</p>
<p>CAN THE "NEW BROOM SWEEP CLEANER"?</p>	<p>In some organizations, when inspections are made by the safety committee, which is composed of workers or supervisors, the individuals involved inspect each other's area of operation.</p> <p>It has been found that in many situations the "stranger" notes unsafe conditions or acts which the persons familiar with the operation have been missing, and therefore are likely to miss again when inspecting for safety.</p>
<p>WHAT SHOULD THE "INSPECTOR" KNOW OR LEARN?</p>	<p>Whatever position the person making the safety inspection has--a worker, supervisor, insurance engineer, State inspector--he should possess a good working knowledge of the machines, processes, functions, needs, problems, etc., of the plant, area, or operation which he plans to inspect, as well as a sound knowledge of basic accident causes.</p>

SOMETIMES,
SPECIAL
KNOWLEDGE
IS REQUIRED

In some special circumstances, he should be an expert; for example, in a special industrial hygiene inspection and in comparable situations, a high degree of technical and specialized training, background, or ability is required. In this topic under discussion, however, we are not covering such situations.

HOW CAN THE
'NON-PROFESSIONAL'
PREPARE
HIMSELF?

Where the need exists, before attempting a safety inspection, an individual should acquire and digest all pertinent information available on the type operations which he proposes to survey.

He should review and acquaint himself with the details of these functions, generally and specifically, and in relation to each other.

Other supplementary information also is often applicable, depending on the circumstances, such as data on accidents which have occurred, review of previous safety inspection reports, specific regulations which may be required, and standards which may be applicable.

WHAT "MAKES" A SAFETY INSPECTOR?

1. Expertise?
2. Ability?
3. Experience?
4. Capacity for ideas?
5. Self-analysis?

CHART 10

WHAT
KNOWLEDGE IS
NECESSARY TO
QUALIFY AS
A "SAFETY
INSPECTOR"?

"Knowledge" should encompass at least a reasonable acquaintanceship with the various aspects of the operations which an individual is to inspect and an understanding of the hazards or other problems affecting safety.

EXPERTISE

An old adage refers to "not seeing the forest for the trees." In some cases, this has been applied to safety inspection in the sense that sometimes being too completely familiar with an operation or area can cloud a person's ability to discern even obvious hazards.

There are certain techniques in making a safety inspection which are learned by doing. The more times a person makes inspections, the more expert he becomes in concentrating on looking

	<p>for and recognizing unsafe conditions. The more knowledge the inspector has of the specific types of hazards that may exist in the operation he is inspecting, the closer he comes to being an expert in this activity.</p>
ABILITY	<p>Some people have a greater ability to see, perceive, and recognize potential accident causes, because of their basic safety interest, perceptiveness, and curiosity. Such natural ability can be improved through experience.</p>
EXPERIENCE	<p>Some persons assigned the responsibility for making safety inspections have never done so before and therefore have no experience. Lack of experience may be somewhat compensated for by studying and learning the basic accident causes and by reviewing previous inspection reports. If committee members are rotated, it is important that their rotation be staggered so that some persons with experience are always retained.</p>
CAPACITY FOR IDEAS	<p>It has been said that "accident prevention is mostly common sense." The knowledge that the inspector should have--particularly the non-professional--would therefore not necessarily include the ability to solve accident prevention problems, especially from a technical standpoint, but it is very advantageous if he "gets ideas" easily.</p> <p>What he needs most of all is the ability to recognize hazards, or conditions and acts which represent potential hazards.</p>
SELF-ANALYSIS	<p>Good intentions and a desire to help, even when combined with common sense referred to previously, are not usually enough to qualify a person to inspect for safety.</p> <p>Therefore, to be truly effective, the conscientious inspector should critically analyze his own qualifications to inspect for safety.</p>

WHO INSPECTS

STATE SAFETY

REPRESENTATIVE



Annually

CHART 11

WHO INSPECTS--
STATE SAFETY
REPRESENTATIVE

Most States have a safety inspection staff in the Department of Labor, the Industrial Commission, or some other agency responsible for labor law administration. The extent of authority depends upon the specific State law and the type of promotion or enforcement prescribed. The small number of State safety representatives, compared with the number of establishments, generally allows only one inspection per year--often without any additional follow-up.

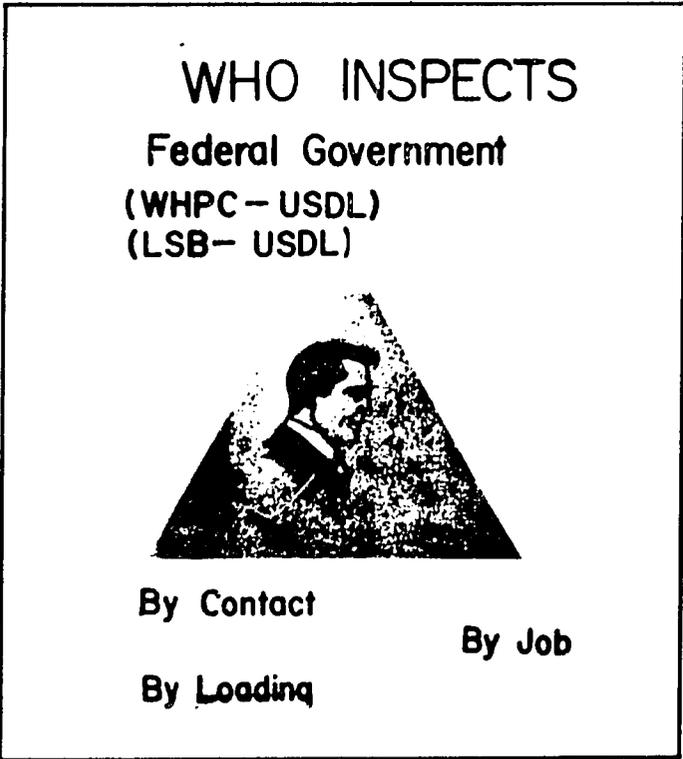


CHART 12

<p>WHO INSPECTS-- FEDERAL GOVERNMENT</p>	<p>The Federal Government's responsibility for industrial safety inspections rests primarily on the Bureau of Labor Standards of the Department of Labor. The safety activity under the Wage and Hour and Public Contracts Laws generally is confined to manufacturing firms with Government contracts of \$10,000 and over. Safety standards established under the WHPC Laws are used as a basis for such inspections. In some States, these inspections are conducted by the State safety representatives.</p> <p>The Longshoremen's and Harbor Workers' Compensation Act also gives authority to the Bureau of Labor Standards to inspect longshoring, ship repair, and ship breaking activities.</p>
---	--

WHO INSPECTS
INSURANCE COMPANY
SAFETY ENGINEER



According to Policy
Agreement

CHART 13

<p>WHO INSPECTS-- INSURANCE COMPANY SAFETY ENGINEER</p>	<p>Workmen's compensation insurance companies often assign safety engineers to inspect the premises to detect unsafe conditions and submit recommendations. While there seems to be no standard, the amount of the premium usually is used to determine the extent of this service. Probably the greatest influence for making corrections is obtained by threatening to cancel the policy.</p>
--	---

WHAT AIDS ARE NEEDED?

1. Plans
2. Guides
3. Forms
4. Incidental Equipment
5. Technical Materials
6. Incentives

CHART 14

GUIDES, CHARTS,
AND OTHER AIDS
AN INSPECTOR
SHOULD HAVE

This is an important part of the preparation for a safety inspection. Good preparation is essential for good inspection.

LAYOUT AND
MACHINERY

In many cases, a layout of the area to be inspected is helpful or even essential. A chart or listing of machinery, equipment, etc., helps considerably. All items in this general category should be considered,

FORMS

There are several types of forms available which can be applied to most safety inspections. A form adapted to meet local conditions and pat-

	<p>tered to fit the particular aspects involved in the inspection to be made is even better.</p> <p>The form may be filled out during inspection or completed afterwards from notes made. But, whatever the techniques, the use of forms is an integral part of good safety inspection. (Discussed later on.)</p>
<p>INSPECTION GUIDES</p>	<p>Such aids as checklists and similar inspection guides should be used to help guarantee a thorough inspection, thus minimizing the possibility of something being overlooked or forgotten.</p>
<p>INCIDENTAL EQUIPMENT</p>	<p>The inspector should take along incidental necessities, such as a hard hat, goggles, flashlight, tape measure, pencil, and any other basic accessories needed to make an efficient inspection.</p>
<p>ROUTING THE INSPECTION</p>	<p>Although there is no standard sequence for the most productive safety inspection, it is best to follow a process or operation from the beginning--from the raw material, step by step, through to the finished product. This would be true in most production operations, chemical and manufacturing plants, etc. But in custom operations or in an area making a product by different methods, the layout may lend itself to unit-by-unit or a nonrouted method, rather than the step-by-step method of safety inspection.</p> <p>Usually, inspection in sequence is easier, saves time, and is more efficient; also, needs are recognized more readily. Then, too, there is less chance of missing something even though the safety inspector may feel that he is familiar with the operation.</p>
<p>SOME DO'S AND DON'TS</p>	<p>Make necessary notes, but don't be "obvious"; the fewer, the better. Avoid "showiness" in recording information.</p> <p>Don't disturb workers. As you make your inspection, do so without disrupting operations.</p> <p>Avoid conversation with workers, except with supervisor's approval.</p>

Do not "lecture"; do not argue.

Inspect all areas. Check thoroughly, open doors, don't be "steered away" from any area whether isolated or not. (Exception: where security clearance is required but inspector has not been cleared.)

Seek out the reasons why any adverse condition exists.

Discuss the inspection with supervisors if they wish to, but don't get into an argument with them.

RECOMMENDA-
TIONS

The safety inspector should organize his notes and decide upon necessary recommendations, listing definite location in the area inspected of each recommendation.

Recommendations should have a good basis in logic, be well worded, and take into account as much as possible the viewpoints of the people they affect. They should not create new hazards.

The safety inspector should be prepared to substantiate his opinions with standards, codes, or accepted practices and should not "load" the recommendation list with any of questionable importance.

WHAT SHOULD YOU LOOK FOR?

1. General Conditions
2. Specific Hazards
3. Work Practices

CHART 15

WHAT SHOULD THE SAFETY INSPECTOR LOOK FOR?	There are three basic categories in a safety inspection: general conditions, specific operations, and work practices.
GENERAL CONDITIONS	General conditions would include lighting, housekeeping, ventilation, and similar matters.
SPECIFIC HAZARDS	Specific hazards category would include tools, machines, equipment, materials, etc.
WORK PRACTICES	The work practices category is an appraisal of methods and the manner in which methods are implemented.

Pass out "Student Work Sheet," entitled "Thirty-five Items To Consider for a Safety Inspection," then discuss each of the items, pointing out that the list is illustrative and intended as a guide. Encourage class discussion.

HOW TO GET RESULTS

1. Reporting
2. Recording
3. Application

CHART 16

WHAT REPORTING AND RECORDING PROCEDURES SHOULD BE USED?

Reports and records should be as simple as possible. Cumbersome elaboration of any good, basic system will not necessarily make it work better nor will it produce a more effective result.

FORMS

Forms are a valuable adjunct to safety inspection if they are comprehensive and well prepared. The checklist and similar type forms have a tendency, of course, to limit the breadth of the inspection. On the other hand, completely narrative-type reporting usually is verbose, cumbersome, incoherent, and difficult to understand.

Inspection and reporting forms are therefore usually more effective when they combine the better features of both the checklist and narrative-type which produce a quick and easy method of reporting, but also allows narrative description when necessary.

RECORDING AND
HANDLING
PROCEDURES

Recording and the procedural aspects of safety inspections, the recommendations made as a consequence, and the further activity resulting are areas where brevity and efficiency, combined with proper and established procedures and thoroughness, will produce meaningful results.

APPLYING
THESE
PRINCIPLES

In this discussion, the foregoing comments on reporting and procedures are, of necessity, quite general. No exact rules or ideas can apply in all instances.

The main point here is that in each case, based upon the circumstances involved, a standard procedure should be set up to cover the type of reporting to be used and the method by which recommendations will be handled, recorded, filed, classified, and followed up, and all other material and functional details which are produced by safety inspections.

SAFETY INSPECTION IN A NUTSHELL

1. What is to be inspected?
2. How often?
3. Who will inspect?
4. Who will supervise?
5. Reports and records?
6. Corrective action?

CHART 17

SUMMARY

Many details are involved in a good safety inspection procedure, but the points requiring full consideration and development in an effective system which will produce meaningful results are quite simple; namely--

What is to be inspected?

How often is each thing, process, or area to be inspected?

Who is to do the inspecting, and what procedures are to be used?

Who will supervise inspection activities and how?

What reports and records will be needed, and how will they be handled?

What provisions must be made for taking corrective action?

Sincere and diligent safety inspection efforts made as a result and part of a good inspection system and which are based upon the foregoing principles can only produce a valuable and fulfilling result.

Hand out occupational safety aids, "Inspecting for Safety," Plant Inspection Check Sheet," and "A Ladder and Stairway Inspection Sheet."

INSPECTING FOR SAFETY

Safety inspections are a necessary segment of a complete safety program. They are essential to maintaining acceptable standards of safety for physical facilities and working practices. Conditions are constantly changing. Materials are moved, stockpiles are depleted, waste materials accumulate, and many other changes occur daily or even by the hour. If machinery is involved, changes occur as a result of use, wear, or abuse. In offices and similar places of employment, there are changes in layout, additions of equipment, and wear and tear of such items as floors, rugs, and equipment.

Safety inspections are a means of surveying and appraising the problems of unsafe conditions and work practices which result from these changes. Safety inspections provide for:

DETECTION

--seeking out the unsafe work methods and conditions.

ANALYSIS

--determining why the unsafe methods or conditions exist.

CORRECTION

--elimination of the unsafe methods or conditions.



TYPES OF INSPECTIONS

CONTINUOUS ACTIVITY - These are the "day-to-day" inspections made by safety directors, safety engineers, or their staffs. Inspection activities of safety committees are included.

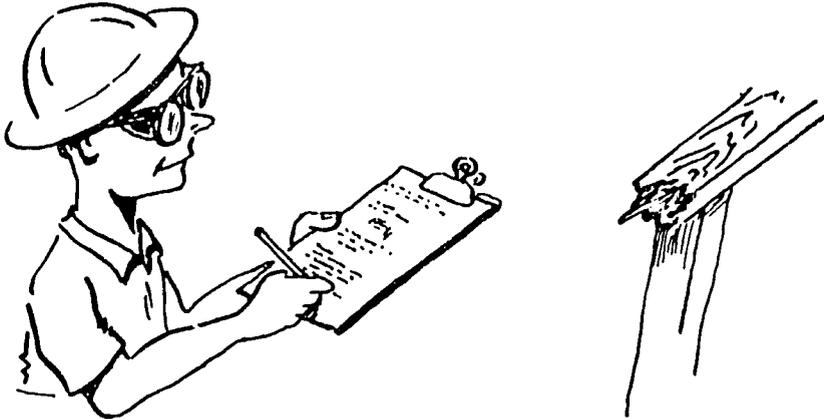
PREVENTIVE MAINTENANCE - Scheduled or continuing inspections by designated plant personnel such as electricians, mechanics, maintenance men and similar personnel. This includes inspections for safety as well as for mechanical functioning, damage, lubrication, and wear and tear.

LICENSED - Inspections made by certified and/or licensed inspectors, usually not employees of the organization being inspected. Boiler, elevator, and electrical inspectors conduct this type of inspection.

SPECIAL INSPECTIONS - Inspections made for special purposes; usually upon request of management, governmental officials, employee groups, or unions.

ONE-CALL - These are inspections made according to a predetermined schedule by "outside" inspectors, usually annually or semi-annually. An example would be State agency inspections.

STEPS IN A SAFETY INSPECTION



PREPARATION - PLAN - Prepare for your inspection beforehand by planning the procedures to be followed.

REVIEW - Check available records on past history of area to be inspected.

STUDY - Obtain and review information on hazards of operations to be inspected.

OUTLINE - Prepare list of specific items to check.

PROCURE - Acquire booklets, posters, or other materials to be distributed.

EQUIPMENT - **NOTEBOOK**, pencil, hard hat, flashlight, goggles, tape measure.

PLAN ROUTE - **HAVE DEFINITE OBJECTIVE** - Determine areas, buildings, operations, or other objectives such as housekeeping, machine guarding.

FOLLOW SEQUENCE - Observe operations by starting from first process, and following through in sequence.

INSPECTION PATTERN - **GENERAL CONDITIONS** - Lighting, work areas, buildings, chemicals, and materials.

SPECIFIC HAZARDS - Tools, machines, equipment.

WORK PRACTICES - The human element; how work is done.

SOME INSPECTION TIPS

MAKE NOTES But don't be obvious.
Avoid "showiness" in recording information.

DON'T DISTURB As you make your tour, do so without disrupting operations.

AVOID CONVERSATION Don't stop and speak to the workers, except with the supervisor's permission.

INSPECT ALL AREAS Don't miss anything; even those areas "where no one ever goes."
Don't be steered away from anything.



BE CONSTRUCTIVE

Your approach should be clear and certain. Remember, you are performing an affirmative function.

SEEK REASONS

Look for "why" adverse conditions exist; but think in terms of corrective action only.

ADVISE SUPERVISORS

Give the benefit of your thinking to the supervisors you contact. Answer their questions, discuss items with them if they wish. (But, don't get into arguments, or time-consuming and disrupting discussion—a good inspector doesn't get involved in arguments.)

PREPARE RECOMMENDATIONS

Be prepared to discuss recommendations with supervisor and top management. Have good reference notes. Make sure your ideas are reasonable and well organized. Use "selling" approach to convince of the needs you have observed.

EXAMPLES OF WHAT TO CHECK IN A SAFETY INSPECTION - This list does not cover *all* conditions. It is intended as a guide.

RECEIVING, SHIPPING, STORAGE - Equipment, job planning, layout, heights, floor loads, projection of materials, material-handling methods

BUILDING CONDITIONS - Floors, walls, ceilings, exits, stairs, walkways, ramps, platforms, driveways, aisles

HOUSEKEEPING - Waste disposal, tools, objects, materials, leakage and spillage, methods, schedules, work areas, remote areas, windows, ledges

ELECTRICITY - Equipment, switches, breakers, fuses, switchboards, junctions, special fixtures, circuits, insulation, extensions, tools, motors, grounding, code compliance

LIGHTING - Type, intensity, controls, condition, diffusion, location, glare and shadow control, standards applied

HEATING AND VENTILATION - Type, effectiveness, temperature, humidity, controls, natural and artificial ventilation and exhausting

MACHINES - Points of operation, flywheels, gears, shafts, pulleys, key ways, belts, couplings, sprockets, chains, frames, controls, lighting, tools and equipment, brakes, exhausting, feeding, oiling, adjusting, maintenance, grounding, how attached, work space, location

PERSONNEL - Training, experience, methods of checking machines before use, methods of cleaning, oiling, or adjusting machinery, type clothing, personal protective equipment, use of guards, tool storage, work practices

HAND AND POWER TOOLS - Purchasing standards, inspection, storage, repair, types, maintenance, grounding, use and handling

CHEMICALS - Storage, handling, transportation, amounts used, warning signs, supervision, training, protective clothing and equipment

FIRE PREVENTION - Extinguishers, alarms, sprinklers, smoking rules, exits, personnel assigned, separation of flammable materials and dangerous operations, explosion-proof fixtures, waste disposal

MAINTENANCE - Regularity, effectiveness, training of personnel, materials and equipment used, method of locking out machinery, general methods

PERSONAL PROTECTION - Type, size, maintenance, repair, storage, assignment of responsibility, purchasing methods, standards observed, rules of use, method of assignment

OA-10-0



STUDENT WORK SHEET

U. S. DEPARTMENT OF LABOR SAFETY TRAINING CENTER

SWS LS-128

OOS 11.64

PLANT INSPECTION CHECK SHEET

Metal Working Machines	Woodworking Machines
1. Engine and turret lathes	1. Swing cut-off saws
2. Milling machines	2. Table saws
3. Planers	3. Planers
4. Drill presses	4. Jointers
5. Grinding wheels	5. Band saws

1. Items of Inspection to check on each machine:			
		YES	NO
Point of Operation	a. Is there a point-of-operation guard provided for this machine?		
	b. Does it keep operator's fingers and hands out of the hazard zone?		
	c. Is there any evidence to show that protective devices are being removed?		
	d. Could you design or suggest a more practical, workable guard?		
	e. Could changes be made on the machine which would remove the point-of-operation hazard and increase the work efficiency?		
Power Transmission	f. Are there any exposed gears, sprockets, pulleys, or flywheels?		
	g. Are there any belt or chain drives exposed?		
	h. Are the starting and stopping devices within easy reach?		
	i. If there is more than one operator, are separate controls provided?		
	j. Are there any exposed set screws, key ways, collars, etc.?		

NOTES

STUDENT WORK SHEET

U. S. DEPARTMENT OF LABOR SAFETY TRAINING PROGRAMS

SWS LS-113

OOS 11.64

A LADDER AND STAIRWAY INSPECTION SHEET

Work sheet is to assist in locating and analyzing specific defects and condition of ladders, stairways and scaffolds. Also serves as an aid in making specific recommendations.

Plant:		Department:	
COLUMNS ARE LISTED FOR BRIEF NOTES ON CONDITIONS FOUND DURING INSPECTION			
1. TYPES OF LADDERS BEING USED:	YES	NO	REMARKS What they are used for
Fixed			
Portable Straight			
Extension			
Sectional			
Trestle or "A" Frame			
Step			
Trolley			
Slide-rolling			
Other			

2. DEFECTS IN LADDER	Type Ladder	Location or ladder number	REMARKS condition and recommendation
a. Non-uniform rung spaces?			
b. Too wide or too narrow?			
c. Inadequate clearances?			
d. Handholds lacking?			
e. Cages needed?			
f. Defective condition noted?			
g. Inadequate lock- ing devices?			
h. Safety feet not used?			

3. MAINTENANCE	YES	NO	REMARKS condition and recommendation
a. Are ladders painted?			
b. Inspected regularly?			
c. Marked for identification?			
d. Stored properly?			

NOTES:

4. DEFECTS IN STAIRWAYS to and from area being inspected	YES	NO	REMARKS condition and recommendation
a. Non-uniform riser heights?			
b. Non-uniform tread widths?			
c. Worn or slippery steps?			
d. Nosing missing?			
e. Treads too narrow?			
f. Risers too high?			
g. Stairway too steep?			
h. Insufficient railing?			
i. Railing design correct?			
j. Stairway too long?			
k. Stairway too narrow?			
l. Other			

Note: Stairway lighting is treated later under the subject "Illumination."

Summarize your notes above for each subject or condition noted and write the recommendation in the space provided below as you would present it to management.

1. LADDER DEFECTS NOTED:

2. MAINTENANCE SUGGESTIONS:

3. RECOMMENDATIONS FOR STAIRWAY:

SESSION IV

JOB HAZARD ANALYSIS

CHART	PAGE
IMPORTANCE OF JOB HAZARD ANALYSIS	93
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JOB HAZARD ANALYSIS

<p>IMPORTANCE OF JOB HAZARD ANALYSIS</p>	<p>The fundamentals of accident prevention include: (1) the provision and maintenance of safe working conditions; (2) the use of safe operating procedures and methods; and (3) the training and supervision of employees in the knowledge of safe procedures. Such safe procedures must therefore be developed for the specific work to be done. A job hazard analysis can provide the information needed to eliminate accident causes, to specify the precautions, equipment, tools, devices, or conditions which should be provided and/or used, and the basis for safe operating procedures necessary to training, job instructions, and efficient supervision. Job hazard analysis can be an important tool in the development or guidance of proper safety attitudes.</p>
<p>DEFINITION</p>	<p>Job hazard analysis is the study of work procedures to determine the mechanical or physical hazards which do or could exist and the acts or actions of persons which could result in an accident.</p>
<p>SAFE OPERATING PROCEDURES</p>	<p>Using the information developed in a job hazard analysis, the safe operating procedures--including any requirements for safe conditions or safety equipment--may be developed.</p>
<p>VARYING DEGREES OF THOROUGHNESS</p>	<p>The extent of thoroughness of the analysis often depends upon the amount of time and effort allotted for the study and the intended use of the analysis. This may vary from a cursory review of a job to a complete study of an entire operation.</p>

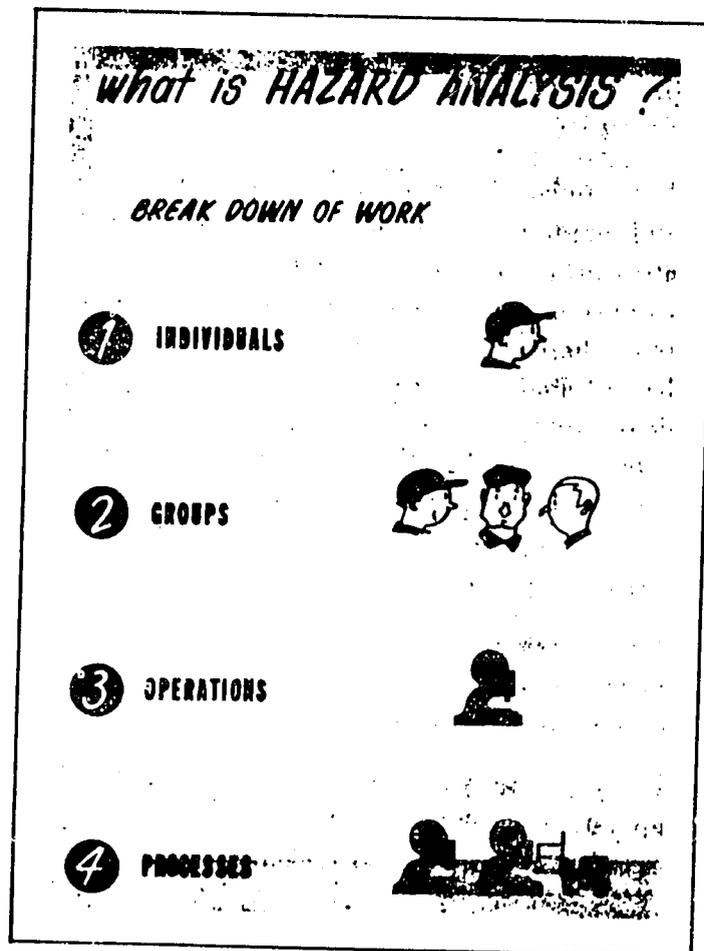


CHART 18

INDIVIDUALS	<p>For some types of trades or jobs with a variety of tasks, it may be practical or necessary to study each individual throughout his day's work. As an example, a maintenance electrician might work on crane motors, switch panels, elevator or hoist motors, cables, and transformer stations all in different types of locations.</p>
GROUPS	<p>Where several people work as a team, each doing similar tasks, the job hazard analysis may be a study of the group activity. Usually the coordination and cooperation of all persons involved would be a determining factor. Two men handling a ladle in a foundry or a crane operator and his signalman would be examples of types of work which might be analyzed on a group basis.</p>

OPERATIONS

If the various departments use similar machines or equipment, it may be found that a study of one or two machine operations will result in safe operating procedures applicable to all other machines of the same kind. In a manufacturing plant having a number of screw machines all making the same product, or grinders doing similar grinding, it might not be necessary to study each machine operation, as an analysis of one would apply to all.

PROCESSES

In chemical, mixing, or batching plants, or other types of processing or manufacturing where operators are few or are located in remote positions, the job hazard analysis may be more concerned with the equipment or mechanical functions than with the individual operators. In such cases, an analysis of the process may be supplemented with "individual" analyses.

THE JOB STEP IS--

An example: To pick up a 2- by 6-inch plank, place it in an upright position, and nail it to a cross beam, using both hands to pick it up. While holding plank in position, which hand takes the nails? the hammer? If nails and hammer are in one hand, how do you transfer to separate hands while holding plank? If hammer and nails are in the hands before picking up the plank, how do you hold the plank safely?

FLOW	Similarly, the flow of materials should be considered to ascertain if the mode, manner, method, or the areas covered can create hazards which would show up in the overall or separate hazard analyses.
REPETITION	This may be considered two ways. First, if there is a repetition of operations (numerous presses, grinders, etc.), this fact would be important in determining which and how many separate analyses should be made. Second, any repetitive type of work which could cause psychological or physical fatigue could be considered as a necessary operation requiring a job hazard analysis.
MACHINE JOBS	A comparison of the number of machine jobs with those primarily of a manual nature may be made against the accident experience to determine the jobs which should be analyzed first. It probably will be found that machine jobs will produce standard operating procedures which may be more easily specified than jobs requiring frequent changes in location or type of work. Another classification may be machine jobs which are incidental to production but not actually a part of the production line. Making dies for presses or grinding tools are examples of such machine jobs.
FLOW CHARTS	Charts showing the flow of materials from receiving to shipping or of the status of construction projects can be very helpful in identifying areas, jobs, or operations to be analyzed, the order in which analyses will be

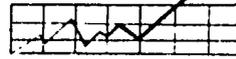
or have been made, and the follow-through of safety operating procedures and supervisory instruction.

STUDY PLAN CLUES

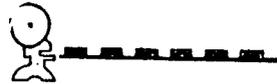
A KNOWN DATA



B INJURY RATES



C REPETITIVE WORK



D INTERFERENCE



E MANUAL HANDLING



F ACCIDENT REPORTS



G SPOILAGE



CHART 20

STUDY PLAN CLUES	<p>Before determining where to start on a program of job hazard analysis, it is practical to review the clues which may give guidance to the areas or jobs most needing such analysis.</p>
KNOWN DATA	<p>The first step to making a job hazard analysis is to gather and assemble all of the presently known data which can be found relating to the same industry: Some companies have developed their own job hazard analysis which may be available on a single copy or loan basis. The curriculum of a joint apprenticeship program provides some guidance. The company itself may have time and motion studies which contain the essential activities of the work process.</p>
INJURY RATES	<p>A review of injury rates for the industry or the specific plant or project may spotlight departments or types of work which produce the highest injury rates and would be likely targets for job hazard analysis.</p>

<p>REPETITIVE WORK</p>	<p>Repetitive jobs, such as punch press operations, tend to become monotonous and result in worker fatigue, hypnosis, or a stroboscopic effect, which could make a worker susceptible to accidents. As such operations are repeated at short intervals, they lend themselves to simple analysis.</p>
<p>INTERFERENCE</p>	<p>If a survey of the operation shows up areas of interference where one kind of work gets in the way of another, or bottlenecks where materials, scrap, or products pile up and interfere with safe operations, it becomes obvious that a job hazard analysis is needed.</p>
<p>MANUAL HANDLING</p>	<p>The analyzer should look for manual handling operations, as these are known to produce accidents and injuries. The possibility here is to produce safe manual handling methods or to determine the mechanical handling methods and equipment necessary to safe operation.</p>
<p>ACCIDENT REPORTS</p>	<p>If there is an accident reporting system (which would be more inclusive than an injury frequency rate tabulation), a review of these reports would indicate the operations, individuals, and departments or trades which should receive priority attention.</p>
<p>SPOILAGE</p>	<p>Spoilage, scrap, and rejects may be indicators of inefficient (unsafe) methods or lack of skill training. By having supervisors report excess of any of these, it may be found that these operations need job hazard analyses.</p>

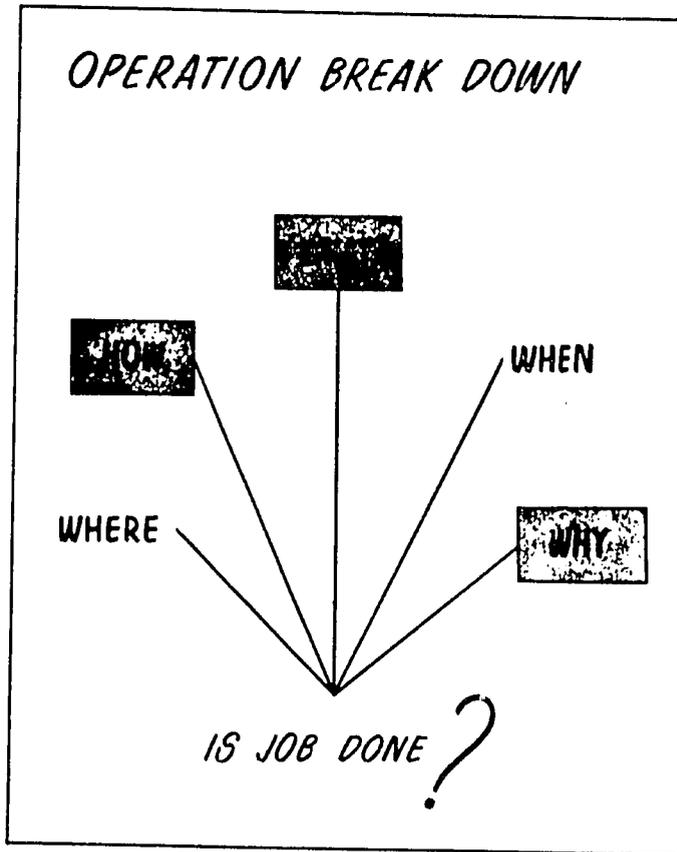


CHART 21

<p>OPERATION BREAKDOWN</p>	<p>The first step in conducting a job hazard analysis is to make a breakdown of the operation or job to determine the various elements. Most of this can be done through interviews, discussions, and reviews with the supervisors and workers.</p>
<p>WHAT?</p>	<p>What is being or will be done is a designation of the specific operation. The extent of detail depends upon the expected result, the complications of the job, or the necessity for variations because of the possibilities of different hazards. For instance, the "what" might be termed engine lathe operator. However, if the type of work involved a variety of products from a small 2½-pound shaft to a 250-pound casting, there might be different designations to indicate the size, weight, or type of work and consequently different job hazard analyses.</p>

HOW?	<p>This is the separation of the job into detailed steps or actions of the person, machine, or equipment which make up the job or process. Some methods used for recording these steps will be discussed further.</p>
WHEN?	<p>The sequence or order in which the various steps or actions are taken may be of utmost importance for safety. The familiar admonition to fasten your seat belt before starting your car--rather than after you are "underway"--is an example of "when."</p>
WHERE?	<p>The location of the person--on a scaffold or ladder, in a crane, on a platform over a tank, etc.--may be of considerable importance in relation to the hazard of the job. It should be noted that on some jobs this item may vary from time to time and each separate location or place may present different types of hazards.</p>
WHY?	<p>This question should be raised throughout the job hazard analysis to determine if the movement or action is necessary and that it is being done in the safest manner. It must be assumed that the person is doing it this way because he was told to, from force of habit, because it seems to be the easiest way, on impulse, or because he was not instructed or required to do it any other way. But this way is not necessarily the safest way.</p> <p>This factor alone may point out the necessity for changing the job method.</p>

[REDACTED]		
STEPS	METHOD	HAZARDS
1		
2		
3		
4		
5		
[REDACTED]		

CHART 22

SIMPLE HAZARD
ANALYSIS FORM

The use of a 2½-gallon fire extinguisher is a good subject for a simple job hazard analysis.

Draw chart on blackboard and fill in, using suggestions from the group--but making certain that the following concept is followed.

<u>STEPS</u>	<u>METHOD</u>	<u>HAZARDS</u>
1. Removing fire extinguisher from hanger.	<p>With right hand, grasp nozzle of extinguisher hose between thumb and forefinger, bending the hose upward to the top of the rim.</p> <p>Holding the nozzle tightly, grasp top rim with other fingers of right hand.</p> <p>Simultaneously, grasp bottom rim on the nearest side with left hand.</p>	<p>Catch fingers of right hand between rim and hanger.</p> <p>Strain from lifting.</p> <p>Dirt or dust from top of extinguisher falls in eyes.</p> <p>Lose grip, causing extinguisher to tip over, discharging.</p>
2. Lower to carrying position.	<p>With both hands, lift extinguisher from hanger, keeping extinguisher upright.</p>	<p>Drop extinguisher on toes.</p>
3. Carrying extinguisher to fire.	<p>Holding extinguisher in upright position close to the body, walk to fire.</p>	<p>Strain from carrying.</p> <p>Trip or slip and fall, drop extinguisher.</p>

RELATED ITEMS
INDICATED

Using only these three steps, an analyst point out related items which need to be sidered before establishing the safe ope procedures. As examples, the following tions could be raised for discussion:

- Step 1. a. What is the height of the pe relationship to the height o mounting of the fire extingui Is it too high for the perso reach it without strain?
- b. Does this person have a thuml forefinger on his right hand
- c. Is there clear access to the tinguisher?
- d. Is the extinguisher enclosed box?
- e. Is there anything piled on top of the extinguisher?
- f. Is there dirt or dust on the ex- tinguisher which should be brushed off first?
- g. Is this the proper type of extin- guisher for the type of fire?
- h. Is the hose flexible so it will not break when bent?
- Step 2. a. Shuld he carry it in front of him using both hands, or lower it carry- ing it in one hand, to have the other hand free and to have a better view of where he is walking?
- b. How far must he carry it to the fire? Should he put the nozzle up before moving the extinguisher or wait un- til ready to discharge it on the fire?
- c. Does he have to carry it up a ladder or stairs?
- d. Is the walking surface uneven?

It will be seen that a simple analysis of how the job is being done must take into account any other safety factor of conditions; right tool or equipment for the job; location or placement of equipment, tools, or controls; personal physical requirements; maintenance of safe condition of the equipment; ability and skill of the worker.

<p>THOROUGH ANALYSIS</p>	<p>A more complete and thorough job hazard analysis form is indicated in the attached appendix, Occupational Safety Aid, "Conducting a Job Hazard Analysis." In contrast with the simple form, this suggests the inclusion of informative data as to the specific operation, location, physical conditions and exposures, and a brief description of the procedures.</p> <p>The chart for recording the analysis provides for separate studies of each hand, the feet, and the body. Also, there are provisions for explanations of high hazard areas, mechanical hazard protection, and recommendations.</p>
<p>TYPE OF FORM</p>	<p>The type of form used is not nearly as important as the extent of analysis, as long as all the pertinent information is obtained and recorded for later study and the development of standard operating procedures and other safety requirements.</p>

Using occupational safety aid, "Conducting a Job Hazard Analysis," review the details described, adding any pertinent suggestions of the class.

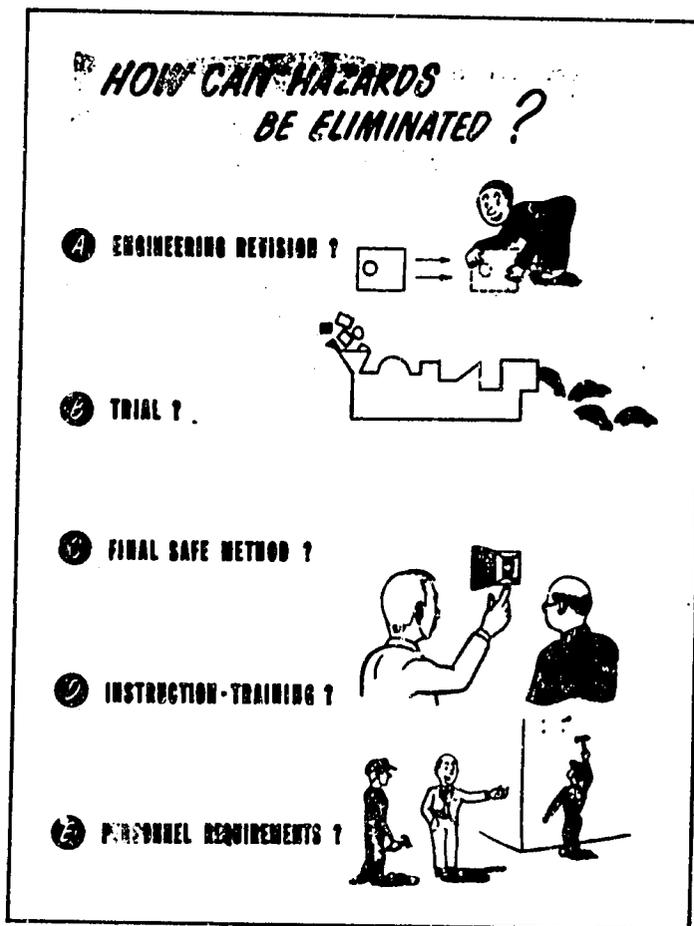


CHART 23

HOW CAN HAZARDS BE ELIMINATED?	
ENGINEERING REVISION	<p>The analysis may indicate the need for engineering revision of the physical layout of machines, equipment, or materials. It may be necessary to change the position or location of machines; to change equipment--such as converting a punch press from manual feed to automatic or semi-automatic feed; to provide a guard or change the design of a guard already in use; to place materials in a different position or in a different shape or kind of container.</p>

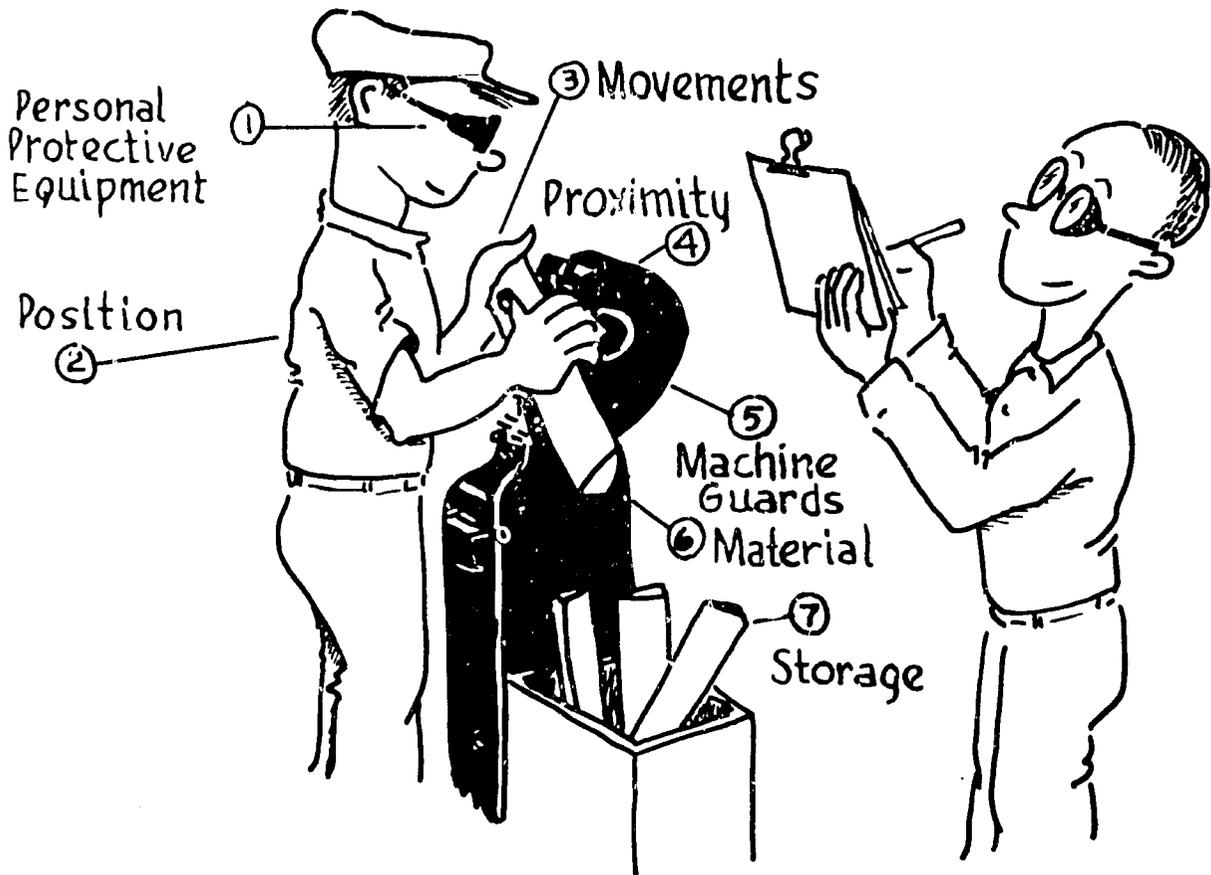
Using the fire extinguisher example, discussed previously, it might be found that the design of the hanger should be changed to permit easier removal of the extinguisher and that the hanger should be placed 6 inches lower to enable all persons to reach the top of the extinguisher.

<p>TRIAL</p>	<p>When any changes are made in methods or equipment, it is necessary that the procedures be followed in the revised method to determine if there have been new or other hazards introduced which were not previously noted or anticipated. The trial should be done with supervision and similar analytical study.</p>
<p>FINAL SAFE METHOD</p>	<p>The final safe method is the objective of the whole job hazard analysis study. This should be written as the standard for the job or process on a step-by-step basis, including illustrations where required, and specifications of equipment, tools, devices, etc. In addition, on any types of work where approvals by supervisory or engineering personnel are required, or where prior inspection, adjustments, or other procedures are necessary and must be checked, or signed off, proper forms should be designed and provided.</p>
<p>INSTRUCTION-TRAINING</p>	<p>Final safe methods may then be used for instructing supervisors; by supervisors for giving instructions and training to employees. Where there is a training department or section, the safe work methods can be used in the preparation of training materials for new employees and those who are given preparatory training for new jobs or assignments.</p>
<p>PERSONNEL REQUIREMENTS</p>	<p>Copies of the final safe work methods should be provided to the personnel division for use in assessing and assigning personnel requirements for vision, height, weight, dexterity, aptitudes, and skills.</p>

To conclude this session, the instructor should conduct a demonstration such as: changing a washer in a water faucet, changing an overhead light bulb, taking down a projection screen. It is preferable that this be done without conversation or description as the class makes a job hazard analysis. It may be necessary to repeat the demonstration, making certain that the same motions and actions are followed.

The participants should then develop a final safe work method—with which all agree—which can then be given a trial and revised if necessary.

CONDUCTING A JOB HAZARD ANALYSIS



U. S. DEPARTMENT OF LABOR
Wage and Labor Standards Administration
Washington, D. C. 20210

Instructions for CONDUCTING A JOB HAZARD ANALYSIS

The prevention of industrial accidents and resulting injuries is accomplished by providing safe surroundings, guarded machines and processes, and safe work methods. While a number of standards have been developed which specify the requirements for safe surroundings and machine guards, there is much to be done in the determination of safe work methods.

The establishment of safe work methods requires a study of the specific job to discover the hazards connected with it, and from this study the development of work methods and necessary protection to make the job safe. These instructions are intended to simplify the job safety analysis through the use of forms designed to produce information regarding the hazards of the job as it is being done.

Before beginning a job safety analysis, it is necessary to define the precise limits of the job. Most jobs can be divided into three sections: Preparation, Operation, Disposal.

Preparation (make ready, setting up) is that part of the job in which the machine, process, tools, etc., are put into order, adjusted, or arranged to do the work.

Operation (doing) is the running of the machine, putting together, or whatever work is done in the actual making of the product or accomplishment.

Disposal (transport) is getting rid of the product of operation so as to continue the operation.

A separate analysis should be made for each phase of the job, involving only the performance within those limits.

USE OF THE FORM

Before filling in the first section of the form, make a general observation of the surroundings and conditions in which the job is performed. Note the items of material, lighting, housekeeping, clothing, and exposures. They may be further clarified later under remarks if they show possible hazards.

The Description of the Procedure should be a summary of the information on the chart following.

The WORK PROCEDURE CHART is divided into nine columns in which the steps of the operation, the actions or movements of the hands, feet, and body, and the exposures to hazard may be shown.

Column 1 (Step) is used as a breakdown of the job procedure to indicate that something new or additional is being done. In the attached example sheet, step 1 (shown in column 4 - right hand), Operator reaches into box, grasps casting, and carries it to grinding wheel; step 2 (column 2 - left hand) grasps left side of casting, pushes casting against wheel; also step 2 (column 4 - right hand) pushes casting against wheel; step 3 (column 2 - left hand) places finished casting in box at left side of machine.

Columns 2 - Left Hand, 4 - Right Hand, 6 - Foot, and 8 - Body, are used for the description of what the body parts are doing. It is suggested that each part be observed separately, following through the entire procedure. It has been found advisable to observe the left hand first, then the right hand, etc. As there may be variations in the operator's method, it is advisable to watch each hand in every step of the operation several times before making final notes.

Columns 3, 5, 7, 9 ^(H) are for indicating those steps in which the body parts are exposed to High Hazard areas. When the left hand, for example, enters an area within 6 inches of cutting tools or blades, gears, belts, shafts, etc., or can be involved in any other hazard, it is so indicated in the column (3) to the right of the description. This part of the form is very important as the observer should note every possibility of accident to each body part.

In Explanation of High Hazard Area, page 5, you should include descriptions of the specific hazards, from columns ^(H), and accidents which may occur. These should contain sufficient details for later use in developing safe work methods. Use symbols to show the steps and body parts involved, such as: "2 LH" for step two, left hand.

Remarks should include all supplementary information which may have some bearing on the procedure or hazards and is not included in the spaces provided.

The section on Mechanical Hazard Protection is designed to reveal the adequacy of protection provided by guards or other protective devices which are furnished; improvements necessary on furnished guards; other guards or devices required to provide the protection desired.

In addition to the above information, a sketch showing relative positions of machines, stock, operator and suggestions, recommendations, and comments of the supervisor and worker should be included.

Several jobs of the same type should be analyzed and a summary made of the recommendations for SAFE WORK METHODS.

JOB SAFETY ANALYSIS FORM

Example:

Operation: Grinding Castings Machine: Pedestal Grinder

Department: Machine shop Material used: Cast iron Lighting: Good

Housekeeping: Fair Clothing: O. K. Exposures: Heat _____, Cold _____,
Oils _____, Fumes _____, Mists _____, Gases _____, Dusts , Other _____

Description of procedure: Operator reaches into metal box, procures casting, places
casting against grinding wheel to grind off burr, places casting in box on left of
Machine.

WORK PROCEDURE CHART

H = High hazard area
H

1	2	3	4	5	6	7	8	9
Step	Left hand	H H	Right hand	H H	Foot	H H	Body	H H
1	----		Reaches into box, grasps casting - carries to wheel	✓	----	✓	----	
2	Grasps left side of casting - pushes casting against wheel	✓	Pushes casting against wheel	✓	----		----	✓
3	Places finished casting in box on side of machine	✓	----		----		----	
4	----		Reaches into box		----		----	

EXPLANATION OF HIGH HAZARD AREAS
shown in work procedure

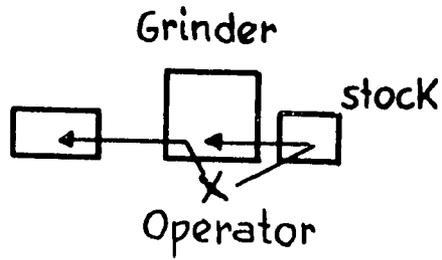
STEP	
1 RH	Strike hand on edge of box or casting - cut hand on burr
1 F	Drop casting on toes
2 LH	Cut hand on burr - strike hand against wheel
2 RH	Cut hand on burr - strike hand against wheel
2 B	Flying sparks, dust, chips - wheel breakage
3 LH	Strike hand against box or castings

REMARKS Operator not wearing gloves, goggles, or safety toe shoes.

MECHANICAL HAZARD PROTECTION

Machine	Point of Operation	Power Transmission	Moving Parts	Other Items to note
Pedestal grinder	Hood design poor	Enclosed-direct	arbor ends	Rest 1/8" from wheel
	Does not cover	Motor drive	Guarded	O. K.
	enough of periphery	O. K.	O. K.	No dust removal system
	of wheel			

SKETCH



RECOMMENDATIONS

1. Leather gloves, goggles, safety toe shoes be worn on this job.
2. Hood be made to conform with standards.
3. Local exhaust system be installed.
4. Improve housekeeping—provide for taking away completed stock.

SESSION V

PROMOTING WORKER INTEREST

CHART		PAGE
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25	STIMULATING WORKER INTEREST	121
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	MATERIAL GAINS	122
	SYMPATHY	122
	PRIDE	122
	RESPONSIBILITY	123
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PROMOTING WORKER INTEREST

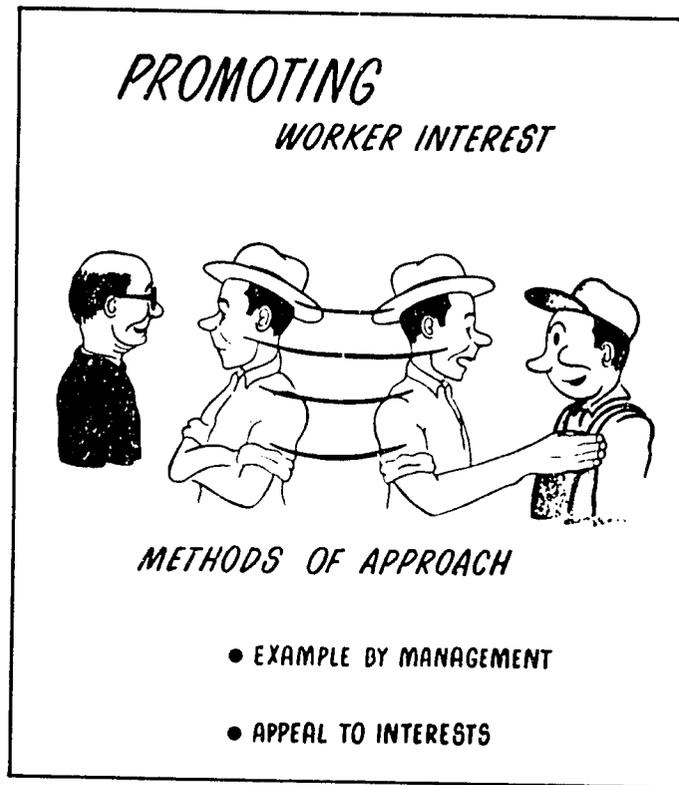


CHART 24

A successful and practical safety program requires teamwork, interest, enthusiasm, and cooperation. To make it succeed, there must be a real desire on the part of all concerned.

MANAGEMENT	Management has the legal and moral responsibility to provide a safe place to work. It has the authority to determine policies, but it must take the lead in efforts to make a safety program successful.
SUPERVISORS	Supervisors have the duty and responsibility of carrying out management instructions by direct contact with workers and other supervisors and by directing the activities in their own department or areas.

They should make sure that all job instructions include safe work methods and practices as part of their regular orders. They should stimulate workers to think about safe work methods and safety devices and they should listen to the workers' suggestions.

WORKERS

Workers are probably least concerned about safety, because they are unaware of hazards. They generally want to take shortcuts (especially on incentive-pay jobs), believing it is the easiest and quickest way. Because they are not in the habit of "thinking safety," they need training, inspiration, constant supervision, and checking.

The worker's first contact with a company, including the personnel or employment department interview and the interview and discussion of the job with his new supervisor, will make a lasting impression upon him. He will be unfavorably impressed by a dirty waiting or interview room, a haphazard interview, or by starting on a job without any orientation. He will be favorably impressed by an orderly employment office, a businesslike, intelligent interview, followed by a discussion on safety policy, and a full introduction to his new surroundings and job.

He should be furnished with the proper safety equipment, instructed in its proper use, and encouraged to make safety and other suggestions. Management should acknowledge these suggestions and if they are not put into practice, the worker should be tactfully told why.

STIMULATING WORKER INTEREST

1 SELF PRESERVATION



2 MATERIAL GAINS



3 SYMPATHY



4 PRIDE



5 RESPONSIBILITY



6 LEADERSHIP



7 LOGIC



CHART 25

STIMULATING WORKER INTEREST: To appeal to the worker's own best interest is a sure-fire way of gaining and holding his attention. Show what safety will do for him, his family, and his chances for advancement. If management is sincere and follows through with an effective, practical safety program, it will hold the worker's interest.

SELF-PRESERVATION

Self-preservation is a natural, animal instinct, but it seems to be losing its power with civilized man and is being replaced by recklessness and chance-taking. To encourage workers to protect themselves, to help them place a value on their lives, stimulate an interest in safety through first-aid training and by displaying goggles, shoes, and hats which have prevented injuries. This will personalize accident

hazards so that unsafe conditions will be seen in terms of potential pain and physical suffering to the worker as well as lowered income and want for his family.

**MATERIAL
GAINS**

By working safely, the worker avoids accidents and personal injury to himself, the temporary loss of wages, or even a subsequent lowering of his earning capacity were he to become permanently injured.

He gains directly by continuing to receive his regular wages without a reduction in pay or having to fall back on his savings. He gains through improved job security for himself and his fellow employees by lowering the costs of injuries, the damages to machinery, products, and equipment, and the loss of production time.

He gains through being eligible for job advancement by having established his capability for added responsibility. His interest in safety will result in his acquiring more knowledge of his job through posters, letters, training, and information on bulletin boards, and letters from his supervisor. The appeal here is to what safety will do for the worker and his interest.

SYMPATHY

The appeal to the sympathy of a worker for his fellowman who may suffer pain and loss due to an injury is worthwhile. This appeal to compassion for his fellowman is an appeal to the worker's sense of humanity, and support of the safety program on this basis can be very effective. A subject of unusual importance, which lends itself well here, is the elimination of "horseplay" at work.

PRIDE

A workman's pride in the quality and quantity of his work can be made a strong incentive in a safety program. Recognition by his supervisors of his craftsmanship and an above-average production can be a very effective stimulus--comparisons with other workers, other groups, other departments, the industry.

The competitive spirit can be used to great advantage. Always remember that safety is as much a vital part of production as is quality or quantity. A job done correctly is a job done safely. The key is quality production with

safety, competition, and recognition.

RESPONSIBILITY

The responsibility of the worker to avoid accidents does not cease at the plant gates as he leaves work for the day. His responsibility to himself, his dependents, his fellow-employees, and his employer during working hours is well understood and accepted. This same responsibility extends to his off-the-job activities--highway, home, and recreation. Generally, the family of a worker who has been injured off-the-job receives less income during the period of his disability than it would had his injury been the result of an industrial accident. Also, the employer suddenly finds himself for a time without the valued services of a skilled worker, so production schedules suffer, as do the earnings of his fellow workers.

LEADERSHIP

Closely akin to the "appeal to pride" is the desire of the average worker for recognition. His desire to feel important, to have an opportunity to prove he can plan and present his ideas, and to assist in carrying them through can be used successfully if he is appointed to serve on safety committees to investigate accidents and to "sell safety" to other workers. His example as a leader is vital to the group effort in accident prevention to obtain active, willing cooperation of workers at all levels in the plant.

LOGIC

Many workers pride themselves on being practical men--oldtimers who have been doing their jobs in a certain way for years. Younger men who have formed unsafe work habits--chance takers, short-cut experts, guard beaters--usually can be sold on safe work practices by actual analyses and demonstrations of the proper work methods through the use of working models and reenactment of actual occurrences versus the new, safe, efficient method.

PROMOTION METHODS

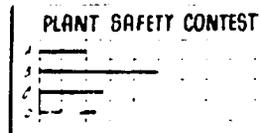
SAFETY COMMITTEE



BULLETIN BOARDS



PUBLICATIONS



CONTESTS

CHART 26

Develop class understanding through discussion of the various safety promotion methods.

SAFETY COMMITTEES

Committees made up of workmen and supervisors under the chairmanship of an elected member are especially valuable in stimulating interest in plant safety programs. The workers bring to the committee that important down-to-earth approach which is gained only after years of practical experience in the plant. The committee members, in turn, provide workers with an intimate knowledge of management's interest in their welfare and a practical, safety know-how developed during their period of service on the committee.

BULLETIN BOARDS	A wide variety of safety material may be presented effectively to plant personnel by means of exhibits, posters, and messages. When properly used, these displays can have considerable value in giving safety information and in promoting safety interest. It must be remembered, however, that to be effective a bulletin board must be kept neat and well lighted and should be changed regularly, preferably once a week.
PUBLICATIONS	House organs or newsletters can be devoted in whole or in part to safety subjects. Humor in publications of this type should be used with discretion. Safety rules in booklet or card form are generally effective if the workers participate in developing such rules.
COMPETITION	Competition is a widely used and useful means of arousing worker interest in safety and can be adapted with equal success in individual plants between crews or departments, or applied on an industrywide or statewide basis. Improvement of the frequency rate is usually the basis of determining the winner. However, in plant competition, particularly, the competition may be based on the length of time a department or individual works without a disabling injury.

Special industry safety programs are developed for State labor departments and trade associations.

SPECIAL INDUSTRY PROGRAMS	Special industry programs require that every opportunity be utilized to provide ideas and methods to assist in setting up safety programs to develop interest in a specific industry. Regular inspections and special visits could be used to set up safety programs. Methods used in other plants, as well as ideas from trade magazines, are other sources of information for a continuing safety promotion plan.
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PARTICIPATION
AND
FOUNDATION
FOR INTEREST

Workers, supervisors, and management will all work to develop their own interest if permitted to participate in a safety program. Keep the program active--advance and publicize each phase of development.

JOB HAZARD
ANALYSIS
TRAINING

Training in job hazard analysis is one of the more important ways to develop worker interest in the safety effort.

Job hazard analysis is a study of work or a process to determine what hazards exist, and the means of eliminating them. It involves a detailed, orderly description done in a one-two-three order for each job or process in terms of duties, tools, methods, and working conditions, with an accurate analysis of the hazards encountered. This should be supplemented by a brief description of personal information, such as age, sex, health, education, and specialized skills if needed. The analysis and job descriptions should be studied by the safety inspector, the plant management, and the safety committee.

These analyses and job descriptions can also be used in the preparation of a special industry program for a particular industry where detailed information is required to develop material for a safety program. Job hazard analysis as the basis for the development of safe operating procedures and conducted with the participation and cooperation of the workers can become the means of determining how the work must be done to accomplish it safely. Through this method, workers can obtain a complete understanding of why the various actions are done in certain ways--which is one of the most important elements of maintaining interest in working safely.

Distribute occupational safety aid, "Promoting Worker Interest."

OCCUPATIONAL SAFETY AID

PROMOTING WORKER INTEREST

A successful safety program requires cooperation, teamwork, interest, and enthusiasm on the part of all employees. Every normal person has a desire to belong to, or be a part of, an organization or a group, and a group that is interested in safety carries that interest to all individuals.

BASIC FACTORS THAT INFLUENCE ACTIONS OF PEOPLE

FEAR OF PERSONAL INJURY

No one wants to be injured. Employees need to be informed as to hazards and told how these hazards can result in injury.

FEAR OF ECONOMIC LOSS

EMPLOYEES need to be advised of the economic losses that result from injuries. Aside from physical suffering due to injuries, there are also wage losses, possible loss of future earning power, and the threat to family well-being and security.

DESIRE FOR REWARD

Everyone appreciates being recognized for his accomplishments. By rewarding workers for good safe work procedures, extended periods of work without injury, and other safety accomplishments, their interest can be aroused and maintained.

U.S. DEPARTMENT OF LABOR
Wage and Labor Standards Administration
Washington, D. C. 20210

DESIRE FOR LEADERSHIP

Some employees have a greater desire and ability for leadership than others. Those who have this specific desire should be used to guide and be examples to others in promoting the safety program.

DESIRE TO EXCEL AND BE OUTSTANDING

This factor can be used in contests of many kinds where individuals and groups can prove that they excel in preventing accidents.

PROTECTION OF OTHERS

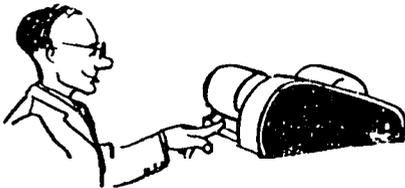
No one wants intentionally or unintentionally to cause injury to a fellow worker or an innocent bystander. Workers need to be shown that if they cause an accident, or set a poor example, it might result in an injury to themselves or to others.

CREATING A FAVORABLE IMPRESSION

Every employee wants approval. Management's sincere appreciation of the work he does is important. A supervisor has a challenge to help men who work for him find satisfaction in working safely. The effort will pay off many times in high morale and production, as well as in safety.

SHOW THEM THE WAY

EXAMPLES BY MANAGEMENT



Any management, regardless of the size of the organization, can eliminate the majority of its work injuries. Most injuries result from a combination of physical hazards and human error which can easily be corrected. The correction of either will usually prevent injury. Top safety performance requires that all physical hazards be reduced to the minimum and every means be taken to control work habits and practices. Suggestions for accomplishing this would include:

1. Providing safe physical, mechanical, and chemical work environment.
2. Providing safe work methods, processes, and procedures.
3. Providing necessary training and qualified supervision.
4. Providing protective devices and equipment.

EXAMPLES BY SUPERVISION



As representatives of management, supervisors are the key to the control of work methods and practices. They can promote safety with the men under them by the example shown in their own attitude toward safety. Some methods used successfully to promote safety are as follows:

1. Giving safety instructions for each job.
2. Setting a good example, by wearing personal protective equipment or clothing, and by following safe procedures.
3. Requiring workers to do jobs safely and to use protective equipment.

EDUCATION AND TRAINING

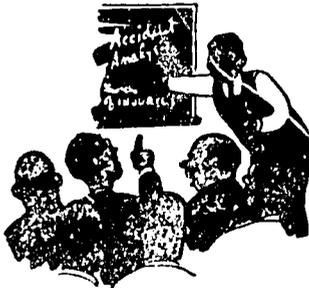


The more you know about safety, the safer you act. The methods and techniques of safety have been developed by trial and error and proved by results achieved. The knowledge of how to reach and maintain top safety performance is available. Training in safe work practices is essential to good work performance. To be effective, a regular program of safety training should be established.

TYPES OF PROMOTION METHODS

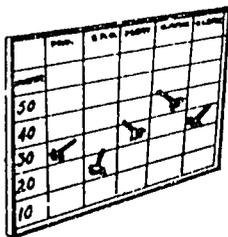
Devices and stunts in great variety are helpful in promoting employee safety interest. Some of the most commonly used are: safety meetings, safety contests, suggestion systems, bulletin boards, publications, signs and slogans.

1. SAFETY MEETINGS



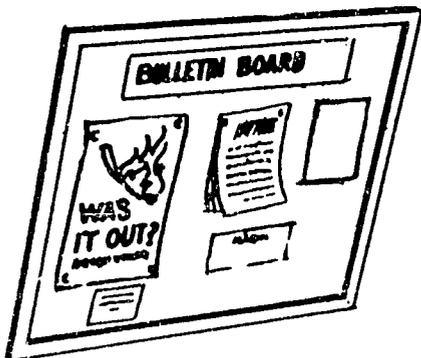
Meetings are so widely used as to be considered essential to an effective safety program. A great variety of interest-getting stunts (each carrying a safety message), safety playlets, talks, demonstrations and the like, are used to liven up meetings. They are helpful if properly used and not overdone.

2. SAFETY CONTESTS



One of the oldest and most widely used means of promoting safety interest and effort is the safety contest. It is extremely important that contest rules be clear and definite, and as fair as possible to all contestants. The purpose of the contest must never be forgotten. The greatest accomplishment comes from the progress made by the non-winners in improving their own safety performance.

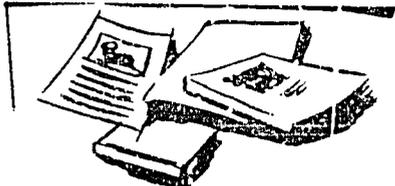
3. BULLETIN BOARDS



Every establishment, regardless of size, should have one or more bulletin boards. It is important that the board be well made, attractive, well finished, and properly maintained.

1. Material should be arranged neatly, and outdated material removed regularly.
2. Posters and notices should be rotated often.
3. Lighting should be good.
4. The boards should be located where they can be easily seen by all employees.

4. PUBLICATIONS



House organs are valuable for providing safety material when it is newsy, interesting, and suitably written. Material should be timely, and pertinent to conditions. Humorous illustrations should make a point. Photographs of hazardous situations and of persons with safety accomplishments are valuable.

5. SIGNS AND SLOGANS



These are widely used to promote safety. Properly used, they give an instant message emphasizing an attitude of readiness to do everything possible to prevent work injuries. They should be:

1. Simple
2. Definite as to meaning
3. Eye catching