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ACCIDENT ANALYSIS AGENDA

8:30

Introduction

- Objectives
- Action Plan
- What is an Accident?

Establishing Written Accident Analysis Program

- Purpose
- Definitions
- Responsibilities
- Program Activities

Steps of Accident Analysis

- (1) Information gathering
- (2) Analysis & Conclusions

Causal Factors

- (1) Management / Process Failure
- (2) Environment
- (3) Material
- (4) Task
- (5) Human Factor (Personal)

11:30

LUNCH

12:30

Steps of Accident Analysis (continued)

- (3) Recommendations
- (4) Written report

Proactive Utilization of Data

- Gather information
- Evaluate data for trends
- Draw conclusions
- Make recommendations
- Take action

Review Content / Questions and Answers

4:30

DISMISS

ACCIDENT ANALYSIS OBJECTIVES

Upon completion of this course, participants will be able to:

- Perform a thorough occupational accident analysis , using basic information and tools,
- Establish or improve their company's (or department's) accident analysis written program,
- Identify the essential elements of an effective accident analysis and how to implement them,
- Recognize the five primary causal factors of accidents,
- List the four action steps in analyzing accidents,
- Use analytic techniques, as a result of hands-on activities during class, and
- Analyze the use of comprehensive accident analyses to prevent and/or minimize the occurrence of future occupational accidents, injuries and illnesses.

Accident Analysis

Follow-up Activities

- Formed an accident analysis kit at my workplace
- Researched injury and accident statistics (incident rates, OSHA logs, types of accidents) at my workplace and identified problem areas.
- Performed a job analysis to identify, quantify, and document the risk factors of a particular job.
- Implemented control measures (engineering or administrative) for the risk factors that have been identified.
- Performed a job safety analysis for my facility or work area.
- Presented a one hour safety presentation on our Accident Analysis process.
- Establish a written program.

Activity Plan

	Activity	Other people involved	Target Deadline
<input type="checkbox"/>			

Resources Available from the Division of Safety & Hygiene (DSH) Libraries

(800) 644-6292 (614) 466-7388

library@bwc.state.oh.us

www.ohiobwc.com

Safety training:

- Safety talks, outlines and scripts - DSH Safety leader's discussion guide, Training Center's One-hour safety presentations, reference books, web resources
- Videos – hundreds of safety and health topics
- Books and articles on training techniques

Machine and equipment safety:

- Safety standards (ANSI, NFPA, CGA)
- Books and articles on power presses, material handling equipment, lockout/tagout, etc.

Sample written programs:

- DSH program profiles and sample written programs
- Reference books
- Internet resources

Illness and injury statistics:

- Statistics from the U.S. Bureau of Labor Statistics
- National Safety Council's *Injury Facts*
- National Institute of Occupational Safety & Health (NIOSH) studies

Hazard communication and chemical safety:

- Chemical safety information
- Material safety data sheets (MSDSs)
- Sample written programs
- Videos
- Internet resources

Safety standards

- American National Standards Institute (ANSI) standards (including standards for construction, machinery and equipment, personal protective equipment)
- National Fire Protection Association (NFPA) fire codes (including the Life Safety Code and the National Electrical Code)
- Compressed Gas Association (CGA) standards

Other topics of interest (books, articles, magazines, videos and standards):

- Confined spaces
- Electrical safety
- Job safety analysis
- New employee orientation
- Powered industrial trucks
- Respiratory protection
- Safety culture
- Scaffolds

Directories and lists of vendors of safety equipment

Occupational Safety & Health Administration (OSHA) regulations

Manual of Uniform Traffic Control Devices (MUTCD)

Recommendations of useful Internet sites

BWC publications

**INTERNET WEB SITES
FOR
OCCUPATIONAL SAFETY & HEALTH INFORMATION
April 2005**

GENERAL

NATIONAL SAFETY COUNCIL (NSC)

<http://www.nsc.org/>

The NSC has a user friendly web site for innovative and current information on home, farm and community, on the road and workplace safety and as well statistical data and charts.

NORTH DAKOTA WORKFORCE SAFETY & INSURANCE

<http://www.workforcesafety.com/>

For workplace safety, North Dakota's WSI site puts forth their "safe operating procedures" page where they give information on accident and near miss reports, substance abuse, material handling and storage, walking and working surfaces, and safety program development and orientation.

OCCUPATIONAL & INDUSTRIAL SAFETY RESOURCES

<http://www.khake.com/page59.html>

Maintained by a Vocational Information Center, this web site provides links to occupational and industrial safety with lists of directories, national centers, hotlines and help lines as well as specific area coverage such as emergency, disaster and natural hazards, and tool, machine and equipment safety options.

OKLAHOMA STATE UNIVERSITY

<http://www.pp.okstate.edu/ehs/>

The Department of Environmental Health & Safety at OSU offers an online safety resource library that is constantly being updated with topics from A-Z including specific areas of safety such as fire, construction, HAZCOM and training. Go to the "Links Library" option.

SAFETY DIRECTORY

<http://www.safetydirectory.com/>

Safety Directory.com is an Internet gateway to occupational health & safety sites. This web site is indexed with information on industry specific topics, training, illness and injury, as well as safety publications and resources.

FEDERAL GOVERNMENT

CENTERS FOR DISEASE CONTROL & PREVENTION (CDC)

<http://www.cdc.gov/>

The CDC is always a good resource for current medical issues throughout the United States. Health topics from A-Z give an in-depth look at most communicable diseases as well as topics such as safe driving, violence, and air pollution, and workplace safety and health topics.

FEDERAL EMERGENCY MANAGEMENT ASSOCIATION (FEMA)

<http://www.fema.gov/>

For up-to-date information on active disasters and emergencies nationwide access this web site first. Publications include options for emergency preparedness and prevention, response and recovery, disaster fact sheets, and public awareness information.

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY & HEALTH (NIOSH)

<http://www.cdc.gov/niosh/homepage.html>

NIOSH's web site provides current information on many services as well as safety research, including ergonomics programs, respirators, and mining safety. At the chemical page you will find databases and other helpful resources, information on personal protective equipment, as well as government agency web sites of interest.

OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA)

<http://www.osha.gov>

OSHA'S official web site includes media releases, online publications, statistics, standards & directives, "Technical Links," training center courses, "hot topics," and "what's new" as well a very useful A-Z index page.

INTERNATIONAL RESOURCES

HEALTH & SAFETY EXECUTIVE (HSE)

<http://www.hse.gov.uk/>

The United Kingdom has an international safety web site with a good deal to offer on occupational safety & health. Drop down boxes offer A-Z industry information, health and safety topics, tools, research, as well as publications and statistics.

ERGNET

<http://www.sunderland.ac.uk/~ts0qli/ergnet.htm>

The University of Sunderland in the UK is an international web site directory of "places for ergonomics and human factors". Featuring lists of sources such as societies, organizations, government bodies, institutes, centers and laboratories, this site also gives links to journals, a research database and other general ergonomic sites.

OHIO

OHIO EPA (OEPA)

<http://www.epa.state.oh.us>

At the official web site for Ohio's Environmental Protection Agency; use the "Topic Index" to find regulations and information on permits, hazardous waste, pollution prevention, wastewater, wetlands, and much more.

OHIO STATE LIBRARY/OHIOLINK

<http://winslo.state.oh.us>

At **OhioLink**, a statewide library and information network, you can search the State Library of Ohio's collection for the BWC's Division of Safety & Hygiene library books as well as other Ohio College and university library collections. Also available at this web site are searchable versions of Ohio Administrative laws and rules, electronic databases, and other Ohio library directories.

SPECIFIC (BY SUBJECT)

CONSTRUCTION

<http://www.cdc.gov/elcosh/index.html>

CDC's **eLCOSH** is a comprehensive library of construction-related safety information presented in both English and Spanish with items listed under trade, hazard, job site, and others. Also see: The Construction Industry Safety Council, a Center to Protect Workers' Rights resource center at <http://www.buildsafe.org/RSC.htm> for OSHA publications in PDF and hazard alerts.

ERGONOMICS

<http://www.ergoweb.com>

ERGOWEB provides current information on ergonomics and human factor science. Offered are: research, case studies, reference material and a forum for questions, answers and discussion.

LABORATORY SAFETY

<http://safety.science.tamu.edu/>

Texas A&M University College of Science is an optional choice for safety in the laboratory information. From hazard identification to waste disposal this web site offers thorough coverage of laboratory safe practices.

MATERIAL SAFETY SHEETS

<http://www.ilpi.com/msds/index.html>

This web site offers many solutions for finding MSDS (100 free sites) as well as chemical manufacturers and suppliers, pesticides including fertilizers, government sites, and other miscellaneous locations for chemical data. Also check any toxicological effects at <http://www.atsdr.cdc.gov/toxprofiles/> and health and safety information on household chemical ingredients at <http://householdproducts.nlm.nih.gov/>.

MOTOR CARRIER SAFETY PROGRAMS

<http://www.fmcsa.dot.gov/safetyprogs/saftprogs.htm>

The Federal Motor Carrier Safety Administration (FMCSA), an administration within the U.S. Department of Transportation, regulates and supports the Nation's interstate commercial carrier industry. The FMCSA web page offers several safety programs in PDF format such as brake safety, fatigue, HAZMAT safety, speed management, sharing the road safely, and other insurance and licensing information.

RADIATION

<http://www.physics.isu.edu/radinf/>

The Radiation Information Network offers a web site that is in-depth with information on radiation topics and issues. In addition to what's new in the field and general information there are regulatory, organizational and society links as well as research and educational resources available to access.

SAFETY STATISTICS

<http://stats.bls.gov/>

Occupational health and safety statistics by industry and occupation can be researched for injuries, illnesses, and fatality data at this web site starting with the "Overview of BLS Statistics on Worker Safety and Health" page.

SAFETY BRIEFINGS, MANUALS, PRODUCTS & PROGRAMS

OSHA POWERPOINT SAFETY PRESENTATIONS

<http://esf.uvm.edu/siript/powerpt.html>

An extensive safety PowerPoint presentation library is available at this web site featuring A-Z topics such as accident investigations, bomb threats, chemical spills, construction, electrical, hand tools, emergency response, fire safety, forklifts, JSA, laser, OSHA compliance, PPE, razor knife safety, safe lifting, and many more.

SAFETY PUBLICATIONS & VIDEO RESOURCES

<http://www.cbs.state.or.us/external/osha/standards/pub.htm>

A valuable resource for safety resources, the Oregon State's Department of Consumer and Business Publications web site is packed with downloadable information. Areas covered are agriculture, asbestos abatement, occupational exposures, HAZCOM, HAZMAT, HAZWOPER, safety practices, writing manuals and programs, tools of the trade, workers' compensation and ergonomics.

Ohio Bureau of Workers' Compensation, Div. of Safety & Hygiene Library
30 W. Spring St., L-3, Columbus, OH 43215-2256
(800) 644-6292, press option 2 - 2
(614) 466-7388/ (614) 644-9634 (fax)
E-Mail: library@bwc.state.oh.us

Saving You Time and Research

Requests for copies of OSHA standards, information on starting a safety committee, a video on accident investigation techniques -- these are some of the thousands of inquiries BWC's Division of Safety & Hygiene (DSH) libraries receive each year.

DSH has two libraries to serve you:

- The central library in the William Green Building in downtown Columbus;
- The resource center and video library located at the Ohio Center for Occupational Safety and Health (OCOSH) in Pickerington.

Both libraries are open 8 a.m. to 4:45 p.m., Monday through Friday. Your need for information does not require a visit to the library. You can phone, fax, or e-mail your requests and receive a quick response.

The central library provides free information services on the topics of occupational safety and health, workers' compensation and rehabilitation.

The OCOSH resource center provides similar services for those who visit OCOSH for meetings and training center classes.

Students from the DSH training center can use the services and collections of the libraries to assist with the completion of their course **follow-up activities**. The librarians have recommended a variety of resources for the follow-up activities and are available to answer questions and provide assistance.

The video library offers an extensive collection of videotapes to supplement your organization's safety and health training program. It is a convenient and popular source for Ohio employers to borrow quality occupational safety- and health-related training aids.

Visit our Web site at **www.ohiobwc.com**.

Central library
30 W. Spring St., Third Floor
Columbus OH 43215-2256
1-800-OHIOBWC
(614) 466-7388
(614) 644-9634 (fax)
library@bwc.state.oh.us

OCOSH resource center
13430 Yarmouth Drive
Pickerington OH 43147
1-800-OHIOBWC
Resource center (614) 728-6464
Video library (614) 644-0018

ACTION PLAN

Your Name _____ Company _____

Agenda Item	Action Step
Why do we do Accident Analysis?	
Written Analysis Procedures	
Causal Factors	
Steps of Accident Analysis	
Proactive Utilization of Data	
Training Analysts	
Other	

ACCIDENT ANALYSIS TERMINOLOGY

ACCIDENT - An unplanned event that interrupts the completion of an activity, and that may (or may not) include injury, illness, or property damage. (also - incident, near miss)

ACCIDENT ANALYSIS - The collection of all pertinent information through interviews, past records, on-site inspection, etc. that helps identify all causes of an accident. Part of accident analysis is the determination and implementation of appropriate corrective action.

ACCIDENT ANALYST - Someone who is held responsible for conducting analyses . One who has been trained in the purpose and effective methods of accident analysis.

ACCIDENT RECORDKEEPING - The documentation of recordable accidents as required under federal law. (a.k.a. OSHA recordkeeping)

AGENCY - The object or substance which was directly involved in the accident.

CATASTROPHE - Accidents resulting in one or more fatalities, or the hospitalization of three or more employees.

CHARGE BACK SYSTEM - A department or location is charged a specified amount of the insurance premium based on its percentage of the total incident or accident cost.

CLAIMS MANAGEMENT - The process of maintaining an active role to insure speedy recovery and return to work.

COMPENSATION PAID - The payment of lost wages and benefits, excluding medical, paid to the claimant or claimant's dependent.

DIRECT COST - Wage compensation, benefits, and medical costs paid as the result of an accident.

EMPLOYEE BODY POSITION / ACTIVITY - The body position required by an activity that relates to an accident, injury, or illness.

EMPLOYEE TASK - The specific task performed by the employee.

ERGONOMICS - The science that seeks to adapt work or working conditions to the worker.

EXPENSE - The cost of an accident incurred as a result of damage, repair, outsourcing contracting, production loss.

FACTOR(S) - Any behavior, condition, act, or negligence without which the accident would not have happened, can be simultaneous or sequential.

FIRST AID - The administering of minor medical attention, usually not covered by insurance.

INCIDENT - An unplanned event that interrupts the completion of an activity without directly involving the worker(s). Something that happens as a result of and in connection with something more important.

INDIRECT COST - Costs, other than direct costs, related to an accident, usually not covered by insurance.

MEDICAL EXPENSES - The payment of medical costs related to an accident.

NATURE OF INJURY / ILLNESS - The result of an occupational accident / illness to the physical condition or health of the worker. (examples: amputation; fracture; strain; sprain; carpal tunnel syndrome)

NEAR-MISS - An unplanned event that interrupts the completion of an activity which directly involves the worker(s).

OCCUPATIONAL ILLNESS - Any abnormal condition or disorder caused by exposure to environmental factors associated with employment, whether due to acute (short) or chronic (long) exposures.

OCCUPATIONAL INJURY - An injury which results from an exposure involving an incident in the work environment.

OPERATION LOCATION - Where the work is being performed.

OPERATION TASK - The specific operation being performed.

OUTSOURCING CONTRACTING - Outsourcing work requiring specialized skills such as repairing underground utilities or electrical work.

PART OF BODY AFFECTED - Exact area of the body damaged as the result of an occupational injury / illness. (examples: right eye, left leg, multiple body parts)

PRE-ACCIDENT PLAN - An existing plan of action set up to respond in the event of an accident. Elements of such a program include:

- an alarm system to warn other employees;

- procedures to save lives directly involved with the accident scene (i.e. first aid, transfer to medical facility);
- procedures for protecting lives or property from further loss;
- procedures to assure timely analyses ; and
- (suggested) procedures to provide assistance to employees suffering reaction to an accident - employee assistance program

PRECEDING SITUATION OR EVENT - Important event(s) occurring just prior to an accident injury, or illness. These may be considered as triggering events, situations, or circumstances necessary for the accident to occur.

PRODUCTION LOSS - Examples are damaged machinery, equipment, tools out of service, damaged product, disrupted project schedule.

RECONSTRUCT - To recreate, using available evidence, events and conditions leading to and including the accident. This will help identify the cause or causes of the accident. Special precautions should be taken to prevent the accident from being repeated.

RESERVES - The total amount of money set aside to pay future medical and /or compensation awards over the life of the claim.

SUPERVISION - The management of a company, or a designated representative.

TEMPORARY WORKER REPLACEMENT - Replacing the injured worker with a temporary worker, or breaking in a new worker.

TIME LOSS MEASUREMENT - The time away from the job, computed in days, hours, and minutes. Minutes are recorded in 15-minute increments, such as 15 minutes, 30 minutes, 45 minutes, and 60 minutes, which would roll over to the hour.

TYPE OF ACCIDENT - The general type of accident that occurred. (examples: fall to the same or different level; caught in, on, or between; struck by; strike against)

WAGE - Payment for services to a worker. Examples could be hourly, daily, weekly, monthly, or by the piece.

WITNESS - A person who can contribute information about an accident. Someone involved in the chain of events leading to an accident, someone involved in the post-accident scene, or others who perform the same job, as examples.

OSHA Forms for Recording Work-Related Injuries and Illnesses

What's Inside...

In this package, you'll find everything you need to complete OSHA's *Log* and the *Summary of Work-Related Injuries and Illnesses* for the next several years. On the following pages, you'll find:

- ▼ **An Overview: Recording Work-Related Injuries and Illnesses** — General instructions for filling out the forms in this package and definitions of terms you should use when you classify your cases as injuries or illnesses.
- ▼ **How to Fill Out the Log** — An example to guide you in filling out the *Log* properly.
- ▼ **Log of Work-Related Injuries and Illnesses** — Several pages of the *Log* (but you may make as many copies of the *Log* as you need.) Notice that the *Log* is separate from the *Summary*.
- ▼ **Summary of Work-Related Injuries and Illnesses** — Removable *Summary* pages for easy posting at the end of the year. Note that you post the *Summary* only, not the *Log*.
- ▼ **Worksheet to Help You Fill Out the Summary** — a worksheet for figuring the average number of employees who worked for your establishment and the total number of hours worked.
- ▼ **OSHA's 301: Injury and Illness Incident Report** — Several copies of the OSHA 301 to provide details about the incident. You may make as many copies as you need or use an equivalent form.

Take a few minutes to review this package. If you have any questions, visit us online at www.osha.gov or call your local OSHA office. We'll be happy to help you.



An Overview: Recording Work-Related Injuries and Illnesses

The Occupational Safety and Health (OSHA) Act of 1970 requires certain employers to prepare and maintain records of work-related injuries and illnesses. Use these definitions when you classify cases on the Log. OSHA's recordkeeping regulation (see 29 CFR Part 1904) provides more information about the definitions below.

The *Log of Work-Related Injuries and Illnesses* (Form 300) is used to classify work-related injuries and illnesses and to note the extent and severity of each case. When an incident occurs, use the *Log* to record specific details about what happened and how it happened. The *Summary* — a separate form (Form 300A) — shows the totals for the year in each category. At the end of the year, post the *Summary* in a visible location so that your employees are aware of the injuries and illnesses occurring in their workplace.

Employers must keep a *Log* for each establishment or site. If you have more than one establishment, you must keep a separate *Log* and *Summary* for each physical location that is expected to be in operation for one year or longer.

Note that your employees have the right to review your injury and illness records. For more information, see 29 Code of Federal Regulations Part 1904.35, *Employee Involvement*.

Cases listed on the *Log of Work-Related Injuries and Illnesses* are not necessarily eligible for workers' compensation or other insurance benefits. Listing a case on the *Log* does not mean that the employer or worker was at fault or that an OSHA standard was violated.

When is an injury or illness considered work-related?

An injury or illness is considered work-related if an event or exposure in the work environment caused or contributed to a condition or significantly aggravated a preexisting condition. Work-relatedness is

presumed for injuries and illnesses resulting from events or exposures occurring in the workplace, unless an exception specifically applies. See 29 CFR Part 1904.5(b)(2) for the exceptions. The work environment includes the establishment and other locations where one or more employees are working or are present as a condition of their employment. See 29 CFR Part 1904.5(b)(1).

Which work-related injuries and illnesses should you record?

Record those work-related injuries and illnesses that result in:

- ▼ death,
- ▼ loss of consciousness,
- ▼ days away from work,
- ▼ restricted work activity or job transfer, or
- ▼ medical treatment beyond first aid.

You must also record work-related injuries and illnesses that are significant (as defined below) or meet any of the additional criteria listed below.

You must record any significant work-related injury or illness that is diagnosed by a physician or other licensed health care professional. You must record any work-related case involving cancer, chronic irreversible disease, a fractured or cracked bone, or a punctured eardrum. See 29 CFR 1904.7.

What are the additional criteria?

You must record the following conditions when they are work-related:

- ▼ any needlestick injury or cut from a sharp object that is contaminated with another person's blood or other potentially infectious material;
- ▼ any case requiring an employee to be medically removed under the requirements of an OSHA health standard;
- ▼ tuberculosis infection as evidenced by a positive skin test or diagnosis by a physician or other licensed health care professional after exposure to a known case of active tuberculosis.

What is medical treatment?

Medical treatment includes managing and caring for a patient for the purpose of combating disease or disorder. The following are not considered medical treatments and are NOT recordable:

- ▼ visits to a doctor or health care professional solely for observation or counseling;
- ▼ diagnostic procedures, including administering prescription medications that are used solely for diagnostic purposes, and
- ▼ any procedure that can be labeled first aid. (See below for more information about first aid.)

What do you need to do?

1. Within 7 calendar days after you receive information about a case, decide if the case is recordable under the OSHA recordkeeping requirements.
 2. Determine whether the incident is a new case or a recurrence of an existing one.
 3. Establish whether the case was work-related.
 4. If the case is recordable, decide which form you will fill out as the injury and illness incident report.
- You may use *OSHA's 301: Injury and Illness Incident Report* or an equivalent form. Some state workers compensation, insurance, or other reports may be acceptable substitutes, as long as they provide the same information as the OSHA 301.

How to work with the Log

1. Identify the employee involved unless it is a privacy concern case as described below.
2. Identify when and where the case occurred.
3. Describe the case, as specifically as you can.
4. Classify the seriousness of the case by recording the **most serious outcome** associated with the case, with column J (Other recordable cases) being the least serious and column G (Death) being the most serious.
5. Identify whether the case is an injury or illness. If the case is an injury, check the injury category. If the case is an illness, check the appropriate illness category.





What is first aid?

If the incident required only the following types of treatment, consider it first aid. Do NOT record the case if it involves only:

- ▼ using non-prescription medications at non-prescription strength;
- ▼ administering tetanus immunizations;
- ▼ cleaning, flushing, or soaking wounds on the skin surface;
- ▼ using wound coverings, such as bandages, BandAids™, gauze pads, etc., or using SteriStrips™ or butterfly bandages.
- ▼ using hot or cold therapy;
- ▼ using any totally non-rigid means of support, such as elastic bandages, wraps, non-rigid back belts, etc.;
- ▼ using temporary immobilization devices while transporting an accident victim (splints, slings, neck collars, or back boards).
- ▼ drilling a fingernail or toenail to relieve pressure, or draining fluids from blisters;
- ▼ using eye patches;
- ▼ using simple irrigation or a cotton swab to remove foreign bodies not embedded in or adhered to the eye;
- ▼ using irrigation, tweezers, cotton swab or other simple means to remove splinters or foreign material from areas other than the eye;
- ▼ using finger guards;
- ▼ using massages;
- ▼ drinking fluids to relieve heat stress

How do you decide if the case involved restricted work?

Restricted work activity occurs when, as the result of a work-related injury or illness, an employer or health care professional keeps, or recommends keeping, an employee from doing the routine functions of his or her job or from working the full workday that the employee would have been scheduled to work before the injury or illness occurred.

How do you count the number of days of restricted work activity or the number of days away from work?

Count the number of calendar days the employee was on restricted work activity or was away from work as a result of the recordable injury or illness. Do not count the day on which the injury or illness occurred in this number. Begin counting days from the day after the incident occurs. If a single injury or illness involved both days away from work and days of restricted work activity, enter the total number of days for each. You may stop counting days of restricted work activity or days away from work once the total of either or the combination of both reaches 180 days.

Under what circumstances should you NOT enter the employee's name on the OSHA Form 300?

You must consider the following types of injuries or illnesses to be privacy concern cases:

- ▼ an injury or illness to an intimate body part or to the reproductive system,

- ▼ an injury or illness resulting from a sexual assault,
- ▼ a mental illness,
- ▼ a case of HIV infection, hepatitis, or tuberculosis,
- ▼ a needlestick injury or cut from a sharp object that is contaminated with blood or other potentially infectious material (see 29 CFR Part 1904.8 for definition), and
- ▼ other illnesses, if the employee independently and voluntarily requests that his or her name not be entered on the log.

You must not enter the employee's name on the OSHA 300 Log for these cases. Instead, enter "privacy case" in the space normally used for the employee's name. You must keep a separate, confidential list of the case numbers and employee names for the establishment's privacy concern cases so that you can update the cases and provide information to the government if asked to do so.

If you have a reasonable basis to believe that information describing the privacy concern case may be personally identifiable even though the employee's name has been omitted, you may use discretion in describing the injury or illness on both the OSHA 300 and 301 forms. You must enter enough information to identify the cause of the incident and the general severity of the injury or illness, but you do not need to include details of an intimate or private nature.

What if the outcome changes after you record the case?

If the outcome or extent of an injury or illness changes after you have recorded the case, simply draw a line through the original entry or if you wish, delete or white-out the original entry. Then write the new entry where it belongs. Remember, you need to record the most serious outcome for each case.

Classifying injuries

An injury is any wound or damage to the body resulting from an event in the work environment.

Examples: Cut, puncture, laceration, abrasion, fracture, bruise, contusion, chipped tooth, amputation, insect bite, electrocution, or a thermal, chemical, electrical, or radiation burn. Sprain and strain injuries to muscles, joints, and connective tissues are classified as injuries when they result from a slip, trip, fall or other similar accidents.



Classifying illnesses

Skin diseases or disorders

Skin diseases or disorders are illnesses involving the worker's skin that are caused by work exposure to chemicals, plants, or other substances.

Examples: Contact dermatitis, eczema, or rash caused by primary irritants and sensitizers or poisonous plants; oil acne; friction blisters, chrome ulcers; inflammation of the skin.

Respiratory conditions

Respiratory conditions are illnesses associated with breathing hazardous biological agents, chemicals, dust, gases, vapors, or fumes at work.

Examples: Silicosis, asbestosis, pneumonitis, pharyngitis, rhinitis or acute congestion; farmer's lung, beryllium disease, tuberculosis, occupational asthma, reactive airways dysfunction syndrome (RADS), chronic obstructive pulmonary disease (COPD), hypersensitivity pneumonitis, toxic inhalation injury, such as metal fume fever, chronic obstructive bronchitis, and other pneumoconioses.

Poisoning

Poisoning includes disorders evidenced by abnormal concentrations of toxic substances in blood, other tissues, other bodily fluids, or the breath that are caused by the ingestion or absorption of toxic substances into the body.

Examples: Poisoning by lead, mercury, cadmium, arsenic, or other metals; poisoning by carbon monoxide, hydrogen sulfide, or other

When must you post the Summary?

You must post the Summary only — not the Log — by February 1 of the year following the year covered by the form and keep it posted until April 30 of that year.

How long must you keep the Log and Summary on file?

You must keep the Log and Summary for 5 years following the year to which they pertain.

Do you have to send these forms to OSHA at the end of the year?

No. You do not have to send the completed forms to OSHA unless specifically asked to do so.

How can we help you?

If you have a question about how to fill out the Log,

- visit us online at www.osha.gov or
- call your local OSHA office.



Optional

Calculating Injury and Illness Incidence Rates

What is an incidence rate?

An incidence rate is the number of recordable injuries and illnesses occurring among a given number of full-time workers (usually 100 full-time workers) over a given period of time (usually one year). To evaluate your firm's injury and illness experience over time or to compare your firm's experience with that of your industry as a whole, you need to compute your incidence rate. Because a specific number of workers and a specific period of time are involved, these rates can help you identify problems in your workplace and/or progress you may have made in preventing work-related injuries and illnesses.

How do you calculate an incidence rate?

You can compute an occupational injury and illness incidence rate for all recordable cases or for cases that involved days away from work for your firm quickly and easily. The formula requires that you follow instructions in paragraph (a) below for the total recordable cases or those in paragraph (b) for cases that involved days away from work, and for both rates the instructions in paragraph (c).

(a) To find out the total number of recordable injuries and illnesses that occurred during the year, count the number of line entries on your OSHA Form 300, or refer to the OSHA Form 300A and sum the entries for columns (G), (H), (I), and (J).

(b) To find out the number of injuries and illnesses that involved days away from work, count the number of line entries on your OSHA Form 300 that received a check mark in column (H), or refer to the entry for column (H) on the OSHA Form 300A.

(c) The number of hours all employees actually worked during the year. Refer to OSHA Form 300A and optional worksheet to calculate this number.

You can compute the incidence rate for all recordable cases of injuries and illnesses using the following formula:

Total number of injuries and illnesses *Number of hours worked by all employees* *Number of hours worked by all employees* ÷ *200,000 hours* = *Total recordable case rate*

(The 200,000 figure in the formula represents the number of hours 100 employees working 40 hours per week, 50 weeks per year would work, and provides the standard base for calculating incidence rates.)

You can compute the incidence rate for recordable cases involving days away from work, days of restricted work activity or job transfer (DART) using the following formula:

(Number of injuries in column H + Number of entries in column I) ÷ Number of hours worked by all employees × *200,000 hours* = *DART incidence rate*

You can use the same formula to calculate incidence rates for other variables such as cases involving restricted work activity (column (I) on Form 300A), cases involving skin disorders (column (M-2) on Form 300A), etc. Just substitute the appropriate total for these cases, from Form 300A, into the formula in place of the total number of injuries and illnesses.

What can I compare my incidence rate to?

The Bureau of Labor Statistics (BLS) conducts a survey of occupational injuries and illnesses each year and publishes incidence rate data by

various classifications (e.g., by industry, by employer size, etc.). You can obtain these published data at www.bls.gov or by calling a BLS Regional Office.

Worksheet

Total number of recordable injuries and illnesses in your establishment

+

Hours worked by all your employees

× 200,000 =

Total recordable cases incidence rate

Total number of recordable injuries and illnesses with a checkmark in column H or column I

+

Hours worked by all your employees

× 200,000 =

DART incidence rate

How to Fill Out the Log

The *Log of Work-Related Injuries and Illnesses* is used to classify work-related injuries and illnesses and to note the extent and severity of each case. When an incident occurs, use the *Log* to record specific details about what happened and how it happened.

If your company has more than one establishment or site, you must keep separate records for each physical location that is expected to remain in operation for one year or longer.

We have given you several copies of the *Log* in this package. If you need more than we provided, you may photocopy and use as many as you need.

The *Summary* — a separate form — shows the work-related injury and illness totals for the year in each category. At the end of the year, count the number of incidents in each category and transfer the totals from the *Log* to the *Summary*. Then post the *Summary* in a visible location so that your employees are aware of injuries and illnesses occurring in their workplace.

You don't post the Log. You post only the Summary at the end of the year.

OSHA's Form 300 Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and should be kept in a manner that protects the confidentiality of workers to the extent possible while the information is being used for occupational safety and health purposes.

This form must record information about injury work-related, down and about every work-related injury or illness, regardless of days away from work, or medical treatment beyond first aid. You must also record repetitive trauma injuries and illnesses. By a physician or licensed health care professional, you must also record work-related sprains and strains, including those listed in 29 CFR Part 1910.1033, and any other health conditions that are recorded in the most complete injury and illness report (OSHA Form 301) or equivalent form for each injury or illness. For more information, see OSHA's *Record-Keeping Requirements* booklet, available from OSHA offices. Help form: If you are not sure whether to record an injury or illness, contact your OSHA office for help.

Year 20
U.S. Department of Labor
Occupational Safety and Health Administration
Form approved OSHA no. 114-0116
Form Approved VIZ Company
OSHA Form 300
Rev. 1-1-81

Identify the person		Describe the case		Classify the case		Record the number of days the employee was away from work or the number of work days lost due to the injury or illness		Record the number of work days lost due to the injury or illness	
(A) Case no.	(B) Employee's name	(C) Job title (e.g. Welder)	(D) Date of injury or onset of illness	(E) Where the event occurred (e.g. Loading dock west end)	(F) Describe injury or illness, parts of body affected, or medical treatment (e.g. Sprain, deep burn on right forearm from a power sander)	(G) Death	(H) Days away from work	(I) Job transfer (K) (L) (M)	(J) Days lost due to injury or illness
1	Mark Egan	Welder	5 / 25 morning	basement	fracture, left arm and left leg, fell from ladder	<input type="checkbox"/>	12 days	12 days	12 days
2	Shane Alexander	Assembly man	7 / 2 morning	painting deck	poisoning from lead fumes	<input type="checkbox"/>	15 days	15 days	15 days
3	Sam Swader	Electrician	8 / 15 morning	2nd floor stairway	back strain, laceration	<input type="checkbox"/>	30 days	30 days	30 days
4	Robert Bocella	Labourer	9 / 17 morning	packaging dept	back strain, lifting boxes	<input type="checkbox"/>	3 days	3 days	3 days
5	Jarrod Daniels	Machine opr.	10 / 23 morning	production floor	dot in eye	<input type="checkbox"/>	3 days	3 days	3 days
						<input type="checkbox"/>	3 days	3 days	3 days
						<input type="checkbox"/>	3 days	3 days	3 days

Be as specific as possible. You can use two lines if you need more room.

Revise the log if the injury or illness progresses and the outcome is more serious than you originally recorded for the case. Cross out, erase, or white-out the original entry.

Choose ONE of these categories. Classify the case by recording the most serious outcome of the case, with column J (Other recordable cases) being the least serious and column G (Death) being the most serious.

Note whether the case involves an injury or an illness.

OSHA's Form 300

Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

You must record information about every work-related death and about every work-related injury or illness that requires medical attention beyond first aid. You must also record fatalities and cases professional. You must also record work-related injuries and illnesses that meet any of the special recording criteria listed below. You must use two lines for a single case if you need to. You must complete an injury and illness record form for each case. You must complete an injury and illness record form, if you're not sure whether a case is recordable. Call your local OSHA office for help.

Establishment Name _____
 City _____ State _____

Identify the person

(A) Case no. _____
 (B) Employee's name _____

(C) Job title (e.g., fitter) _____

(D) Date of injury or onset of illness _____

(E) Where the event occurred (e.g., loading dock (with end) _____

(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g., Second degree burn, on right forearm from overhead torch) _____

Classify the case

Using these four categories, check ONLY the most serious result for each case:

Death (G) Days away from work (H) Job transfer or restriction (I) Object recordable cases (J) Remained at work (K)

Enter the number of days the injured or ill worker was:

On job transfer or restriction (K) _____ days

Away from work (L) _____ days

Job transfer or restriction (I) _____ days

Object recordable cases (J) _____ days

Check the "injury" column or choose one type of illness:

(M) Injury (1) Skin disorder (2) Respiratory condition (3) Poisoning (4) All other illnesses (5)

Page totals

Be sure to transfer these totals to the Summary page (Form 300A) before you post it.

Page ____ of ____

Public reporting burden for this collection of information is estimated to average 14 minutes per response, including time to review the instructions, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any other aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3654, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.

OSHA's Form 300A

Summary of Work-Related Injuries and Illnesses

All establishments covered by Part 1904 must complete this Summary page, even if no work-related injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete and accurate before completing this summary.

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the Log. If you had no cases, write "0."

Employees, former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR Part 1904.35, in OSHA's recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
(g) _____	(h) _____	(i) _____	(j) _____

Number of Days

Total number of days of job transfer or restriction	Total number of days away from work
(k) _____	(l) _____

Injury and Illness Types

Total number of . . .	(4) Poisonings	(5) All other illnesses
(1) Injuries _____	_____	_____
(2) Skin disorders _____	_____	_____
(3) Respiratory conditions _____	_____	_____

Post this Summary page from February 1 to April 30 of the year following the year covered by the form.

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including time to review the instructions, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any other aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Avenue, NW, Washington, DC 20216. Do not send the completed forms to this office.

Establishment information

Your establishment name _____

Street _____

City _____

State _____

ZIP _____

Industry description (e.g., *Manufacture of motor truck trailers*) _____

Standard Industrial Classification (SIC), if known (e.g., *SIC 3715*) _____

Employment information (If you don't have these figures, or the Worksheet on the back of this page, to estimate.)

Annual average number of employees _____

Total hours worked by all employees last year _____

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

Company executive _____ Title _____

Phone _____ Date _____

Optional

Worksheet to Help You Fill Out the Summary

At the end of the year, OSHA requires you to enter the average number of employees and the total hours worked by your employees on this page to estimate the numbers you will need to enter on the Summary page at the end of the year.

How to figure the average number of employees who worked for your establishment during the year:

- Add** the total number of employees your establishment paid in all pay periods during the year. Include all employees: full-time, part-time, temporary, seasonal, salaried, and hourly.
The number of employees paid in all pay periods = 1
- Count** the number of pay periods your establishment had during the year. Be sure to include any pay periods when you had no employees.
The number of pay periods during the year = 2
- Divide** the number of employees by the number of pay periods.
1 ÷ 2 = 3
- Round the answer** to the next highest whole number. Write the rounded number in the blank marked *Annual average number of employees*.
The number rounded = 4

For example, Acme Construction figured its average employment this way:

For pay period...	Acme paid this number of employees...	
1	10	Number of employees paid = 830
2	0	
3	15	Number of pay periods = 26
4	30	
5	40	830 ÷ 26 = 31.92
▼	20	26
24	15	31.92 rounds to 32
25	15	
26	+10	32 is the annual average number of employees
	830	

How to figure the total hours worked by all employees:

Include hours worked by salaried, hourly, part-time and seasonal workers, as well as hours worked by other workers subject to day to day supervision by your establishment (e.g., temporary help services workers).

Do not include vacation, sick leave, holidays, or any other non-work time, even if employees were paid for it. If your establishment keeps records of only the hours paid or if you have employees who are not paid by the hour, please estimate the hours that the employees actually worked.

If this number isn't available, you can use this optional worksheet to estimate it.

Optional Worksheet

_____ **Find** the number of full-time employees in your establishment for the year.

X _____ **Multiply** by the number of work hours for a full-time employee in a year.

_____ **This is** the number of full-time hours worked.

+ _____ **Add** the number of any overtime hours as well as the hours worked by other employees (part-time, temporary, seasonal)

_____ **Round** the answer to the next highest whole number. Write the rounded number in the blank marked *Total hours worked by all employees last year*.



OSHA's Form 301 Injury and Illness Incident Report

This *Injury and Illness Incident Report* is one of the first forms you must fill out when a recordable work-related injury or illness has occurred. Together with the *Log of Work-Related Injuries and Illnesses* and the accompanying *Summary*, these forms help the employer and OSHA develop a picture of the extent and severity of work-related incidents.

Within 7 calendar days after you receive information that a recordable work-related injury or illness has occurred, you must fill out this form or an equivalent. Some state workers' compensation, insurance, or other reports may be acceptable substitutes. To be considered an equivalent form, any substitute must contain all the information asked for on this form.

According to Public Law 91-596 and 29 CFR 1904, OSHA's recordkeeping rule, you must keep this form on file for 5 years following the year to which it pertains.

If you need additional copies of this form, you may photocopy and use as many as you need.

Completed by _____ Date _____

Title _____

Phone (____) _____ Date _____

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.



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

Form approved OMB no. 1218-0176

Information about the employee

- 1) Full name _____
- 2) Street _____
City _____ State _____ ZIP _____
- 3) Date of birth _____
- 4) Date hired _____
- 5) Male
 Female

Information about the physician or other health care professional

- 6) Name of physician or other health care professional _____
Facility _____
- 7) If treatment was given away from the worksite, where was it given?
Street _____
City _____ State _____ ZIP _____

8) Was employee treated in an emergency room?
 Yes
 No

9) Was employee hospitalized overnight as an in-patient?
 Yes
 No

Information about the case

- 10) Case number from the Log _____ (Transfer the case number from the Log after you record the case.)
- 11) Date of injury or illness _____ AM / PM
- 12) Time employee began work _____ AM / PM
- 13) Time of event _____ AM / PM Check if time cannot be determined

14) **What was the employee doing just before the incident occurred?** Describe the activity, as well as the tools, equipment, or material the employee was using. Be specific. *Examples:* "climbing a ladder while carrying roofing materials"; "spraying chlorine from hand sprayer"; "daily computer key-entry."

15) **What happened?** Tell us how the injury occurred. *Examples:* "When ladder slipped on wet floor, worker fell 20 feet"; "Worker was sprayed with chlorine when gasket broke during replacement"; "Worker developed soreness in wrist over time."

16) **What was the injury or illness?** Tell us the part of the body that was affected and how it was affected; be more specific than "hurt," "pain," or "sore." *Examples:* "strained back"; "chemical burn, hand"; "carpal tunnel syndrome."

17) **What object or substance directly harmed the employee?** *Examples:* "concrete floor"; "chlorine"; "radial arm saw." If this question does not apply to the incident, leave it blank.

18) **If the employee died, when did death occur?** Date of death _____

Public reporting burden for this collection of information is estimated to average 22 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Persons are not required to respond to the collection of information unless it displays a current valid OMB control number. If you have any comments about this estimate or any other aspects of this data collection, including suggestions for reducing this burden, contact US Department of Labor, OSHA Office of Statistics, Room N-3144, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.

If You Need Help...

If you need help deciding whether a case is recordable, or if you have questions about the information in this package, feel free to contact us. We'll gladly answer any questions you have.

▼ Visit us online at www.osha.gov

▼ Call your OSHA Regional office and ask for the recordkeeping coordinator

or

▼ Call your State Plan office

Federal Jurisdiction

Region 1 - 617 / 565-9860
Connecticut; Massachusetts; Maine; New Hampshire; Rhode Island

Region 2 - 212 / 337-2378
New York; New Jersey

Region 3 - 215 / 596-1201
DC; Delaware; Pennsylvania; West Virginia

Region 4 - 404 / 562-2300
Alabama; Florida; Georgia; Mississippi

Region 5 - 312 / 353-2220
Illinois; Ohio; Wisconsin

Region 6 - 214 / 767-4731
Arkansas; Louisiana; Oklahoma; Texas

Region 7 - 816 / 426-5861
Kansas; Missouri; Nebraska

Region 8 - 303 / 844-1600
Colorado; Montana; North Dakota; South Dakota

Region 9 - 415 / 975-4310

Region 10 - 206 / 553-5930
Idaho

State Plan States

Alaska - 907 / 269-4957

Arizona - 602 / 542-5795

California - 415 / 703-5100

*Connecticut - 860 / 566-4380

Hawaii - 808 / 586-9100

Indiana - 317 / 232-3325

Iowa - 515 / 281-3661

Kentucky - 502 / 564-3070

Maryland - 410 / 767-2371

Michigan - 517 / 322-1851

Minnesota - 651 / 296-2116

Nevada - 702 / 687-3230

*New Jersey - 609 / 292-2313

New Mexico - 505 / 827-4230

*New York - 518 / 457-2574

North Carolina - 919 / 807-2875

Oregon - 503 / 978-3272

Puerto Rico - 787 / 754-2171

South Carolina - 803 / 734-9632

Tennessee - 615 / 741-2793

Utah - 801 / 530-6901

Vermont - 802 / 828-2765

Virginia - 804 / 786-6613

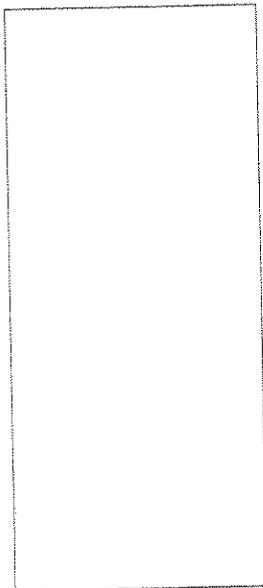
Virgin Islands - 340 / 772-1315

Washington - 360 / 902-5799

Wyoming - 307 / 777-7786

*Public Sector only





Have questions?

If you need help in filling out the *Log or Summary*, or if you have questions about whether a case is recordable, contact us. We'll be happy to help you. You can:

- ▼ Visit us online at: www.osha.gov
- ▼ Call your regional or state plan office. You'll find the phone number listed inside this cover.





Better Workers' Compensation

Built with you in mind.



First Report of an Injury, Occupational Disease or Death

This form can be completed and submitted online at:
www.ohiobwc.com

Report your injury by completing all four sections of this form

- 1 Complete as much of all four sections of this form as possible to reduce the time necessary in determining the claim. If this form is completed by the injured worker at the first visit to a medical provider, the injured worker may give the FROI to the provider to complete the treatment information section. The provider can then submit the FROI to the MCO.
- 2 Deliver, mail or fax the completed document to your employer or your employer's managed care organization (MCO).
- 3 If you do not know your employer's MCO, contact BWC at 1-800-OHIOBWC (1-800-644-6292), and press 4 or use the MCO on the BWC web site at www.ohiobwc.com.
- 4 If you are unable to determine your MCO, mail or fax this form to the BWC customer service office closest to your home (see list of offices below).

Injured workers employed by a self-insuring employer

- Complete this form and give to your employer.
- Your employer should be able to tell you if he or she is a self-insuring employer.
- If your employer is self-insuring and you file this information with BWC, processing delays may occur.

For assistance in completing this form, call your **BWC customer service office** Monday through Friday, 8 a.m. – 4:45 p.m.

Akron
Ocasek Government Building
161 S. High St., Suite 300
Akron, OH 44308-1617
Phone: (330) 643-3111
Fax: (330) 643-3700

Bridgeport
56104 National Road, Suite 112
P.O. Box 388-389
Bridgeport, OH 43912-0388
Phone: (740) 635-1163
Fax: (740) 635-6210

Canton
400 Third St., S. E.
P.O. Box 24801
Canton, OH 44701-4801
Phone: (330) 438-0638
Fax: (330) 471-1126

Cincinnati
125 E. Court St., Eighth Floor
Cincinnati, OH 45202-2196
Phone: (513) 852-3341
Fax: (513) 361-8474

Cleveland
615 W. Superior Ave., Sixth Floor
Cleveland, OH 44113-1889
Phone: (216) 787-3050
Fax: (216) 787-3580

Columbus North
30 W. Spring St., 11th Floor
Columbus, OH 43215-2256
Phone: (614) 728-5416
Fax: (614) 728-5546

Columbus South
30 W. Spring St., 12th Floor
Columbus, OH 43215-2256
Phone: (614) 466-6446
Fax: (614) 752-4410

Dayton
3401 Park Center Drive
P.O. Box 13910
Dayton, OH 45414-0910
Phone: (937) 264-5000
Fax: (937) 264-5089

Governor's Hill
8500 Governor's Hill Drive, Suite 400
Cincinnati, OH 45249-1389
Phone: (513) 583-4400
Fax: (513) 583-4827

Hamilton
One Renaissance Center
345 High St.
Hamilton, OH 45011-6055
Phone: (513) 785-4500
Fax: (513) 785-4827

Independence
5990 W. Creek Road, Suite 200
P.O. Box 318030
Independence, OH 44131-8030
Phone: (216) 573-7700
Fax: (216) 573-7709

Lima
2025 E. 4th St.
Lima, OH 45804-4101
Phone: (419) 227-3127
Fax: (419) 227-3128

Logan
1225 W. Hunter St.
Logan, OH 43138-0630
Phone: (740) 385-5607
Fax: (740) 385-9048

Mansfield
240 Tappan Drive, N.
P.O. Box 8051
Mansfield, OH 44906-80551
Phone: (419) 747-4090
Fax: (419) 529-2720

Portsmouth
1005 Fourth St.
P.O. Box 1307
Portsmouth, OH 45662-1307
Phone: (740) 353-2187
Fax: (740) 353-4909

Richmond Heights
26301 Curtiss Wright Parkway
Richmond Heights, OH 44143-1433
Phone: (216) 289-4290
Fax: (216) 289-0060

Springfield
1 S. Limestone St.
P.O. Box 1467
Springfield, OH 45501-1467
Phone: (937) 327-1425
Fax: (937) 327-1485

Toledo
1 Government Center, Suite 1136
P.O. Box 794
Toledo, OH 43697-0794
Phone: (419) 245-2700
Fax: (419) 245-2666

Warren
258 E. Market St.
P.O. Box 1190
Youngstown, OH 44482-1190
Phone: (330) 306-4000
Fax: (330) 306-4136

Youngstown
242 Federal Plaza, W., Suite 200
P.O. Box 1877
Youngstown, OH 44501-1877
Phone: (330) 797-5500
Fax: (330) 797-6351

Zanesville
905 Zane St.
P.O. Box 37
Zanesville, OH 43702-0037
Phone: (740) 450-5151
Fax: (740) 450-5158

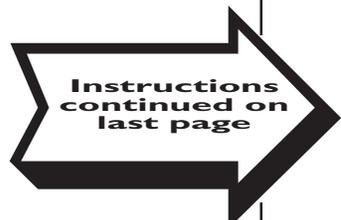
Completion Instructions (continued)

Injured Worker and Injury/Disease/Death Info.	Last name, first name, middle initial			Social Security number		Marital status <input type="checkbox"/> Single <input type="checkbox"/> Married <input type="checkbox"/> Divorced <input type="checkbox"/> Separated <input type="checkbox"/> Widowed		Date of birth		
	Home mailing address 1			Sex <input type="checkbox"/> Male <input type="checkbox"/> Female				Number of dependents		
	City		State	9-digit ZIP code		Country if different from USA		Department name 2		
	Wage rate \$ _____ Per: 3 <input type="checkbox"/> Hour <input type="checkbox"/> Month <input type="checkbox"/> Week		What days of the week do you usually work? 4 <input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tues <input type="checkbox"/> Wed <input type="checkbox"/> Thur <input type="checkbox"/> Fri <input type="checkbox"/> Sat		Regular work hours From _____ To _____ 4					
	Have you been offered or do you expect to receive payment or wages for this claim from anyone other than the Ohio Bureau of Workers' Compensation? 5 <input type="checkbox"/> YES <input type="checkbox"/> NO If yes, please explain.							Occupation or job title 6		
	Employer name 7									
	Mailing address (number and street, city or town, state, ZIP code and county)									
	Location, if different from mailing address									
	Was place of accident or exposure on employer's premises? <input type="checkbox"/> YES <input type="checkbox"/> NO If no, give accident location, street address, city, state and ZIP code.									
	Date of injury/disease 8		Time of injury <input type="checkbox"/> AM <input type="checkbox"/> PM		If fatal, give date of death		Time employee began work <input type="checkbox"/> AM <input type="checkbox"/> PM		Date last worked 9	Date returned to work 10
	Date hired			State where hired 11		Date employer notified 12				
	Description of accident (Describe the sequence of events that directly injured the employee, or caused the disease or death) 13						Type of injury/disease and part(s) of body affected (for example: sprain of lower left back, etc.) 14			
	<p><i>Benefit Application/Medical Release – I am applying for recognition of my claim under the Ohio Workers' Compensation Act for work-related injuries that I did not purposely inflict. I request payment for compensation and/or medical expenses as allowable. Direct payment(s) to the providers of any medical services are authorized. I understand that I am allowing any provider who attends to, treats or examines me to release all medical, psychological, and/or psychiatric information that is related causally or historically to physical or mental injuries relevant to issues necessary to the administration of my workers' compensation claim to the Ohio Bureau of Workers' Compensation, the Industrial Commission of Ohio, the employer listed in this claim, that employer's managed care organization, and any authorized representatives. I further authorize the Ohio Rehabilitation Services Commission to release information about my physical, mental, vocational and social conditions that is related causally and historically to physical or mental injuries relevant to issues necessary for the administration of my workers' compensation claim to the aforementioned parties.</i></p>									
	Injured worker signature 15						Date	Telephone number () ()	Fax number () ()	

Injured Worker and Injury/Disease/Death Info.

- 1 Home address:** Enter the home address where the injured worker lives.
Include the apartment number, if applicable.
 - If the post office does not deliver mail to the home address, list the mailing address instead of the home address.
- 2 Department name:** Enter the injured worker's department or area name, where he/she normally reports for work.
- 3 Wage rate:** Enter the injured worker's rate of pay and then select how often it is received.
(If the pay rate being reported is not hourly, report the GROSS amount.)
 - If eight or more days of work will be missed, BWC will need wage information for the 52 weeks prior to the date of injury. Submit wage information by: employer payroll reports, wage statement (BWC form C-94-A), W-2s, etc.
- 4 What days of the week do you usually work?/Regular work hours:** Enter the days and hours the injured worker normally works.
 - If the days worked vary from week to week, list the number of hours worked in an average week.
- 5 Wages:** If you received wages during disability, please explain.
- 6 Occupation or job title:** Enter the injured worker's type of occupation or actual job title at the time of injury, occupational disease, or death.
- 7 Employer name:** Enter the name of the injured worker's employer at the time of the injury, occupational disease or death.
- 8 Date of injury/disease:** Enter the date injured worker was injured.
OR
If the injured worker contracted an occupational disease, determine which of the following happened most recently:
 - The occupational disease was diagnosed by a medical provider;
 - The first medical treatment; or
 - The injured worker first quit work due to the occupational disease.

Enter this as the date of occupational disease.
- 9 Date last worked:** Enter the last day worked as a result of this injury, occupational disease or death.
- 10 Date returned to work:** Enter the date the injured worker returned to work after the injury or occupational disease.
- 11 State where hired:** Enter the state where the injured worker was hired by the employer listed on this application.
- 12 Date employer notified:** Enter the date the employer was notified of the injury, occupational disease, or death.
- 13 Description of accident:** Describe in detail the events that caused the injury, occupational disease, or death. Attach additional sheets, if necessary.
- 14 Type of injury/Disease and part of body affected:** Describe the nature of the injury, occupational disease, or death.
Indicate the part(s) of body injured, affected, or that caused the death.
 - For example: Laceration of first toe, left foot; Sprain of lower right back; etc.
- 15 Injured worker signature (injured workers only):** Please read the Benefit Application/Medical Release information before signing and dating this form.



Tear off this sheet and return completed form to your employer's managed care organization (MCO) or to your local BWC customer service office.



Better Workers' Compensation

Built with you in mind.



First Report of an Injury, Occupational Disease or Death

WARNING:

Any person who obtains compensation from BWC or self-insuring employers by: knowingly misrepresenting or concealing facts, making false statements, or accepting compensation to which he/she is not entitled, is subject to felony criminal prosecution for fraud.

(R.C. 2913.48)

Injured Worker and Injury/Disease/Death Info.

Last name, first name, middle initial			Social Security number		Marital status <input type="checkbox"/> Single <input type="checkbox"/> Married <input type="checkbox"/> Divorced <input type="checkbox"/> Separated <input type="checkbox"/> Widowed		Date of birth		
Home mailing address				Sex <input type="checkbox"/> Male <input type="checkbox"/> Female		Number of dependents			
City		State	9-digit ZIP code		Country if different from USA		Department name		
Wage rate \$ _____ Per: <input type="checkbox"/> Hour <input type="checkbox"/> Month <input type="checkbox"/> Week <input type="checkbox"/> Year <input type="checkbox"/> Other _____			What days of the week do you usually work? <input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tues <input type="checkbox"/> Wed <input type="checkbox"/> Thur <input type="checkbox"/> Fri <input type="checkbox"/> Sat			Regular work hours From _____ To _____			
Have you been offered or do you expect to receive payment or wages for this claim from anyone other than the Ohio Bureau of Workers' Compensation? <input type="checkbox"/> YES <input type="checkbox"/> NO If yes, please explain.							Occupation or job title		
Employer name									
Mailing address (number and street, city or town, state, ZIP code and county)									
Location, if different from mailing address									
Was place of accident or exposure on employer's premises? <input type="checkbox"/> YES <input type="checkbox"/> NO If no, give accident location, street address, city, state and ZIP code)									
Date of injury/disease		Time of injury _____ <input type="checkbox"/> AM <input type="checkbox"/> PM		If fatal, give date of death		Time employee began work _____ <input type="checkbox"/> AM <input type="checkbox"/> PM		Date last worked	Date returned to work
Date hired			State where hired			Date employer notified			
Description of accident (Describe the sequence of events that directly injured the employee, or caused the disease or death)						Type of injury/disease and part(s) of body affected (For example: sprain of lower left back, etc.)			
<p>Benefit Application/Medical Release – I am applying for recognition of my claim under the Ohio Workers' Compensation Act for work-related injuries that I did not purposely inflict. I request payment for compensation and/or medical expenses as allowable. Direct payment(s) to the providers of any medical services are authorized. I understand that I am allowing any provider who attends to, treats or examines me to release all medical, psychological, and/or psychiatric information that is related causally or historically to physical or mental injuries relevant to issues necessary to the administration of my workers' compensation claim to the Ohio Bureau of Workers' Compensation, the Industrial Commission of Ohio, the employer listed in this claim, that employer's managed care organization, and any authorized representatives. I further authorize the Ohio Rehabilitation Services Commission to release information about my physical, mental, vocational and social conditions that is related causally and historically to physical or mental injuries relevant to issues necessary for the administration of my workers' compensation claim to the aforementioned parties.</p>									
Injured worker signature				Date		Telephone number () ()		Work number () ()	

Treatment Info.

Health care provider name			Telephone number () ()		Fax number () ()		Initial treatment date	
Street address				City		State		9-digit ZIP code
Diagnosis(es): Include ICD code(s)								
<p>Will the incident cause the injured worker to miss eight or more days of work? <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>Is the injury causally related to the industrial incident? <input type="checkbox"/> YES <input type="checkbox"/> NO</p>								
Health care provider signature				11-digit BWC provider number			Date	

Employer Info.

Employer policy number			<input type="checkbox"/> Employer is self-insuring <input type="checkbox"/> Injured worker is Owner/Partner/Member of Firm					
Telephone number () ()		Fax number () ()		E-mail address		Federal ID number		Manual number
Was employee treated in an emergency room? <input type="checkbox"/> YES <input type="checkbox"/> NO				Was employee hospitalized overnight as an in-patient? <input type="checkbox"/> YES <input type="checkbox"/> NO				
If treatment was given away from worksite, provide the facility name, street address, city, state, ZIP code								
<input type="checkbox"/> CERTIFICATION - The employer certifies that the facts in this application are correct and valid.			<input type="checkbox"/> REJECTION - The employer rejects the validity of this claim for the following reason(s) below:			FOR SELF-INSURING EMPLOYERS ONLY <input type="checkbox"/> CLARIFICATION - The employer clarifies and allows the claim for the condition(s) below:		
Employer signature and title						Date		OSHA case number

Completion Instructions (continued)

Treatment Info.	Health care provider name	Telephone number ()	Fax number ()	Initial treatment date
	Street address	City	State	9-digit ZIP code
	Diagnosis(es): Include ICD code(s) 1			
	Will the incident cause the injured worker to miss eight or more days of work? <input type="checkbox"/> YES <input type="checkbox"/> NO		Is the injury causally related to the industrial incident? <input type="checkbox"/> YES <input type="checkbox"/> NO	
Health care provider signature 3		11-digit BWC provider number 4		Date

- Treatment Info.**
- Indicate the diagnosis and ICD codes for conditions being treated as a result of the injury.
 - Indicate the treating provider's medical opinion that the injury sustained is causally related to the industrial incident, that the injury could result from the method (manner) of the accident, as described by the injured worker. It must be clear that the diagnosis in all probability occurred as a result of the injury.
 - Signature of the health care provider completing this form.
 - Enter the physician's or health-care provider's 11-digit BWC-assigned provider number.

Employer Info.	Employer policy number 1	CHECK IF <input type="checkbox"/> Employer is self-insuring		
	Telephone number ()	Fax number ()	E-mail address	<input type="checkbox"/> Injured worker is Owner/Partner/Member of Firm
	Was employee treated in an emergency room? <input type="checkbox"/> YES <input type="checkbox"/> NO		Federal ID number	Manual number 2
	If treatment was given away from worksite, provide the facility name, street address, city, state and ZIP code		Was employee hospitalized as an in-patient? <input type="checkbox"/> YES <input type="checkbox"/> NO	
	<input type="checkbox"/> CERTIFICATION - The employer certifies that the facts in this application are correct and valid. 3		<input type="checkbox"/> REJECTION - The employer rejects the validity of this claim for the following reason(s) below: 4	
	Employee signature and title		FOR SELF-INSURING EMPLOYERS ONLY <input type="checkbox"/> CLARIFICATION - The employer clarifies and allows the claim for the condition(s) below: 5	
		Date	OSHA case number 6	

- Employer Info.**
- Enter the employer's BWC-assigned policy number which is located on the BWC certificate of coverage.
 - Enter the four-digit code that indicates the injured worker's job classification, located on the semiannual payroll report.
 - If you do not know the injured worker's manual number call 1-800-OHIOBWC (1-800-644-6292) and press 21.
 - If certification is selected and the claim is allowed, it will be promptly paid. Employers certifying a claim waive both the notice of receipt and notice of first order of compensation.
 - If rejection is selected, use the space provided to list the reasons for rejection. Attach additional sheets if necessary.
 - Self-insuring employers choosing to clarify certification may use the space provided. Attach additional sheet if necessary.
 - If this is an OSHA-reportable injury, include the case number assigned by the employer. This form meets OSHA 301 requirements and may be used in lieu of the OSHA 301 when reporting recordable injuries and illnesses to the federal government.

Note:
If your employee misses eight or more days of work, BWC will need wage information for the 52 weeks prior to the date of injury. Submit wage information by: employer payroll reports, wage statement (BWC form C-94-A), W-2s, etc.

POWER PRESS POINT-OF-OPERATION INJURY REPORT

Mailing address at which accident occurred:

Company name _____
Address _____
City _____ State _____ Zip _____

Name of injured employee: _____

Injury sustained: _____

Type of feeding:

_____	Manual with hand in point-of-operation	_____	Semi Automatic
_____	Manual with hand not in point-of-operation	_____	Other _____
		_____	Not applicable

Description of press involved:

Type of clutch	Type of safeguard
_____	_____
_____	_____
_____	_____
_____	_____

Devices:	_____	_____	_____
	_____	_____	_____
	_____	_____	_____
	_____	_____	_____
	_____	_____	_____

Means used to actuate press:

_____	Foot trip	_____	Foot treadle
_____	Hand control	_____	Other _____

Number of operators required for this operation: _____

Number of operators provided with control and safeguard: _____

Alleged cause of accident:

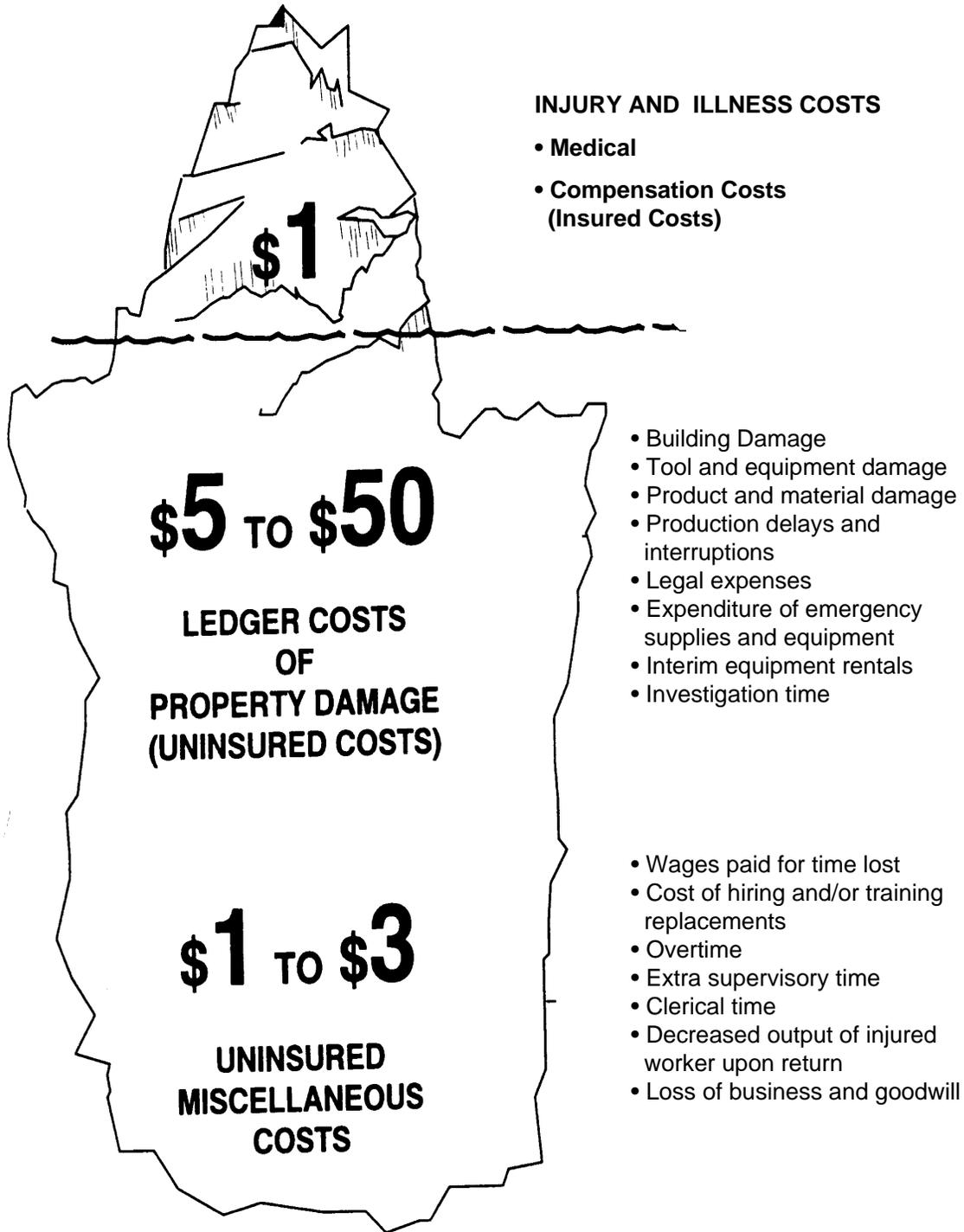
(Repeat of press, Removing stuck part, Safeguard not provided, Safeguard failure, Operation error, Safeguard not used)

Describe: _____

Corrective action to prevent similar accident: _____

* All lost time Point-of-Operation injuries on mechanical power presses are required to be reported to Director of the Office of Standards Development, OSHA, U.S. Department of Labor, New Department of Labor Building, 200 Constitution Avenue, N.W. Washington, D.C. 20210

ACCIDENT COST ICEBERG



COST ANALYSIS

Company Name: _____

Locations: _____

Supervisor: _____

DIRECT COST

Compensation paid	\$
Medical expense	\$
Reserves	\$
Total Direct Cost	\$

INDIRECT COST

TOPIC	TIME-LOSS	WAGES /EXPENSES
Injured Worker		
Injured Worker Claim Number (if applicable)		
Other Workers:		
A.		
B.		
C.		
First-Aid		
Supervision:		
A. Analyzing accident or incident		
B. Claims management		
Overtime		
Temporary Worker Replacement		
Production Loss:		
Machinery		
Equipment		
Tools		
Product		
Project Delay		
Outsourcing Contracting		
Other		
Total Indirect Cost		

Sources:

1. Dan Petersen: Techniques of Safety Management: A System Approach
2. Sandy Newman: BWC Division of Safety and Hygiene Occupational Safety and Health Research

QUARTERLY REPORT

Company Name _____

Quarter Report

DIRECT COST

Superintendent/Foreman	Injured Worker Claim #	Compensation Paid	Medical Expenses	Reserves	Totals

INDIRECT COST

Supervisor	# Of Injured Worker Claims	# Of Other Workers	# Of Supervisors Involved	# Of Temp Worker Replacement	First Aid (Cost)	Production Loss (Cost)	Outsourced Contract Work (Cost)	Time Loss Total Hours	Wages	Expenses	Others	Totals

FRAUD “RED FLAG” INDICATORS

At the Time of the Accident

- Not witnessed by co-workers.
- Occurs immediately after day(s) away from work.
- Coincides with layoff or plant closing.
- Claimant is in line for “early retirement.”
- Claimant has moved out of state or country.
- Injury not consistent with job duties.

Following the Accident

- Conflicting descriptions of the accident between first report and medical history.
- Leads indicate that the worker is involved with activities not consistent with extent of injury.
- Claimant is seen as suntanned, muscular, and/or with calluses on his/her hands and dirty fingernails.

Either the Employee or Employer

- Cross-outs, white-outs, and/or erasures on application form or other documents.
- Salary is inconsistent with occupation.
- Disputes over average weekly wage.
- Lack of cooperation in claim investigation.

Health Care Providers/Attorneys

- Reports from a doctor on various claims read almost identically.
- Claims where the injuries are of a subjective nature and lack credible objective findings (e.g. stress, emotional distress, or inability to sleep).
- Several employees from the same employer are having similar injuries and using the same doctor(s) and/or attorney(s).
- Same doctor and attorney repeatedly involved together in questionable claims.
- Provider type is inconsistent with injury.
- Length of treatment or disability is inconsistent with injury.
- High cost of medical care relative to type of injury.

WHAT THE EMPLOYER CAN DO

- Require the employee to complete an internal accident report at the time of the injury.
- Go to the scene of the accident and correlate the employee's version with your perception of the accident.
- Complete an accident report.
- Verify the accident facts with any witnesses.
- Carefully review the accident facts and injuries listed on the claim application.
- Review emergency room records to verify the diagnosis matches the injuries listed on the application.
- Contact the attending physician on reasonable expectations for return to work or the possibilities for light duty work.
- Review other records for prior similar injury and total number of injuries to date.
- Review and evaluate all BWC lost-time and medical explanations on benefit reports.
- Stay involved with all claims whether they are in your experience rating period or not.
- Communicate with the BWC claims representative.
- Cooperate with any fraud investigation.

**To Report Fraud From Anywhere in the United States
1-800-644-6292**

Establishing Written Accident Analysis Program

Purpose

Definitions

- Accident
- Accident Analysis
- Hazards
- Hazard control
- Incident

Responsibilities

- Program Administrator
- Supervisors/Managers
- Employees

Program Activities

- General
- Safety Committee
- Training
- Recordkeeping

ACCIDENT ANALYSIS

Written Program

Purpose

The purpose of this program is to define and document the accident analysis process at *(name of company)*.

This program defines the responsibilities of all company management and supervisors in analyzing the causes of accidents and implementing appropriate corrective actions to prevent similar situations from recurring.

Definitions

Accident: Any unwanted happening, movement, or release of energy.

Accident Analysis : The process of determining the causes of accidents and implementing corrective actions to prevent recurrence.

Hazard: Anything that presents a danger to employees or property.

Hazard Control: Any method used to reduce or eliminate a hazard, such as:

- Engineering controls
- Administrative controls
- Personal Protective Equipment
- Housekeeping
- Safe work practices
- Training

Incident: Any accident that caused or could have caused an injury, illness, or damage to equipment.

OSHA No. 300: Log and Summary of Occupational Injuries and Illnesses, on which fatalities, regardless of the time between the injury and death, or the length of the illness; or lost workday cases; nonfatal cases without lost workdays which result in transfer to another job or termination of employment, or require medical treatment; or involve loss of consciousness, restriction of work or motion. Also used to summarize the log at the end of the year to satisfy employer posting requirements.

Responsibilities

The Program Administrator is (*person's name/title*).

This person is responsible for:

- Administering the program and issuing written material that support it;
- Coordinating all activities related to hazard control, insurance companies (e.g. workers' compensation), and OSHA, state and local regulatory compliance;
- Maintaining OSHA recordkeeping on the OSHA 300 Log and Summary of Occupational Injuries and Illnesses;
- Reporting all serious accidents that result in fatalities or hospitalization of three (3) or more employees to the local OSHA area office within eight (8) hours of occurrence;
- Analyzing accident records to identify program deficiencies;
- Scheduling managers, supervisors and, as appropriate, safety committee members for training;
- Maintaining training recordkeeping; and
- Posting the Summary of the OSHA 300 during the month of February.

Supervisors and Managers:

These people are responsible for:

- Conducting accident analyses within their departments and providing appropriate corrective actions; and
- Initiating accident analyses immediately upon notification and completing them within twenty-four (24) hours after learning of its occurrence.

Program Activities

General

- All employees will report all incidents immediately to their respective supervisor and/or manager.
- All accidents that result in employee injuries, property damage or the probability thereof will be analyzed .
- A company analysis report will be completed within twenty-four (24) hours of an accident.
- The accident analysis will be completed according to the accident analysis procedure included in the "Attachments" section.

- Department management will initiate corrective action according to the corrective action plan on the company accident report. Corrective actions that cannot be initiated immediately will be documented in a written report that indicates what will be done, when, and by whom. A copy of the corrective action report will be forwarded to the Safety Program Administrator within five (5) days of the incident.
- Any accident that results in sending employees to outside medical treatment will be reported to company management and the Safety Program Administrator immediately.

Safety Committee

- Will review accident analyses and make recommendations for corrections.
- Will review incident and near-miss analyses and, when necessary, submit suggestions to prevent future accidents.

Training

- All supervisors and managers will be trained and knowledgeable in accident analyses and the safety and health hazards to which employees under their immediate direction and control may be exposed.

Recordkeeping

- All accident reports generated shall be kept a minimum of six (6) years.
- All OSHA 300 Logs shall be retained a minimum of six (6) years.
- It's recommended that records be kept indefinitely to maintain the information necessary to provide an adequate history of conditions that have been responsible for accidents and what corrective actions have been taken.
- The Summary of the company OSHA 300 will be posted on the employee bulletin board for the month of February.
- All records shall be kept documenting training for each employee, including employee name or other identifier, training date(s), type(s) of training and training providers.

Attachments

Recordkeeping

- Accident Analysis Report Form
- Accident Analysis Training Record
- OSHA Form No. 300

Recordkeeping

Accident Recordkeeping

Keep accurate records of all accident analysis activities, including:

- OSHA Form No. 300, Log and Summary of Occupational Injuries and Illnesses (page 1-5 of this manual);
- First reports of injuries and illnesses;
- Workers' compensation forms; and
- Accident Investigation report forms (tab 5 of this manual).

Training Recordkeeping

A written certification record of all accident analysis training activities must be maintained. It should include:

- The name (or other identity) of the person trained.
- The Social Security Number of the person trained.
- The date(s) of training.
- The signature of the person conducting the training or of the employer.

Steps of Accident Analysis

(Preliminary Considerations)

(1) Information gathering

- Analysis Kit
- Physical Evidence
- Interview Questions
- Background Information

(2) Analysis & Conclusions

- Accident Tree
- BWC Accident Investigation Form

(3) Recommendations

- Feedback
 - Employees
 - Safety committee
 - Supervisors/Managers
 - Affected departments
- Modify recommendations
- Final decision

(4) Written report

Video Summary:
“Accident Investigation in the Workplace”
Summit Training Source
Grand Rapids, Michigan
1-800-842-0466

This 22 minute video opens depicting the events that lead to an accident suffered by a maintenance worker at a snack food factory. You will be led, step-by-step, through the process of investigating the accident. Details on preserving and gathering evidence, interviewing those who have information regarding the accident, collecting background information, analyzing the data, and making recommendations are included. A logic diagram using the Management Oversight Risk Tree (MORT) system is used to document the factors identified as having influenced events contributing to the accident.

You may wish to use the worksheet below to record the accident factors you observe.

Case Study

Accident Factors	Preventive Measures

**Ohio Center for Occupational Safety & Health
Training Center**

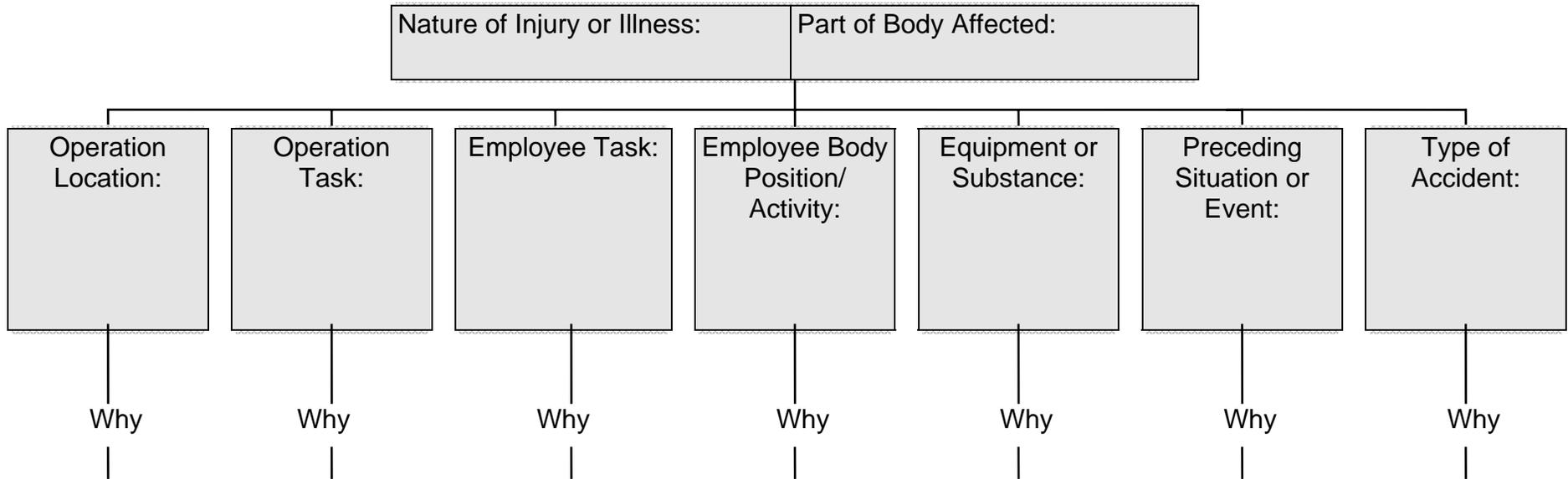
Accident Analysis

KIT

Here are some suggested items that would be helpful in the analysis of an accident. These articles might be kept in an analysis kit. They should be readily available for use at all times.

- Camera, extra film, flash attachment
- Clipboard, paper, pencils
- Graph paper (for diagram)
- Copy of pertinent guidelines, standard operating procedures, and pre-accident plan (listing of emergency telephone numbers)
- Ruler and tape measure
- Identification tags (for parts)
- Accident investigation forms
- Interview comment sheet (blank paper)
- Personal protective clothing or equipment
- Containers (for material samples)
- Barrier tape or cord (to rope off areas)

ACCIDENT TREE



OCCUPATIONAL INJURY & ILLNESS TERMS

Nature of Injury

- Amputations
- Burns
- Contusions
- Dislocations
- Foreign Body in Eye
- Fractures
- Lacerations/Punctures
- Sprains/Strains
- Cumulative Trauma Disorders
- Other Occupational Illnesses
- Multiple injuries

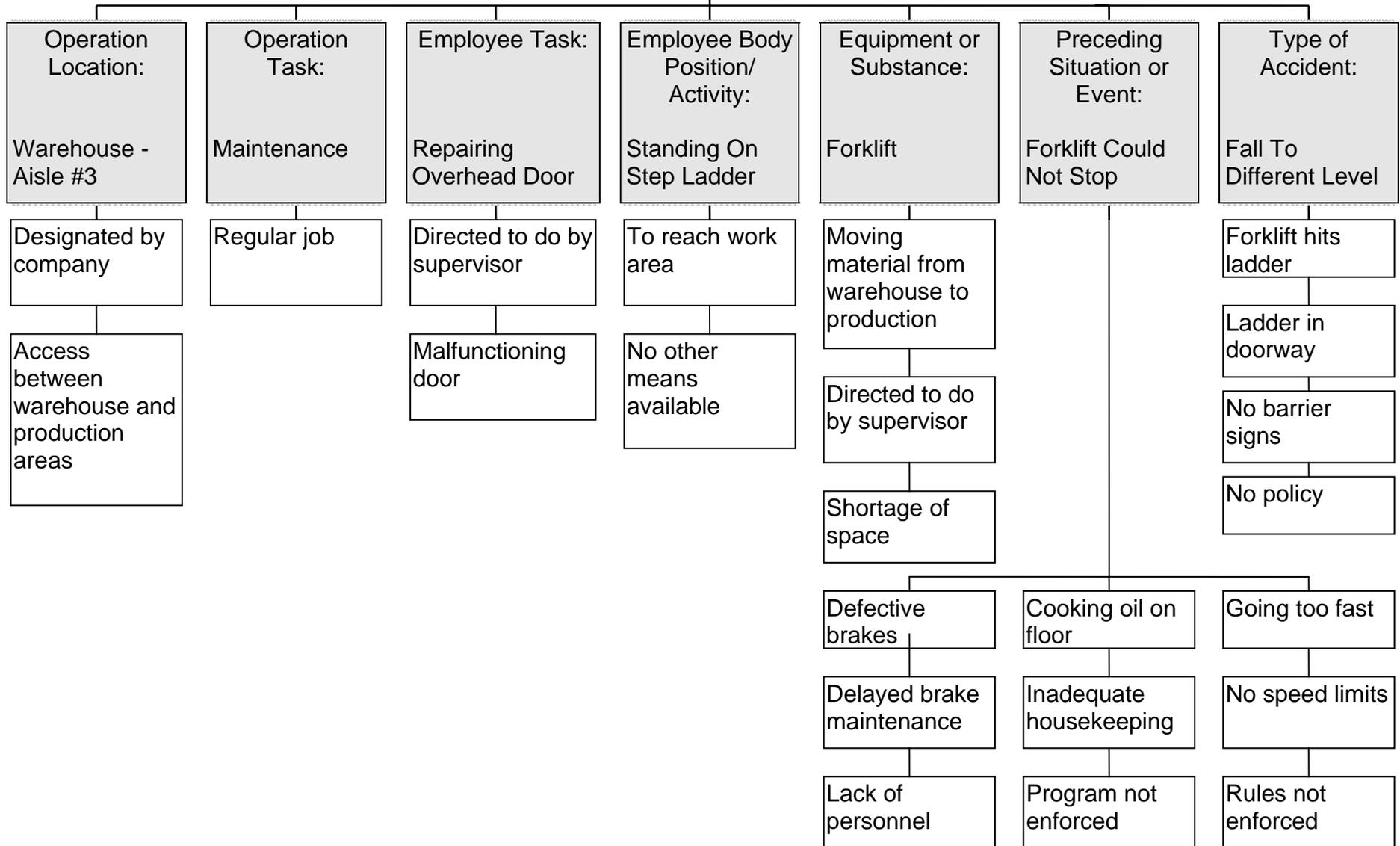
Part of Body

- Eyes
- Head
- Face & Neck
- Back
- Trunk/Internal Organs
- Arms
- Hands
- Fingers
- Legs
- Feet/Toes
- Multiple Major Body Parts
- Internal Systems

Type of Accident or Exposure

- Caught In, On, or Between
- Contact with Temperature Extremes/Fire/Explosion
- Contact with Electrical Current
- Fall: Same Level
- Fall: Different Level
- Contact with Harmful Substances
- Motor Vehicle Accidents
- Striking Against
- Struck By Flying/Falling Objects
- Slips (Not Falls)/Bodily Reaction
- Overexertion

Nature of Injury or Illness: Fracture	Part of Body Affected: Left Leg
--	------------------------------------



Fully describe accident:

Frank instructed Jim to repair the overhead door in aisle #3.

At about the same time, Alice directed Tom to remove some boxes of packaged product from her area and to bring more boxing material to the department.

When Tom was traveling from the warehouse to the production department, he encountered Jim on a stepladder in the middle to the doorway. Unable to stop or avoid the ladder, Tom struck the ladder with Jim on it. The ladder was knocked out from under Jim. Jim first fell onto the top of the load Tom was moving from the warehouse; then onto the floor. Jim's left leg broke when it finally struck against the overturned ladder.

What factors led to the accident?

Frank supervises Jim in the maintenance department. Frank instructed Jim to repair the fire door located between the warehouse and production area because it had been reported as not working properly. Although Jim wanted to leave work early for a trout-fishing tournament, he agreed to repair the door. There is no company policy to protect workers when work is being performed in an aisle or doorway. Jim selected the tallest stepladder and set it up so he could inspect the door's mechanical linkage. Jim was on the next to the top step of the ladder when Tom struck the ladder.

Frank is also responsible for the maintenance of the company's forklifts. He admits, that due to lack of personnel, the brakes on Tom's forklift had not received proper maintenance. Frank has not taken forklifts, needing maintenance, out of service.

As a forklift operator, Tom receives directions to move material from all supervisors. Alice supervises the production department. Since there is a shortage of storage space in her department, she instructed Tom to remove some packaged material from the department and to bring more boxing material to the area. Tom acknowledged to Alice that the forklift's brakes were not working properly after narrowly missing Alice with the forklift. Tom had previously reported the bad brakes to maintenance but continued to operate it since repairs were not being done. Alice and at least one other witness reported that Tom operated the forklift too fast in the vicinity of the doorway.

Earlier on the day of the incident, Kathy told Alice there was some cooking oil on the floor of the doorway from production to the warehouse. Alice did not inform anyone of the spill nor direct it to be cleaned up.

Supervisors Accident Investigation Report

(ALL INJURIES MUST BE REPORTED TO FIRST AID)

COMPANY OR ORIGIN XYZ COMPANY		DEPARTMENT NAME AND NUMBER MAINTENANCE	
EXACT LOCATION AND GENERAL AREA SHOP FLOOR		DATE OF OCCURRENCE. 6/1/00	TIME <input type="checkbox"/> A.M. <input checked="" type="checkbox"/> P.M. 3: 00
PERSONAL INJURY		PROPERTY DAMAGE	
INJURED'S NAME AND SOCIAL SECURITY NUMBER JIM SMITH		PROPERTY DAMAGED NONE	
OCCUPATION MAINTENANCE	INJURED BODY PART LEG & HEAD	NATURE OF DAMAGE	
NATURE OF INJURY HURT LEG & HEAD		OBJECT/EQUIPMENT/SUBSTANCE CAUSING INJURY	
OBJECT/EQUIPMENT/SUBSTANCE CAUSING INJURY FORKLIFT		PERSON(S) WITH MOST CONTROL OF OBJECT/EQUIPMENT/SUBSTANCE	
PERSON(S) WITH MOST CONTROL OF OBJECT/EQUIPMENT/SUBSTANCE TOM BROWN		ESTIMATED COSTS	FOR INTERNAL USE – DO NOT COMPLETE

DESCRIBE CLEARLY HOW THE ACCIDENT OCCURRED:

TOM RAN INTO JIM'S LADDER WITH HIS FORKLIFT

Example of
bad report

WITNESS: **NONE**

LEAD ON DUTY:

DESCRIBE CLEARLY HOW THE ACCIDENT OCCURRED:

TOM'S FORKLIFT COULDN'T STOP.

WHAT ACTION(S) HAS OR WILL BE TAKEN TO PREVENT RECURRENCE? PLACE X AND DATE BY ITEM(S) COMPLETED

TELL TOM TO BE MORE CAREFUL NEXT TIME.

WHO GAVE FIRST AID, IF ANY _____ DID INJURED LEAVE WORK? _____ TTME _____ A.M. / P.M. DID INJURED RETURN TO WORK? _____ TTME _____ A.M. / P.M.	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">REPORT COMPLETED BY</td> <td style="width: 20%;">DATE</td> <td style="width: 20%;">EXTENSION</td> </tr> <tr> <td style="text-align: center;">STEVE MILLER</td> <td></td> <td style="text-align: center;">6/2/00</td> </tr> <tr> <td>REPORT COMPLETED BY</td> <td>DATE</td> <td>EXTENSION</td> </tr> </table>	REPORT COMPLETED BY	DATE	EXTENSION	STEVE MILLER		6/2/00	REPORT COMPLETED BY	DATE	EXTENSION
REPORT COMPLETED BY	DATE	EXTENSION								
STEVE MILLER		6/2/00								
REPORT COMPLETED BY	DATE	EXTENSION								

BWC

**Ohio Bureau of Workers'
Compensation
Division of Safety & Hygiene**

Workers' Compensation
claim # _____
OSHA 300 case/file # _____

ACCIDENT ANALYSIS REPORT

PART 1 IDENTIFICATION INFORMATION

Employee Name JIM SMITH
 Date of Accident 6/1/00 Time 3:00 AM PM
 Occupation MAINTENANCE Shift 1st
 Department MAINTENANCE ID 000

PART 2 SUPPLEMENTARY INFORMATION

Company XYZ COMPANY
 Mailing Address 0000 ANY STREET
DAYTON OHIO 45401
City State Zip Code

Telephone (000) 000-0000
 Establishment Location (if different from above) (SAME AS ABOVE)

Accident Location Same as establishment? On premises? (Check if applies)
WAREHOUSE AISLE #3

Employee Address 000 SOME STREET
DAYTON OHIO 45401
City State Zip Code

Telephone (000) 000-0000 Social Security Number 000-00-000

Sex MALE Age 32 Date of Birth 03/31/68

Was injured person performing regular job at time of accident? Yes No

Length of service: With employer 6 YRS On this job 5 YRS

Time shift started 7:00 AM PM Overtime? Yes No

Name and address of Physician DR. DOCKTOR
DAYTON OHIO 45401
City State Zip Code

If hospitalized, name and address of hospital DSH HOSPITAL
DAYTON OHIO 45401
City State Zip Code

Fatality? Yes No If Yes, date of death _____

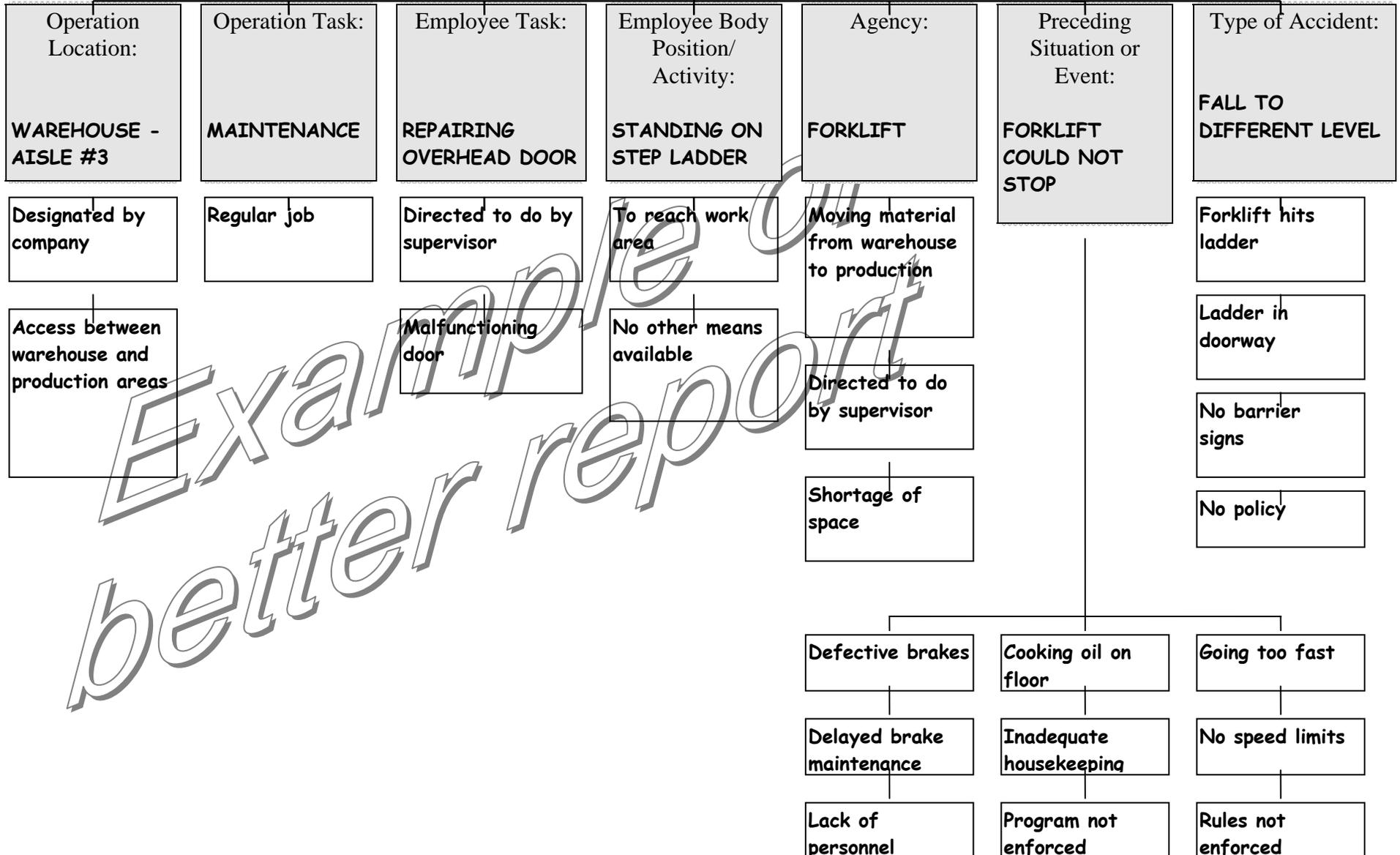
If death, attach Coroner's Report.

PART 3

ACCIDENT TREE

(Refer to Instructions)

Nature of Injury or Illness: FRACTURE	Part of Body Affected: LEFT LEG
---	---



*Example only
better report*

PART 4 DESCRIPTION AND ANALYSIS

Fully describe accident: (SEE ATTACHMENT #1)

Attach photographs of accident scene and machinery/equipment.

What factors led to the accident (from Accident Tree in Part 3)? (SEE ATTACHMENT #2)

MACHINERY/EQUIPMENT INVOLVED

Manufacturer MULE, INC. Equipment Age 10 YEARS
Serial No. A123456 Model RAH SERIES
Function MECHANICAL MATERIAL HANDLER
Location PRODUCTION AND WAREHOUSE

- 1. Has machine/equipment been modified? **NO**
- 2. Was it guarded properly? **YES**
- 3. Was there any mechanical failure? **NO**

To answer these questions, research and attach equipment history, maintenance history, relevant photographs and other reports and comments.

CONSTRUCTION N/A

If construction-related, date of contract _____

Is firm General Contractor or Subcontractor

Names of other contractors _____

WEATHER/ENVIRONMENTAL CONDITIONS (temperature, housekeeping, lighting, work surfaces, etc.)
COOKING OIL ON FLOOR; BLIND CORNERS

TRAINING

Did employee receive specific training or instructions relating to safety and health on the job being performed?

Yes No

If Yes: Type: _____

Instructed by: _____

When instructed: _____ Length of training _____

Attach appropriate training documentation.

PART 5 SPECIFIC ACTION THAT WILL BE TAKEN

ITEM #	DESCRIPTION	ROUTE TO	TARGET DATE
SEE ATTACHMENT "PREVENTIVE MEASURES FOR JIM'S ACCIDENT"			

WHAT ADDITIONAL ACTIONS SHOULD BE CONSIDERED?

Completed by: STEVE MILLER Date of Investigation 6/1/00

Title: SAFETY COORDINATOR

Reviewed by: _____ Date _____

Reviewed by: _____ Date _____

Attach individual statements from :

- (a) the injured worker
- (b) any witness(es) or others with contributing information
- (c) the employer.

For each statement, include name, job title, home address, home telephone number, and the date the statement was given.

INSTRUCTIONS

OSHA 101 FORM COMPATIBILITY--When fully completed, this report is believed to satisfy the requirements of the OSHA 101 form.

COMPLETION OF THIS REPORT--Parts 1 and 2 may be filled out by office personnel or other staff assigned this function. Parts 3, 4 and 5 **must** be completely filled out by the first line supervisor, in coordination with plant manager and safety director.

PROCEDURE FOR COMPLETING PART 3--ACCIDENT TREE

A. Fill in the top blocks of the tree.

Describe the NATURE of the injury or illness.

This could be a strain, sprain, laceration, contusion, abrasion, carpal tunnel syndrome, and so forth. Write in the space provided at the top of the tree.

Determine the PART OF THE BODY AFFECTED (such as right index finger, shoulder, lower back, and so forth.) and place this information in the adjacent space provided at the top of the tree.

If these specific details are not fully known at this time, do not wait to perform the investigation! Fill out as much as possible and continue.

If investigating accident or near miss, write *none* in "Nature of Injury or Illness" and "Part of Body Affected" blocks, and continue to next row of tree.

B. Fill in the next row of the tree.

1. Operation--Location

Where is the work being performed? Example: Working in assembly area.

2. Operation Task

On a larger scale, what specific operation is being performed? Examples: Milling keyway in shaft; Stocking shelves.

3. Employee Task

What specific task was the employee performing? Examples: Employee lifting box; Employee was fastening bolt.

4. Employee Body Position/Activity

Briefly describe the position required by the activity that relates to the accident, injury or illness. Examples: Wrist flexed forward; Hands grasping box.

5. Equipment or Substance

What is the equipment or substance which was directly involved in the accident, injury or illness? Examples: The machine or object struck against; The vapor or contaminant inhaled or swallowed; The object lifted, pulled.

6. Preceding Situation or Event

Determine important event(s) that led to the accident, injury, or illness. These may be considered as "triggering events", situations, or circumstances necessary for the accident to occur.

7. Type of Accident

What general type of accident occurred? Examples: Fall off a platform; Slipped on oil; Struck by machine tool; Contact with electricity; Exposure to hazardous substances.

C. Trace each factor in more detail.

Work from each of the factors identified above. Ask why each of the factors is necessary, or why they occurred. Under each factor, write the key words describing "why", and draw a line to connect the two. It is possible for there to be more than one reason "why" under each factor, so be sure to include all that you discover.

D. Repeat the process--build the tree.

The process in step three can be repeated until all questions are answered for each path of the tree. Dead ends are either unanswered questions that require additional investigation or pathways that have been resolved as far as practical.

Attachment # 1

Fully describe accident:

Frank instructed Jim to repair the overhead door in aisle #3.

At about the same time, Alice directed Tom to remove some boxes of packaged product from her area and to bring more boxing material to the department.

When Tom was traveling from the warehouse to the production department he encountered Jim on a stepladder in the middle to the doorway. Unable to stop or avoid the ladder, Tom struck the ladder with Jim on it. The ladder was knocked out from under Jim. Jim first fell onto the top of the load Tom was moving from the warehouse; then onto the floor. Jim's left leg broke when it finally struck against the overturned ladder.

*Example of
better report*

Attachment # 2

What factors led to the accident?

Frank supervises Jim in the maintenance department. Frank instructed Jim to repair the fire door located between the warehouse and production area because it had been reported as not working properly. Although Jim wanted to leave work early for a trout-fishing tournament, he agreed to repair the door. There is no company policy to protect workers when work is being performed in an aisle or doorway. Jim selected the tallest stepladder and set it up so he could inspect the door's mechanical linkage. Jim was on the next to the top step of the ladder when Tom struck the ladder.

Frank is also responsible for the maintenance of the company's forklifts. He admits, that due to lack of personnel, the brakes on Tom's forklift had not received proper maintenance. Frank has not taken forklifts, needing maintenance, out of service.

As a forklift operator, Tom receives directions to move material from all supervisors. Alice supervises the production department. Since there is a shortage of storage space in her department, she instructed Tom to remove some packaged material from the department and to bring more boxing material to the area. Tom acknowledged to Alice that the forklift's brakes were not working properly after narrowly missing Alice with the forklift. Tom had previously reported the bad brakes to maintenance but continued to operate it since repairs were not being done. Alice and at least one other witness reported that Tom operated the forklift too fast in the vicinity of the doorway.

Earlier on the day of the incident, Kathy told Alice there was some cooking oil on the floor of the doorway from production to the warehouse. Alice did not inform anyone of the spill nor direct it to be cleaned up.

Preventive Measures for Jim's Accident

- Repair fire-door (and investigate why it was not working properly)
- Develop and implement LOTO procedure for all fire-doors
- Purchase scissors-lift
- Conduct scissors-lift training
- Hold maintenance man accountable for standing on step-ladder unsafely
- Conduct ladder safety training
- Develop and implement a fall protection program
- Analyze the need for additional production storage space
- Develop and implement a forklift inspection program
- Develop and implement a planned maintenance program for forklifts
- Develop and implement a "deadline" policy for all powered equipment
- Hold supervisor accountable for allowing the forklift with brakes needing repair to be operated
- Clean-up spills immediately (and investigate how the oil was spilled)
- Encourage all employees to practice good housekeeping
- Hold supervisor accountable for not responding to report of spilled oil
- Purchase and install convex mirrors at all blind-corners
- Hold forklift operator accountable for operating the forklift unsafely
- Conduct forklift refresher training
- Hold supervisor accountable for not enforcing safe operation of forklift rules
- Develop and implement a worksite barricade policy
- Purchase worksite barricades

Causal Factors

(1) Task

- Ergonomics
- Safe work procedures
- Condition changes
 - Process
 - Materials
 - Workers
- Appropriate tools/materials
- Safety devices (including lockout)

(2) Material

- Equipment failure
- Machinery design/guarding
- Hazardous substances
- Substandard material

(3) Environment

- Weather conditions
- Housekeeping
- Temperature
- Noise levels
- Lighting
- Air contaminants
- Personal Protective Equipment

(4) Human Factor (Personal)

- Level of experience
- Level of training
- Physical capability
- Health
- Fatigue
- Stress

(5) Management / Process Failure

- Visible active senior management support for safety
- Safety policies
- Enforcement of safety policies
- Adequate supervision
- Knowledge of hazards
- Hazard corrective action
- Preventive maintenance
- Regular audits

“A Guide to Accident Investigation,” published by the Canadian Centre for Occupational Health and Safety (CCOHS) on its web site, www.ccohs.ca, appears here in its entirety.

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A Guide to Accident Investigation

- [What is an accident and why should it be investigated?](#)
 - [Who should do the accident investigating?](#)
 - [Who and how many people should investigate an accident?](#)
 - [Should the immediate supervisor be on the team?](#)
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 - [What are the steps involved in investigating an accident?](#)
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 - [How are the facts collected?](#)
 - [What should I know when making the analysis and conclusions?](#)
 - [Why should recommendations be made?](#)
 - [What should be done if the investigation reveals "human error"?](#)
-

▲ What is an accident and why should it be investigated?

The term "accident" can be defined as an unplanned event that interrupts the completion of an activity, and that may (or may not) include injury or property damage.

Reasons for workplace accident investigation are:

- to fulfill the legal requirement
- to determine the cost of an accident
- to determine compliance with applicable safety regulations
- to process workers' compensation claims

Most importantly accident investigations are conducted to find out the cause of accidents and to prevent similar accidents in the future.

Incidents that involve no injury or property damage should still be investigated to determine the hazards that should be corrected. The same principles apply to a quick inquiry of a minor incident and to the more formal investigation of a serious event.

The information that follows is intended to be a general guide for newly appointed supervisors or joint occupational health and safety committee members. When accidents are investigated, the emphasis should be concentrated on finding the root cause of the accident rather than the investigation procedure itself.

▲ **Who should do the accident investigating?**

Ideally, an investigation would be conducted by someone expert in accident causation, experienced in investigative techniques, fully knowledgeable of the work processes, procedures, persons, and industrial relations environment of a particular situation. Unfortunately, such persons are hard to find. Especially in smaller organizations, both workers and supervisors with little, if any, previous investigative experience may be called upon to participate in an accident investigation.

▲ **Who and how many people should investigate an accident?**

Some jurisdictions provide guidance such as requiring that it must be conducted jointly, with both management and labour represented, or that the investigators must be knowledgeable about the work processes involved.

▲ **Should the immediate supervisor be on the team?**

The advantage is that this person is likely to know most about the work and persons involved and the current conditions. Furthermore, the supervisor can usually take immediate remedial action. The counter argument is that there may be an attempt to gloss over the supervisor's shortcomings in the accident. This situation should not arise if the worker representative(s) and the management members review all accident investigation reports critically.

▲ **How to make sure that investigators are impartial?**

An investigator who believes that accidents are caused by unsafe conditions will likely try to uncover conditions as causes. On the other hand, one who believes they are caused by unsafe acts will attempt to find the human errors that are causes. Therefore, it is necessary to examine briefly some underlying factors in a chain of events that ends in an accident.

The important point is that even in the most seemingly straightforward accidents, **seldom, if ever, is there only a single cause.** For example, an "investigation" which concludes that an accident was due to worker carelessness, and goes no further, fails to seek answers to several important questions such as:

- Was the worker distracted? If yes, why was the worker distracted?
- Was a safe work procedure being followed? If not, why not?
- Were safety devices in order? If not, why not?
- Was the worker trained? If not, why not?

An inquiry that answers these and related questions will probably reveal conditions that are more open to correction than attempts to prevent "carelessness".

▲ **What are the steps involved in investigating an accident?**

The accident investigation process involves the following steps:

- Report the accident occurrence to a designated person within the organization
- Provide first aid and medical care to injured person(s)
- Investigate the accident
- Identify the causes
- Report the findings
- Develop a plan for corrective action
- Implement the plan
- Evaluate the effectiveness of the corrective action
- Make changes for continuous improvement

As little time as possible should be lost between the moment of an accident or near miss and the beginning of the investigation. In this way, one is most likely to be able to observe the conditions as they were at the time, prevent disturbance of evidence, and identify witnesses. The tools that members of the investigating team may need (pencil, paper, camera, film, camera flash, tape measure, etc.) should be immediately available so that no time is wasted.

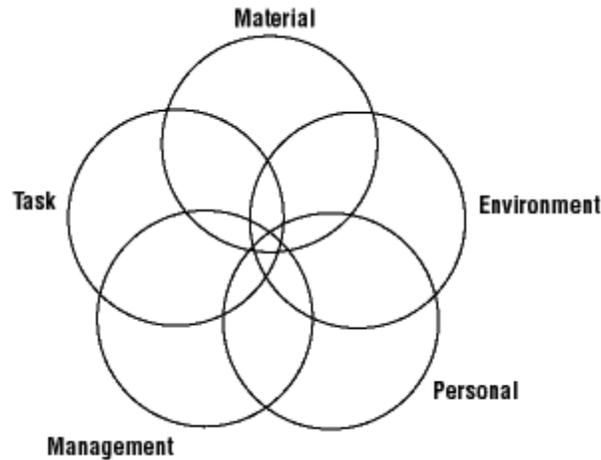
▲ **What should be looked at as the cause of an accident?**

Accident Causation Models

Many models of accident causation have been proposed, ranging from Heinrich's domino theory to the sophisticated Management Oversight and Risk Tree (MORT).

The simple model shown in Figure 1 attempts to illustrate that the causes of any accident can be grouped into five categories - task, material, environment, personnel, and management. When this model is used, possible causes in each category should be investigated. Each category is examined more closely below. Remember that these are *sample* questions only: no attempt has been made to develop a comprehensive checklist.

Figure 1: Accident Causation



Task

Here the actual work procedure being used at the time of the accident is explored. Members of the accident investigation team will look for answers to questions such as:

- Was a safe work procedure used?
- Had conditions changed to make the normal procedure unsafe?
- Were the appropriate tools and materials available?
- Were they used?
- Were safety devices working properly?
- Was lockout used when necessary?

For most of these questions, an important follow-up question is "If not, why not?"

Material

To seek out possible causes resulting from the equipment and materials used, investigators might ask:

- Was there an equipment failure?
- What caused it to fail?
- Was the machinery poorly designed?
- Were hazardous substances involved?
- Were they clearly identified?
- Was a less hazardous alternative substance possible and available?
- Was the raw material substandard in some way?
- Should personal protective equipment (PPE) have been used?
- Was the PPE used?

Again, each time the answer reveals an unsafe condition, the investigator must ask **why** this situation was allowed to exist.

Environment

The physical environment, and especially sudden changes to that environment, are factors that need to be identified. The situation at the time of the accident is what is important, not what the "usual" conditions were. For example, accident investigators may want to know:

- What were the weather conditions?
- Was poor housekeeping a problem?
- Was it too hot or too cold?
- Was noise a problem?
- Was there adequate light?
- Were toxic or hazardous gases, dusts, or fumes present?

Personnel

The physical and mental condition of those individuals directly involved in the event must be explored. The purpose for investigating the accident is **not** to establish blame against someone but the inquiry will not be complete unless personal characteristics are considered. Some factors will remain essentially constant while others may vary from day to day:

- Were workers experienced in the work being done?
- Had they been adequately trained?
- Can they physically do the work?
- What was the status of their health?
- Were they tired?
- Were they under stress (work or personal)?

Management

Management holds the legal responsibility for the safety of the workplace and therefore the role of supervisors and higher management must always be considered in an accident investigation. Answers to any of the preceding types of questions logically lead to further questions such as:

- Was safety rules communicated to and understood by all employees?
- Were written procedures available?
- Were they being enforced?
- Was there adequate supervision?
- Were workers trained to do the work?
- Had hazards been previously identified?

- Had procedures been developed to overcome them?
- Were unsafe conditions corrected?
- Was regular maintenance of equipment carried out?
- Were regular safety inspections carried out?

This model of accident investigations provides a guide for uncovering all possible causes and reduces the likelihood of looking at facts in isolation. Some investigators may prefer to place some of the sample questions in different categories; however, the categories are not important, as long as each pertinent question is asked. Obviously there is considerable overlap between categories; this reflects the situation in real life. Again it should be emphasized that *the above sample questions do not make up a complete checklist, but are examples only.*

▲ How are the facts collected?

The steps in accident investigation are simple: the accident investigators gather information, analyze it, draw conclusions, and make recommendations. Although the procedures are straightforward, each step can have its pitfalls. As mentioned above, an open mind is necessary in accident investigation: preconceived notions may result in some wrong paths being followed while leaving some significant facts uncovered. All possible causes should be considered. Making notes of ideas as they occur is a good practice but conclusions should not be drawn until all the information is gathered.

Injured workers(s)

The most important immediate tasks--rescue operations, medical treatment of the injured, and prevention of further injuries--have priority and others must not interfere with these activities. When these matters are under control, the investigators can start their work.

Physical Evidence

Before attempting to gather information, examine the site for a quick overview, take steps to preserve evidence, and identify all witnesses. In some jurisdictions, an accident site must not be disturbed without prior approval from appropriate government officials such as the coroner, inspector, or police. Physical evidence is probably the most non-controversial information available. It is also subject to rapid change or obliteration; therefore, it should be the first to be recorded. Based on your knowledge of the work process, you may want to check items such as:

- positions of injured workers
- equipment being used
- materials being used
- safety devices in use
- position of appropriate guards

- position of controls of machinery
- damage to equipment
- housekeeping of area
- weather conditions
- lighting levels
- noise levels

You may want to take photographs before anything is moved, both of the general area and specific items. Later careful study of these may reveal conditions or observations missed previously. Sketches of the accident scene based on measurements taken may also help in subsequent analysis and will clarify any written reports. Broken equipment, debris, and samples of materials involved may be removed for further analysis by appropriate experts. Even if photographs are taken, written notes about the location of these items at the accident scene should be prepared.

Eyewitness Accounts

Although there may be occasions when you are unable to do so, every effort should be made to interview witnesses. In some situations witnesses may be your primary source of information because you may be called upon to investigate an accident without being able to examine the scene immediately after the event. Because witnesses may be under severe emotional stress or afraid to be completely open for fear of recrimination, interviewing witnesses is probably the hardest task facing an investigator.

Witnesses should be interviewed as soon as practicable after the accident. If witnesses have an opportunity to discuss the event among themselves, individual perceptions may be lost in the normal process of accepting a consensus view where doubt exists about the facts.

Witnesses should be interviewed alone, rather than in a group. You may decide to interview a witness at the scene of the accident where it is easier to establish the positions of each person involved and to obtain a description of the events. On the other hand, it may be preferable to carry out interviews in the quiet of an office where there will be fewer distractions. The decision may depend in part on the nature of the accident and the mental state of the witnesses.

Interviewing

Interviewing is an art that cannot be given justice in a brief document such as this, but a few do's and don'ts can be mentioned. The purpose of the interview is to establish an understanding with the witness and to obtain his or her own words describing the event:

DO...

- put the witness, who is probably upset, at ease
- emphasize the real reason for the investigation, to determine what happened and why
- let the witness talk, listen
- confirm that you have the statement correct

- try to sense any underlying feelings of the witness
- make short notes only during the interview

DO NOT...

- intimidate the witness
- interrupt
- prompt
- ask leading questions
- show your own emotions
- make lengthy notes while the witness is talking

Ask open-ended questions that cannot be answered by simply "yes" or "no". The actual questions you ask the witness will naturally vary with each accident, but there are some general questions that should be asked each time:

- Where were you at the time of the accident?
- What were you doing at the time?
- What did you see, hear?
- What were the environmental conditions (weather, light, noise, etc.) at the time?
- What was (were) the injured worker(s) doing at the time?
- In your opinion, what caused the accident?
- How might similar accidents be prevented in the future?

If you were not at the scene at the time, asking questions is a straightforward approach to establishing what happened. Obviously, care must be taken to assess the credibility of any statements made in the interviews. Answers to a first few questions will generally show how well the witness could actually observe what happened.

Another technique sometimes used to determine the sequence of events is to replay them as they happened. Obviously, great care must be taken so that further injury or damage does not occur. A witness (usually the injured worker) is asked to reenact in slow motion the actions that preceded the accident.

Background Information

A third, and often an overlooked source of information, can be found in documents such as technical data sheets, maintenance reports, past accident reports, formalized safe-work procedures, and training reports. Any pertinent information should be studied to see what might have happened, and what changes might be recommended to prevent recurrence of similar accidents.

▲ **What should I know when making the analysis and conclusions?**

At this stage of the investigation most of the facts about what happened and how it happened should be known. This has taken considerable effort to accomplish but it represents only the first half of the objective. Now comes the key question--why did it happen? To prevent recurrences of similar accidents, the investigators must find all possible answers to this question.

You have kept an open mind to all possibilities and sought out all pertinent facts. There may still be gaps in your tracing of the sequence of events that resulted in the accident. You may need to reinterview some witnesses to fill these gaps in your knowledge, or you may have to resort to assumptions. Some authorities claim that assumptions have no place in accident investigations. On the other hand, it may better to make assumptions based on what evidence is available, than to leave questions unanswered.

- When your analysis is complete, jot down a step-by-step account of what happened (your conclusions) working back from the moment of the accident, listing all possible causes at each step. This is not extra work: it is a draft for part of the final report. Each conclusion should be checked to see if:
 - it is supported by evidence
 - the evidence is direct (physical or documentary) or based on eyewitness accounts, or
 - the evidence is based on assumption.

This list serves as a final check on discrepancies that should be explained or eliminated.

▲ **Why should recommendations be made?**

The most important final step is to come up with a set of well-considered recommendations designed to prevent recurrences of similar accidents. Once you are knowledgeable about the work processes involved and the overall situation in your organization, it should not be too difficult to come up with realistic recommendations. Resist the temptation to make only general recommendations to save time and effort.

For example, you have determined that a blind corner contributed to an accident. Rather than just recommending "eliminate blind corners" it would be better to suggest:

- install mirrors at the northwest corner of building X (specific to this accident)
- install mirrors at blind corners where required throughout the worksite (general)

Never make recommendations about disciplining a person or persons who may have been at fault. This would not only be counter to the real purpose of the investigation, but it would jeopardize the chances for a free flow of information in future accident investigations.

In the unlikely event that you have not been able to determine the causes of an accident with any certainty, you probably still have uncovered safety weaknesses in the operation. It is appropriate that recommendations be made to correct these deficiencies.

The Written Report

If your organization has a standard form that must be used, you will have little choice in the form that your written report is to be presented. Nevertheless, you should be aware of, and try to overcome, shortcomings such as:

- If a limited space is provided for an answer, the tendency will be to answer in that space despite recommendations to "use back of form if necessary."
- If a checklist of causes is included, possible causes not listed may be overlooked.
- Headings such as "unsafe condition" will usually elicit a single response even when more than one unsafe condition exists.
- Differentiating between "primary cause" and "contributing factors" can be misleading. All accident causes are important and warrant consideration for possible corrective action.

Your previously prepared draft of the sequence of events can now be used to describe what happened. Remember that readers of your report do not have the intimate knowledge of the accident that you have so include all pertinent detail. Photographs and diagrams may save many words of description. Identify clearly where evidence is based on certain facts, eyewitness accounts, or your assumptions.

If doubt exists about any particular part, say so. The reasons for your conclusions should be stated and followed by your recommendations. Weed out extra material that is not required for a full understanding of the accident and its causes such as photographs that are not relevant and parts of the investigation that led you nowhere. The measure of a good accident report is quality, not quantity.

▲ What should be done if the investigation reveals "human error"?

A difficulty that has bothered many investigators is the idea that one does not want to lay blame. However, when a thorough worksite accident investigation reveals that some person or persons among management, supervisor, and the workers were apparently at fault, then this fact should be pointed out. The intention here is to remedy the situation, not to discipline an individual.

Failing to point out human failings that contributed to an accident will not only downgrade the quality of the investigation. Furthermore, it will also allow future accidents to happen from similar causes because they have not been addressed.

▲ *Document last updated on April 9, 1998*

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Information found May 25, 2000 at
<http://www.ccohs.ca/oshanswers/hsprograms/investig.html#A>

The BWC Division of Safety & Hygiene Accident Investigation form appears here in its entirety.

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ACCIDENT ANALYSIS REPORT

PART 1 IDENTIFICATION INFORMATION

Employee Name _____
 Date of Accident _____ Time _____ AM PM
 Occupation _____ Shift _____
 Department _____ ID _____

PART 2 SUPPLEMENTARY INFORMATION

Company _____
 Mailing Address _____

 City _____ State _____ Zip Code _____
 Telephone (____) _____
 Establishment Location (if different from above) _____

Accident Location Same as establishment? On premises? (Check if applies)

Employee Address _____

 City _____ State _____ Zip Code _____
 Telephone (____) _____ Social Security Number _____
 Sex _____ Age _____ Date of Birth _____

Was injured person performing regular job at time of accident? Yes No
 Length of service: With employer _____ On this job _____
 Time shift started _____ AM PM Overtime? Yes No

Name and address of Physician _____

 City _____ State _____ Zip Code _____

If hospitalized, name and address of hospital _____

 City _____ State _____ Zip Code _____

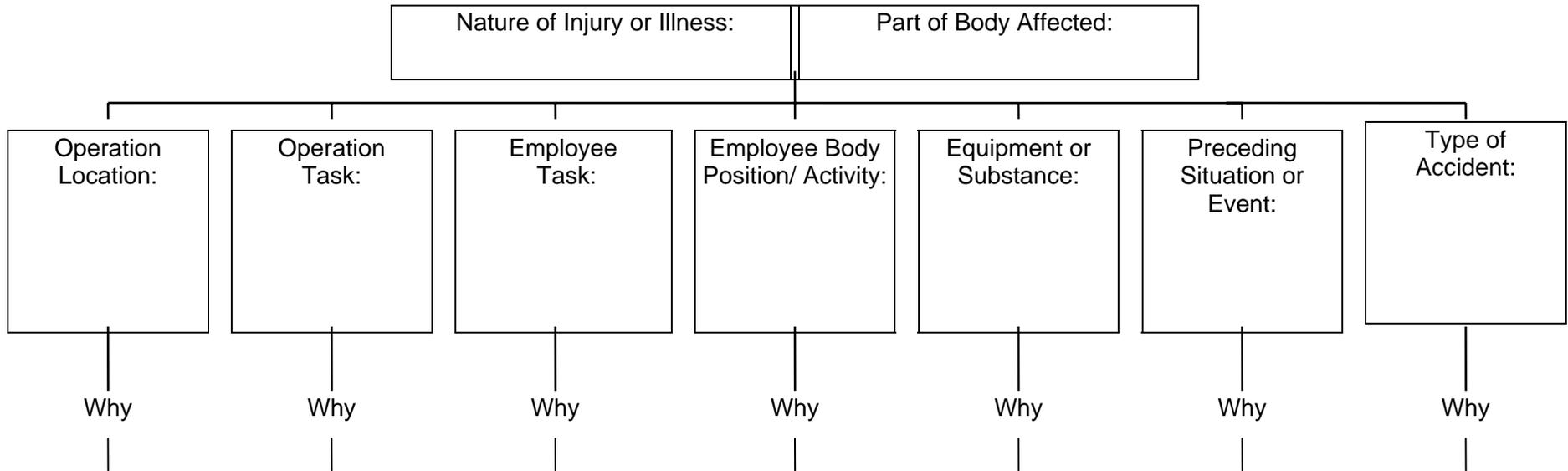
Fatality? Yes No If Yes, date of death _____

If death, attach Coroner's Report.

PART 3

ACCIDENT TREE

(Refer to Instructions)



PART 4 DESCRIPTION AND ANALYSIS

Fully describe accident:

Attach photographs of accident scene and machinery/equipment.

What factors led to the accident (from Accident Tree in Part 3)?

MACHINERY/EQUIPMENT INVOLVED

Manufacturer _____ Equipment Age _____
Serial No. _____ Model _____
Function _____
Location _____

- 4. Has machine/equipment been modified?
- 5. Was it guarded properly?
- 6. Was there any mechanical failure?

To answer these questions, research and attach equipment history, maintenance history, relevant photographs and other reports and comments.

CONSTRUCTION

If construction-related, date of contract _____
Is firm General Contractor or Subcontractor
Names of other contractors _____

WEATHER/ENVIRONMENTAL CONDITIONS (temperature, housekeeping, lighting, work surfaces, etc.)

TRAINING

Did employee receive specific training or instructions relating to safety and health on the job being performed?

Yes No

If Yes: Type: _____

Instructed by: _____

When instructed: _____ Length of training _____

Attach appropriate training documentation.

PART 5 SPECIFIC ACTION THAT WILL BE TAKEN

ITEM #	DESCRIPTION	ROUTE TO	TARGET DATE

WHAT ADDITIONAL ACTIONS SHOULD BE CONSIDERED?

Completed by: _____ Date of Investigation _____

Title: _____

Reviewed by: _____ Date _____

Reviewed by: _____ Date _____

- Attach individual statements from :**
- (d) the injured worker**
 - (e) any witness(es) or others with contributing information**
 - (f) the employer.**

For each statement, include name, job title, home address, home telephone number, and the date the statement was given.

INSTRUCTIONS

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PROCEDURE FOR COMPLETING PART 3--ACCIDENT TREE

A. Fill in the top blocks of the tree.

Describe the NATURE of the injury or illness.

This could be a strain, sprain, laceration, contusion, abrasion, carpal tunnel syndrome, and so forth. Write in the space provided at the top of the tree.

Determine the PART OF THE BODY AFFECTED (such as right index finger, shoulder, lower back, and so forth.) and place this information in the adjacent space provided at the top of the tree.

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On a larger scale, what specific operation is being performed? Examples: Milling keyway in shaft; Stocking shelves.

3. Employee Task

What specific task was the employee performing? Examples: Employee lifting box; Employee was fastening bolt.

4. Employee Body Position/Activity

Briefly describe the position required by the activity that relates to the accident, injury or illness. Examples: Wrist flexed forward; Hands grasping box.

5. Equipment or Substance

What is the equipment or substance which was directly involved in the accident, injury or illness? Examples: The machine or object struck against; The vapor or contaminant inhaled or swallowed; The object lifted, pulled.

6. Preceding Situation or Event

Determine important event(s) that led to the accident, injury, or illness. These may be considered as "triggering events", situations, or circumstances necessary for the accident to occur.

7. Type of Accident

What general type of accident occurred? Examples: Fall off a platform; Slipped on oil; Struck by machine tool; Contact with electricity; Exposure to hazardous substances.

C. Trace each factor in more detail.

Work from each of the factors identified above. Ask why each of the factors is necessary, or why they occurred.

Under each factor, write the key words describing "why", and draw a line to connect the two. It is possible for there to be more than one reason "why" under each factor, so be sure to include all that you discover.

D. Repeat the process--build the tree.

The process in step three can be repeated until all questions are answered for each path of the tree. Dead ends are either unanswered questions that require additional investigation or pathways that have been resolved as far as practical.

Proactive Utilization of Data

Gather information

- Paper documentation
 - OSHA 300 log
 - First aid logs
 - Accident Reports
 - Process documents
 - Maintenance records
 - Safety audit documents
 - Workforce Suggestion
 - Safety Committee minutes
- Technology tools
- Interviews
 - Employees
 - Supervisors/Managers
 - Vendors
 - Outside consultants
 - Trade associations
 - Other companies in your industry
- Workplace audits

Evaluate data for trends

- Repeat injuries
- Accident types
- Nature of injury
- Department (location)
- Operation task
- Employee task
- Human factors

Draw conclusions

Make recommendations

Take action

FIRST-AID REPORT FORM

Date _____ Case number _____

Name _____ Male Female

Department _____ Job Title _____

Supervisor _____

Date of Treatment _____ Time _____ AM / PM

Type of Injury _____

Describe What Happened _____

Nature of Treatment _____

Subsequent Action Taken:

- Referred to Physician Sent to hospital Sent home
- Returned to work Refused treatment
- Other (explain) _____

Signed _____ Date _____

Title _____

NATURE OF INJURY TRENDS
Injury/Illness Statistics

	Amputations	Burns	Contusions	Foreign Body In Eye	Fractures	Lacerations / Punctures	Sprains/ Strains	Cumulative Trauma Disorders	Multiple Injuries	TOTALS
January										
February										
March										
April										
May										
June										
July										
August										
September										
October										
November										
December										
TOTALS										

PART OF BODY TRENDS
Injury/Illness Statistics

	Eyes	Head	Face & Neck	Back	Trunk/ Internal Organs	Arms	Hands/ Fingers	Legs	Feet/ Toes	Multiple Parts	TOTALS
January											
February											
March											
April											
May											
June											
July											
August											
September											
October											
November											
December											
TOTALS											

TYPE OF ACCIDENT OR EXPOSURE TRENDS

Injury/Illness Statistics

	Caught In, On, or Between	Contact w/ Temperature Extremes	Contact w/ Electricity	Falls	Contact w/ Harmful Substances	Striking Against	Struck By	Slips	Overexertion	TOTALS
January										
February										
March										
April										
May										
June										
July										
August										
September										
October										
November										
December										
TOTALS										

Ohio Center for Occupational Safety & Health
ACCIDENT ANALYSIS SEMINAR

Self Analysis Accident Analysis Report Form

Information	Y	N	Comment
I. Form:			
A. Case or File Number			
B. CLAIM NUMBER			
II. Employer:			
A. Name			
B. Mailing Address			
C. Location			
D. TELEPHONE			
E. RISK NUMBER			
F. MANUAL NUMBER(S)			
III. Employee:			
A. Name			
B. Social Security Number			
C. Home Address			
D. Age/ Date of Birth			
E. Sex			
F. Occupation			
G. Department			
H. SHIFT			
I. TIME SHIFT STARTED			
J. OVERTIME			
K. ID NUMBER			
L. TELEPHONE			
M. PERFORMING REGULAR JOB			
N. LENGTH OF SERVICE WITH EMPLOYER			
O. LENGTH OF SERVICE ON JOB			

IV. The Accident or Exposure:			
A. Location			
B. On Employer's Premises			
C. What Was The Employee Doing			
D. How Did It Occur			
E. Date and time of the accident			
V. The Injury or Illness:			
A. Describe it in detail and the part of the body			
B. Name the object or substance directly involved			
C. Date and time of the injury or initial diagnosis			
D. FATALITY			
E. DATE OF DEATH			
VI. Other:			
A. Name and Address of Physician			
B. Name and Address of Hospital			
C. Date of Report			
D. Prepared By			
E. Official Position			
F. MACHINERY/EQUIPMENT INVOLVED			
G. TRAINING			
H. SPECIFIC ACTION THAT WILL BE TAKEN			
I. REVIEWED BY			
J. STATEMENT(S) BY EMPLOYEE, WITNESS(S), and EMPLOYER			

(The BWC Division of Safety & Hygiene neither recommends or endorses any product. This is a representation of what is available.)

The following information is from the Best Safety Directory, A. M. Best Co., Oldwick, NJ 08858 (1996).

Loss Control Data Management Software

These software systems provide a means to record and maintain on a personal computer a variety of loss control information, including both safety and security information. The software packages may record information, such as access control information, that is collected at remote points in a facility, or they may simply store information that is fed into a personal computer. The software may also provide accident and injury/illness reporting capacities, insurance forms, and data analysis features. **Recommended uses:** To reduce paper work and improve loss control information management by providing a means to record and maintain the information on a PC.

DNV Loss Control Management, 4546 Atlanta Highway, Loganville, GA 30249

1-404-466-2208 FAX: 1-404-466-4318

EcoAnalysis, Inc., 221 Matilija Street, Ste. A, Ojai, CA 93023 1-800-646-1461 FAX: 1-805-646-4141

Injury Prevention Technology, 2732 Woodstock Rd., Los Alamitos, CA 90720 1-310-430-5646

Safety Software, Inc., 2030 Spottswood Road, Ste. 200, P.O. Box 5225, Charlottesville, VA 22905 1-800-932-9457 FAX: 1-804-296-1660

Injury/Illness Reports & Claims Analysis

Computer systems and services can manage employee injury and illness reports and statistics covering such topics as heart disease, alcohol and drug abuse, illnesses related to on-the-job exposure to toxic materials, and job absenteeism patterns and rates.

Azimuth Technologies, Inc., 1825 Richard Street, Pomona, CA 91787 1-818-405-0300 FAX: 1-818-405-9010

DNV Loss Control Management, 4546 Atlanta Highway, Loganville, GA 30249

1-404-466-2208 FAX: 1-404-466-4318

EcoAnalysis, Inc., 221 Matilija Street, Ste. A, Ojai, CA 93023 1-800-646-1461 FAX: 1-805-646-4141

Injury Prevention Technology, 2732 Woodstock Rd., Los Alamitos, CA 90720 1-310-430-5646

Labelmaster, An American Labelmark Co., 5724 N. Pulaski Rd., Chicago, IL 60646 1-800-621-5808 FAX: 1-800-723-4327

PerDATUM, Inc., 4098 Main Street, Hilliard, OH 43026 1-614-777-4636 FAX: 1-614-777-4650

Safety Software, Inc., 2030 Spottswood Road, Ste. 200, P.O. Box 5225, Charlottesville, VA 22905 1-800-932-9457 FAX: 1-804-296-1660

Accident Analysis Software

These software packages provide safety, engineering, and medical expertise assistance to managers when evaluating accidents. Causation factors, product failures, and human elements are considered.

Azimuth Technologies, Inc., 1825 Richard Street, Pomona, CA 91787
1-818-405-0300 FAX: 1-818-405-9010

EcoAnalysis, Inc., 221 Matilija Street, Ste. A, Ojai, CA 93023 1-800-646-1461 FAX: 1-805-646-4141

PerDATUM, Inc., 4098 Main Street, Hilliard, OH 43026 1-614-777-4636
FAX: 1-614-777-4650

PHH Management Services, 307 International Circle, Hunt Valley, MD 21030 1-417-771-2817 FAX: 1-410-771-6337

Safety Software, Inc., 2030 Spottswood Road, Ste. 200, P.O. Box 5225, Charlottesville, VA 22905 1-800-932-9457 FAX: 1-804-296-1660

“Accident Investigations: How to Ask Why,” from *Safety & Health*, December 1992, appears here in its entirety. The original page numbers appear on the pages.

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Accident Investigations: How to Ask Why

With a little psychology and a lot of common sense, you can get more out of interviews with accident witnesses.

By Shane Tritsch

You wouldn't send an archaeologist to unearth the remains of an ancient city if he or she didn't know how to use a shovel. Yet when accidents happen in the workplace, companies often do the equivalent when they send investigators who don't know how to use their most important tool, the witness interview, to dig for information.

Witness interviews can make or break an accident investigation. They yield information an investigator needs to reconstruct the accident, understand its causes and ultimately recommend ways to prevent it from reoccurring. Yet some investigators step into their roles with little formal training. They may ask the wrong questions and fail to get the most out of witnesses. Or they might antagonize witnesses and lose their trust. Maybe they presume too quickly to know all the answers and fail to pursue important lines of questioning. Or perhaps they steer witnesses to their own hypotheses.

With so much riding on an investigation - the safety and well-being of the workers, for one thing, and a company's ability to defend itself in potential litigation, for another - it is crucial that safety professionals master the art of the post-accident witness interview.

The Basics of Accident Prevention

Even at companies where safety is a priority, accidents are inevitable. Prepare yourself with an investigation game plan. "Sit down as a management group or safety group and

look at areas where people get hurt," says Harold Risk, professor of health and safety at St. Cloud State University in Minnesota. "Conveyor belts, computers, fire and heat, sharp objects, heavy materials, high-speed equipment, enclosed places where someone could be trapped or overcome by toxic vapors or gases - all present hazards. If you don't know the right questions to ask [about hazardous areas], you're just going to wing it and may fail to get crucial information."

as a group is not advisable because they will tend to rally around a consensus. "If someone says something [that's not true], the rest may agree to it because no one wants to rat on anyone else," explains Phil Schmidt, section administrator for the National Safety Council.

- Conduct the interview at the scene of the accident. Witnesses can point to specific details and conditions rather than describe them, and the interviewer can see them rather than imagine them. This saves time

As an investigator, you're not auditioning for a cross-examination scene on the next episode of L.A.

Witness interviews vary according to the investigation and the investigator. Most safety experts agree, however, on some basic principles.

- Get the names of anyone who can provide relevant information. The list should include those directly involved with the accident, those who saw it happen, those who can account for events leading up to it and those who arrived on the scene immediately afterward. The best witnesses generally were close to the scene, often within a radius of 10 feet, Risk says.

- Interview one-on-one. Gang interviewing with a team or panel of investigators intimidates a witness. Conversely, interviewing witnesses

and prevents misunderstanding.

- Question witnesses as soon as possible. Facts are fresher, memories are clearer. The only reason to delay an interview is for medical treatment or because the person needs time to regain composure.

"If you wait until the next day to get to a witness, the validity is pretty much gone," Risk says. "Their recollection won't be as detailed. Plus, they'll go home and get coaching from other people and end up changing their stories."

Find Fact, Not Fault

The best witness is one who is relaxed and who responds freely to questions. Yet often witnesses are

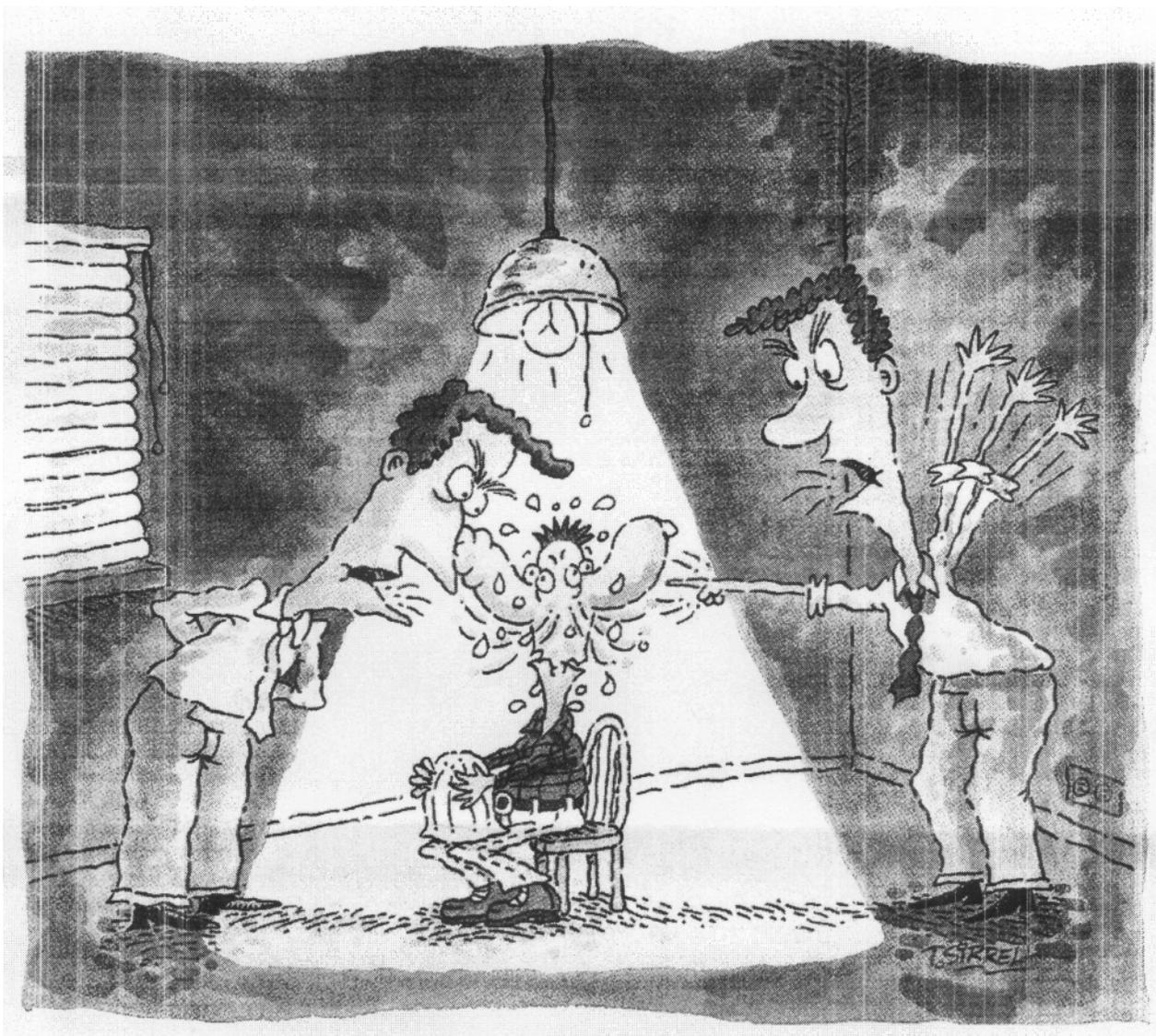


Illustration by Terry Sirrell

anything but relaxed or responsive, especially at the beginning of an interview. They may be concerned about the well-being of a friend or colleague. They may also fear that their testimony will get someone in trouble or jeopardize their job. Like Schultz on the old *Hogan's Heroes*

television show, they might conclude that the safest course is simply to say, "I know nothing."

"It's human nature to hold back," Risk says. "To talk is to expose yourself. To keep quiet is to protect yourself. There is usually a mentality of us against them - workers against

management. And both sides are going to look out for their own best interests."

There are numerous ways to encourage witness cooperation (see sidebar), but perhaps the key is to avoid any appearance that you are out to assign blame. "Don't point

fingers,” advises Richard Jarrell, manager of safety and training at Bohn Aluminum Corp. in Butler, Ind. “It won't get you anywhere other than to make people uncooperative. It tells them you're interested in one thing - finding fault. You may very well know that there's fault involved. But workers are very protective of one another. They may not like some co-workers. But they like you, a representative of management, even less.”

Emphasize that the investigation's purpose is to uncover facts. Review the facts as you know them. It may convince the witness that there is no point in holding back and should lend credibility to your assurance that you really are interested in just the facts.

“I try to ask generic questions starting off, more about conditions than what happened,” says Steven Gross, safety manager at Helena Chemical Co. in Des Moines, Iowa. “If you start by asking about the conditions, that helps put people at ease. It reinforces the fact that it isn't a head hunt and that we are looking for the root causes of the accident.”

Some safety supervisors tell witnesses right off that they are not looking to find fault or dole out reprisals. While this indeed may be true, the mere mention of the word “fault” might act as a red flag. “The minute you start putting in qualifiers, it's going to put the person being interviewed on guard,” Risk says. “It's like telling someone in a police interview that you're not going to arrest them. Why raise the issue? Why not start out saying that all you want are the facts? Let the witness talk. He or she might talk for five minutes, or go on for an hour.”

To steer witnesses away from concerns about blame and reprisals, stress the more important reason for conducting the investigation, one that is in the workers' own interest: preventing future accidents. “Reinforce the fact that you're not out to get someone and that your company is dedicated to safety in the workplace,” says Helena Chemical's Gross. “An accident is a terrible way to learn from your mistakes, but if you don't learn, it's

again. We stress that it's a learning process and that we don't want it to happen to the next guy.”

How to Question the Witness

As an accident investigator, you're not auditioning for a cross-examination scene on the next episode of *L.A. Law*. You want to hear the witness' views of what happened, just as he or she saw it, unbiased by your line of questioning or someone else's testimony. Be sure it is the witness' version and not hearsay or a version that is embellished for your benefit. Practice these techniques during questioning:

- Ask open-ended questions (ones that can't be answered yes or no). Get the facts about conditions, what happened and how it hap-

pened. Establish whether anything appeared out of the ordinary - an odd odor, perhaps, or a missing machine guard or a procedural breach. But be careful not to lead the witness. If you suspect that an employee involved in an accident got careless because he or she was preoccupied with other matters, don't ask, “Did John seem distracted lately?” Ask instead, “How has John seemed to you lately?”

- Don't interrupt. Let the witness tell all he or she knows, from beginning to end. “If you ask questions, you'll get an answer but maybe not the whole answer. By letting them give their own thoughts, you're more likely to get opinion as well as fact,” says Don Durnil, occupational safety-and-health officer at the Naval Aviation Depot in Cherry Point, N.C.

- Don't disagree. “If you're familiar with the operation and a person says it was done a certain way, and you say it couldn't have been, you may be right,” Jarrell says. “But the worker was there and saw what happened firsthand. I try to look at *everyone as* teng the truth

until I'm convinced otherwise.”

- Some investigators recommend reenacting the events preceding an accident. The rationale is that reenactment can help the investigator visualize the incident. The obvious drawback is that it could lead to further injury. With proper caution, however, this can be a valuable investigative tool.

- Have the witness draw rough diagrams as a way to detail who was where and to illustrate how the accident happened.

- Ask the witness how the accident could have been prevented. Often the people closest to the scene will have the best understanding of what went wrong and know how to prevent a repeat. When investigators ask for employee input, they

In the course of an investigation, it may be tempting to speculate on an accident's cause before hearing all the testimony. Experienced investigators resist this impulse.

create an atmosphere of partnership and reinforce the notion that the mission is safety and prevention.

- When the witness finishes, follow up with questions that will clarify or amplify previous points. But also recognize that it isn't necessary always to press for a definite answer. “Let them know it's okay to say, ‘I don't know,’” Durnil says. “You want facts. If they don't know, then you don't want them to tell you.”

- Keep a permanent, accurate record of the interview. In most cases, detailed notes will suffice. This could be a written summary in the investigator's words or in the employee's words. For an elaborate investigation it could even include taped or videotaped testimony. These records will help you keep straight who said what. They will be invaluable when it comes time to write your report or should the investigation reopen in the future.

- Repeat to the witness what you've noted, and correct any errors. This assures that you have accurately recorded what the witness

said and not what you think he or she said. It may also jog the witness' memory and unearth details that may shed light on the investigation.

Don't Jump to Conclusions

In the course of an investigation you may be tempted to speculate on an accident's cause before you hear all the testimony. This is natural, but experienced investigators resist the impulse. Those who harbor preconceived notions are more likely to look only for evidence that fits their theory and to ignore that which does not.

"Don't try to project what may have happened, even if you are 99 percent sure," Schmidt says. "The witness will give much better answers if you don't have any foregone conclusions. If you offer witnesses a conclusion, they will either agree with you or change the thrust of their answers."

It's also easy to look for superficial answers rather than root causes. If an employee slips on a wet floor, a sloppy investigator might simply conclude that the wet floor caused the accident and not look into the housekeeping procedures that might have caused a wet floor at an inappropriate time. Recognize that most accidents have more than one cause. Continue to ask questions until those causes become clear, even if it means you must talk to a witness two or three times. Inform witnesses in advance that you may need to conduct follow-up interviews, and don't hesitate to do so if there are discrepancies or gaps in their testimony.

Some discrepancies, however, are probably inevitable and may even be a sign of a good investigation. "If you talk to 12 witnesses, you want to hear 12 different stories," Risk says. "If they saw and heard the same thing, that common thread will run through all of their stories. If two or three people said they heard a snap or rumble, then you get a fairly accurate picture that this is actually what occurred."

Finding out what occurred, of course, is what witness interviews are all about. It is through such revelation, arrived at methodically and objectively, that the accident investigator can help

Sources: Robert Bendy, senior environmental health-and-safety specialist, Loral Fairchild Systems; Oliver Diedrich, environmental health-and-safety coordinator, IGC Advanced Superconductors; Don Durnil, occupational health-and-safety officer, U.S. Marine Corps; Steven Gross, safety

manager, Helena Chemical Co.; Richard Jarrell, manager of safety and training, Bohn Aluminum Corp.; Charles Pabke, safety supervisor, L. E. Pabke Co.; Dr. Harold Risk, professor of health and safety, St. Cloud State University; Phil Schmidt, section administrator, National Safety Council.

The Rapport Report: How to Put Witnesses at Ease

It may not be enough simply to tell a witness that you are not looking to find fault in an accident investigation. You must also show it. After all, verbal assurances will mean little if the witness reads conflicting signals in your demeanor and body language. Harold Risk, professor of health and safety at St. Cloud (Minn.) State University, offers the following tips to help you tailor your actions to your words.

- Introduce yourself, tell witnesses what your position is and why you're there: namely, to find out their impressions and hear their eyewitness account.
- Encourage witnesses to call you by your first name if they don't already know you by that. "If you insist on going by a title such as Dr. or Mr., the employee will perceive you to be a person of authority and will clam up," Risk says.
- Attend to witnesses' creature comforts. Make sure they have a comfortable chair to sit in. Offer them a soft drink or cup of coffee. "The whole thing is to put them at ease, to make them feel nonthreatened," Risk explains. "What you don't want to do is create the feeling of an interrogation room from an old police movie. A bare room with a single metal table and a bare light bulb is the last thing in the world you want."
- Sit adjacent or near to witnesses. Avoid placing barriers between the two of you such as a long conference table or a large desk.
- Speak gently, colloquially, with a relaxed cadence - in the manner of a counselor. Avoid speaking too formally, quickly or loudly.
- Be sincere, polite and show compassion.
- Be conscious of your own body language and the fact that it can betray your real thoughts. "Just by a simple gesture - like raising an eyebrow or cocking your head - you can show that you don't believe witnesses, even without saying a word, and even though they were there and ostensibly are telling you what they saw," Risk says.
- Pay careful attention while witnesses speak. Maintain eye contact, and refrain from nervous habits such as tapping your foot or playing with your coffee cup.
- Avoid threatening gestures such as standing over witnesses or walking behind them, where they can't see you.
- Foster a sense of partnership and boost witnesses' esteem by stressing to them that they are a key in the company's efforts to create a safer environment. First of all, it's true. And second, says Risk, "Everyone likes to be schmoozed a little."
- Don't rush because your boss wants a report pronto or because it's Friday afternoon and you want to go home. "It's a mistake to show you're in a hurry," Risk says. "As soon as they perceive that you are, witnesses will log off on you."

“How to Prepare for Workplace Emergencies,” published by the Department of Labor, Occupational Safety and Health Administration (1995), appears here in its entirety. The original page numbers appear on the pages.

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How to Prepare for Workplace Emergencies



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

OSHA 3088
1995 (Revised)



This informational booklet is intended to provide a generic, non-exhaustive overview of a particular standards-related topic. This publication does not itself alter or determine compliance responsibilities, which are set forth in OSHA standards themselves and the *Occupational Safety and Health Act*.

Moreover, because interpretations and enforcement policy may change over time, for additional guidance on OSHA compliance requirements, the reader should consult current administrative interpretations and decisions by the Occupational Safety and Health Review Commission and the courts.

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How to Prepare for Workplace Emergencies



U.S. Department of Labor
Robert B. Reich, Secretary

Occupational Safety and Health Administration
Joseph A. Dear, Assistant Secretary

OSHA 3088
1995 (Revised)

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Introduction

The importance of an effective workplace safety and health program cannot be overemphasized. There are many benefits from such a program including increased productivity, improved employee morale, reduced absenteeism and illness, and reduced workers' compensation rates; however, incidents still occur in spite of efforts to prevent them. Therefore, proper planning for emergencies is necessary to minimize employee injury and property damage.

Purpose

This publication details the basic steps to handle emergencies in the workplace. These emergencies include accidental releases of toxic gases, chemical spills, fires, explosions, and bodily harm and trauma caused by workplace violence. This publication is intended to assist small businesses that do not have safety and health professionals. It is not intended as an all inclusive safety program but rather to provide guidelines for planning for emergencies. It is hoped that businesses without safety and health plans will utilize one of the consultation sources listed on pages 12 or 13 to help develop guidelines for their plants and to obtain training for their personnel. Many companies already have programs in effect. For these companies, this document can assist in updating and revising existing programs.

Planning

The effectiveness of response during emergencies depends on the amount of planning and training performed. Management must show its support for plant safety programs and the importance of emergency planning. If management is not interested in employee protection and in minimizing property loss, little can be done to promote a safe workplace. It is therefore management's responsibility to see that a program is instituted and that it is frequently reviewed and updated. The input and support of all employees must be obtained to ensure an effective program. The emergency response plan should be developed locally and should be comprehensive enough to deal with all types of emergencies specific to that site. When emergency action plans are required by a particular OSHA standard, the plan must be in writing; except for firms with 10 or fewer employees, the plan may be communicated orally to employees. The plan must include, as a minimum, the following elements:

- (1) Emergency escape procedures and emergency escape route assignments,
- (2) Procedures to be followed by employees who remain to perform (or shut down) critical plant operations before the plant is evacuated,
- (3) Procedures to account for all employees after emergency evacuation has been completed,
- (4) Rescue and medical duties for those employees who are to perform them,
- (5) The preferred means for reporting fires and other emergencies, and
- (6) Names or regular job titles of persons or departments to be contacted for further information or explanation of duties under the plan.

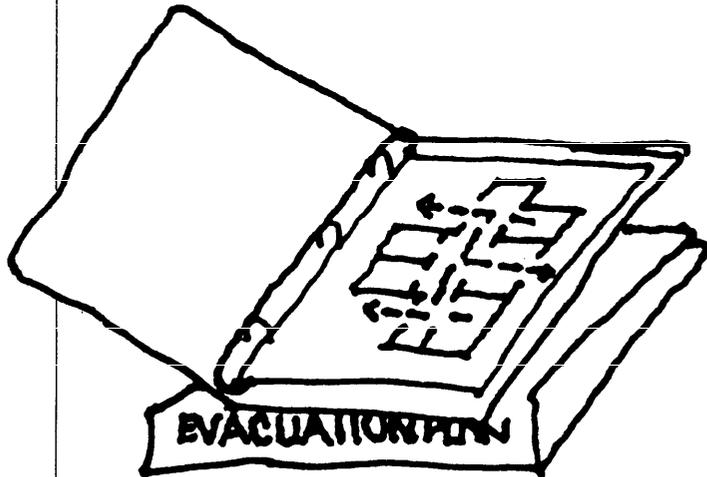
The emergency action plan should address all potential emergencies that can be expected in the workplace. Therefore, it will be necessary to perform a hazard audit to determine toxic materials in the workplace, hazards, and potentially dangerous conditions. For information on chemicals, the manufacturer or supplier can be contacted to obtain Material Safety Data Sheets. These forms describe the hazards that a chemical may present, list precautions to take when handling, storing, or using the substance, and outline emergency and first-aid procedures.

The employer must list in detail the procedures to be taken by those employees who must remain behind to care for essential plant operations until their evacuation becomes absolutely necessary. This may include monitoring plant power supplies, water supplies, and other essential services that cannot be shut down for every emergency alarm, and use of fire extinguishers.

For emergency evacuation, the use of floor plans or workplace maps that clearly show the emergency escape routes and safe or refuge areas should be included in the plan. All employees must be told what actions they are to take in emergency situations that may occur in the workplace, such as a designated meeting location after evacuation.



This plan must be reviewed with employees initially when the plan is developed, whenever the employees' responsibilities under the plan change, and whenever the plan is changed. A copy should be kept where employees can refer to it at convenient times. In fact, to go a step further, the employer could provide the employees with a copy of the plan, particularly all new employees.



Chain of Command

A chain of command should be established to minimize confusion so that employees will have no doubt about who has authority for making decisions. Responsible individuals should be selected to coordinate the work of the emergency response team. In larger organizations, there may be a plant coordinator in charge of plant-wide operations, public relations, and ensuring that outside aid is called in. Because of the importance of these functions, adequate backup must be arranged so that trained personnel are always available. The duties of the Emergency Response Team Coordinator should include the following:

- (1) Assessing the situation and determining whether an emergency exists that requires activating the emergency procedures,
- (2) Directing all efforts in the area including evacuating personnel,
- (3) Ensuring that outside emergency services such as medical aid and local fire departments are called in when necessary, and
- (4) Directing the shutdown of plant operations when necessary.

Communications

During a major emergency involving a fire or explosion it may be necessary to evacuate offices in addition to manufacturing areas. Also, normal services, such as electricity, water, and telephones, may be nonexistent. Under these conditions, it may be necessary to have an alternate area to which employees can report or that can act as a focal point for incoming and outgoing calls. Since time is an essential element for adequate response, the person designated as being in charge should make this the alternate headquarters so that he/she can be easily reached.

Emergency communications equipment such as amateur radio systems, public address systems, or portable radio units should be present for notifying employees of the emergency and for contacting local authorities, such as law enforcement officials, private sector charitable groups, and the fire department.

A method of communication also is needed to alert employees to the evacuation or to take other action as required in the plan. Alarms must be audible or seen by all people in the plant and have an auxiliary power supply in the event electricity is affected. The alarm must be distinctive and recognizable as a signal to evacuate the work area or perform actions designated under the emergency action plan. The employer must explain to each employee the means for reporting emergencies, such as manual pull box alarms, public address systems, or telephones. Emergency phone numbers should be posted on or near telephones, on employees' notice boards, or in other conspicuous locations. The warning plan should be in writing and management must be sure each employee knows what it means and what action is to be taken.

It may be necessary to notify other key personnel such as the plant manager or physician during off-duty hours. An updated written list of key personnel should be kept listed in order of priority.

Accounting for Personnel

Management will need to know when all personnel have been accounted for. This can be difficult during shift changes or if contractors are on site. A responsible person in the control center must be appointed to account for personnel and to inform police or Emergency Response Team members of those persons believed missing.

Emergency Response Teams

Emergency Response Teams are the first line of defense in emergencies. Before assigning personnel to these teams, the employer must assure that employees are physically capable of performing the duties that may be assigned to them. Depending on the size of the plant there may be one or several teams trained in the following areas:

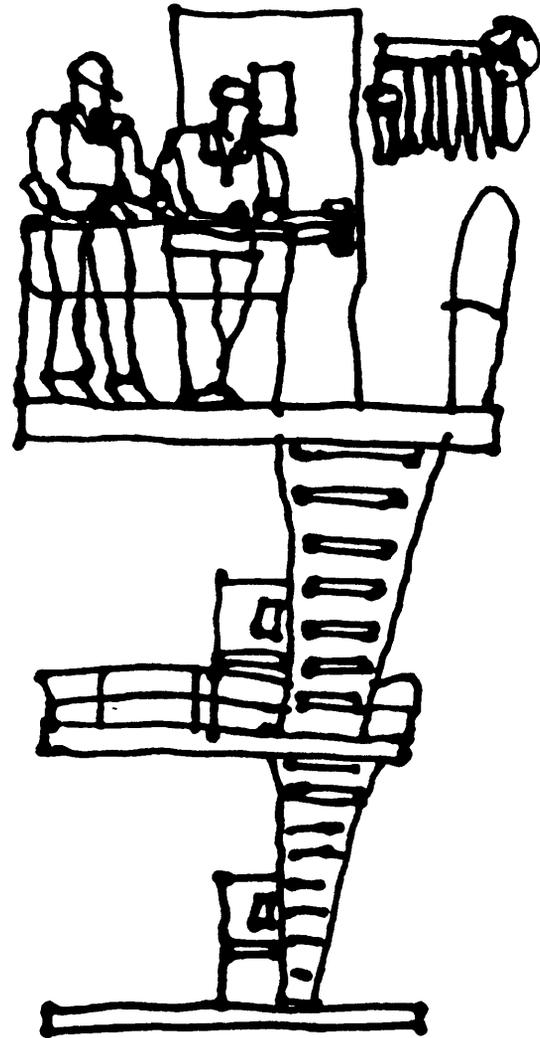
- (1) Use of various types of fire extinguishers,
- (2) First aid, including cardiopulmonary resuscitation (CPR),
- (3) Shutdown procedures,
- (4) Evacuation procedures,
- (5) Chemical spill control procedures,
- (6) Use of self-contained breathing apparatus (SCBA),
- (7) Search and emergency rescue procedures,
- (8) Incipient and advanced stage firefighting, and
- (9) Trauma counseling.

The type and extent of the emergency will depend on the plant operations and the response will vary according to the type of process, the material handled, the number of employees, and the availability of outside resources. OSHA's Hazard Communication Standard (29 CFR part 1910.1200) is designed to ensure that the hazards of all chemicals produced or imported are evaluated and that information concerning their hazards is transmitted to employers and employees. This is done by means of comprehensive hazard communication programs including container labeling and other forms of warnings, material safety data sheets, and employee training. Emergency Response Teams should be trained in the types of possible emergencies and the emergency actions to be performed.

They are to be informed about special hazards—such as storage and use of flammable materials, toxic chemicals, radioactive sources, and water-reactive substances—to which they may be exposed during fire and other emergencies. It is important to determine when not to intervene. For example, team members must be able to determine if the fire is too large for them to handle or whether search and emergency rescue procedures should be performed. If there is the possibility of members of the Emergency Response Team receiving fatal or incapacitating injuries, they should wait for professional firefighters or emergency response groups.

Training

Training is important to the effectiveness of an emergency plan. Before implementing an emergency action plan, a sufficient number of persons must be trained to assist in the safe and orderly evacuation of employees. Training for each type of disaster response is necessary so that employees know what actions are required.



In addition to the specialized training for Emergency Response Team members, all employees should be trained in the following:

- (1) Evacuation plans,
- (2) Alarm systems,
- (3) Reporting procedures for personnel,
- (4) Shutdown procedures, and
- (5) Types of potential emergencies.

These training programs must be provided as follows:

- (1) Initially when the plan is developed,
- (2) For all new employees,
- (3) When new equipment, materials, or processes are introduced,
- (4) When procedures have been updated or revised,
- (5) When exercises show that employee performance must be improved, and
- (6) At least annually.

The emergency control procedures should be written in concise terms and be made available to all personnel. A drill should be held for all personnel, at random intervals at least annually, and an evaluation of performance made immediately by management and employees. When possible, drills should include groups supplying outside services such as fire and police departments. In buildings with several places of employment, the emergency plans should be coordinated with other companies and employees in the building. Finally, the emergency plan should be reviewed periodically and updated to maintain adequate response personnel and program efficiency.

Personal Protection

Effective personal protection is essential for any person who may be exposed to potentially hazardous substances. In emergency situations employees may be exposed to a wide variety of hazardous circumstances, including:

- (1) Chemical splashes or contact with toxic materials,
- (2) Falling objects and flying particles,
- (3) Unknown atmospheres that may contain toxic gases, vapors or mists, or inadequate oxygen to sustain life,
- (4) Fires and electrical hazards, and
- (5) Violence in the workplace.



It is extremely important that employees be adequately protected in these situations. Some of the safety equipment that may be used includes:

- (1) Safety glasses, goggles, or face shields for eye protection,
- (2) Hard hats and safety shoes for head and foot protection,
- (3) Proper respirators for breathing protection,
- (4) Whole body coverings—chemical suits, gloves, hoods, and boots for body protection from chemicals, and
- (5) Body protection for abnormal environmental conditions such as extreme temperatures.

The equipment selected must meet the criteria contained in the OSHA standards or described by a nationally recognized standards producing organization. The choice of proper equipment is not a simple matter and consultation should be made with health and safety professionals before making any purchases. Manufacturers and distributors of health and safety products may be able to answer questions if they have enough information about the potential hazards involved.

Professional consultation will most likely be needed in providing adequate respiratory protection. Respiratory protection is necessary for toxic atmospheres of dust, mists, gases, or vapors and for oxygen-deficient atmospheres. There are four basic categories of respirators:

- (1) Air-purifying devices (filters, gas masks, and chemical cartridges), which remove contaminants from the air but cannot be used in oxygen-deficient atmospheres.
- (2) Air-supplied respirators (hose masks, air line respirators), which should not be used in atmospheres that are immediately dangerous to life or health.
- (3) Positive-pressure self-contained breathing apparatus (SCBA), which are required for unknown atmospheres, oxygen-deficient atmospheres, or atmospheres immediately dangerous to life or health.
- (4) Escape masks.

Before assigning or using respiratory equipment the following conditions must be met:

- (1) A medical evaluation should be made to determine if the employees are physically able to use the respirator.
- (2) Written procedures must be prepared covering safe use and proper care of the equipment, and employees must be trained in these procedures and in the use and maintenance of respirators.
- (3) A fit test must be made to determine a proper match between the facepiece of the respirator and the face of the wearer. This testing must be repeated periodically. Training must provide the employee an opportunity to handle the respirator, have it fitted properly, test its facepiece-to-face seal, wear it in normal air for a familiarity period, and wear it in a test atmosphere.
- (4) A regular maintenance program must be instituted including cleaning, inspecting, and testing of all respiratory equipment. Respirators used for emergency response must be inspected after each use and at least monthly to assure that they are in satisfactory working condition. A written record of inspection must be maintained.
- (5) Distribution areas for equipment used in emergencies must be readily accessible to employees.

A positive-pressure self-contained breathing apparatus (SCBA) offers the best protection to employees involved in controlling emergency situations. It must have a minimum service life rating of at least 30 minutes. Conditions that require a positive-pressure SCBA include the following:

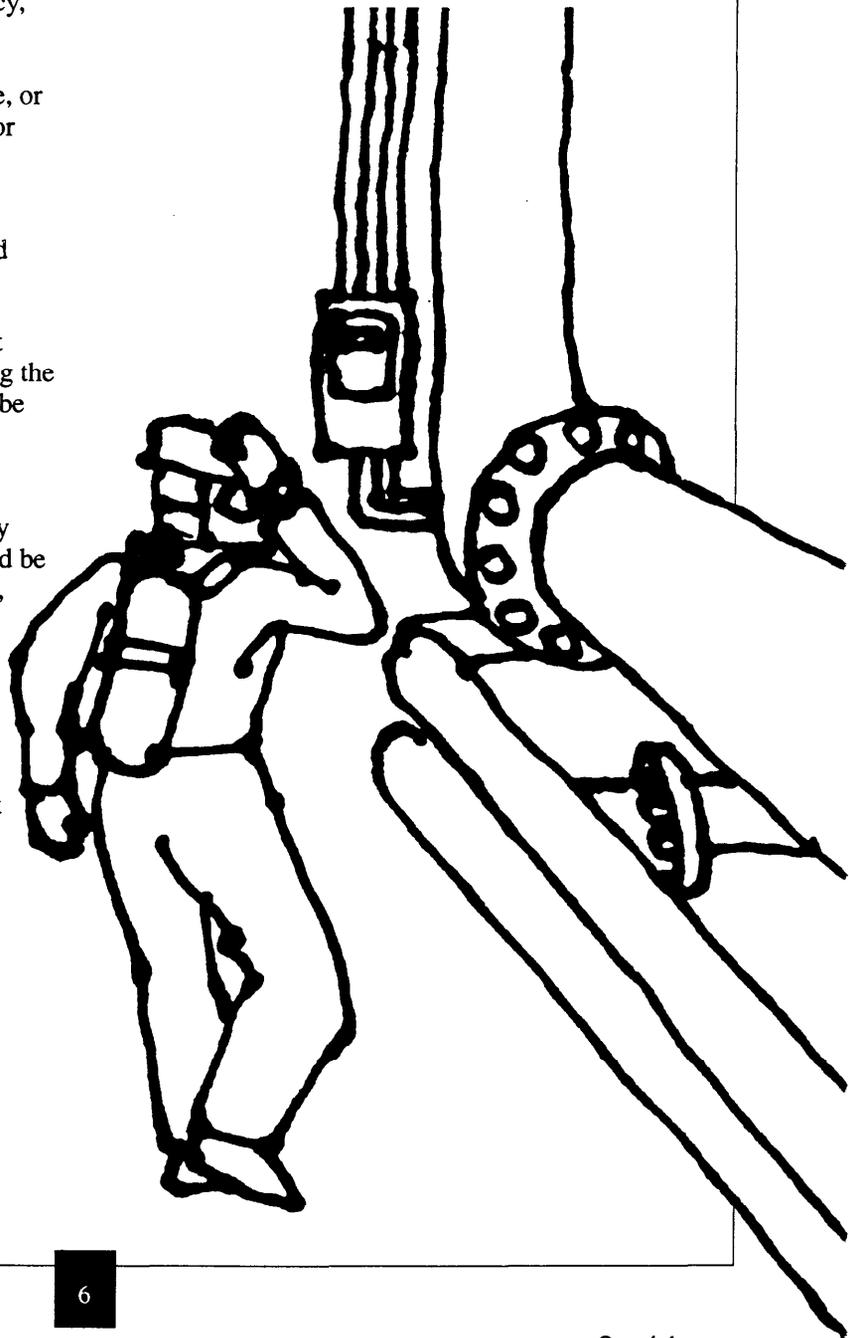
- (1) Leaking cylinders or containers, smoke from chemical fires, or chemical spills that indicate high potential for exposure to toxic substances.
- (2) Atmospheres with unknown contaminants or unknown contaminant concentrations, confined spaces that may contain toxic substances, or oxygen-deficient atmospheres.

Emergency situations may involve entering confined spaces to rescue employees who are overcome by toxic compounds or who lack oxygen. These permit-required confined spaces include tanks, vaults, pits, sewers, pipelines, and vessels. Entry into permit-required confined spaces can expose the employee to a variety of hazards, including toxic gases, explosive atmospheres, oxygen deficiency, electrical hazards, and hazards created by mixers and impellers that have not been deactivated and locked out. Personnel must never enter a permit-required confined space unless the atmosphere has been tested for adequate oxygen, combustibility, and toxic substances. Conditions in a permit-required confined space must be considered immediately dangerous to life and health unless shown otherwise. If a permit-required confined space must be entered in an emergency, the following precautions must be adhered to:

- (1) All lines containing inert, toxic, flammable, or corrosive materials must be disconnected or blocked off before entry.
- (2) All impellers, agitators, or other moving equipment inside the vessel must be locked out.
- (3) Appropriate personal protective equipment must be worn by employees before entering the vessel. Mandatory use of harnesses must be stressed.
- (4) Rescue procedures must be specifically designed for each entry. A trained stand-by person must be present. This person should be assigned a fully charged, positive-pressure, self-contained breathing apparatus with a full facepiece. The stand-by person must maintain unobstructed lifelines and communications to all workers within the permit-required confined space and be prepared to summon rescue personnel if necessary. The stand-by person should not

enter the confined space until adequate assistance is present. While awaiting rescue personnel, the stand-by person may make a rescue attempt utilizing lifelines from outside the permit-required confined space.

A more complete description of procedures to follow while working in confined spaces may be found in the OSHA standard for permit-required confined spaces, 29 CFR 1910.145 and the National Institute for Occupational Safety and Health (NIOSH) Publication Number 80-106, *Criteria for a Recommended Standard...Working in Confined Spaces*.



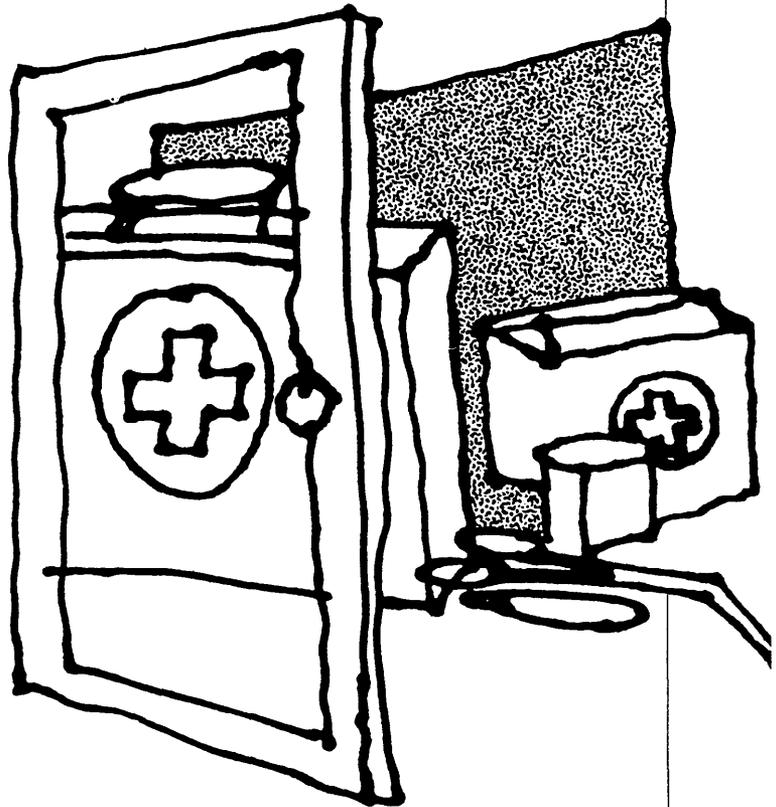
Medical Assistance

In a major emergency, time is critical factor in minimizing injuries. Most small businesses do not have a formal medical program, but they are required to have the following medical and first-aid services:

- (1) In the absence of an infirmary, clinic, or hospital in close proximity to the workplace that can be used for treatment of all injured employees, the employer must ensure that a person or persons are adequately trained to render first aid. The first aid is to begin within 3 to 4 minutes of the incident if the injury is of a serious nature.
- (2) Where the eyes or body of any employee may be exposed to injurious corrosive materials, eye washes or suitable equipment for quick drenching or flushing must be provided in the work area for immediate emergency use. Employees must be trained to use the equipment.
- (3) The employer must ensure the ready availability of medical personnel for advice and consultation on matters of employees' health. This does not mean that health care must be provided, but rather that, if health problems develop in the workplace, medical help will be available to resolve them.

To fulfill the above requirements, the following actions should be considered:

- (1) Survey the medical facilities near the place of business and make arrangements to handle routine and emergency cases. A written emergency medical procedure should then be prepared for handling accidents with minimum confusion.
- (2) If the business is located far from medical facilities, at least one and preferably more employees on each shift must be adequately trained to render first aid. The American Red Cross, some insurance carriers, local safety councils, fire departments, and others may be contacted for this training.
- (3) First-aid supplies should be provided for emergency use. This equipment should be ordered through consultation with a physician.



- (4) Emergency phone numbers should be posted in conspicuous places near or on telephones.
- (5) Sufficient ambulance service should be available to handle any emergency. This requires advance contact with ambulance services to ensure they become familiar with plant location, access routes, and hospital locations.

Security

During an emergency, it is often necessary to secure the area to prevent unauthorized access and to protect vital records and equipment. An off-limits area must be established by cordoning off the area with ropes and signs. It may be necessary to notify local law enforcement personnel or to employ private security personnel to secure the area and prevent the entry of unauthorized personnel.

Certain records also may need to be protected, such as essential accounting files, legal documents, and lists of employees' relatives to be notified in case of emergency. These records may be stored in duplicate outside the plant or in protected secure locations within the plant.

Some OSHA Requirements

The following is a list of some of the OSHA requirements pertaining to emergency response. These references refer to appropriate sections of the Occupational Safety and Health Standards (*Title 29, Code of Federal Regulations, Part 1910*, which are the OSHA General Industry Standards).

If additional information is required call the nearest OSHA Area Office listed on page 13 or State Plan Office on page 14 of this booklet.

Subpart E - Means of Egress

- 1910.37 Means of egress
- 1910.38 Employee emergency plans and fire prevention plans
- Appendix to Subpart E - Means of egress

Subpart H - Hazardous Materials

- 1910.119 Process safety management of highly hazardous chemicals
- 1910.120 Hazardous waste operations and emergency response.

Subpart I - Personal Protective Equipment

- 1910.132 General requirements - personnel protection
- 1910.133 Eye and face protection
- 1910.134 Respiratory protection
- 1910.135 Occupational head protection
- 1910.136 Occupational foot protection
- 1910.138 Hand protection

Subpart J - General Environmental Controls

- 1910.146 Permit-required confined spaces
- 1910.147 Control of hazardous energy sources

Subpart K - Medical and First Aid

- 1910.151 Medical services and first aid

Subpart L - Fire Protection

- 1910.155-156 Fire protection and fire brigades
- 1910.157-163 Fire suppression equipment
- 1910.164 Fire detection systems
- 1910.165 Employee alarm systems
- Appendix A-E of Subpart L

Subpart R - Special Industries, Electrical Power Generation, Transmission, and Distribution

Subpart Z - Toxic and Hazardous Substances

- 1910.1030 Bloodborne pathogens
- 1910.1200 Hazard communication

Information and Consultation Services

Much of the planning and program development for responding to occupational emergencies will require professional assistance. Many public and private agencies provide information and services free or at minimal cost (e.g., Federal, State, and local health and labor departments, insurance carriers, and local universities). After having exhausted these sources, consider using a private consultant selected by matching his/her specialty with your specific needs.

If there is a carrier for workers' compensation insurance, that company probably has safety and health specialists on staff who are familiar with minimum standards and technical information currently available and may be quite helpful in advising about accident and illness prevention and control.

Trade associations often have technical materials, programs, and industry data available for specific needs.

The Department of Labor through the Occupational Safety and Health Administration (OSHA) provides information in interpreting the law and on meeting the applicable standards. This information is available free of charge or obligation. The OSHA Area Office or State Plan Office nearest to the plant may be contacted for this information.

The Department of Health and Human Services through the National Institute for Occupational Safety and Health (NIOSH) provides printed material relating to employee safety and health in the workplace. Staff from this agency will perform industrial hygiene surveys of plants upon request of employers or employees. See the listing on page 15.

Machine or product manufacturers can be helpful in providing additional information on precautions to take in using their products. Any special problems should be referred to them first.

Professional societies in the safety, industrial hygiene, and medical fields issue publications in the form of journals, pamphlets, and books that may be quite useful (e.g., American Society of Safety Engineers or the Occupational Health Institute). They can also recommend individuals from their societies to serve as consultants.

Local colleges and universities sometimes have industrial hygiene, public health, medical, or other relevant departments with faculty and libraries to assist.

Other Sources of OSHA Assistance

Effective management of worker safety and health protection is a decisive factor in reducing the extent and severity of work-related injuries and their related costs. To assist employers and employees in developing effective safety and health programs, OSHA published recommended *Safety and Health Management Guidelines* (*Federal Register* 54(18): 3908-3916, January 26, 1988). These voluntary guidelines apply to all places of employment covered by OSHA.

The guidelines identify four general elements that are critical to the development of a successful safety and health management program:

- (1) Management commitment and employee involvement;
- (2) Worksite analysis;
- (3) Hazard prevention and control; and
- (4) Safety and health training.

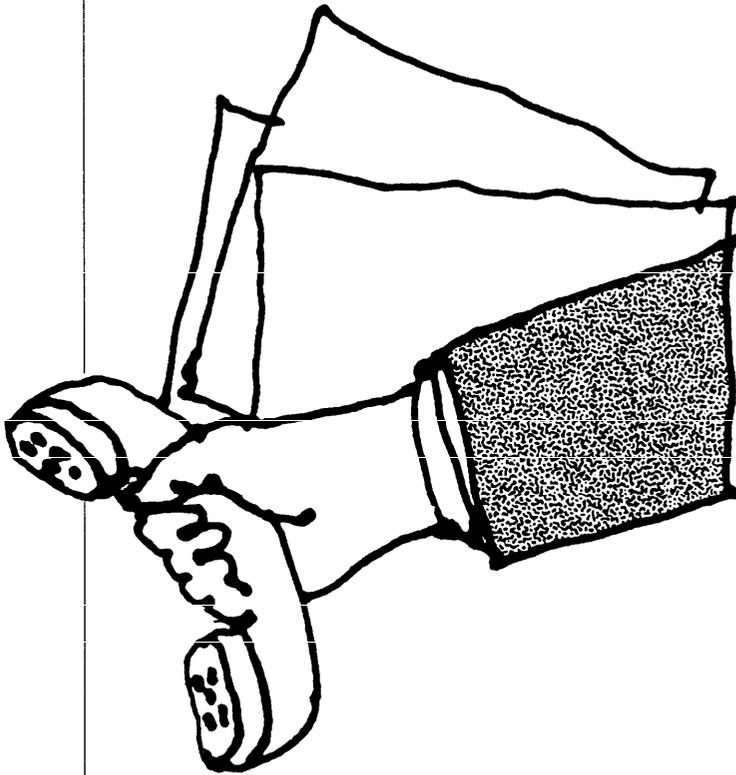
The guidelines recommend specific actions, under each of these general elements, to achieve an effective safety and health program. A single free copy of the guidelines can be obtained from the OSHA Publications Office, U.S. Department of Labor, 200 Constitution Avenue, N.W., Room N3101, Washington DC 20210, by sending a self-addressed mail label with your request.

State Occupational Safety and Health Plans

The *Occupational Safety and Health Act of 1970*, under Section 18(b), encourages States to develop and operate their own State job safety and health plans under the approval and monitoring of OSHA. Twenty-five states and territories operate such plans. They are required to set standards that are at least as effective as the federal, conduct inspections to enforce those standards (including inspections in response to workplace complaints), cover State and local government employees, and operate occupational safety and health training and education programs. In addition, all States provide on-site consultation to help employers to identify and correct workplace hazards. Such consultation may be provided either under the plan or through a special agreement under section 7(c)(1) of the Act. Federal OSHA does not conduct enforcement activities in the state plan States, except in very limited circumstances.

A listing of those States that operate approved State plans can be found on page 14, or call your local OSHA Area Office.

A comprehensive customer service poster listing OSHA services and how to contact agency Regional, Area, and District offices is available from OSHA's Publications Office, 200 Constitution Avenue, N.W. Washington D.C. 20210, Rm N3101. Telephone (202) 219-4667.



Free On-Site Consultation

Free on-site safety and health consultation services are available to employers in all states who want help in establishing and maintaining a safe and healthful workplace. This service is largely funded by OSHA. Primarily developed for smaller employers with more hazardous operations, the consultation service is delivered by state governments employing professional safety consultants and health consultants. Comprehensive assistance includes an appraisal of all mechanical systems, physical work practices, and environmental hazards of the workplace and all aspects of the employer's present job safety and health program.

This program is completely separate from OSHA's inspection efforts. No penalties are proposed or citations issued for any safety or health problems identified by the consultant. The service is confidential.

For more information concerning consultation services, see the list of state consultation projects on page 13.

Voluntary Protection Programs

Voluntary Protection programs (VPPs) and onsite consultation services, when coupled with an effective enforcement program, expand worker protection to help meet the goals of the OSH Act. The three VPPs—Star, Merit, and Demonstration—are designed to recognize outstanding achievement by companies that have successfully incorporated comprehensive safety and health programs into their total management system. They motivate others to achieve excellent safety and health results in the same outstanding way, and they establish a cooperative relationship among employers, employees, and OSHA.

For additional information on VPPs and how to apply, contact the OSHA offices listed at the end of this publication.

Training and Education

OSHA's area offices offer a variety of informational services, such as publications, audiovisual aids, technical advice, and speakers for special events. OSHA's Training Institute in Des Plaines, IL, provides basic and advanced courses in safety and health for federal and state compliance officers, state consultants, federal agency personnel, and private sector employers, employees, and their representatives.

OSHA also provides funds to nonprofit organizations, through grants, to conduct workplace training and education in subjects where OSHA believes there is a lack of workplace training. Grants are awarded annually. Grant recipients are expected to contribute 20 percent of the total grant cost.

For more information on grants, training, and education, contact the OSHA Training Institute, Office of Training and Education, 1555 Times Drive, Des Plaines, IL 60018, (708) 297-4810.

For further information on any OSHA program, contact your nearest OSHA area or regional office listed at the end of this publication.

OSHA Area Office Services

OSHA Area Offices are prime sources of information, publications, and assistance in understanding the requirements of standards.

They can furnish:

1. *Job Safety and Health Protection* (the OSHA workplace poster),
2. The necessary forms for OSHA recordkeeping requirements,
3. Information on applying for variances,
4. Off-site advice on controlling various hazards,
5. Copies of various publications and fact sheets,
6. Safety and health complaint investigations,
7. Investigations of complaints alleging discrimination for exercising safety and health rights,
8. Speakers at public events on safety and health topics, and
9. Advice and consultation on maintaining and calibrating some monitoring measuring equipment.

In addition they can provide referral services regarding:

1. Free on-site consultation,
2. Grant recipients with projects, products, or services related to hazards,
3. Training and education delivery resources,
4. Other Federal agencies and their areas of jurisdiction,
5. Voluntary protection programs under which employers with exemplary programs and safety records can be exempted from routine OSHA inspections (not all States have implemented this program), and
6. The National Institute for Occupational Safety and Health for health hazard evaluations.

These offices may be contacted (see pages 13, 14) by phone, by mail, by Fax, or in person, without fear of initiating an inspection.

Additional Sources of Information

Safety Data Sheets, Guides and Manuals

AIHA Hygienic Guide Series. American Industrial Hygiene Association, 2700 Prosperity Ave., Fairfax, VA 22031. Separate data sheets on specific substances giving hygienic standards, properties, industrial hygiene practices, specific procedures, and references.

ANSI Standards, Z37 Series, Acceptable Concentrations of Toxic Dusts and Gases. American National Standards Institute, 11 West 42nd Street, New York, NY 10036. These guides represent a consensus of interested parties concerning minimum safety requirements for the storage, transportation, and handling toxic substances; they are intended to aid the manufacturers, the consumer, and the general public.

ASTM Standards with Related Material. American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

Standards and Specification Groups

American National Standards Institute, 11 West 42nd Street, New York, NY 10036, coordinates and administers the federated voluntary standardization system in the United States.

American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103. World's largest source of voluntary consensus standards for materials, products, systems, and services.

Fire Protection Organizations

Factory Insurance Association, 85 Woodland Street, Hartford, CT 06105. Composed of capital stock insurance companies to provide engineering, inspections, and loss adjustment service to industry.

Factory Mutual System, 1151 Boston-Providence Turnpike, Norwood, MA 02062. An industrial fire protection, engineering, and inspection bureau established and maintained by mutual fire insurance companies.

National Fire Protection Association, 470 Batterymarch Park, Quincy, MA 02269. The clearinghouse for information on fire protection and fire prevention also writes NFPA standards. Nonprofit technical and educational organization.

Underwriter Laboratories, Inc., 207 East Ohio Street, Chicago, IL 60611. Not-for-profit organization whose laboratories publish annual lists of manufacturers whose products proved acceptable under appropriate standards.

Medical Consultation

Arrange for a local doctor to advise on workplace medical matters. Contact the local Red Cross chapter for assistance in first-aid training. If a local chapter cannot be located write:

**American National Red Cross
National Headquarters Safety Programs
18th and E Streets, N.W.
Washington, D.C. 20006**

References

Chemical Industries Association, Chemical Industry Safety and Health Council. *Recommended Procedures for Handling Major Emergencies*. Alembic House. 93 Albert Embarkment. London, SE10 7TU, July 1976.

Krikorian, Michael. "Advanced Planning is the Key to Controlling Emergencies and Disasters in the Workplace." *Prof Safety*: 39-42, December 1977.

Lee, W.R. Sources of Consultation and Reference Aids. Section XI, in H.M. Key, A.F. Henschel, J. Butler, R.N. Ligo, I.R. Tabershaw, and L. Ede (Eds): *Occupational Diseases: A Guide to Their Recognition*. NIOSH Publication No. 77-181. Cincinnati, 1977. Pp. 523-556. Also available as Lee, W.R. Consultation and Reference Sources for Occupational Health. *J Occu Med* 17(7): 446-456, July 1975.

National Safety Council. *Accident Prevention Manual for Industrial Operations Administration and Programs*. 8th ed. Chicago, 1981. Pp. 439-471.

U.S. Department of Labor. Occupational Safety and Health Administration. *OSHA Handbook for Small Businesses*. OSHA 2209. Washington, DC, 1990.

_____. Occupational Safety and Health Administration. *Principal Emergency Response and Preparedness Requirements in OSHA Standards and Guidance for Safety and Health Programs*. OSHA 3122. Washington, DC, 1990.

U.S. Department of Health and Human Services. National Institute for Occupational Safety and Health. *Safety and Health Alert : Request for Assistance In Preventing Homicide In the Workplace*. U.S. Department of Health and Human Services, Cincinnati, Ohio, September 1993, Number 93-109.

_____. Public Health Service. National Institute for Occupational Safety and Health. *A Guide to Industrial Respiratory Protection*. NIOSH Publication No. 76-189. Cincinnati, 1976.

_____. *Criteria for a Recommended Standard...Working in Confined Spaces*. NIOSH Publication. No. 80-106. Cincinnati, 1980.

_____. *Respiratory Protection...An Employer's Manual*. NIOSH Publication No. 78-198A. Cincinnati, October 1978.

_____. *Self-Evaluation of Occupational Safety and Health Programs*. NIOSH Publication No. 78-187. Cincinnati, 1978.

APPENDIX I

**OSHA/State Consultation
Project Directory**

State	Telephone
Alabama	(205) 348-3033
Alaska	(907) 269-4939
Arizona	(602) 542-5795
Arkansas	(501) 682-4522
California	(415) 703-4441
Colorado	(303) 491-6151
Connecticut	(203) 566-4550
Delaware	(302) 571-3908
District of Columbia	(202) 576-6339
Florida	(904) 488-3044
Georgia	(404) 894-8274
Guam	(671) 647-4202
Hawaii	(808) 586-9116
Idaho	(208) 385-3283
Illinois	(312) 814-2337
Indiana	(317) 232-2688
Iowa	(515) 281-5352
Kansas	(913) 296-4386
Kentucky	(502) 564-6895
Louisiana	(504) 342-9601
Maine	(207) 624-6460
Maryland	(410) 333-4218
Massachusetts	(617) 969-7177
Michigan	(517) 322-8250(H) (517) 322-1809(S)
Minnesota	(612) 296-5432
Mississippi	(601) 987-3981

State	Telephone
Missouri	(314) 751-3403
Montana	(406) 444-6418
Nebraska	(402) 471-4717
Nevada	(702) 486-5016
New Hampshire	(603) 271-2024
New Jersey	(609) 292-3923
New Mexico	(505) 827-2877
New York	(518) 457-2481
North Carolina	(919) 733-2360
North Dakota	(701) 221-5188
Ohio	(614) 644-2631
Oklahoma	(405) 528-1500
Oregon	(503) 378-3272
Pennsylvania	(412) 357-2396
Puerto Rico	(809) 754-2171
Rhode Island	(401) 277-2438
South Carolina	(803) 734-9599
South Dakota	(605) 688-4101
Tennessee	(615) 741-7036
Texas	(512) 440-3834
Utah	(801) 530-6868
Vermont	(802) 828-2765
Virginia	(804) 786-8707
Virgin Islands	(809) 772-1315
Washington	(206) 956-5443
West Virginia	(304) 558-7890
Wisconsin	(608) 266-8579(H) (414) 521-5188(S)
Wyoming	(307) 777-7786

*H - Health
S - Safety*

APPENDIX II

OSHA Area Offices

State	City	Telephone
Alabama	Birmingham	205-731-1534
Alaska	Anchorage	907-271-5152
Arizona	Phoenix	602-640-2007
Arkansas	Little Rock	501-324-6291
California	San Francisco	415-744-7120
Colorado	Denver	303-844-5285
Connecticut	Hartford	203-240-3152
Florida	Fort Lauderdale	305-424-0242
	Jacksonville	904-232-2895
	Tampa	813-626-1177
Georgia	Savannah	912-652-4393
	Smyrna	404-984-8700
	Tucker	404-493-6644
Hawaii	Honolulu	808-541-2685
Idaho	Boise	208-334-1867
Illinois	Calumet City	708-891-3800
	Des Plaines	708-803-4800
	North Aurora	708-896-8700
	Peoria	309-671-7033

Indiana	Indianapolis	317-226-7290
Iowa	Des Moines	515-284-4794
Kansas	Wichita	316-269-6644
Kentucky	Frankfort	502-227-7024
Louisiana	Baton Rouge	504-389-0474
Maine	Augusta	207-622-8417
Maryland	Baltimore	410-962-2840
Massachusetts	Braintree	617-565-6924
	Methuen	617-565-8110
	Springfield	413-785-0123
Michigan	Lansing	517-377-1892
Minnesota	Minneapolis	612-348-1994
Mississippi	Jackson	601-965-4606
Missouri	Kansas City	816-426-2756
	St. Louis	314-425-4249
Montana	Billings	406-657-6649
Nebraska	Omaha	402-221-3182
Nevada	Carson City	702-885-6963
New Hampshire	Concord	603-225-1629
New Jersey	Avenel	908-750-3270
	Hasbrouck Heights	201-288-1700
	Marlton	609-757-5181
	Parsippany	201-263-1003

APPENDIX II (Continued)

State	City	Telephone
New Mexico ...	Albuquerque	505-766-3411
New York	Albany	518-464-6742
	Bayside	718-279-9060
	Bowmansville	716-684-3891
	New York	212-264-9840
New York	Syracuse	315-451-0808
	Tarrytown	914-682-6151
	Westbury	516-334-3344
North Carolina	Raleigh.....	919-856-4770
North Dakota ..	Bismarck	701-250-4521
Ohio	Cincinnati	513-841-4132
	Cleveland	216-522-3818
	Columbus	614-469-5582
	Toledo	419-259-7542
Oklahoma	Oklahoma City	405-231-5351
Oregon	Portland	503-326-2251
Pennsylvania ...	Allentown	215-776-0592
	Erie	814-833-5758
	Harrisburg	717-782-3902
	Philadelphia	215-597-4955
	Pittsburgh.....	412-644-2903
	Wilkes-Barre	717-826-6538
Puerto Rico	Hato Rey	809-766-5457
Rhode Island ...	Providence	401-528-4669
South Carolina	Columbia	803-765-5904
Tennessee	Nashville	615-781-5423
Texas	Austin	512-482-5783
	Corpus Christi.....	512-888-3257
	Fort Worth	817-885-7025
	Houston	713-286-0583
	Houston	713-591-2438
	Lubbock	806-743-7681
Utah	Salt Lake City	801-524-5080
Washington	Bellevue	206-553-7520
West Virginia ..	Charleston	304-347-5937
Wisconsin	Appleton	414-734-4521
	Madison	608-264-5388
	Milwaukee	414-297-3315

Appendix III

States with Approved Plans

Albany, NY	(518) 457-2741
Baltimore, MD	(410) 333-4179
Carson City, NV	(702) 687-3032
Cheyenne, WY	(307) 777-7786
Columbia, SC	(803) 734-9594
Des Moines, IA	(515) 281-3447
Frankfort, KY	(502) 564-3070
Hato Rey, PR	(809) 754-2119
Honolulu, HI	(808) 586-8844
Indianapolis, IN	(317) 232-2378
Juneau, AK	(907) 465-2700
Lansing, MI	(517) 335-8022
Lansing, MI	(517) 373-9600
Montpelier, VT	(802) 828-2288
Nashville, TN	(615) 741-2582
Olympia, WA	(206) 956-4200
Phoenix, AZ	(602) 542-5795
Raleigh, NC	(919) 662-4585
Richmond, VA	(804) 786-2377
Salem, OR	(503) 378-3272
Salt Lake City, UT	(801) 530-6880
San Francisco, CA	(415) 703-4590
Santa Fe, NM	(505) 827-2850
St. Croix, VI	(809) 773-1994
St. Paul, MN	(612) 296-2342
Wethersfield, CT	(203) 566-5123

NIOSH Office Addresses

National Institute for Occupational
Safety and Health HQ
Suite 1007
1600 Clifton Road, NE
Atlanta, GA 30323
(404) 639-3771

NIOSH Regional Representatives

Government Center
JFK Federal Building
Room 1401
Boston, MA 02203
(617) 223-3848

1961 Stout Street
Room 1185
Denver, CO 80294
(303) 844-6166

101 Marietta Towers
Suite 1007
Atlanta, GA 30323
(404) 331-2396

**Regional Offices
U.S. Department of Labor
Occupational Safety and Health Administration**

Region I

(CT,* MA, ME, NH, RI, VT*)
133 Portland Street
1st Floor
Boston, MA 02114
Telephone: (617) 565-7164

Region II

(NJ, NY,* PR,* VI*)
201 Varick Street
Room 670
New York, NY 10014
Telephone: (212) 337-2378

Region III

(DC, DE, MD,* PA, VA,* WV)
Gateway Building, Suite 2100
3535 Market Street
Philadelphia, PA 19104
Telephone: (215) 596-1201

Region IV

(AL, FL, GA, KY,* MS, NC,*
SC,* TN*)
1375 Peachtree Street, N.E.
Suite 587
Atlanta, GA 30367
Telephone: (404) 347-3573

Region V

(IL, IN,* MI,* MN,* OH, WI)
230 South Dearborn Street
Room 3244
Chicago, IL 60604
Telephone: (312) 353-2220

Region VI

(AR, LA, NM,* OK, TX)
525 Griffin Street
Room 602
Dallas, TX 75202
Telephone: (214) 767-4731

Region VII

(IA,* KS, MO, NE)
1100 Main Street, Suite 800
Kansas City, MO 64105
Telephone: (816) 426-5861

Region VIII

(CO, MT, ND, SD, UT,* WY*)
Federal Building, Room 1576
1961 Stout Street
Denver, CO 80294
Telephone: (303) 844-3061

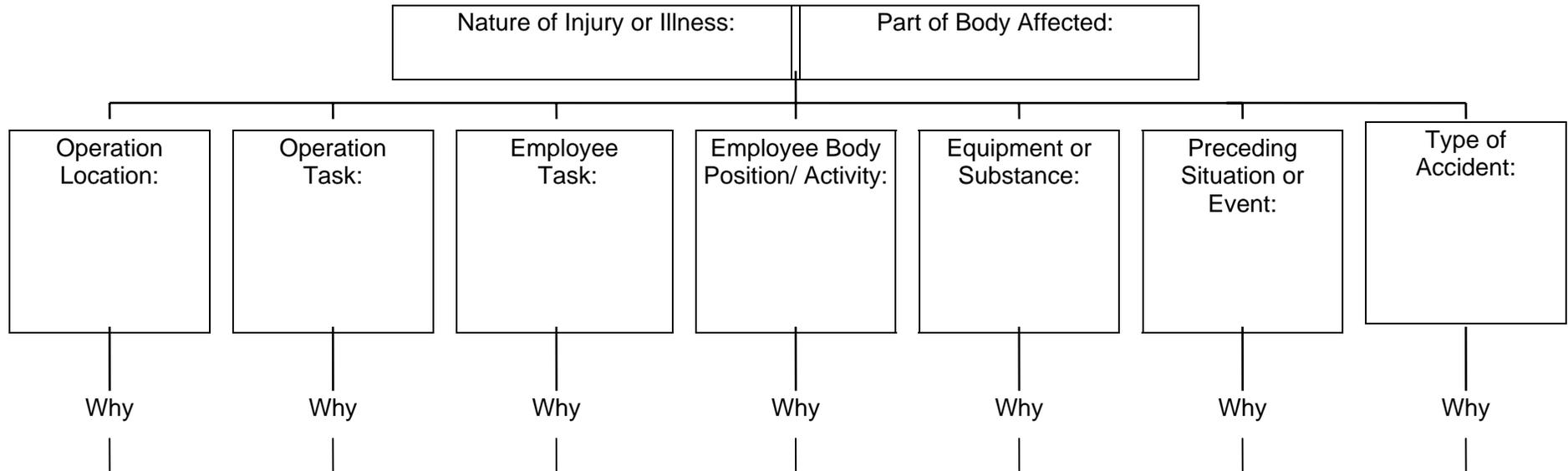
Region IX

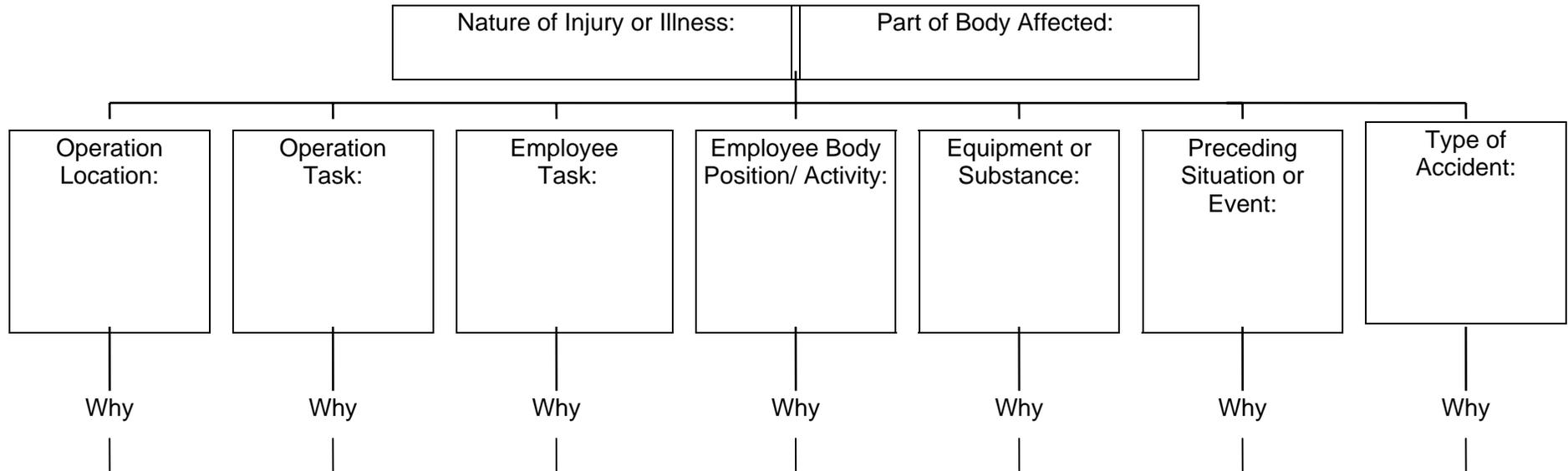
(American Samoa, AZ,* CA,* Guam,
HI,* NV,* Trust Territories of the Pacific)
71 Stevenson Street
Room 415
San Francisco, CA 94105
Telephone: (415) 744-6670

Region X

(AK,* ID, OR,* WA*)
1111 Third Avenue
Suite 715
Seattle, WA 98101-3212
Telephone: (206) 553-5930

*These states and territories operate their own OSHA-approved job safety and health plans (Connecticut and New York plans cover public employees only). States with approved plans must have a standard that is identical to, or at least as effective as, the federal standard.





ACCIDENT ANALYSIS QUIZ

1. An accident is an _____ event that _____ the completion of an activity, and that may (or may not) include _____, _____ or _____ damage.
2. Describe a “near miss.”
3. What three costs are included in the direct cost of an accident?
4. Name at least three indirect costs of an accident?
5. Indirect costs of an accident can range from _____ to _____ times the direct costs of an accident.
6. Name the four main reasons that we analyze accidents.
7. TRUE or FALSE. An accident analysis could lead to the discovery of fraud.
8. TRUE or FALSE. An accident analysis will always lead to the discovery of fraud.
9. Why is it necessary to have a written accident analysis program?
10. Whose job is it to provide possible solutions to causal factors of accidents?
 - A) Program Administrator (Safety Director)
 - B) Supervisors
 - C) Employees
 - D) None of the above
 - E) All of the above

11. Name the five causal factors of accidents.

12. TRUE or FALSE. In most cases of accident analysis, there is only one causal factor involved.

13. Name the four main steps of accident analysis.

14. Choose the items that could be used for proactive utilization of data.

OSHA 300 Log	First Aid Logs	Accident Reports
Maintenance Records	Employee Suggestions	Employee Interviews
Vendor Interviews	Trade Associations	Workplace Audits

15. Name three data points that could be used to evaluate trends.

16. When you return to your worksite, what will you do to convince others of the importance of doing accident analysis?

17. TRUE or FALSE. After accident analysis training has been completed, employees should be given the opportunity to apply their newly acquired skills.

18. How could you accomplish Item 17 without waiting for an accident to occur at your facility?

EXTRA CREDIT: (Fill in the blanks)

If you always _____ what you always _____, you will always _____ what you have always _____.

**One Hour Safety
Presentation**

One Hour Safety Presentation

The main goal of the Division of Safety & Hygiene is the reduction of accidents and illnesses in the workplace. Toward this goal, the One Hour Safety presentation is designed to support the delivery of a presentation to co-workers in your workplace to help them understand and promote safer and healthier work environments. It is recommended that you take the DSH Training Center course as a background for using One Hour Safety Presentation to train others at your workplace. Call 1-800-OHIOBWC, option 2, 2, 2 for class dates and locations.

The One Hour Safety Presentation contains:

- Transparency Masters from which films can be made to use on an overhead projector,
- Instructor Notes which gives the instructor suggestions and script notations to use during the presentation, and
- Student Handouts which can be copied for those attending the presentation.

Materials are included for a one-hour presentation on each of these topics:

- ✓ Accident Analysis
- ✓ Bloodborne Pathogens
- ✓ Effective Safety Teams
- ✓ Enhancing Safety through a Drug-Free Workplace
- ✓ Ergonomics Basic Principles
- ✓ Ergonomics Developing an Effective Process
- ✓ Hazard Communication
- ✓ Lockout/Tagout and Safety-related Work Practices
- ✓ Machine Guarding Basics
- ✓ Measuring Safety Performance
- ✓ Powered Industrial Trucks Training Program
- ✓ Respiratory Protection
- ✓ Violence in the Workplace

Applications used:

- 1) Text documents (ending in .txt) can be opened with any word processing program.
- 2) Microsoft PowerPoint slides (ending in .ppt) can be opened with the Microsoft PowerPoint program. If you do not have PowerPoint and you do have Windows 95, 98, 2000 or Windows NT operating system, you can view the PowerPoint slides by downloading a free PowerPoint Viewer from the following website:
<http://office.microsoft.com/downloads/default.aspx?Product=PowerPoint&Version=95|97|98|2000|2002&Type=Converter|Viewer>
- 3) Adobe Reader document (ending in .pdf) contains the One Hour Safety Presentation in read-only format. It can be opened when you download Adobe Reader, which is available free of charge at the following website:
<http://www.adobe.com/products/acrobat/readstep2.html>

If you have comments or questions about these materials for One Hour Safety Presentation, please e-mail us: OCOSHTrng@bwc.state.oh.us

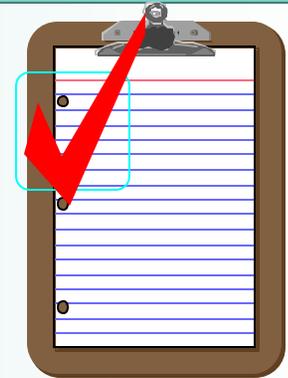
Transparency Masters

What is an Accident?



Objectives

- ◆ **Causal factors**
- ◆ **Steps of accident analysis**
- ◆ **Written program**



Causal Factors

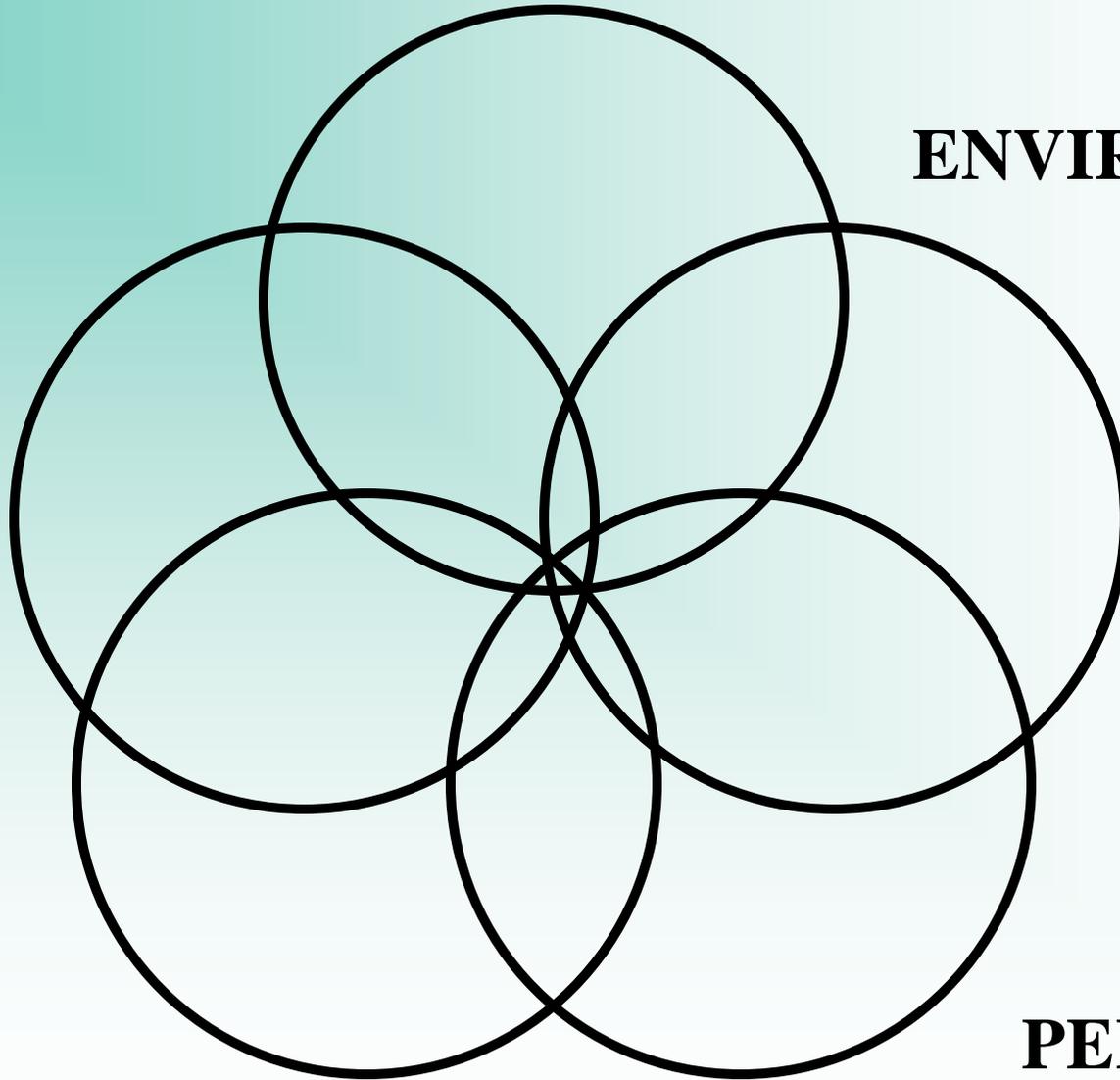
- (1) Task**
- (2) Material**
- (3) Environment**
- (4) Human Factor (Personal)**
- (5) Management/Process Failure**



MATERIAL

ENVIRONMENT

TASK



PERSONAL

MANAGEMENT

(1) Task

- ◆ Ergonomics
- ◆ Safety work procedures
- ◆ Condition changes
- ◆ Process
- ◆ Materials
- ◆ Workers
- ◆ Appropriate tools/materials
- ◆ Safety devices (including lockout)



(2) Material

- ◆ Equipment failure
- ◆ Machinery design/guarding
- ◆ Hazardous substances
- ◆ Substandard material



(3) Environment

- ◆ Weather conditions
- ◆ Housekeeping
- ◆ Temperature
- ◆ Lighting
- ◆ Air contaminants
- ◆ Personal Protective Equipment



(4) Human Factor (Personal)

- ◆ **Level of experience**
- ◆ **Level of Training**
- ◆ **Physical capability**
- ◆ **Health**
- ◆ **Fatigue**
- ◆ **Stress**



(5) Management/Process Failure

- ◆ **Visible Active senior management support for safety**
- ◆ **Safety policies**
- ◆ **Enforcement of safety policies**
- ◆ **Adequate supervision**
- ◆ **Knowledge of hazards**
- ◆ **Hazard corrective action**
- ◆ **Preventive maintenance**
- ◆ **Regular audits**



Steps of Accident

Analysis

- (1) Protocol/Procedure**
- (2) Information gathering**
- (3) Analysis & Conclusions**

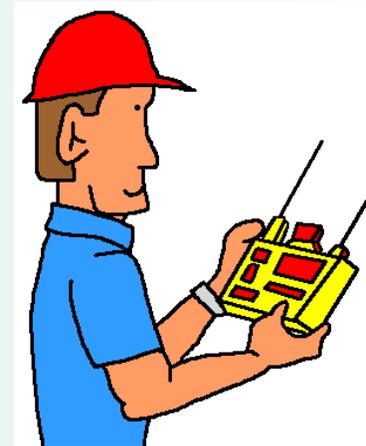


(1) Protocol/Procedure

- ◆ **Our Company's:**
 - ◆ **Emergency Plan**
 - ◆ **First Aid Procedures**
 - ◆ **Accident Plan**
 - ◆ **Accident Report**

(2) Information Gathering

- ◆ **Analysis Kit**
- ◆ **Physical Evidence**
- ◆ **Interview Questions**
- ◆ **Background Information**



Gather information

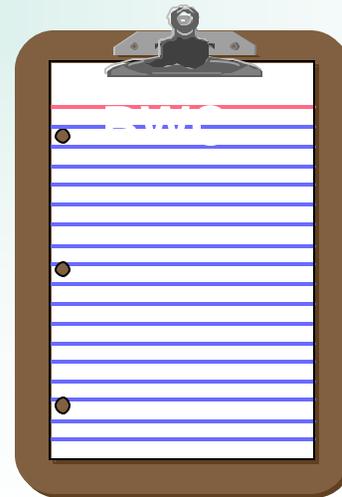
- ◆ **Paper documentation**
 - ◆ **OSHA 300 log**
 - ◆ **First aid logs**
 - ◆ **Accident Reports**
 - ◆ **Process documents**
 - ◆ **Maintenance**
 - ◆ **Safety audit documents**
 - ◆ **Work-force Suggestion**
 - ◆ **Safety Committee minutes**

Gather information (cont...)

- ◆ **Technology tools**
- ◆ **Interviews**
 - ◆ **Employees**
 - ◆ **Supervisors/Managers**
 - ◆ **Vendors**
 - ◆ **Outside consultants**
 - ◆ **Trade associations**
 - ◆ **Other companies in your industry**
- ◆ **Workplace audits**

(3) Analysis & Conclusions

- ◆ Accident Tree
- ◆ BWC Accident Investigation Form



Instructor Notes

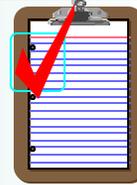
What is an Accident?



- What is an accident ?
- Any unplanned event that interrupts the completion of an activity and has the potential to include injury, illness, or property damage

Objectives

- ◆ Causal factors
- ◆ Steps of accident analysis
- ◆ Written program

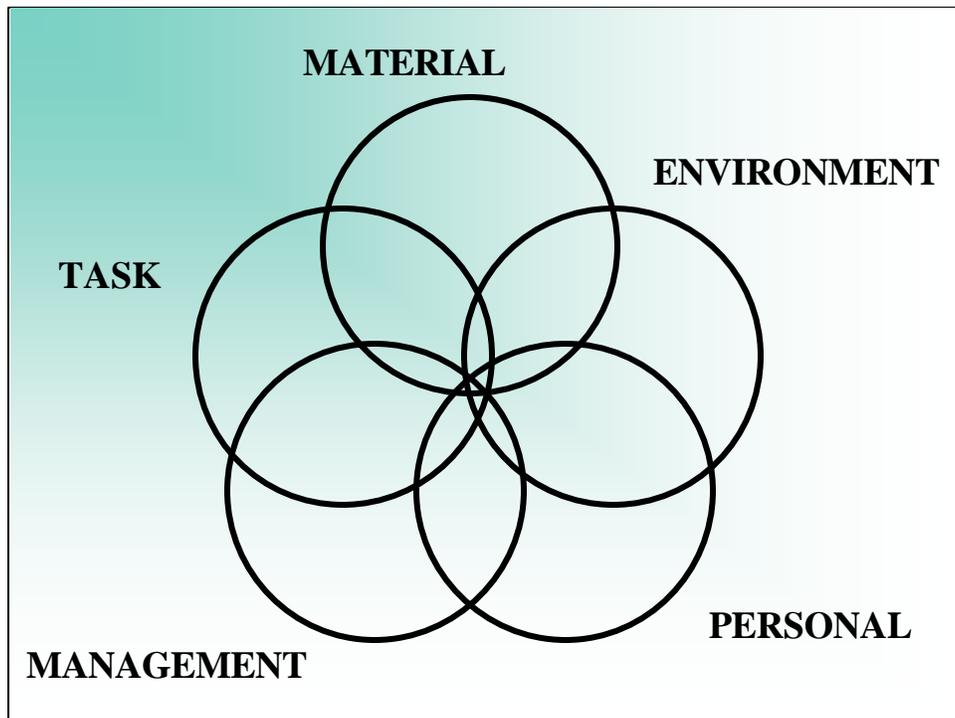


- Learn & apply the 5 casual factors of an Accident (next slide)
- Work through and develop the Steps of Accident Analysis
 - Protocol / Procedure
 - Information Gathering
- Talk about our written program
- Analysis & Conclusions

Causal Factors

- (1) Task**
- (2) Material**
- (3) Environment**
- (4) Human Factor (Personal)**
- (5) Management/Process Failure**





- The five intertwining circles of factors show the increase potential for accidents
- More than one factor
- How do these factors interrelate to create accidents?”
- Point: you want to remove as many potential risks as possible.

(1) Task

- ◆ Ergonomics
- ◆ Safety work procedures
- ◆ Condition changes
- ◆ Process
- ◆ Materials
- ◆ Workers
- ◆ Appropriate tools/materials
- ◆ Safety devices (including lockout)



- Was a safe work procedure used?
- Had conditions changed to make normal procedures unsafe?
- Were appropriate tools & materials available & working properly?
- Were safety devices working properly?

(2) Material

- ◆ Equipment failure
- ◆ Machinery design/guarding
- ◆ Hazardous substances
- ◆ Substandard material



- Was there equipment failure?
- What caused it to fail?
- Was the machinery poorly designed
- Were hazardous substances involved?
- Were they identified?
- Should Personal Protective Equipment have been used

(3) Environment

- ◆ Weather conditions
- ◆ Housekeeping
- ◆ Temperature
- ◆ Lighting
- ◆ Air contaminants
- ◆ Personal Protective Equipment



- What were the weather conditions?
- Was poor housekeeping a problem?
- Was noise a problem?
- Was there adequate light?
- Were toxic gases, dusts, fumes present?

(4) Human Factor (Personal)

- ◆ Level of experience
- ◆ Level of Training
- ◆ Physical capability
- ◆ Health
- ◆ Fatigue
- ◆ Stress



- Were workers experienced in the work being performed?
- Were they properly trained?
- Were they physically capable of doing the work?
- Were they under stress (*work or personal*)?

(5) Management/Process Failure

- ◆ Visible Active senior management support for safety
- ◆ Safety policies
- ◆ Enforcement of safety policies
- ◆ Adequate supervision
- ◆ Knowledge of hazards
- ◆ Hazard corrective action
- ◆ Preventive maintenance
- ◆ Regular audits



- Does management engage in the same practices they preach?
- Were safety rules in effect and enforced?
- Was adequate supervision available?
- Were regular safety inspections carried out?
- Had hazards previously been identified?
- Was regular maintenance of equipment carried out?

Steps of Accident

Analysis

- (1) Protocol/Procedure
- (2) Information gathering
- (3) Analysis & Conclusions



- What is our protocol/ procedure for accidents?
- How do we accomplish the information gathering task?
- What do we do with the information and how do we process it for recommendations?

(1) Protocol/Procedure

◆ Our Company's:

- ◆ Emergency Plan**
- ◆ First Aid Procedures**
- ◆ Accident Plan**
- ◆ Accident Report**

(2) Information Gathering

- ◆ Analysis Kit
- ◆ Physical Evidence
- ◆ Interview Questions
- ◆ Background Information



Gather information

- ◆ **Paper documentation**
 - ◆ **OSHA 300 log**
 - ◆ **First aid logs**
 - ◆ **Accident Reports**
 - ◆ **Process documents**
 - ◆ **Maintenance**
 - ◆ **Safety audit documents**
 - ◆ **Work-force Suggestion**
 - ◆ **Safety Committee minutes**

Gather information (cont...)

- ◆ **Technology tools**
- ◆ **Interviews**
 - ◆ **Employees**
 - ◆ **Supervisors/Managers**
 - ◆ **Vendors**
 - ◆ **Outside consultants**
 - ◆ **Trade associations**
 - ◆ **Other companies in your industry**
- ◆ **Workplace audits**

(3) Analysis & Conclusions

- ◆ Accident Tree
- ◆ BWC Accident Investigation Form



- Practice with the Tree (see following pages)
- Practice with the form (see following pages)
- Why do we do this?
 - Build a record that shows critical behaviors
 - Compare trends
 - Identify needs
 - Develop improvements

ACCIDENT TREE

Nature of Injury or Illness:	Part of Body Affected:
------------------------------	------------------------

Operation Location:	Operation Task:	Employee Task:	Employee Body Position/ Activity:	Equipment or Substance:	Preceding Situation or Event:	Type of Accident:
---------------------	-----------------	----------------	-----------------------------------	-------------------------	-------------------------------	-------------------

Why

Why

Why

Why

Why

Why

Why





*Ohio Bureau of Workers' Compensation
Division of Safety & Hygiene*

Workers' Compensation claim # _____
OSHA 200 case/file # _____

ACCIDENT ANALYSIS REPORT

PART 1 IDENTIFICATION INFORMATION

Employee Name _____
 Date of Accident _____ Time _____ AM PM
 Occupation _____ Shift _____
 Department _____ ID _____

PART 2 SUPPLEMENTARY INFORMATION

Company _____
 Mailing Address _____

 City _____ State _____ Zip Code _____
 Telephone () _____
 Establishment Location (if different from above) _____

Accident Location Same as establishment? On premises? (Check if applies)

Employee Address _____

 City _____ State _____ Zip Code _____
 Telephone () _____ Social Security Number _____

Sex _____ Age _____ Date of Birth _____
 Was injured person performing regular job at time of accident? Yes No
 Length of service: With employer _____ On this job _____
 Time shift started _____ AM PM Overtime? Yes No

Name and address of Physician _____

 City _____ State _____ Zip Code _____

If hospitalized, name and address of hospital _____

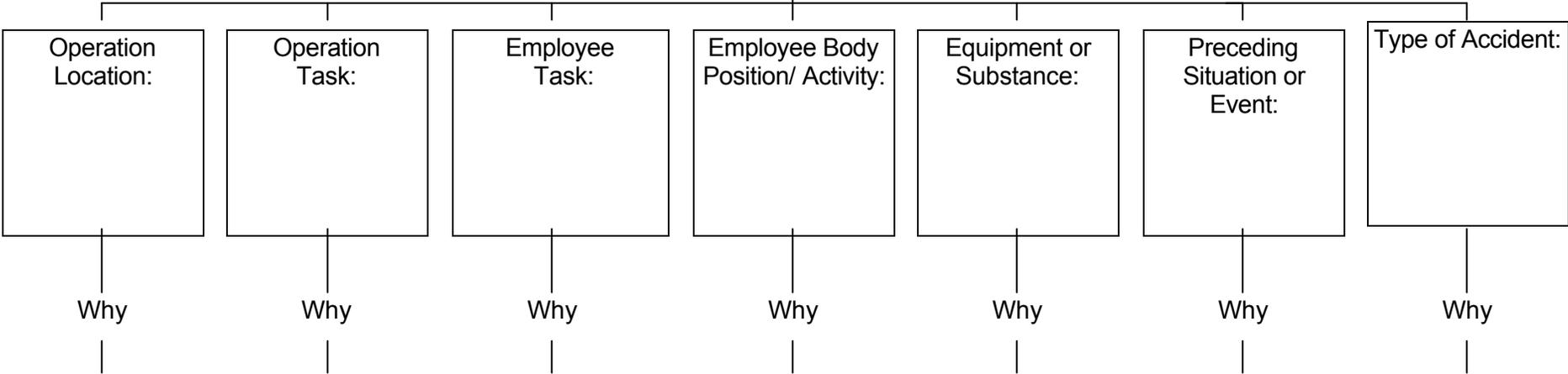
 City _____ State _____ Zip Code _____

Fatality? Yes No If Yes, date of death _____

If death, attach Coroner's Report.

PART 3 **ACCIDENT TREE** (Refer to Instructions)

Nature of Injury or Illness:	Part of Body Affected:
------------------------------	------------------------



PART 4 DESCRIPTION AND ANALYSIS

Fully describe accident:

Attach photographs of accident scene and machinery/equipment.

What factors led to the accident (from Accident Tree in Part 3)?

MACHINERY/EQUIPMENT INVOLVED

Manufacturer _____ Equipment Age _____

Serial No. _____ Model _____

Function _____

Location _____

- 4. Has machine/equipment been modified?
- 5. Was it guarded properly?
- 6. Was there any mechanical failure?

To answer these questions, research and attach equipment history, maintenance history, relevant photographs and other reports and comments.

CONSTRUCTION

If construction-related, date of contract _____

Is firm General Contractor or Subcontractor

Names of other contractors _____

WEATHER/ENVIRONMENTAL CONDITIONS (temperature, housekeeping, lighting, work surfaces, etc.)

ACCIDENT ANALYSIS TERMINOLOGY

ACCIDENT - An unplanned event that interrupts the completion of an activity, and that may (or may not) include injury, illness, or property damage. (also - incident, near miss)

ACCIDENT ANALYSIS - The collection of all pertinent information through interviews, past records, on-site inspection, etc. that helps identify all causes of an accident. Part of accident analysis is the determination and implementation of appropriate corrective action.

ACCIDENT ANALYST - Someone who is held responsible for conducting analyses. One who has been trained in the purpose and effective methods of accident analysis.

ACCIDENT RECORDKEEPING - The documentation of recordable accidents as required under federal law. (a.k.a. OSHA recordkeeping)

AGENCY - The object or substance which was directly involved in the accident.

CATASTROPHE - Accidents resulting in one or more fatalities, or the hospitalization of three or more employees.

CHARGE BACK SYSTEM - A department or location is charged a specified amount of the insurance premium based on its percentage of the total incident or accident cost.

CLAIMS MANAGEMENT - The process of maintaining an active role to insure speedy recovery and return to work.

COMPENSATION PAID - The payment of lost wages and benefits, excluding medical, paid to the claimant or claimant's dependent.

DIRECT COST - Wage compensation, benefits, and medical costs paid as the result of an accident.

EMPLOYEE BODY POSITION / ACTIVITY - The body position required by an activity that relates to an accident, injury, or illness.

EMPLOYEE TASK - The specific task performed by the employee.

ERGONOMICS - The science that seeks to adapt work or working conditions to the worker.

EXPENSE - The cost of an accident incurred as a result of damage, repair, outsourcing contracting, production loss.

FACTOR(S) - Any behavior, condition, act, or negligence without which the accident would not have happened, can be simultaneous or sequential.

FIRST AID - The administering of minor medical attention, usually not covered by insurance.

INCIDENT - An unplanned event that interrupts the completion of an activity without directly involving the worker(s). Something that happens as a result of and in connection with something more important.

INDIRECT COST - Costs, other than direct costs, related to an accident, usually not covered by insurance.

MEDICAL EXPENSES - The payment of medical costs related to an accident.

NATURE OF INJURY / ILLNESS - The result of an occupational accident / illness to the physical condition or health of the worker. (examples: amputation; fracture; strain; sprain; carpal tunnel syndrome)

NEAR-MISS - An unplanned event that interrupts the completion of an activity which directly involves the worker(s).

OCCUPATIONAL ILLNESS - Any abnormal condition or disorder caused by exposure to environmental factors associated with employment, whether due to acute (short) or chronic (long) exposures.

OCCUPATIONAL INJURY - An injury which results from an exposure involving an incident in the work environment.

OPERATION LOCATION - Where the work is being performed.

OPERATION TASK - The specific operation being performed.

OUTSOURCING CONTRACTING - Outsourcing work requiring specialized skills such as repairing underground utilities or electrical work.

PART OF BODY AFFECTED - Exact area of the body damaged as the result of an occupational injury / illness. (examples: right eye, left leg, multiple body parts)

PRE-ACCIDENT PLAN - An existing plan of action set up to respond in the event of an accident. Elements of such a program include:

- an alarm system to warn other employees;

- procedures to save lives directly involved with the accident scene (i.e. first aid, transfer to medical facility);
- procedures for protecting lives or property from further loss;
- procedures to assure timely analyses ; and
- (suggested) procedures to provide assistance to employees suffering reaction to an accident - employee assistance program

PRECEDING SITUATION OR EVENT - Important event(s) occurring just prior to an accident injury, or illness. These may be considered as triggering events, situations, or circumstances necessary for the accident to occur.

PRODUCTION LOSS - Examples are damaged machinery, equipment, tools out of service, damaged product, disrupted project schedule.

RECONSTRUCT - To recreate, using available evidence, events and conditions leading to and including the accident. This will help identify the cause or causes of the accident. Special precautions should be taken to prevent the accident from being repeated.

RESERVES - The total amount of money set aside to pay future medical and /or compensation awards over the life of the claim.

SUPERVISION - The management of a company, or a designated representative.

TEMPORARY WORKER REPLACEMENT - Replacing the injured worker with a temporary worker, or breaking in a new worker.

TIME LOSS MEASUREMENT - The time away from the job, computed in days, hours, and minutes. Minutes are recorded in 15-minute increments, such as 15 minutes, 30 minutes, 45 minutes, and 60 minutes, which would roll over to the hour.

TYPE OF ACCIDENT - The general type of accident that occurred. (examples: fall to the same or different level; caught in, on, or between; struck by; strike against)

WAGE - Payment for services to a worker. Examples could be hourly, daily, weekly, monthly, or by the piece.

WITNESS - A person who can contribute information about an accident. Someone involved in the chain of events leading to an accident, someone involved in the post-accident scene, or others who perform the same job, as examples.

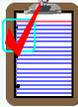
Student Handouts

What is an Accident?



Objectives

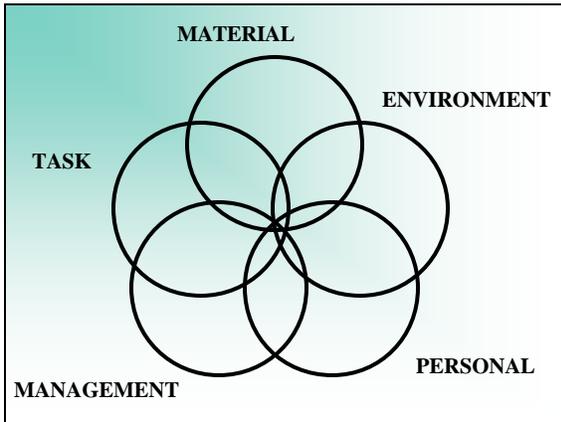
- ◆ Causal factors
- ◆ Steps of accident analysis
- ◆ Written program



Causal Factors

- (1) Task
- (2) Material
- (3) Environment
- (4) Human Factor (Personal)
- (5) Management/Process Failure





(1) Task

- ◆ Ergonomics
- ◆ Safety work procedures
- ◆ Condition changes
- ◆ Process
- ◆ Materials
- ◆ Workers
- ◆ Appropriate tools/materials
- ◆ Safety devices (including lockout)

An illustration of a worker in a blue shirt and cap reading a book titled "SAFETY RULES".

(2) Material

- ◆ Equipment failure
- ◆ Machinery design/guarding
- ◆ Hazardous substances
- ◆ Substandard material

An illustration of a worker in a blue shirt and cap being struck by a falling object from a machine, with a large yellow starburst indicating the impact.

(3) Environment

- ◆ Weather conditions
- ◆ Housekeeping
- ◆ Temperature
- ◆ Lighting
- ◆ Air contaminants
- ◆ Personal Protective Equipment



(4) Human Factor (Personal)

- ◆ Level of experience
- ◆ Level of Training
- ◆ Physical capability
- ◆ Health
- ◆ Fatigue
- ◆ Stress



(5) Management/Process Failure

- ◆ Visible Active senior management support for safety
- ◆ Safety policies
- ◆ Enforcement of safety policies
- ◆ Adequate supervision
- ◆ Knowledge of hazards
- ◆ Hazard corrective action
- ◆ Preventive maintenance
- ◆ Regular audits



Steps of Accident

Analysis

- (1) Protocol/Procedure
- (2) Information gathering
- (3) Analysis & Conclusions



(1) Protocol/Procedure

- ◆ Our Company's:
 - ◆ Emergency Plan
 - ◆ First Aid Procedures
 - ◆ Accident Plan
 - ◆ Accident Report

(2) Information Gathering

- ◆ Analysis Kit
- ◆ Physical Evidence
- ◆ Interview Questions
- ◆ Background Information



Gather information

- ◆ Paper documentation
 - ◆ OSHA 300 log
 - ◆ First aid logs
 - ◆ Accident Reports
 - ◆ Process documents
 - ◆ Maintenance
 - ◆ Safety audit documents
 - ◆ Work-force Suggestion
 - ◆ Safety Committee minutes

Gather information (cont...)

- ◆ Technology tools
- ◆ Interviews
 - ◆ Employees
 - ◆ Supervisors/Managers
 - ◆ Vendors
 - ◆ Outside consultants
 - ◆ Trade associations
 - ◆ Other companies in your industry
- ◆ Workplace audits

(3) Analysis & Conclusions

- ◆ Accident Tree
- ◆ BWC Accident Investigation Form