

Section 4

Fundamentals of Accident/Incident Prevention

Accidents/Incidents are Preventable

Many people believe that accidents are the inevitable result of unchangeable circumstances, fate, or a matter of bad luck. Others believe that accidents happen to individuals with little or no common sense. The National Safety Council has stated in previous articles that, 88% of all accidents are the result of unsafe acts of people. Approximately 10% of all accidents are caused by unsafe equipment or unsafe surroundings. The other 2% of all accidents are caused by Acts of God.

It is important to emphasize that people make choices, those choices result in safe behaviors or risky behaviors not fate or bad luck.

It must also be emphasized that in most situations common sense or a lack of common sense is not the problem, people use values and past experiences in determining what set of actions to take. Those actions taken by the individual or individuals may result in an accident/incident or not.

Root Cause

Accidents do not happen without causes, and the identification, isolation and control of these causes are the underlying principles of all accident/incident prevention techniques.

To better understand the circumstances that give rise to the causes of accidents and incidents, it is helpful to consider the sources, these sources can be preexisting, potential or a combination.

The sources can be reduced to three major elements. Briefly the sources are the:

- **Employee**—company, employee or supervisor's attitude or values; what someone does or fails to do; skill and/or educational level.
- **Equipment**—guarding, improper guarding or lack of guarding; hot objects, heavy objects, irregular shaped or sharp objects and materials; improper, inadequate, inappropriate or defective equipment; inadequate maintenance or lack of maintenance; spacing of equipment; appropriate warnings.
- **Environment**—illumination, noise, toxic substances, atmospheric conditions; the safety culture.

Control of Hazards

There are four main controls for an effective accident/incident prevention program. Engineering, Administrative, Personal Protective Equipment & Review.

- (a) Engineering—Causes of accidents, or unsafe conditions, can sometimes be eliminated through the application of engineering controls. Design of machine guards, automobile brakes, traffic signals, pressure relief valves, general ventilation, local exhaust and hand rails are examples of safety engineering at work.
- (b) Administrative—The risk of an accident or incident happening can be reduced or eliminated by administrative controls, for example: elimination or reduction of hazardous chemicals being introduced into the workplace; hiring well educated or trained individuals; buying equipment with proper protective devices; removing the employee from direct contact. Safety education is an effective tool in the prevention. Through adequate instruction, personnel gain useful knowledge and can develop safe attitudes.
- (c) Personal Protective Equipment (PPE) – protective equipment is used when hazardous conditions cannot be eliminated, reduced or isolated (in other words when engineering and administrative controls are not feasible or economical or during the interim when evaluating if controls would be feasible or economical).
- (d) Review—Programs, policies and procedures should be reviewed and audited periodically to incorporate any changes or updates and to re-evaluate if the first two controls can be instituted.

Eliminating Unsafe Conditions

Employees shall report any unsafe condition to their supervisors and/or eliminate the unsafe condition, if possible. The supervisor must take the initiative to abate unsafe conditions and protect employees and the public. If corrective action is beyond the supervisor's scope of authority, the matter must be brought to the attention of management and/or Risk Management.

The following are examples of unsafe conditions that must not be permitted to exist:

- (a) Obstacles and impediments to the safe movement of personnel, vehicles or machines, such as blocked fire exits.
- (b) Forcing pedestrians to walk out onto roadways due to shoulder work (without the proper safeguards).
- (c) Unsafe working and walking surfaces. Holes in the walking or working surface that an individual can fall through or get their shoe stuck in. Uneven floors (greater than ¼ inch), cracks in flooring (greater than ½ inch) and uneven steps.

- (d) Worn, damaged, or misused tools (cheater bars).
- (e) Operation of equipment without the proper protective machine guards.
- (f) Working without required protective equipment such as goggles, gloves, hard hats, adequate foot wear or seat belts.
- (g) Worn and/or damaged or unguarded electrical wiring, fixtures and power cords.
- (h) Absence of required signage warning of particular hazards in the area.

Educating and training the workforce in the proper use of equipment and materials, awareness of their surroundings, and understanding their role in the workplace and in safety will aid in eliminating these occurrences.

One of the most effective means of preventing accidents/incidents is eliminating unsafe conditions through engineering controls, the second effective means is administrative controls the last effective control should be through the use of PPE.

Near-Miss

The important factor in eliminating unsafe conditions is doing so before an accident or incident occurs. Near-miss occurrences need to be investigated and corrected, as they are a warning of a condition that may eventually lead to an accident. A near-miss occurrence is an example of an incident resulting in neither an injury nor property damage. However, a near-miss occurrence has the potential to inflict injury or property damage if its cause is not corrected.

Job Safety Analysis/Risk Assessment

Job Safety Analysis/Risk Assessments, break down the job into tasks/steps that are evaluated to identify any hazard for each task/step involved.

Procedures for Job Safety Analysis/Risk Assessment are as follows:

Job Hazard Analysis

- (a) List the sequence of **job steps**—the job is broken down into basic steps, describing what is to be done in a logical sequence.
- (b) Search for and list potential hazards—each step is analyzed for hazards that may cause an accident. The objective is to identify as many hazards as possible.
- (c) Decide on a recommended action or procedure to protect the employee from the hazards. When the risks and potential hazards associated with each step are identified and their causes understood, then methods of eliminating them should be outlined. There are four basic methods by which this can be accomplished.

- (1) Substitution—Eliminate the hazardous process or operating and provide a substitute action.
- (2) Isolation—Isolate the process or operation in order to eliminate or minimize the hazard.
- (3) Protection—Provide appropriate engineering controls to minimize or eliminate hazards.
- (4) Personal Protective Equipment—Provide and enforce use of personal protective equipment to reduce the possibility of injury or illness.

The information collected from all of the above steps is used to create specific department safety policies and procedures. The policies and procedures assist supervisors in instructing employees how to perform their job safely. (See [Exhibit C](#) for an Example.)

Job Safety Training

No one should assume a newly hired, newly assigned, or reassigned employee knows all the required job procedures. They must be trained and evaluated on their ability to perform the job adequately and safely.

By their actions and supervision of subordinates, supervisors must demonstrate “safety.”

Every employee shall consider the maintenance of a safe working environment and safe working practices as an essential, vital, and primary part of his/her responsibilities. The line supervisor has the most immediate and influential control over an employee’s behavior.

It is essential for all supervisors to set a proper example by complying with all accepted safety practices that apply to assigned tasks. The effectiveness of employee injury and illness prevention depends upon the involvement of the first-line supervisor.

Supervisors shall ensure all employees are competently trained and capable of carrying out assigned tasks in a safe manner.

Training on job competency, safety, inspection procedures, the correct use of personal protective equipment, and hazardous chemicals handling will be conducted prior to an employee starting operations.

All employee safety training shall be documented. All training documentation is subject to review by Risk Management and regulatory agencies.

Risk Management can provide training and training assistance in many safety topics.

Specialized training is often required in such topics as:

- (a) Bloodborne Pathogens
- (b) Confined Space

Safety Training
offered by Risk
Management

- (c) Respiratory Protection
- (d) Forklift Operation
- (e) Hazard Communication Standard
- (f) Welding, etc.

Safety Inspections

Every employee is responsible for maintaining a safe working environment and inspecting their work area daily.

The objectives of a safety inspection program are to:

- (a) Maintain a safe work environment through awareness training, hazard recognition, and removal.
- (b) Ensure that employees are following proper safety procedures while working.
- (c) Determine which operations meet or fail to meet acceptable safety standards.

Complete walk through and detailed inspections of equipment, work areas, and employee operating procedures should be performed by the department on a regular basis.

Inspections should be documented and all unsafe conditions, procedures, and practices corrected. All corrective actions taken should also be documented.

In addition to self-inspections, Orange County operations are inspected by Orange County Risk Management, other governmental agencies and commercial insurance carriers. All employees are required to cooperate with these agencies regarding inspections.

Inspection reports will specify the length of time to correct violations or hazards. Corrective action will be the responsibility of the manager. The Department will send a copy of outside agency inspection reports to Risk Management as well as a notification that corrective action has been taken.

Order

Employees will inspect their work area and equipment before each shift to identify unsafe conditions. Order must be maintained. Some steps to order are:

- (a) Daily work inspections.
- (b) Daily decision on course(s) to take.
- (c) Daily action and follow-up.

Order prevents wasted energy; eliminates accidental injury and fire causes; maintains greatest use of precious space; keeps stores and inventory at a minimum; controls property damage; guarantees good show appearance; encourages better work practices; impresses the customer and reflects well on the employee and the supervisor.

Supervisory Accident/Incident Investigation

Accident/incident investigations should be conducted, not to place blame, but to find out the facts to prevent recurrence. Each incident/accident shall be investigated immediately and a report submitted to Safety within 48 hours by the injured employee's SUPERVISOR or their designee. *See Exhibit D for Supervisors Accident Report Form.* This form can then be used by the Safety Section of Risk Management to determine corrective actions if any.

Accident
Investigations

In the case of accidents resulting in serious injuries, the following procedures shall be adhered to as closely as possible:

(a) Secure the Scene

- (1) Secure the scene first so no one else is injured. If there is an injury, ensure that medical care is given to the victim.
- (2) Preserve the scene (unless the scene represents an additional hazard such as a fuel or chemical spill or dangerous traffic conditions) until Risk Management's investigation has been completed.

Accident Investigations
Power Point Presentation

(b) Call Risk Management

(c) Interview Victim

- (1) Document all relevant interview information.
- (2) Interview victim, if possible.
- (3) If the injury is serious, selecting the right time for the interview is a judgment factor. Immediately after the accident the victim may be confused; but waiting too long may cause the important details to be forgotten.

(d) Interview Witnesses

- (1) Obtain the names, phone numbers (day phone) and addresses of any witnesses and their location at the time of the accident occurrence or as soon as possible thereafter.
- (2) It is very important to interview witnesses immediately to document for future reference.

(e) Investigate the Scene

Accident Investigation

- (1) Reconstruct in writing the chain of events leading up to the accident/incident and attempt to determine the cause(s) that lead up to the accident/incident.
- (2) Use photographs or draw a diagram of the location to help in the investigation.
- (3) Note/document all other factors at time of investigation such as lighting conditions, weather conditions or any other factors that may have a relevant bearing on the accident.
- (4) Obtain a police report.