Introduction

Welcome to the Safety Committee Operations Workshop. This workshop is designed to include you as much as possible in the learning experience. The more you contribute, the more you will get out of this training, so please don’t hold back...participate and have fun!

Purpose

The purpose of the workshop is to give safety committee members training to meet safety committee operational requirements.

Goal:

Given the information and exercises in this workshop, you will gain a greater understanding of effective safety committee operations.

Form Groups

- Introductions
- Elect a Chairperson
- Select a Spokesperson
- Everyone is a Recorder

This material, or any other material used to inform employers of compliance requirements of OSHA standards through simplification of the regulations should not be considered a substitute for any provisions of the Occupational Safety and Health Act of 1970 or for any standards issued by OSHA. The information in workbook is intended for training purposes only.
Understanding the Purpose of the Safety Committee

The primary purpose of a safety committee is to bring workers and management together in a non-adversarial, cooperative effort to assist the employer in making improvements to the safety management system.

Safety Committee Role, Purpose, Processes, and Function

The role we play – Leader, counselor, coach, supervisor, owner. Determines expectations and purpose.

Purpose - the intended outcome towards which a person or group strives.

Process - the means and methods used to achieve the intended purpose.

Function – the actual outcome. Determined by how well we design and carry out processes, fulfill our purposes, and play our role. An ineffective safety committee may “function” to hurt rather than help the employer manage an effective safety program.

What does the safety committee do to fulfill its purpose(s)?

1. ____________________________________________

2. ____________________________________________

3. ____________________________________________

4. ____________________________________________

5. ____________________________________________

What is the role of the safety committee?

The most effective safety committees play the role of a Consultant, not a Cop!
Safety Committee Formation and Membership.

An effective safety committee should be composed of an number of employer and employee representatives. Employee representatives should be volunteers or should be elected by their peers. When agreed upon by workers and management, the number of employee representatives on the committee should be greater than the number of employer representatives. The chairperson should be elected by the committee members.

Why is it crucial that safety committee members either volunteer or be elected?

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Why is it important that the chairperson be elected?

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What are some causes for a lack of safety committee involvement?

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________________________________________________________________________

Discuss some strategies to get employees breaking down the door to be active members of the safety committee?

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________________________________________________________________________
Commitment = Time and Money

Management commitment to workplace health and safety.
The employer can best demonstrate commitment to the safety committee by allocating time and money so that the safety committee can meet, be trained, and conduct its important activities. The safety committee should hold regular meetings at least once a month.

Ten Keys to an Effective Safety Committee Meeting

1. Meetings are well organized with expected and unexpected activities

2. The committee clearly understands its role and purpose

3. Action items, activities, projects are assigned to members and completion dates set

4. The extent of safety committee authority is understood

5. Establish ground rules that set standards of behavior and procedure. - “committee culture”

6. Formal and informal communications are clear and occur often

7. Members demonstrate a commitment to the safety committee

8. Duties and responsibilities are delegated to individual members

9. Member involvement and input is encouraged and recognized

10. Members are educated and trained on their duties and responsibilities
Purpose: Create a Culture of Consequences

We do what we do because of consequences!

**Natural consequences.** Hurt or health to the employee and employer. Injury, accident costs, morale, productivity. We are punished or rewarded by what we do.

**System consequences.** Discipline or recognition/reward. The employee and employer experience these consequences from another person or organization. Disciplinary action, OSHA penalties are examples. We are punished or rewarded for what we do.

**Positive consequences.** When effective, increase mandatory and discretionary behavior.
- Pay, benefits, recognition, reward
- Employee performs to receive the consequence
- Employee may perform far beyond minimum standards
- Focus is on excellence - success based
- **What do you hear from employees?**
  ✓ “If you report a hazard, I will make sure you’re recognized.”
  ✓ “If you prevent an injury or save money, you will be rewarded.”

**Negative consequences.** When effective, increases required behavior only.
- Discipline, punishment,
- Employee performs to avoid the consequence - fear based
- Employee performs to minimum standard - just enough to get by
- This strategy can work if the goal is only compliance
- **What do you hear from employees?**
  ✓ “If you wear that eye protection, you won’t get injured.”
  ✓ “If you comply with safety rules, you won’t be disciplined.”

**Absence of consequences** - Withholding positive and negative consequences results in the extinction of desired behaviors.
- No expectation of positive or negative consequences
- Employee is ignored - no relationship with management is established
- Initially, the employee will work harder in the hope of receiving positive consequence - then gives up
- **What do you hear from employees?**
  ✓ “It doesn’t matter how hard I work around here.”
  ✓ “Apathy is rampant, but who cares.”
  ✓ “Hey, we can get away with anything around here!”
  ✓ “If management doesn't care…why should I?”

*If people are taking shortcuts in areas such as safety and quality, the naturally occurring positive consequences associated with doing the job with less effort will cause the undesirable behaviors to continue.* Aubrey, C. Daniels, *Bringing Out the Best in People*, p. 29
**Process: Evaluate the Safety & Health Program**

The safety committee should assist the employer in evaluating the employer's accident and illness prevention program, and should make written recommendations to improve the program where applicable.

### Inputs - Resources

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### Processes - Using Resources

1. **Top Management Commitment** - leading, following, managing, planning, funding

2. **Labor and Management Accountability** - responsibility, discipline

3. **Employee Involvement** - safety committees, suggesting, recognizing/rewarding

4. **Hazard Identification** - inspections, surveys, observation

5. **Hazard Analysis** - incidents/accidents, tasks

6. **Hazard Control** - engineering, work practice, administrative, interim control methods

7. **Education and Training** - orientation, OJT, periodic

8. **System Evaluation** - judging effectiveness of conditions, behaviors, systems, results

9. **System Improvement** - change management, design, implementation

**Outputs - Conditions, Behaviors, Results**

Safe/Unsafe conditions, behaviors  
Many/Few incidents and accidents  
High/Low accident costs  
High/Low productivity, morale, trust

*Where do we look for clues that the safety committee is effectively fulfilling its role and purposes?*

*“Every system is designed perfectly to produce what it’s producing”*
The safety committee should evaluate the employer’s accountability system and make recommendations to implement supervisor and employee accountability for safety and health.

**Accountability = Performance + Evaluation → Consequences**

**Evaluation Checklist.** An effective accountability system is required to ensure compliance with required employer safety standards. Here’s a simple checklist your safety committee can use to evaluate your organization’s accountability system. (Y=Yes, N=No)

1. **Formal standards and expectations.** Before employees can be held accountable, management must design and communicate employee accountabilities.
   - Do clear safety policies, plans, processes, procedures, practices exist?
   - Are safety standards written in the primary language(s) of all employees?
   - Are safety policies and rules discussed with new employees at orientation?
   - Are safety policies and rules communicated adequately to employees?

2. **Resources to meet/exceed expectations.** Before management can hold employees accountable, they must first fulfill their obligation to provide employees with the tools to perform safely.

   **Physical Resources**
   - Are tools, equipment, machinery and materials adequate in ensuring a safe workplace?
   - Are workstations designed to be ergonomically appropriate for the assigned worker?
   - Is adequate Personal Protective Equipment provided to employees?
   - Do temperature, chemical, noise, atmospheric and other environmental safety hazards exist?

   **Psychosocial Support**
   - Is adequate initial safety orientation training being provided?
   - Is adequate safety training on specific safety procedures being provided?
   - Is management providing adequate safety leadership through example?
   - Are workloads reasonable? (Employee has ability to complete work without undue physical or psychological stress)
   - Are work shifts reasonable? (Does not produce excessive fatigue)
   - Is an Employee Assistance Program (EAP) available?
   - Do employees suffer any negative consequences from working safe?
   - Do positive working relationships exist between employees and supervisors?
3. **A system of measurement.** It’s important that behaviors are evaluated and measured to that discipline is based on facts, not feelings.
   — Is an effective informal observation and feedback process being conducted, or...
   — Is a effective formal observation process in place?
   — Are the results of observations being tracked to improve the safety management system?
   — Do formal appraisals/reviews index safety performance?
   — Do employees have control over behaviors/results being measured?

4. **Effective consequences.** Without effective intervention, improvement in behaviors and performance will not occur.
   — Is discipline for noncompliance expected?
   — Does discipline occur soon after justification is established?
   — Do employees know exactly what behaviors lead to discipline?
   — Are the motives for disciplining perceived as sincere?
   — Do disciplinary procedures change behavior/performance in the desired direction?
   — Is discipline progressively more significant for repeated noncompliance?

5. **Appropriate application of Consequences.** Appropriate intervention ensures discipline is justified and perceived as fair.
   — Does management first determine that their obligations to employees are have been fulfilled before disciplining? (Clear expectations, resources, training, enforcement, example)
   — Does discipline occur as a result of failure to comply with safety policies and rules (behaviors) rather than “having an accident” (results)?
   — Are employees automatically disqualified from safety recognition/rewards if they have an accident?
   — Is discipline consistently applied throughout the organization - top to bottom and across functions?
   — Is the purpose of discipline to improve performance rather than merely to punish?
   — Is recognition occurring more often than discipline?
   — Is discipline appropriate to the severity of the infraction?
   — Is discipline appropriate to the negative impact the infraction has on the company?

6. **Evaluation of the accountability system.** This element is essential in continually improving the accountability system.
   — Is the safety committee evaluating the accountability system on a periodic/continuous schedule?
   — Are all processes within each of the accountability system elements evaluated?
   — Does the safety committee submit the evaluation results to management?
   — Does the safety committee develop and submit recommendations to improve the accountability system?
   — Does management respond to and implement safety committee recommendations?
Exercise: Accountability establishes obligation

Determine appropriate actions in each of the following scenarios.

Scenario 1. Bob, a maintenance worker who has been working for the company for 10 years, received a serious electrical shock while working on a conveyor belt motor. When asked why he did not use the company’s established lockout/tagout procedures he acknowledged that he had thought about it, but that the “old procedures” hadn’t been used for years, and he had done this same task many times before. And, besides, the production manager yelled at him to get the conveyor running again or it’s his job because the whole system was shut down.

Appropriate actions and justification:

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Scenario 2. Ralph, an experienced roofer for Sky High Contractors, was “caught” by his supervisor working on a steeply pitched wood shingled roof without proper fall protection. When questioned he stated that he knew he should be using the fall protection, and that he would be in trouble if caught. He stated that there was nothing wrong with the equipment, but it was too big of a hassle to get it out of the back of his truck.

Appropriate actions and justification:

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Process: Increasing Employee Involvement

The committee should establish a system to allow the members to obtain safety-related suggestions, reports of hazards, or other information directly from all persons involved in the operations of the workplace.

What works to get employees and management motivated to submit suggestions?

Involvement in safety committees can vary greatly. What are the factors that create high levels of participation in safety committee activities?

To be effective, recognition should be …

Soon - occurs immediately after the behavior/performance.

Certain - employees know (1) they will be recognized, and (2) why they’re being recognized.

Significant - perceived as more than an entitlement. Significance is defined by the receiver. Recognize whenever employees meet expectations. Recognize and reward when employees clearly exceed expectations.

Sincere - genuine appreciation or disapproval. You really mean it. Motives for recognizing are not questioned.
Effective Incentive/Recognition Systems

**Evaluation Checklist.** An effective safety incentive/recognition system, like accountability, involves a number of very important processes within six primary elements. Here's a simple checklist your safety committee can use to evaluate your incentive/recognition system. (Y=Yes, N=No)

1. **Formal standards and expectations.** It's important that recognition and reward policies and expectations are clearly written and communicated to all employees.
   - Do written policies, plans, processes, procedures, practices exist?
   - Are policies and procedures discussed with new employees at orientation?
   - Are policies and procedures communicated adequately to employees?
   - Are policies and procedures written in the primary language(s) of all employees?

2. **Commitment and support.** Equally important is that management commit resources and support employee involvement. Employees must feel comfortable and believe they'll be recognized and rewarded for their involvement.
   - Is commitment and support addressed in the written recognition plan?
   - Are employees provided adequate resources in support of their involvement?
   - Are employees educated and trained so that they have the knowledge and skills required to actively participate, make suggestions or otherwise contribute?
   - Is adequate time provided for involvement in safety committees and other activities?
   - Is management leadership evident through their involvement in safety?
   - Are workloads reasonable? (Employees can get involved in safety without jeopardizing other responsibilities)
   - Do employees suffer any negative consequences as a result of their involvement?
   - Does recognition occur more often than discipline?

3. **A system of measurement.** It's important that behaviors are evaluated and measured to that discipline is based on facts, not feelings.
   - Is a measurement process addressed in the written recognition plan?
   - Is recognition criteria based on behaviors/activities over which employees have control?
   - Is recognition based solely on results/outcomes? (number of accidents, mod rate, etc)
   - Is measurement criteria clearly communicated and understood?
   - Do sustained performance of mandatory behaviors result in personal recognition?
   - Do voluntary behaviors result in personal recognition and reward?
   - Are incentives deliberately designed to increase desired behaviors?
   - Are rewards controlled and monitored by management?
   - Are standard procedures used to identify employees, activities, incentives?
4. **Effective consequences.** Without effective consequences, improvement in behaviors and performance will not occur.

- Does recognition occur soon after the performance?
- Is recognition/reward based on behaviors or luck?
- Are games (safety bingo, drawings, etc) used to determine who gets recognize/rewarded?
- Are first, best, most improved categories part of the recognition process?
- Does the recognition/reward process include individual/group competition?
- Are employees certain they will be recognized for professional performance?
- Do employees know exactly what behaviors lead to recognition?
- Are recognition and rewards considered significant/meaningful to employees?
- Are the motives for recognition and rewards perceived as sincere?
- Do recognition procedures actually result in changed behavior/performance in the desired direction?

5. **Appropriate application.** Appropriate intervention ensures discipline is justified and perceived as fair.

- Are recognition and reward contingent on individual behavior. (not next on the list, politics, favoritism, etc)
- Does recognition/reward occur as a result of meeting/exceeding behavioral expectations rather than "working accident free."
- Are employees automatically disqualified from safety recognition/rewards if they have an accident?
- Are employees involved in determining criteria and recognition/rewards?
- Is the recognition/reward process consistently applied throughout the organization - top to bottom and across functions?
- Is recognition occurring more often than discipline?
- Is recognition and reward appropriate to the positive impact on the organization?
- Do employees consider the recognition/reward process fair?

6. **Evaluation of the incentive/recognition system.** This element is essential in continually improving the processes within the system.

- Are the safety committee/safety coordinator evaluating the recognition system on a periodic/continuous schedule?
- Are all procedures within each of the recognition system elements evaluated?
- Does the safety committee submit the evaluation results to management?
- Does the safety committee develop and submit recommendations to improve the recognition system?
- Do safety committee recommendations for improvement include cost/benefit analysis?
- Does management respond to and implement safety committee recommendations in a timely manner?
Exercise: Perceiving the problem
Read the following scenario and complete each assignment.

Minutes from last months safety committee meeting. The safety committee chair informed members that two employees were caught stuffing a tuna sandwich into the safety suggestion box in the maintenance shop. Injuries are down 10% from the year before, but have reversed and actually increased 7% during each of the last two months. Injury reports jumped the week after the safety contest for the quarter was complete. Bob mentioned that he had to coax Billie to report her cut hand to the supervisor. When asked why she did not want to report the injury, she explained that she didn’t want to hurt the department’s chance to win the quarterly safety award. Gloria expressed her concern that morale is low because the general attitude about management is that it doesn’t really care about employee safety. No one is really interested in the company’s incentive program so once again, we need to do something exciting to increase involvement. She recommended “Safety Bingo.”

What conditions and behaviors lead you to believe there is a problem?
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_______________________________________________________________________
_______________________________________________________________________
_______________________________________________________________________

How would you solve one or more of the problems you’ve identified above?
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_______________________________________________________________________
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_______________________________________________________________________
All safety committee members should receive training based upon the type of business activity the company is engaged in. At a minimum, members should receive training regarding hazard identification and control and incident/accident analysis procedures.

To be most effective as a consultant group and "profit center activity," safety committees should also be trained in other subjects to help them solve problems and provide useful information to management.

List education and training topics, implied above, that will help the safety committee operate as a successful problem-solving team.

Education
Training
Experience
Accountability

Draw a line from each term in the left column with it's purpose in the right column.

Education: Shows how
Training: Sustains behavior
Experience: Explains why
Accountability: Improves skill
**Process: Identifying Hazards**

The safety committee should establish procedures for workplace inspections by employees and supervisors. The safety committee should also create an inspection team to locate and identify safety and health hazards through regular workplace inspections.

It takes a **hazard** and someone **exposed** to the hazard to produce an **accident**.

**Hazard + Exposure \(\Rightarrow\) Accident**

*What is a "hazard"?*

An unsafe workplace condition or practice that could cause injury or illness to an employee.

*What's a condition...practice?*

How can an employee become a "hazardous condition"?

*What is “Exposure”?*

- **Physical exposure** - generally arm’s length
- **Environmental exposure** - could be everyone in facility.

*What causes incidents and accidents in the workplace?*

- Hazardous conditions account for 3% of all workplace accidents.
- Unsafe/Inappropriate behaviors account for 95% of all workplace accidents.
- Uncontrollable acts (acts of God) account for 2% of all workplace accidents.
- Management has some degree of control over 98% of all factors causing or contributing to workplace accidents.
Hazard Categories

1. **Acceleration.** When we speed up or slow down too quickly.
2. **Vibration/Noise.** Produce adverse physiological and psychological effects.
3. **Toxics.** Toxic to skin and internal organs.
5. **Ergonomics.** Lifting, lowering, pushing, pulling, twisting.
6. **Pressure.** Increased pressure in hydraulic and pneumatic systems.
7. **Mechanical.** Pinch points, sharp points and edges, weight, rotating parts, stability, ejected parts and materials, impact.
8. **Heat/Temperature.** Extremes in either can cause trauma, illness.
9. **Flammability/Fire.** In order for combustion to take place, the fuel and oxidizer must be present in gaseous form.
10. **Explosives.** Explosions result in large amounts of gas, heat, noise, light and over-pressure.
11. **Electrical contact.** Inadequate insulation, broken electrical lines or equipment, lightning strike, static discharge, and so on.
12. **Chemical reactions.** Chemical reactions can be violent, can cause explosions, dispersion of materials and emission of heat.
13. **Biologicals.** Primarily airborne and bloodborne viruses.

* Source: Occupational Safety Management and Engineering, Willie Hammer
Four basic processes to identify hazards

1. Informal and formal observations
2. Walkaround inspections
3. Job hazard analysis
4. Incident/Accident analysis

1. Informal and Formal Observation Strategies

Informal observations are conducted daily in an informal manner. Other strategies include assigned observers that make observations to collect data to help improve the safety management system. In both cases, observation is key in uncovering hazardous conditions and unsafe behaviors.

Who should be involved in conducting informal observations?

What about formal observation programs? Do they work?

What does a simple observation program look like?

How should observers respond to hazardous conditions or unsafe behaviors?
How to develop an effective inspection checklist.

• **Determine applicable state safety & health rules for the workplace.** Get copies of applicable rules.

• **Review rules and use those you feel apply to your workplace.** What rules, if violated would result in serious physical harm or fatality?

• **Develop applicable checklist questions that are not addressed in the rules.** Don’t get “tunnel vision.”

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### 2. Walkaround Inspections: Uncovering controllable hazards

Formal inspection and informal observation are important processes that can be effective in identifying hazardous conditions and unsafe behaviors in your workplace.

*Why is the walkthrough inspection ineffective in identifying the causes of most accidents?*

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*How do we overcome this weakness in the inspection process?*

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*To be most effective, who should be involved in the inspection process?*

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__________________________________________________________________________________________________________________________________________
It’s important to write an inspection report that effectively “sells” management on corrective actions. The following inspection report format is designed to give management useful information describing hazards and “bottom line” costs/benefits needed to justify corrective actions.

1. The **Background/Introduction** section briefly outlines:
   - What the report is
   - Who conducted the inspection
   - Where was it conducted
   - Why it was conducted

2. The **Findings** section give information about:
   - Hazardous conditions and unsafe work practices
   - Safety system inadequacies
   - Estimated costs if an accident occurs as a result of the hazard are also indicated

3. The **Recommendations** section provides:
   - Strategies to eliminate/reduce hazards
   - Improvements to system inadequacies
   - Estimates of the investment required to implement changes

4. The **Conclusion/Summary** section summarizes:
   - Costs and investments required if all changes are approved
   - Return on investment
   - Other benefits realized

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**Report Identified Hazards**

- Watch your language. Is the report considered a “concern” or a “complaint?”
- Keep the process simple. How can we do that?
- Recognize employees who report hazards. Soon, certain, significant, sincere

*How can we most effectively recognize employees for reporting hazards?*

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**Writing Effective Inspection Reports**

It’s important to write an inspection report that effectively “sells” management on corrective actions. The following inspection report format is designed to give management useful information describing hazards and “bottom line” costs/benefits needed to justify corrective actions.
3. Conducting the Job Hazard Analysis (JHA)

Step 1. Watch the job being done
Step 2. Break the job down into steps
Step 3. Analyze each step for hazards
Step 4. Develop safe procedures for each step
Step 5. Write a safe work procedure for the job

Why is it important to involve the employee?

Points to remember

• Write in a step-by-step format
• Paint a word picture - concrete vs. abstract
• Write the narrative in the first person - I, you not the worker
• Write in the present tense - take not should be taken
• Write as clearly as possible - use not utilize
• Remind the worker why it’s important to do the step safely

Example: Pounding a nail into a piece of wood.

Before you begin, get a hammer, nails and 2x4 lumber. Be sure you have enough light. Select and put on leather gloves, goggles and face shield. It’s important to make sure they are clean, in good repair, and comfortable so they won’t interfere with work. Place a 2x4 on the work bench directly in front of you. Take a nail and place it on the mark on the 2x4. Use your thumb and fore-finger to hold the nail up over the mark. Take the hammer and carefully tap the nail into the wood until it stands by itself. Make sure you hold the nail so that the hammer will not hit your thumb or fingers. Brace the 2x4 with the hand not holding the hammer so that it will not move as you finish nailing. Finish hammering the nail into the wood until the head of the nail is flush with the surface of the wood.
## SAMPLE JOB HAZARD ANALYSIS WORKSHEET

### Job Description:


### Step 1 Description:

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### Safe Job Procedure

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4. Incident/Accident Analysis

Be ready when accidents happen

When a serious accident occurs in the workplace, everyone will be too busy dealing with the emergency at hand to worry about putting together an investigation plan, so now... before the accident occurs... is the time to develop effective accident investigation procedures. They should include as a minimum procedures that:

1. Write a clear policy statement.
2. Identify those authorized to notify outside agencies (fire, police, etc.)
3. Designate those responsible to investigate accidents.
4. Train all accident investigators.
5. Establish timetables for conducting the investigation and taking corrective action.
6. Identify those who will receive the report and take corrective action.

What's likely to happen when there is no written plan and employees are not properly trained in the incident/accident analysis process?

No-Fault Accident Analysis

If someone deliberately sets out to produce loss or injury, that is called a crime, not an accident. Yet many accident investigations get confused with criminal investigations... Whenever the investigative procedures are used to place blame, an adversarial relationship is inevitable. The investigator wants to find out what actually happened while those involved are trying to be sure they are not going to be punished for their actions. The result is an inadequate investigation. (Kingsley Hendrick, Ludwig Benner, Investigating Accidents with STEP, p 42. Marcel Dekker, Inc. 1987.)
Steps for conducting an incident/accident analysis

**Gather information**

- Step 1 - Secure the accident scene
- Step 2 - Collect facts about what happened
- Step 3 - Develop the sequence of events

**Analyze the facts**

- Step 4 - Determine the causes
- Step 5 - Recommend improvements

**Implement Solutions**

- Step 6 - Write the report

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**What’s the difference between an incident and an accident?**

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**What two key conditions must exist before an accident occurs?**

- H_________________ and E_________________

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**What is the difference between accident investigation and accident analysis?**

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Weed out the causes of injuries and illness

Direct Cause of Injury

- The direct cause is always a harmful transfer of energy
- Energy may take the form of:
  - Acoustic - excessive noise and vibration
  - Chemical - corrosive, toxic, flammable, or reactive substances
  - Electrical - low/high voltage, current
  - Kinetic - energy transferred from impact
  - Mechanical - associated with components that move
  - Potential - involves "stored energy" in objects that are under pressure
  - Radiant - ionizing and non-ionizing radiation
  - Thermal - excessive heat, extreme cold.

- Safety engineers attempt to eliminate or reduce sources of harmful energy

Surface Causes of the Accident

- They are specific/unique hazardous conditions and/or unsafe actions
- They may directly produce or indirectly contribute to the accident
- They may exist/occur at any time and at any place in the organization
- They may involve the actions of the victim and/or others
- They may or may not be controllable by management

Root Causes of the Accident

- Implementation weaknesses - Failure to effectively carry out safety policies, programs, plans, processes, procedures, practices
- Design weaknesses - Failure to effectively develop safety policies, programs, plans, processes, procedures, practices
- Exist prior to surface causes
- Result in common or repeated hazards
- Under control of management
- Failure can occur anytime, anywhere
Analyze incidents to Determine Risk

It’s extremely valuable, when writing an effective incident or inspection report, to include estimates of the risk a hazard imposes on employees. Risk can be thought of as the sum of the probability and severity of a potential accident.

**Probability**

- **Low** – Factors considered indicate it would be *unlikely* that an accident could occur;
- **Medium** – Factors considered indicate it would be *likely* that an accident could occur; or
- **High** – Factors considered indicate it would be *very likely* that an accident could occur.

**Severity**

The severity of an accident should be based on the degree of injury or illness which is reasonably predictable. Severity may also be expressed as a rating.

- **Other Than Serious** – minor injury. The victim may be able to continue working in the same job at the same level of proficiency.
- **Serious Physical Harm** - serious injury. The victim is not able to continue working in the same job at the pre-injury level of proficiency.
- **Death.**

*Team Exercise: List factors that will increase the probability and severity of an injury.*

**Factors increasing probability:**

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**Factors increasing severity:**

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__________________________________________________________________________
__________________________________________________________________________
The safety committee should assist the employer in evaluating the employer's safety management system, and should make written recommendations to improve safety programs where applicable.

**Engineering Controls - Eliminate or reduce the hazard**

Engineering controls consist of substitution, isolation, ventilation, and equipment modification. These controls focus on the source of the hazard, unlike other types of controls that generally focus on the employee exposed to the hazard. The basic concept behind engineering controls is that, to the extent feasible, the work environment and the job itself should be designed to eliminate hazards or reduce exposure to hazards.

**Engineering controls are based on the following broad principles:**

1. **Design.** If feasible, design the facility, equipment, or process to remove the hazard and/or substitute something that is not hazardous or is less hazardous.
   - Redesigning, changing, or substituting equipment to remove the source of excessive temperatures, noise, or pressure;
   - Redesigning a process to use less toxic chemicals;
   - Redesigning a work station to relieve physical stress and remove ergonomic hazards; or
   - Designing general ventilation with sufficient fresh outdoor air to improve indoor air quality and generally to provide a safe, healthful atmosphere.

2. **Enclosure.** If removal is not feasible, enclose the hazard to prevent exposure in normal operations.
   - Complete enclosure of moving parts of machinery;
   - Complete containment of toxic liquids or gases;
   - Glove box operations to enclose work with dangerous microorganisms, radioisotopes, or toxic substances; and
   - Complete containment of noise, heat, or pressure-producing processes.

3. **Barriers.** Where complete enclosure is not feasible, establish barriers or local ventilation to reduce exposure to the hazard in normal operations. Examples include:
   - Ventilation hoods in laboratory work;
   - Machine guarding, including electronic barriers;
   - Isolation of a process in an area away from workers, except for maintenance work;
   - Baffles used as noise-absorbing barriers.
**Management Controls** - Eliminate or reduce exposure

Any procedure which significantly limits daily exposure by control or manipulation of the work schedule or manner in which work is performed is considered a means of management control.

Management controls may result in a reduction of exposure through such methods as changing work habits, improving sanitation and hygiene practices, or making other changes in the way the employee performs the job. The use of personal protective equipment is not considered a means of management control.

1. **General Work Practices.** Some of these may be very general in their applicability. These control strategies include housekeeping activities such as:
   - Removal of tripping, blocking, and slipping hazards;
   - Wearing personal protective equipment (PPE); and
   - Wetting down surfaces to keep toxic dust out of the air.

2. **Specific Procedures.** Specific jobs may require steps to ensure the safety and health of workers while accomplishing the job. To develop these procedures, you may conduct a job hazard analysis.
   - Procedures that require the use of PPE
   - Scaffold erection procedures
   - Chemical spill procedures

3. **Work Schedules.** Measures aimed at reducing employee exposure to hazard by changing work schedules. These control strategies include:
   - Lengthened rest breaks,
   - Additional relief workers,
   - Exercise breaks to vary body motions, and
   - Rotation of workers through different jobs

*Why are engineering controls considered superior to management controls?*
**Control hazards with effective education and training**

Safety education tells why safe practices and procedures are important. Education explains the natural consequences (hurt) and system consequences (discipline) that result from unsafe behavior. Training explains how to perform safe behaviors and procedures.

**Why is it important to educate as well as train all employees?**

**How do we know safety education and training has been effective?**

---

If it isn’t in writing…it didn’t get done…

**Sample training certification for specific tasks**

**Trainee certification.** I have received on-the-job training from the trainer listed below on those subjects below (or on other side of sheet):

- [list procedure(s)]
- [list practice(s)]
- [related policies, rules, accountabilities]

This training has provided me adequate opportunity to practice to determine and correct skill deficiencies. I understand that performing these procedures/practices safely is a condition of employment. I fully intend to comply with all safety and operational requirements discussed. I understand that failure to comply with these requirements may result in progressive discipline (or corrective actions) up to and including termination.

___________________________________ _____________________

(Trainee) (Date)

**Trainer certification.** I conducted on-the-job training on the subjects for the trainee(s) listed above. I explained procedures/practices and policies, answered all questions, observed practice, and tested each trainee individually. I have determined that the trainee(s) listed above has/have adequate knowledge and skills to safety perform these procedures/practices.

___________________________________ _____________________

(Trainer) (Date)
Effective Maintenance Processes

**What two general types of maintenance processes are needed?**

1. **Preventive maintenance** to make sure equipment and machinery operates safely and smoothly.
2. **Corrective maintenance** to make sure equipment and machinery gets back into safe operation quickly.

**How can we make sure corrective maintenance is completed quickly?**

---

Hazard Tracking Procedures

An essential part of any day-to-day safety and health effort is the correction of hazards that occur in spite of your overall prevention and control program. Documenting these corrections is equally important, particularly for larger sites.

**Documentation is important because:**

- It keeps management and safety staff aware of the status of long-term correction items;
- It provides a record of what occurred, should the hazard reappear at a later date; and
- It provides timely and accurate information that can be supplied to an employee who reported the hazard.

**XYZ Hazard Tracking Log**

<table>
<thead>
<tr>
<th>Hazard Number</th>
<th>Description</th>
<th>Reported by</th>
<th>Date Reported</th>
<th>Correct by</th>
<th>Responsible Supervisor</th>
<th>Date Corrected</th>
</tr>
</thead>
<tbody>
<tr>
<td>0301</td>
<td>Lathe #3, needs guard</td>
<td>Smith</td>
<td>9/9/03</td>
<td>9/15/03</td>
<td>Jones</td>
<td>9/14/03</td>
</tr>
<tr>
<td>0302</td>
<td>Dock needs warning stripes</td>
<td>Wilson</td>
<td>9/12/03</td>
<td>9/30/03</td>
<td>Jordan</td>
<td></td>
</tr>
</tbody>
</table>
**Periodic evaluation**

**Team Exercise:** Discuss the processes your organization uses to evaluate the safety management system.

---

**Sample Checklist**

___ 1. A comprehensive baseline hazard survey has been conducted within the past five years.
___ 2. Effective job hazard analysis (JHA) is performed, as needed.
___ 3. Effective safety and health inspections are performed regularly.
___ 4. Effective surveillance of established hazard controls is conducted.
___ 5. An effective hazard reporting system exists.
___ 6. Change analysis is performed whenever a change in facilities, equipment, materials, or processes occurs.
___ 7. Expert hazard analysis is performed, as needed.
___ 8. Hazards are eliminated or controlled promptly.
___ 9. Hazard control procedures demonstrate a preference for engineering methods.
___ 10. Effective engineering controls are in place, as needed.
___ 11. Effective administrative controls are in place, as needed.
___ 12. Safety and health rules are written.
___ 13. Safe work practices are written.
___ 14. Personal protective equipment is effectively used as needed.
___ 15. Effective preventive and corrective maintenance is performed.
___ 16. Emergency equipment is well maintained.
___ 17. Engineered hazard controls are well maintained.
___ 18. Housekeeping is properly maintained.
___ 19. The organization is prepared for emergency situations.
___ 20. The organization has an effective plan for providing competent emergency medical care to employees and others present on the site.
___ 21. An early-return-to-work program is in place at the facility.
**Continual improvement**

Consider how the change you propose will impact all elements of the safety management system.

Effective safety management system models include eight critical elements:

1. Top Management Commitment  
2. Labor and Management Accountability  
3. Employee Involvement  
4. Hazard Identification and Control  
5. Incident/Accident Analysis  
6. Education and Training  
7. Periodic Evaluation  
8. Continuous Improvement

As you can see, the hazard identification and control program primarily addresses Element 4. However, it’s critically important that all seven elements above be applied in support of the program.

**Successful change requires effective design and implementation**

Plan and develop improvements ➔ Implement improvements ➔ Monitor process ➔ Adopt, abandon, or revise program as needed

Plan  ➔ Do  ➔ Study  ➔ Act

Continual feedback

---

**What will be the result if a change is not designed effectively?**

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

**What will be the result if a change is not implemented effectively?**

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

---
The safety committee should recommend to the employer how to eliminate hazards and unsafe work practices in the workplace by writing and carrying out effective safety plans, policies, procedures and rules. The safety committee should establish procedures to review all safety and health inspection reports made by the committee. Based on the results of the review, the committee should make recommendations for improvement of the employer's safety management system.

**Process: Writing Effective Recommendations**

**What are safety committee recommendations suppose to improve?**

**Here's an example of an recommendation**

1) **Problem:** The guard rail in the warehouse has deteriorated to a point that it is unable to support any weight on it.

2) **History:** We had an incident on 6/13/99 where Joe Jones almost fell down the 10 steps because the guard rail did not support his weight. He fortunately caught himself before falling. We had a second near miss incident on 9/18/99 when Jane Doe tripped going up the stairs and grabbed for the rail which did not support her. Again, fortunately she caught herself before falling.

3) **Options to correct problem:** We have attempted to tighten and brace the rail but it continues to work itself loose. We took bids to replace the rail and the bids ranged from a high of $3,200 to a low bid of $1,500. We believe the xyz brand for $2,000 will prove to be the best material for our facility. The disadvantage to the lowest bid of $1,500 was it would not be guaranteed for outside weather conditions.

4) We budgeted "x" for off-site training classes and have secured a source for on-line no-cost training through OSHA which could save "X" dollar that could be applied toward part of the cost of the guard rail.

5) **Cost/Benefit:** **ROI.** Average cost of a severe injury in around $10,000 which is very possible if one of our employees should fall from the second story of the warehouse to the concrete pad below. The estimated indirect cost is $17,500. Total accident cost is estimated to be $27,200. ROI will be approximately 1,360 percent! **Payback Period.** I estimate that the probability of an accident occurring within the next two years as a result of this hazard is very high. Therefore, the payback period is based on 24 months. Our cost for corrective action is $2,000 and the pay back period would, therefore, be less than 2 months ($1,133/month.) .

© OSTN Safety Committee Operations
What do accidents cost your company?

Unseen costs can sink the ship!

Direct - Insured Costs

“Just the tip of the iceberg”
Average to close a claim = $10,000

1. Workers’ compensation premiums
2. Misc. medical expenses. Medical expenses include doctor fees, hospital charges, the cost of medicines, future medical costs, and ambulance, helicopter, and other emergency medical services.

Indirect - Uninsured, hidden Costs - Out of pocket
Estimated average = $18,000

The NSC defines "employer costs" as the uninsured costs incurred by employers and represents the money value of time lost by uninjured workers. It includes time spent investigating and reporting injuries, giving first aid, production slowdowns, training of replacement workers, and extra cost of overtime for uninjured workers.

Examples:
1. Time lost from work by injured employee.
2. Lost time by fellow employees.
3. Loss of efficiency due to break-up of crew.
4. Lost time by supervisor.
5. Training costs for new/replacement workers.
6. Damage to tools and equipment.
7. Time damaged equipment is out of service.
8. Loss of production for remainder of the day.
9. Damage from accident: fire, water, chemical, explosives, etc.
10. Failure to fill orders/meet deadlines.
11. Overhead costs while work was disrupted.
12. Other miscellaneous costs (over 100 other items may impact the employer).
13. Others? ________________________________

Average direct and indirect accident costs

<table>
<thead>
<tr>
<th></th>
<th>Non-Lost-time injury:</th>
<th>Lost-time injury:</th>
<th>Fatality:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$7,000</td>
<td>$28,000</td>
<td>$980,000</td>
</tr>
</tbody>
</table>

Using National Safety Council average costs for 2000, includes both direct and indirect costs, excludes property damage.

Direct to Indirect Accident Cost Ratios

<table>
<thead>
<tr>
<th>Direct cost of claim</th>
<th>Ratio of indirect to direct costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0-2,999</td>
<td>4.5</td>
</tr>
<tr>
<td>$3,000 - 4,999</td>
<td>1.6</td>
</tr>
<tr>
<td>$5,000 - 9,999</td>
<td>1.2</td>
</tr>
<tr>
<td>$10,000 or more</td>
<td>1.1</td>
</tr>
</tbody>
</table>

Studies show that the ratio of indirect to direct costs can vary widely, from a high of 20:1 to a low of 1:1. Source: Business Roundtable, 1982.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor intense industry</td>
<td>1:2 - 1:10</td>
</tr>
<tr>
<td>Capital intense industry</td>
<td>1:5 - 1:50</td>
</tr>
</tbody>
</table>

Unknown Costs - ☔️

1. Human Tragedy
2. Morale
3. Reputation
This material is for training use only
Before you run…let’s review

1. Conditions cause around ____ % of the accidents in the workplace, while behaviors account for about ____ %?

2. Which of the following is not considered a surface symptom?
   a. An unguarded saw.
   b. A missing MSDS.
   c. PPE training does not contain practice of spill procedures.
   d. A maintenance worker fails to wear eye protection.
   e. A forklift driver speeds around a corner in the warehouse.

3. All of the following are system (root) causes, except?
   a. A staff member fails to review safety rules during orientation
   b. No lockout/tagout procedures in place
   c. A missing training plan
   d. Supervisors are ignoring safety rules
   e. An inspection process does not include machine guarding hazards

4. Engineering controls change ____________. Work practice and administrative controls change ____________.
   b. Behavior, things
   a. Objects, behavior
   c. Awareness, attitude
   d. PPE, performance

5. Why is it important to focus on fixing the system, not the blame?

_________________________________________________________________________________
_________________________________________________________________________________
Sample Safety rules

Below is a sample of general safety rules that may be used in many types of businesses. Particularly note the statement of understanding and compliance at the bottom of the page. This statement is very important in properly documenting initial training. We encourage you to incorporate a statement like this into your company’s safety rules orientation program. Those that do not pertain to your business can be eliminated and others may be added as needed. In writing company safety rules, always include any OSHA rules that apply to your business.

1. Employees will report all injuries immediately to the person in charge. No employee should go to a physician or other medical practitioner for treatment of any on-the-job injury without authorization from the office or supervisor in charge - except under absolute emergency conditions.

2. To ensure the systemic causes for accidents can be determined as accurately as possible, complete cooperation in accident investigation is required of all employees.

3. Personal protective equipment (PPE) must be worn when required on specific jobs. Any deficiencies in the required PPE must be reported to the supervisor immediately.

4. Our workplace is inherently dangerous, requiring close attention to procedures. Therefore, no practical jokes, scuffling, or horseplay will be permitted on company property.

5. To eliminate the possibility of a serious injury, workers must not operate a machine unless guard or method of guarding is in good working order, in place, and operative.

6. Only authorized persons should operate machinery or equipment.

7. Safety recommendations or hazard alerts are encouraged. Recommendations/alerts will be reported to your supervisor or directly to a member of the safety committee.

8. A violation of safety policies or posted safety rules will be cause for progressive disciplinary action. Repeat violations may result in suspension or termination at the option of management representatives.

I have read the above safety rules and understand my responsibilities to work in a safe and healthful manner while on the job. I intend to comply fully with the above safety rules as written. I also understand that working in a safe and healthful manner is a condition of employment.

__________________________________________        _____________________
(Employee Signature)                       (Date)

I have instructed this employee on the expectations and accountability related to the above safety rules. The employee has demonstrated sufficient knowledge and skill to comply with the above safety rules.

__________________________________________        _____________________
(Supervisor Signature)                     (Date)
Hazard Analysis Worksheet

Describe the Hazard:

Hazardous condition - __________________________________________________
______________________________________________________________________
______________________________________________________________________

Unsafe behavior - ______________________________________________________
______________________________________________________________________
______________________________________________________________________

Possible Accident Type(s): ______________________________________________

Accident Cost Estimates: Direct - $_______ Indirect - $_______ Total - $_______

Risk: Probability: ________ Severity:___________ Risk is: High Moderate Low

Recommended Corrective Action(s):

Engineering controls - ________________________________________________ Investment - $________
______________________________________________________________________

Work Practice/Administrative controls - ________________________________ Investment - $________
______________________________________________________________________

Personal Protective Equipment - ________________________________________ Investment - $________
______________________________________________________________________

Recommended System Improvement(s):

Implementation - _____________________________________________________ Investment - $________
______________________________________________________________________

Design - __________________________________________________________________ Investment - $________
______________________________________________________________________

Benefits: Return on the investment = (Total Accident Costs)_________ x 100 = ______ %
(Investment)_________
Sample Safety Inspection Report

I. Background

Inspection Date 9/00  Dept. Warehouse
Inspector(s) B. Wood (Management rep.)  R. Smith (Employee rep.)
Inspection Type Quarterly Safety Committee

II. Findings

A. Hazardous Conditions

1. Platform storage area does not have guardrails.
   a. Root cause(s). Missing guardrails were previously identified but not budgeted for correction. Indicates inadequate policy and procedures to respond to hazards. Note: Since management has prior knowledge of this hazard and has elected not to take action, this hazard may be classified as a willful violation by OSHA and subject to an increased penalty.
   b. Possible Accident(s) and Associated Cost(s):
      (1) Struck by falling object. Average direct accident cost for this accident is $9,851. Estimated indirect cost $36,000. Total estimated cost if accident occurs is $45,851.
      (2) Fall from elevated platform. Average direct accident cost for this accident is $15,668. Estimated indirect cost $60,000. Total estimated cost if accident occurs is $75,668.
   c. Exposure, Probability and Severity:
      (1) Exposure. Twelve employees work in the area throughout an 8-hour shift. Five employees routinely work on the platform. Approximately 30 employees walk through the hazard area each day.
      (2) Probability. It is likely that one of the above accidents will occur within the next year. There was a near miss six months ago when an employee was nearly hit by a falling container.
      (3) Severity. Most likely: Serious physical harm. Worst case: Fatality.

B. Hazardous Work Practices:

1. Workers are using improper lifting techniques:
   a. Root Cause(s). Equipment to assist employees in lifting is not present. Through interviews and records reviews it has been determined that workers are not being properly trained in safe lifting techniques. Indicates an inadequate training program addressing ergonomics hazards.
   c. Exposure, Probability and Severity.
      (1) Exposure. All employee in the warehouse are expected to lift heavy containers throughout all 8-hour work shifts.
      (2) Probability. It is highly likely that one or more employees will experience a back strain or sprain in the next year. OSHA 200 Log/101 Reports indicate we experience five such accidents annually (1995-1999).
      (3) Severity. Most likely: Serious physical harm. Worst case: Serious physical harm.
Section III. Recommendations.

A. Hazardous Conditions:
   1. Missing guardrails.
      b. Work practice/Administrative controls. Instruct employees not to work on platform unless absolutely necessary until guardrails are installed. Investment: $500. Recommended action date: Immediately.
      c. Personal Protective Equipment. Fall restraint system should be used by workers on platform until guardrails are installed. Investment: $400. Recommended action date: Immediately.
      d. System improvements. (Weaknesses/recommendations in the safety system may be determined most effectively by the safety coordinator/committee) Improve inspection procedures to include management review of inspection reports. Establish policy/procedures to ensure reasonable response times to recommendations. Investment: $1000

B. Hazardous Work Practices:
   1. Unsafe lifting techniques.
      a. Engineering controls. Purchase equipment to lift heavy containers. Cost: $12,000. Recommended action date: 1/1/98.
      b. Work practice/Administrative controls.
         (1) Train all employees on safe lifting techniques and use of personal protective equipment. Investment: $1,000. Recommended action date: Immediately.
         (2) Train management on accountability system. Ensure warehouse supervisors properly monitor lifting techniques, provide feedback to employees, and enforce safety rule on lifting for repeated violations. Investment: $1000. Recommended action date: Immediately.
      c. Personal protective equipment. N/A.
      d. System improvements. Establish policies and procedures to ensure adequate safety training in a timely manner. Improve/reinforce accountability policy. Ensure all employees review and certify understanding of new rule. Investment: $3000. Recommended action date: Immediately.

Section IV. Conclusion:

A. Total potential direct and indirect accident costs: $171,000 (Does not include possible OSHA penalties)
B. Total investment: $24,700
C. Estimated five-year ROI = 692%
C. Commendable: Observations during the inspection indicated that safe use of forklifts was excellent. All isles were clear and housekeeping in general was excellent.

_____________________________________                     _____________________________________
Inspector                                                    Inspector
Section V. Action Plan [Completed by decision maker]

A. Hazardous conditions:
   1. Missing guardrail.
      a. Interim measures. [Responsible individual] will ensure current guardrail is reinforced immediately.
      b. Long-term corrective actions. [Responsible individual] new guardrail is purchased and installed by [Correction date].

B. Unsafe work practices and procedures:
   1. Improper lifting
      a. Interim measures. [Responsible individual] will ensure affected workers and their supervisors receive proper lifting techniques training by [Date]. Supervisors will increase supervision, provide immediate feedback, and report observations to the safety coordinator.
      b. Long-term corrective actions. [Responsible individual] will ensure a pneumatic lift device is purchased and installed by [Correction date].

C. System improvements.
   1. [Responsible individual] will ensure the safety inspection plan is revised to include review by top management and a schedule is developed for written response to written recommendations. Action to be completed by [Correction date].
   2. [Responsible individual] will ensure proper lifting techniques training is included in new employee orientation and affected employee and supervisor training plans by no later than [Correction date].

_________________________________ _________________________________
[Decision Maker] Date

Section V. After Action Report [Completed by safety coordinator]

A. Hazardous conditions:
   1. Missing guardrail.
      a. Interim measures. Guardrail reinforced. Corrected on [Date]. Item closed
      b. Long-term corrective action. New guardrail installed on [Date]. Item closed.

B. Unsafe work practices and procedures:
   1. Improper lifting
      a. Interim measures. Affected employees/supervisor training is complete. Item closed. Increased supervision and feedback, observations are being reported. Item Open.
      b. Long-term corrective action. A pneumatic lift device is purchased and installed. Item closed.

C. System improvements.
   1. The safety inspection plan is revised to include review by top management and a schedule is developed for written response to written recommendations. Item closed.
   2. Proper lifting techniques training is included in new employee orientation and affected employee and supervisor training plans. Item closed.

_________________________________ _________________________________
Safety Coordinator Date
SAMPLE ACCIDENT INVESTIGATION REPORT

Number ___________ Date ___________

Prepared by __________________________ __________________________

SECTION I. BACKGROUND

WHO   Victim: _______________________________________

Witnesses (1) ___________ Address ________________ Phone (H) _________ (W) ____________
Job Title ______________ Length of Service ______

Witnesses (2) ___________ Address ________________ Phone (H) _________ (W) ____________
Job Title ______________ Length of Service ______

WHEN  Date _____________ Time of day _____________ Work shift _______________
       Date Accident Reported ____________

WHERE  Department ___________ Location _______________ Equipment ______

SECTION II. DESCRIPTION OF THE ACCIDENT PROCESS. (Describe the sequence of relevant events prior to, during, and immediately after the accident. Attach separate page if necessary)

Events prior to: _________________________________________________________________

Injury event:   __________________________________________________________________

Events after:  __________________________________________________________________

SECTION III. FINDINGS AND JUSTIFICATIONS. (Attach separate page if necessary)

Surface Cause(s) (Unsafe conditions and/or behaviors at any level of the organization)

__________________________________________________________

Justification: (Describe evidence or proof that substantiates your finding.)

__________________________________________________________

Root Cause(s) (Missing/inadequate Programs, Plans, Policies, Processes, Procedures)

__________________________________________________________

Justification: (Describe evidence or proof that substantiates your finding.)

__________________________________________________________
SECTION IV. RECOMMENDATIONS AND RESULTS (Attach separate page if necessary)

Corrective actions. (To eliminate or reduce the hazardous conditions/unsafe behaviors that directly caused the accident)

___________________________________________________________________________

Results. (Describe the intended results and positive impact of the change.)

___________________________________________________________________________

System improvements. (To revise and improve the programs, plans, policies, processes, and procedures that indirectly caused/allowed the hazardous conditions/unsafe behaviors.)

___________________________________________________________________________

Results. (Describe the intended results and positive impact of the change.)

___________________________________________________________________________

SECTION V: SUMMARY (Estimate costs of accident. Required investment and future benefits of corrective actions)

___________________________________________________________________________

SECTION VI: REVIEW AND FOLLOW-UP ACTIONS: (Describe equipment/machinery repaired, training conducted, etc. Describe system components developed/revised. Indicate persons responsible for monitoring quality of the change. Indicate review official.)

Corrective Actions Taken: Responsible Individual: Date Closed:

_________________________________________ ______________________       ____________

System improvements made: Responsible Individual: Date Closed:

_________________________________________ ______________________       ____________

Person(s) monitoring status of follow-up actions: ______________________________

Reviewed by __________ Title __________________
Date __________ Department __________

SECTION VII: ATTACHMENTS: (Photos, sketches, interview notes, etc.)
“Fix The System” Incident/Accident Analysis Plan

1.0 General Policy

____________________ considers employees to be our most valued asset and as such we will ensure that all incident and accidents are analyzed to correct the hazardous conditions, unsafe practices, and improve related system weaknesses that produced them. This incident/accident analysis plan has been developed to ensure our policy is effectively implemented.

____________________ will ensure this plan is communicated, maintained and updated as appropriate.

2.0 Incident/Accident Reporting

2.1 Background. We can’t analyze incidents and accidents if they are not reported. A common reason that they go unreported is that the incident/accident analysis process is perceived to be a search for the “guilty party” rather than a search for the facts. We agree with current research that indicates most accidents are ultimately caused by missing or inadequate system weaknesses. Management will assume responsibility for improving these system weaknesses. When we handle incident/accident analysis as a search for facts, the all employees are more likely to work together to report incidents/accidents and to correct deficiencies, be they procedural, training, human error, managerial, or other. Consequently, our policy is to analyze accidents to primarily determine how we can fix the system. We will not investigate accidents to determine liability. A “no-fault” incident/accident analysis policy will help ensure we improve all aspects of our manufacturing process.

2.2 Policy. All employees will report immediately to their supervisor, any unusual or out of the ordinary condition or behavior at any level of the organization that has or could cause an injury or illness of any kind.

Supervisors will recognize employees immediately when an employee reports an injury or a hazard that could cause serious physical harm or fatality, or could result in production downtime. (See recognition program procedures)

2.3 __________________ will ensure effective reporting procedures are developed so that we can quickly eliminate or reduce hazardous conditions, unsafe practices, and system weaknesses.

3.0 Preplanning.

Effective incident/accident analysis starts before the event occurs by establishing a well thought-out incident/accident analysis process. Preplanning is crucial to ensure accurate information is obtained before it is lost over time following the incident/accident as a result of cleanup efforts or possible blurring of people’s recollections.

4.0 Incident/Accident Analysis.

4.1 All supervisors are assigned the responsibility for analyzing incidents in their departments. All supervisors will be familiar with this plan and properly trained in analysis procedures.

4.2 Each department supervisor will immediately analyze all incidents (near hits) that might have resulted in serious injury or fatality. Supervisors will analyze incidents that might have resulted in minor injury or property damage within 4 hours from notification.

4.3 The supervisor will complete and submit a written incident/minor injury report through management levels to the plant superintendent. If within the capability/authority of the supervisor, corrective actions will begin immediately to eliminate or reduce the hazardous condition or unsafe work practice the might result in injury or illness.
5.0 Management Responsibilities

5.1 When our company has an incident/accident such as a fire, release, or explosion emergency, management will:

1. Provide medical and other safety/health help to personnel;
2. Bring the incident under control, and
3. Investigate the incident effectively to preserve information and evidence.

5.2 To preserve relevant information the analyst will:

1. Secure or barricade the scene;
2. immediately collect transient information;
3. Interview personnel.

6.0 Incident/accident Analysis Team

6.1 Background. It is important to establish incident/accident analysis teams before an event occurs so that the team can quickly move into action if called on. The makeup of the team is another important factor affecting the quality of the analysis. We will appoint competent employees who are trained, and have the knowledge and skills necessary to conduct an effective analysis. Doing so will show management’s commitment to the process.

6.2 Incident/Accident Analysis Team Makeup

Although team membership may vary according to the type of incident, a typical team analyzing an incident/accident may include:

1. A third-line or higher supervisor from the section where the event occurred;
2. Personnel from an area not involved in the incident;
3. An engineering and/or maintenance supervisor;
4. The safety supervisor;
5. A first-line supervisor from the affected area;
6. Occupational health/environmental personnel;
7. Appropriate wage personnel (i.e., operators, mechanics, technicians); and,
8. Research and/or technical personnel.

<table>
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6.3 The Incident/Accident Analysis Team Leader

The incident/Accident Analysis team leader will:

1. Control the scope of team activities by identifying which lines of analysis should be pursued, referred to another group for study, or deferred;
2. Call and preside over meetings;
3. Assign tasks and establish timetables;
4. Ensure that no potentially useful data source is overlooked; and,
5. Keep site management advised of the progress of the analysis process.

7.0 Determining the Facts

A thorough search for the facts is an important step in incident/accident analysis. During the fact-finding phase of the process, team members will:

1. Visit the scene before the physical evidence is disturbed;
2. Sample unknown spills, vapors, residues, etc., noting conditions which may have affected the sample; (Be sure you sample using proper safety and health procedures)
3. Prepare visual aids, such as photographs, field sketches, missile maps, and other graphical representations with the objective of providing data for the analysis.
4. Obtain on-the-spot information from eyewitnesses, if possible. Interview with those directly involved and others whose input might be useful should be scheduled soon thereafter. The interviews should be conducted privately and individually; so that the comments of one witness will not influence the responses of others.
5. Observe key mechanical equipment as it is disassembled. Include as-built drawings, operating logs, recorder charts, previous reports, procedures, equipment manuals, oral instruction, change of design records, design data, records indicating the previous training and performance of the employees involved, computer simulations, laboratory tests, etc.
6. Determine which incident-related items should be preserved. When a preliminary analysis reveals that an item may have failed to operate correctly, was damaged, etc., arrangements should be made to either preserve the item or carefully document any subsequent repairs or modifications.
7. Carefully document the sources of information contained in the incident report. This will be valuable should it subsequently be determined that further study of the incident or potential incident is necessary.

8.0 Determining the Cause

It is critical to establish the root cause(s) of an incident/accident so that effective recommendations are made to correct the hazardous conditions and unsafe work practices, and make system improvements to prevent the incident from recurring. The incident/accident analysis team will use appropriate methods to sort out the facts, inferences, and judgments they assemble. Even when the cause of an incident appears obvious, the investigation team will still conduct a formal analysis to make sure any oversight, or a premature/erroneous judgment is not made. Below is one method to develop cause and effect relationships.

1. Develop the chronology (sequence) of events which occurred before, during, and after the incident. The focus of the chronology should be solely on what happened and what actions were taken. List alternatives when the status cannot be definitely established because of missing or contradictory information.
2. List conditions or circumstances which deviated from normal, no matter how insignificant they may seem.
3. List all hypotheses of the causes of the incident based on these deviations.
9.0 Recommending Corrective Actions and System Improvements

Usually, making recommendations for corrective actions and system improvements follow in a rather straightforward manner from the cause(s) that were determined. A recommendation for corrective action and system improvement will contain three parts:

1. The recommendation itself, which describes the actions and improvements to be taken to prevent a recurrence of the incident.
2. The name of the person(s) or position(s) responsible for accomplishing actions and improvements.
3. The correction date(s).

10.0 Follow-up System

To make sure follow-up and closure of open recommendations, ___________________ will develop and implement a system to track open recommendations and document actions taken to close out those recommendations. Such a system will include a periodic status report to site management.

11.0 Communicating Results

11.1 To prevent recurring incidents we will take two additional steps:
   1. Document findings; and
   2. Review the results of the analysis with appropriate personnel.

11.2 Incident documentation will address the following topics:
   1. Description of the incident (date, time, location, etc.);
   2. Facts determined during the analysis (including chronology as appropriate);
   3. Statement of causes; and
   4. Recommendations for corrective and preventive action (including who is responsible and correction date).

12.0 Review and approval.

Appropriate operating, maintenance and other personnel will review all incident/accident analysis reports. Personnel at other facilities will also review the report to preclude a similar occurrence of the incident.

Plan reviewed by ________________________________ Date ________________________________
________________________________________________ Date ________________________________
________________________________________________ Date ________________________________

Plan approved by ________________________________ Date ________________________________
Sample Written Recommendation

I. Description of the problem

All "homemade" guardrails on in Warehouse #2 are defective.

II. History of the problem

a. Three years ago an employee fell through one of the homemade guardrails. The employee suffered a broken right leg. Annual workers’ compensation premiums increased $_____, and unbudgeted indirect costs were $_______ as a result of the previous disabling claim.

b. The safety committee identified this hazard shortly after the accident and submitted a recommendation to repair the section of guardrail that broke through at a cost of $____. There is no record of a response to this recommendation in subsequent safety committee minutes.

III. Causes analysis

a. Surface cause(s). Although the guardrails were identified three years ago by the safety committee for repair, the action was not funded. Subsequent quarterly safety inspections failed to uncover the uncorrected hazard.

b. Root cause(s). Corrective action has not been funded due to inadequate budgetary policy regarding safety related items. Inadequate hazard monitoring/tracking procedures.

V. Recommendations and estimated investment

a. Engineering controls. Install a new guardrail system in compliance with OSHA safety and health rules. Estimated cost: $_____. $_____ in wages. Time required for replacement: 8 hours. Maintenance supervisor has necessary resources to commit to installation within one day of notification that the new guardrail system has arrived. Purchasing has order for guardrail ready for signature (see attach) Recommended correction date: Immediately.

b. Management controls.

1. Develop and carry out new policy that instructs employees not to work on platforms unless absolutely necessary until guardrails are installed. Document management review of inspection reports. Estimated cost: $______ for time required to review documents.

2. Develop and carry out policy that establishes reasonable response times to recommendations. Cost: $_____/year for training and monitoring/review of procedures. Recommended action date: Immediately.

3. Scheduling. Develop and carry out policy that requires workers to take required 15 minute breaks at the required times. Estimated cost: $______. Recommended action date: Immediately.
c. **Personal Protective Equipment.** Fall restraint system should be used by workers on platform until guardrails are installed. Cost: $____ for equipment, $____/year for training and monitoring use of equipment. Recommended action date: Immediately.

d. **Interim measures.** Improve the stability of current guardrails.

### IV. Costs associated with failure to implement recommendation(s)

a. **Fiscal.** Elimination of possible accident(s). Corrective action will result in elimination of the risk of the following potential accidents in the foreseeable future.

1. Struck by falling object. Average direct accident cost for this accident is $9,851. Estimated indirect cost $____. Total estimated accident costs resulting from corrective actions = $____

2. Fall from elevated platform. Average direct accident cost for this accident is $15,668. Estimated indirect cost $____. Total estimated accident costs resulting from corrective action is $____.

3. Fatality. If either potential accident results in a fatality, estimated direct costs will approach $____. Estimated indirect costs may be as high as $____. Total estimated accident costs resulting from a fatality is $____.

b. **Legal.** The homemade guardrails do not meet OSHA rule requirements (see appendix). Since management has prior knowledge of this hazard, failure to take action at this time may result in a willful violation Cost: (Serious violation $300-$5,000 Willful = $5,000 - $70,000).

c. **Risk.** Exposure - Twelve employees work in the area throughout an 8-hour shift. Five employees routinely work on the platform. Approximately 30 employees walk through the hazard area each day. Probability - It is likely that one of the above accidents will occur within the next year. There was a near miss six months ago when an employee was nearly hit by a falling container. Severity - Serious physical harm or death.

### Section V. Summary of Benefits

a. **Total potential direct and indirect accident costs.** Serious Injury $____ (Does not include possible OSHA penalties) Fatality $____

b. **Total investment.** Option 1 $____ Option 2 $____ Option 3 $____ All Options $____

c. **Returns, Payback Period, Replacement Business Volume**

Option 1: ROI = ____% Payback Period = ____ Replacement BV $____

Option 2: ROI = ____% Payback Period = ____ Replacement BV $____

Option 3: ROI = ____% Payback Period = ____ Replacement BV $____
d. **System improvement.** Revising purchasing policy for personal protective equipment will ensure that only quality ppe is purchased in the future. Assigning ppe purchasing authority to line supervisors appropriately places accountability for this responsibility on line managers. Improving the fall protection training plan so that it includes information on fall protection systems will increase general knowledge and skills in using fall protection. Strengthening training documentation by including statements of understanding and compliance will improve accountability and auditing.

e. **OSHA compliance.** In compliance with OSHA standards thereby avoiding potential penalties.

f. **Morale/Welfare.** Implementing these recommendations will improve morale and increase the overall welfare of our employees.

Prepared by _________________________________ Date ___________

**Section V. Action Items:**

Actions taken: ________________ Responsible Person __________ Correction Date ________

Approved by _________________________________ Date ___________________________

Attachments:
References for Effective Meeting Management

BURLESO 1990


Selected Internet Sites


References for Safety Trainers


How to Calculate the Lost Work Day Injury and Illness (LWDII) Rate

The incidence rate can be calculated for the entire establishment and for each department. This procedure allows comparison between and within the same departments from year to year.

LWDII Rate = (Number of cases)*(200,000)/Total population at risk in a given period

Numerator: Number of lost or restricted time incidents (cases) in specified group or department that experiences a disorder in a specified time period multiplied by 200,000. Multiplying the number of employees by 200,000 normalizes the observed work population to a standard work population of 100 employees working a 50-week year.

Denominator: Total number of hours worked in a specified group or department within the same time period. If these numbers are not available an approximation can be made by multiplying the observed number of employees by 2000.

How to Calculate the Severity Rate (SR)

Severity Rate (SR) = This is the same calculation as was performed to produce the LWDII except that the days away from work or restricted days are substituted into the numerator for the number of incidents. This calculation provides a measure of the severity of the cases and is used in conjunction with the LWDII to determine the magnitude of the case.

NOTE: If counting system recognized only lost-time or Workers Compensation cases, relatively low incidence rates may be computed. If the company has instituted an ergonomics program the LWDII may rise dramatically, but there should be a corresponding drop in the SR.