



## Introduction to Hazard Identification

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## Note on Responsibility

The content of this class and the recommendations made do not necessarily include every possible loss potential, code violation, or good practice.



## Learning Objectives

- Define Work Area & Processes
- Identify Workplace Hazards
- Prepare a Job Hazard Analysis
- How to Conduct an Accident Investigation



## Hazard Identification



## Workplace Hazard Definition

Per Cal/OSHA, a workplace hazard is any source of potential damage, harm, or adverse health effects that could occur to someone or something in the workplace.



## Why Are Safety Inspections Important?

- Prevention - workplace accidents can happen anywhere at any time
- Identify workplace hazards and corrective actions to abate the hazards
- Provide continuous improvement data for Loss Prevention Plans
- Required by the Injury and Illness Prevention Program (IIPP)
- Cal/OSHA requires employers provide a safe work environment
  - Employers must provide a workplace free from recognized hazards
  - When a potential hazard is identified, the employer must have a safety plan



## Workplace Safety Programs Include

- **Identifying who is responsible for implementing the plan**
- Involving employees and their representatives
- Communicating with employees regarding workplace hazards
- Accepting and responding to reports of workplace hazards and prohibit employee retaliation
- Responding to actual and potential emergencies
- Developing and providing effective training
- **Identifying, evaluating, and correcting workplace hazards**
- **Performing post incident investigations**



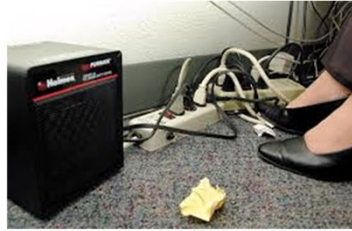
## Roles and Responsibilities

- Plan Coordinator at the Organization Level
  - Global Oversight and Coordination
- Competent Person at Organization and/or Department Level
  - Cal/OSHA defines competent person as, "A person who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees. The competent person has the authority to impose prompt corrective measures to eliminate these hazards."



## What Is The Purposes of Safety Inspection?

- Identify unsafe acts (operations) and unsafe conditions (environment)
- Gain understanding of jobs, tasks, and processes
- Investigate employee safety complaints
- Determine causes of accidents
- Monitor hazard controls



## Hazard Identification

### Workplace Hazard Categories

- Physical Hazards
- Chemical Hazards
- Biological Hazards
- Ergonomic Hazards
- Psychosocial Hazards



## HAZARD ASSESSMENT CHECKLIST



The following checklist can be used to identify and evaluate hazards in your workplace. This checklist covers a wide variety of workplace safety and health hazards. All of the topics covered in this checklist may not apply to your particular workplace. When evaluating your workplace, use the sections of the checklist that apply to your workplace and work activities.

### GENERAL WORK ENVIRONMENT

- Are all worksites clean and orderly?
- Are work surfaces kept dry or appropriate means taken to assure the surfaces are slip-resistant?
- Are all spilled materials or liquids cleaned up immediately?
- Is combustible scrap, debris and waste stored safely and removed from the worksite promptly?
- Is accumulated combustible dust routinely removed from elevated surfaces, including the overhead structure of buildings?



## Hazard Identification

### KISS



## Hazard Identification

**KISS – Keep It Simple S.....**



## Workplace Hazard Factors

- **Environment**
  - Physical Work Location
  - Environmental Conditions
- **Operations**
  - Materials, equipment and processes utilized
  - What employees are doing – tasks performed



## Identify Hazards in the Workplace

### Key Tasks

- Define the Environment and Operation Under Review
- Collect Information – Current & Historical
- Inspect Work Environment
- Observe Operation
- Investigate Incidents
- Involve Employees



## Identify Hazards in the Workplace

### Inspect Work Environment

- Most basic (yet important) component of inspection is visual assessment
- Inspecting the environment, physical site and surroundings, including activity not associated with the employer's operations
  - Public traffic
  - Power lines
- Inspect equipment and surrounding work area when not in operation
  - Certain hazards are only visible when the equipment is not in use



## Identify Hazards in the Workplace

### Observe Operations

- Observe the operation, both equipment and processes
- Watch the operator and note any hazardous situations
- Observing operations offers opportunity to see how the task is actually performed
  - Provides insight on hazards only recognizable during operations, such as,
    - positioning of controls relative to the worker
    - noise and dust levels
    - by-passing or improper use of safety functions
  - This can only be done when workers are present and production is underway



## Identify Hazards in the Workplace

### Involve Employees

- Engage workers and listen to their feedback
  - Seek input from those participating in the operation
  - Employees know the most efficient way to perform the operation
  - Often, they are aware of issues that may not be apparent during an inspection
- Frame questions to receive specific and relevant information
  - Open-ended questions don't prompt meaningful information
  - Example Questions: Office worker performing data entry work
    - How long do you continuously perform data entry before taking a break?
    - Do you experience fatigue or discomfort?



## Where to Conduct Safety Inspections?

- Any workplace where there may be hazards
- Workplace exposures that are regulated by Cal/OSHA
- Workplaces where accidents have occurred
- High hazard workplaces



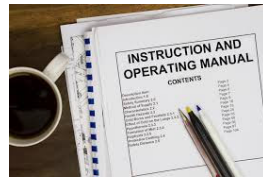
## Planning For Safety Inspections

- Review Standard Operating Procedures (SOPs), and processes
- Review applicable Cal/OSHA regulations
- Communication with the inspector, supervisors, and employees
- Coordinate inspection times to observe maximum employee exposure
- Review accident and incident reports
- Review prior inspections



## Pre-Workplace Safety Inspection Info.

- Diagrams of work areas; plant layout; jobsites
- Location of equipment; maintenance areas, material storage
- Types of machinery, equipment, tools, manufacturer's operator's manuals
- Chemical inventory, Safety Data Sheets (SDSs), storage locations, handling and waste disposal procedures
- Hazard photos



## Hazards To Look For

- **Unsafe Work Practices/Acts (operations)**
  - Lack of supervision; improper supervision
  - Lack of training; improper training
  - Failure to follow established procedures
  - **Failure to wear proper Personal Protective Equipment (PPE)**
  - Excessive motivation to complete the job; failure to comply with Cal/OSHA standards or best practices
  - Working while impaired (alcohol, drugs or fatigue)



## Hazards To Look For

- **Unsafe Work Conditions (environment)**
  - Poor illumination
  - Chemicals, viruses, bacteria, mold, and radiation
  - Inadequate ventilation/indoor air quality
  - Deficient machine guarding
  - Unprotected work at elevations
  - Poor housekeeping
  - Noise
  - Unprotected energized circuits



## Inspection Team

- Supervisors
- Employees
- Safety Committee Members
- Maintenance Personnel
- Safety Professionals
- Engineers
- Cal/OSHA Compliance/Consultation



## Pre-Inspection Meeting

- Meet with supervisors whose areas will be inspected
- Define areas, procedures, and scope of inspection
- Determine the time needed to complete the inspection
- Determine who will receive the inspection report
- Define proper PPE requirements and ensure all participants comply
- **Determine if any special hazards or areas of non-entry exist. Take adequate precautions**



## Conducting Safety Inspections

- Inspect all designated areas.
- Observe all operations, processes, machinery, equipment, tools, materials, chemicals, etc.
- Ask supervisors and employees questions as necessary about the operations, processes, machinery, etc.
- Identify unsafe work practices and conditions.



## Conducting The Safety Inspection

- Determine if any unsafe work practices and/or conditions violate the Cal/OSHA regulations
- Document observed hazards
- **Photograph observed hazards**
- Debrief supervisors on observed hazards and the dangers to employees
- Make on-the-spot corrections and recommendations when possible



## Determining Inspection Frequency

- Management determines the inspection frequency based on the job hazards
- Depending on the job hazard assessment, inspections may be scheduled:
 

Daily	Bi-monthly
Weekly	Quarterly
Bi-weekly	Semi-annually
Monthly	



## Ways to Document Inspections

- IIPP checklists
- Supervisor checklists
- Operator checklist
- Job Hazard Analysis
- Written reports
- Safety inspection software



## Match Job Description with Classification

### Job Description

- Public Parking Lot
- Painting Building Exterior
- Accounts Payable Processing
- Parking Lot Lighting Maintenance
- Office Cubical
- Three (3) Story Structure

### Classification

- Operation
- Environment



## Operation & Environment Hazards

### Job Description

- **Parking Lot Lighting Maintenance**
- **Public Parking Lot**

### Classification

- **Operation**
- **Environment**



## Operation & Environment Hazards

### Job Description

- **Accounts Payable Processing**
- **Office Cubical**

### Classification

- **Operation**
- **Environment**



## Operation & Environment Hazards

### Job Description

- **Painting Building Exterior**
- **Three (3) Story Structure**

### Classification

- **Operation**
- **Environment**



## Operation & Environment Hazards

### Electrical Work



## Electrical Work on Overhead Power Lines

- Operation Hazards
  - Electrocutation
  - Fall from ladder
  - Struck by vehicle
- Environment Hazard
  - Pedestrian electrocutation
  - Pedestrian struck by ladder or worker
  - Vehicle struck by ladder or worker
  - Damage to power lines



## Operation & Environment Hazards

### Hospital Electrician



## Hospital Electrical Maintenance

### Operation Hazards

- Electrocutation
- Fall from ladder
- Struck by electrical equipment

### Environment Hazard

- Electricity shut-off inadvertently disables critical equipment
- Pedestrian struck by ladder or worker
- Worker struck people moving equipment



## Group Activity – Identify Environmental Hazards

**Work together to identify environment hazards per the scenario assigned to your group.**

One person from each group will share their findings



## Environment Hazards

### Workgroup A

Construction Site  
With Crane



## Environment Hazards

### Workgroup B

Park/Playground  
Maintenance



## Environment Hazards

**Workgroup C**  
Office Work Area



## Environment Hazards

**Workgroup D**  
Road Repair



## Environment Hazards

**Workgroup E**  
Lead Hazard  
Abatement



# Job Hazard Analysis



## What is a Job Hazard Analysis (JHA)?

- **Definition:** Technique to identify the dangers of specific tasks in order to reduce the risk of injury to workers
- **Purpose:** Identify potential hazards in job tasks and implement controls



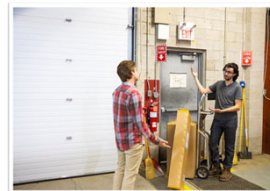
## Benefits of Conducting a JHA

- Identifies workplace hazards
- Helps prevent injuries and illnesses
- Improves training for new employees
- Ensures compliance with regulations
- Increase worker productivity
- Aids in accident investigation



## When to Conduct a JHA

- Before introducing new processes, operations, environments, materials or equipment
- After an incident or near-miss
- When a job involves high-risk tasks
- During periodic safety reviews



## What is a hazard?

- Can cause mishap which results in an injury, illness, or damage.

**Unsafe Condition (Environment):**



**Unsafe Act (Operation):**



## Steps to Conduct a JHA

- Select the job to analyze
- Break down the job into steps
- Identify potential hazards
  - Operations
  - Environments
- Determine hazard controls
- Implement and review



## Step 1 – Select the Job to Analyze

- **All** operations and environments need to be analyzed
- Prioritize high-risk tasks
- New or updated processes and operations
- Outdated procedures
- Tasks assigned to newer or less-experienced staff



## Step 2 – Break Down the Job into Steps

- Observe the operations being performed
- Observe how operations and the work environment coexist
- List each step in order
- Keep descriptions simple, clear, and organized
- Take photos or video to record the process
- Consult with workers to ensure the list of steps is accurate



## Step 3 – Identify Potential Hazards

- What could go wrong?
- Review previous injury and illness records
- Determine potential hazard(s) for the following:
  - Who
  - What
  - When
  - Where
  - Why
  - How



## Step 3 – Identify Potential Hazards cont'd

### Consider the following hazards:

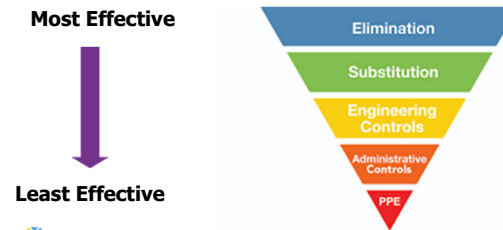
- Physical hazards (machinery, noise, temperature)
- Chemical hazards (exposure to fumes, spills)
- Ergonomic hazards (repetitive motion, lifting)
- Machine-related hazards (burns, crushed fingers)
- Psychosocial hazards (stress, fatigue)
- Environmental hazards (weather, powerlines)



## Step 4 – Determine Hazard Controls

### Use the **Hierarchy of Controls**

- A method of identifying and ranking safeguards to protect workers from hazards.



## Hierarchy of Controls

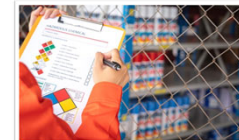
### Steps of the Hierarchy of Controls:

- **Elimination:** Remove the hazards if possible
- **Substitution:** Change out a material or process
- **Engineering Controls:** Prevent hazards from coming into contact with the workers.
- **Administrative Controls:** Change the way work is performed
- **Personal Protective Equipment (PPE):** Use clothing or devices for protection



## Step 5 – Implement and Review

- Correct unsafe behaviors (operations) and unsafe conditions (environments)
- Follow up to implement controls and commit to continual improvement
- Communicate hazards and controls to workers
- Train employees on safety procedures
- Regularly review and update JHA



## Job Hazard Analysis Form

Entity Name:	Date:
Department:	Job Title:
Task/Activity:	Location:

### Step 1: Task Breakdown

List the steps required to complete the task.

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### Step 2: Environmental Hazards

Identify potential environmental hazards (e.g., weather, powerlines, noise).

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### Step 3: Hazard Controls

List existing and recommended controls to eliminate or minimize each hazard (e.g., engineering, administrative, PPE)

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## Job Hazard Analysis Sample

**Task:** Electrical work in office

**Hazards:** power on, standing on top of the ladder, electric shock, slip/trip/fall, overreaching

**Controls:** turn off power, use taller ladder, ensure cords are organized,



## Job Hazard Analysis Sample

Job Hazard Analysis Form

Entity Name: Placer County	Date: March 26, 2025
Department: Human Resources	Job Title: HR Manager
Task/Activity: Electrical work in office	Location: 75 Iron Point Cr., Suite 200 Folsom, CA 95630

### Step 1: Task Breakdown

- Pre-work preparation: inspect the work area for potential hazards
- Accessing the ceiling: secure ladder, remove ceiling tiles
- Perform electrical/maintenance work
- Secure the area: ensure all connections and installations are properly secured
- Post-work inspection: conduct final inspection, notify relevant personnel

### Step 2: Environmental Hazards

- Electrical hazard: power still on
- Ladder safety: standing on top of ladder
- Falling objects: tools or debris falling onto workers
- Ergonomic strain: reaching overhead for extended periods
- Heat stress: working in an enclosed space
- Slip/Trip/Fall: electrical cords

### Step 3: Hazard Controls

- De-energize circuits before working
- Use taller ladder
- Set up warning signs or barricades, organize cords
- Take frequent breaks
- Stay hydrated



## Help Conduct the Job Hazard Analysis



## Job Hazard Analysis

Job Hazard Analysis Form

Entity Name: City of Folsom	Date: March 26, 2025
Department: Public Works	Job Title: Maintenance Worker
Task/Activity: Brick work on scaffolding	Location: City Hall Office - 52 Natoma St. Folsom, CA 95630

### Step 1: Task Breakdown

- Transporting materials (blocks, tools, mortar) onto scaffolding
- Positioning and aligning blocks
- Applying mortar and securing blocks
- Moving on scaffolding while working
- Checking alignment and making adjustments
- Cleaning and organizing work area

### Step 2: Environmental Hazards

- Ergonomic strain: lifting blocks, overreaching, repetitive motion
- Fall hazard: no fall protection, no guardrails on scaffolding
- Slip/Trip/Fall: materials on scaffolding, improper footing
- Weather: slippery scaffolding or high winds
- Falling objects: tools or debris falling onto workers
- Chemical hazard: chemicals in mortar

### Step 3: Hazard Controls

- Fall protection: use personal fall arrest system and guardrails
- Proper lifting techniques: use lifting devices
- Scaffold safety check: inspect scaffold before use
- PPE: wear gloves and steel toed shoes
- Housekeeping/tool management: keep workspace clean
- Weather monitoring: stop work in extreme weather



## Group Activity

- Use the picture given to your group to conduct a Job Hazard Analysis
- 15 minutes to complete the task
- Have someone in the group present the JHA



## Group Activity – Group A



## Group Activity – Group B



### Group Activity – Group C



### Group Activity – Group D



### Group Activity – Group E



## Accident Investigation



## Why Investigate Accidents?



## Potential Outcomes From An Accident:

- Workers' Compensation Loss
- Property Loss
- Liability Loss
- Cal/OSHA Citation(s)
- Serious and Willful Penalties
- Criminal Liability
- Civil Liability
- **Root Cause Analysis - Continuous Improvement**



## Accident Investigation Kit

- Plastic zip lock bags and labels
- Water resistant container with lid
- Leather and latex gloves
- Yellow caution tape
- Note taking supplies
  - Pens
  - paper
  - markers
- Tape measure



## Accident Investigation Kit

- Compass
- GPS navigation device
- Digital camera
- Voice recording device
- Flashlight and batteries
- Food and water for remote sites
- First aid kit



## Arrival On The Scene

- Arrive safely
- Take charge
- Get employee(s) to medical care
- **Preserve evidence**
- Start investigation



## Identify Those Involved & Witnesses

- Injured Employee
- Supervisors
- Co-workers
- Contractors on job site
- Other onlookers (witnesses)



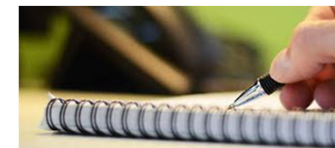
## Conduct Interviews

- For the purpose of accident prevention (continuous improvement)
- In a relaxed atmosphere
- As soon as possible



## Interview Methods

- Interview witnesses independently
- Have witness write down facts
- Read the statement
- Have the witness tell the facts
- Compare
- Ask direct questions
- Document



## Interviews Should Not Be Fault Finding!

- Gather all the facts
- Go to the accident scene
- Reconstruct the events
- Be firm, fair, and friendly
- Show concern for employee safety



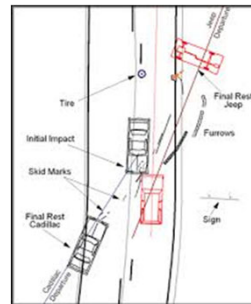
## Photograph Accident Scene

- Photograph 8 points around subject; front, left front, left side, left rear, rear, right rear, right side, right front
- Capture details close-up; data plate, serial number, model number, manufacturer.
- Download and label photos to file (photo log)



## Sketches And Diagrams

- **Map/sketch accident scene**
- Label all key parts
- Show distances
- Keep details
- Take notes
- Use GPS device to identify key locations



## Preserve & Review Documents

- Current IIPP
- Training records
- Certifications
- Maintenance records
- Contracts
- Permits
- Technical manuals
- Audits



## Preserving Critical Evidence

- Use proper collection methods
- Notify management immediately when critical evidence is found
- Maintain chain of custody
- Expedite evidence delivery to County Counsel or City Attorney



## “Human Factors” - Can You Identify Them?

- Improper attention
- Failure to anticipate
- Improper decision
- Inadequate planning
- Misjudged clearance
- Failure to follow established procedures
- Failure to comply with general rules
- Inadequate training
- Inadequate supervision



## More “Human Factors” To Identify

- **Improper simple physical action**
- Improper complex physical action
- Overconfidence
- Lack of confidence
- Fatigue
- Inadequate experience
- Excessive motivation to succeed
- Effects of alcohol, drugs, or illness
- Improper use of tools/equipment



## Accident Investigation

### Electrical Work Fall From Ladder



## Electrical Work – Fall From Ladder

- Location: Overhead power lines at side walk east of 555 Airport Road, Some City, Far Far Away 11111
- Operation: Untangle overhead power lines
- Date/Time: January 1, 2025 / 14:00 hours
- Weather: Clear/dry/calm wind 0 – 5 mph
- Incident: Mr. Billy Bob, Electrician, fell from ladder while untangling power lines
- Injuries: Head (laceration & concussion) and broken left wrist
- Contributing Factors:
  - Improper decision - extension ladder placed against inadequately supported surface (power line)
  - Failure to follow established procedures – working from elevation; & ladder safety
  - Improper use of tools/equipment – Extension ladder not appropriate means of accessing work area – man lift provides safer working platform



## Accident Investigation

### Hospital Electrician Struck by Hospital Gurney



## Hospital Electrical Maintenance

- Location: Miracle Hospital, 3<sup>rd</sup> Floor, Corridor A, adjacent to ICU Room 321, 2020 Hospital Road, Happiness City, Another Land 99999
- Operation: Repair Ceiling Mounted Light Fixture
- Date/Time: January 1, 2025 / 14:00 hours
- Weather: Clear/dry/calm wind 0 – 5 mph
- Incident: Mr. Billy Bob, Electrician, struck by gurney and fell from ladder while replacing ceiling mounted light fixture
- Injuries: Head (laceration & concussion) and dislocated left knee
- Contributing Factors:
  - Failure to anticipate hospital patient movement through work environment
  - Improper decision – ladder work at busy intersection without proper signage/barrier
  - Failure to follow established procedures – working from elevation; & ladder safety



## Group Activity – Accident Investigation

**Work together to complete an accident investigation per the scenario assigned to your group.**

One person from each group will share their findings



## Accident Investigation

**Workgroup A**  
Crane Collapse



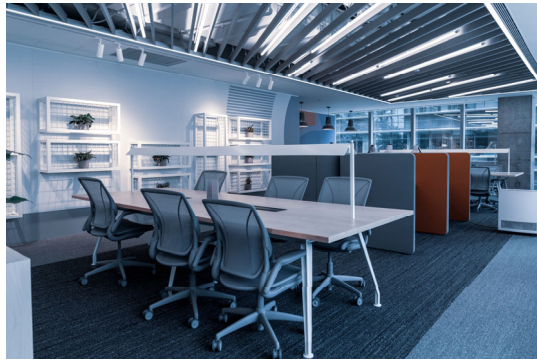
## Accident Investigation

**Workgroup B**  
Dog Attacks Worker



## Accident Investigation

**Workgroup C**  
Worker Trips on  
Extension Cord



## Accident Investigation

**Workgroup D**  
Worker Struck by  
Vehicle



## Accident Investigation

### Workgroup E

Worker Injured by  
Lead Poisoning



## Subrogation

An insurer may endeavor to recover from a third party the amount it paid to its insured for a loss.



## Continuous Improvement

### Regularly review Safety Programs

- At least annually
- When a deficiency is observed or becomes apparent
- After a workplace incident
- As needed – new hazard



## Implement Corrective Action

- Abate hazard(s)
- Change process
- Provide training
- Provide PPE
- Change procedures
- Change behavior



## Changing Unsafe Behavior



## Human Factors Contribute To Most Accidents

- Risk taking occurs without consequence
- NOTHING HAPPENS!
- This becomes positive reinforcement
- The human continues to take risks
- The human rationalizes the accident probability
- Risk taking continues indefinitely until there is a mishap



## 3 Parts to Accident Investigation Reports

- Narrative
- Findings
- Recommendations

