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Hazard Recognition and Assessment

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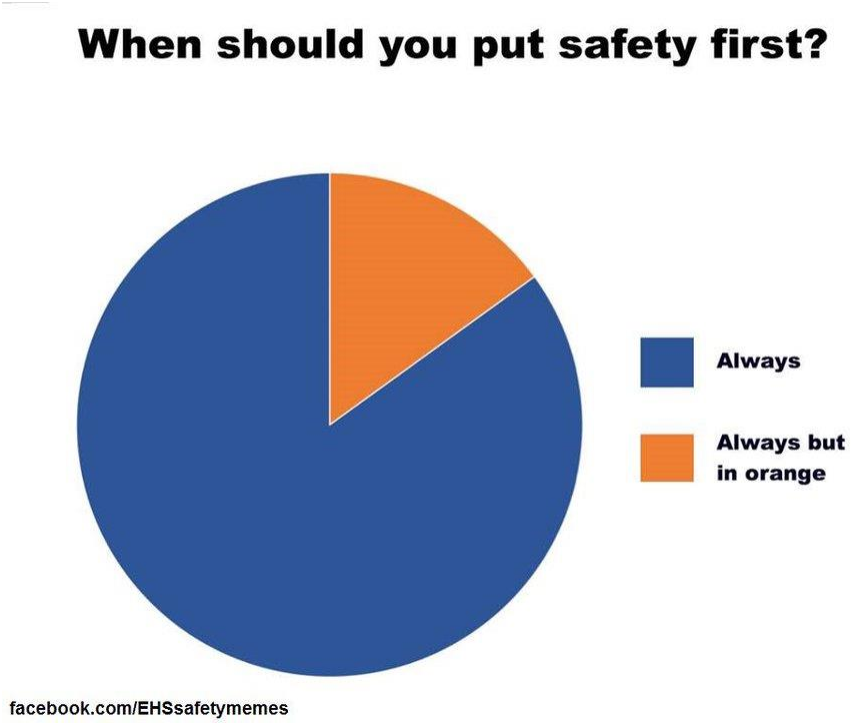
What is a Hazard?

- A Hazard is a potential for harm and can take many forms
  - Health
  - Physical
  - Chemical
  - Ergonomic



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OSHA Hazard Mitigation Recommendations

1. Collect existing information about workplace hazards
2. Inspect the workplace for safety hazards
3. Identify health hazards
4. Conduct incident investigations
5. Identify hazards associated with emergency and non-routine situations
6. Characterize the nature of identified hazards, identify interim control measures, and prioritize the hazards for control

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Hazard Recognition

- One of the “root causes” of workplace injury, illnesses, and incidents is the failure to indefinity or recognize hazards that are present, or could potentially occur

- Therefore, it is important to have ongoing safety audits of the workplace to identify potential hazards or existing hazards

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How do you identify a hazard?

- Collect and review information about the hazards present or likely to be present in the workplace
- Conduct initial and periodic workplace inspections of the workplace to identify new or recurring hazards
- Investigate injuries, illnesses, incidents and close calls/near misses to determine the underlying hazards, their causes and safety and health program shortcomings
- Group similar incidents and identify trends in injuries, illnesses, and hazards reported
- Consider hazards associated with emergency or non-routine situations
- Determine the severity and likelihood of incidents that could result for each hazard identified and use this information to prioritize corrective actions

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OSHA Action Item 1: Collect Existing Information

- Collect information about existing workplace hazards

- Review information with employees to identify hazards present by reviewing
  - Operating manuals
  - Safety Data Sheets
  - Inspection Reports
  - Records of previous injury or illness
  - Existing health and safety programs
  - Input from workers

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OSHA Action Item 2: Inspection for Safety Hazards

- Inspect the work area for safety hazards
- Hazards can be introduced over time with worn equipment or flooring, bad or worn guarding, process changes, bad housekeeping. It is important to regularly schedule inspections to look for safety issues that may not be catastrophic now, but could become worse over time

Look for the following items:

- General Housekeeping
- Slip, trip and fall hazard
- Equipment operation and maintenance
- Work Practices

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OSHA Action Item 3: Identify Health Hazards

- Identify Health Hazards
- Identifying health hazards can be much more difficult than outright physical safety hazards. Gasses and vapors can be invisible or might not have an immediate health effect for example.
  - There are many things that can harm the body over time in the workplace or might not be immediately noticeable
- Things to look out for:
  - Chemical Hazards
  - Physical Hazards (like sound exposure, heat and sources of radiation)
  - Biological Hazards (infectious disease, mold, vectors for disease such as dead animals)
  - Ergonomic Hazards

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Job Hazard Analysis

- What is a Job Hazard Analysis?
  - It is a technique for recognizing and identifying hazards in job tasks before the occur. It usually focuses on the relationship between the worker, the task, the tools and work environment. It is the time to identify any potential risk and mitigate them in the job about to be performed
  - Essentially a written plan to execute the job and mitigate risk by identifying hazards

- Why?
  - Reduces workplace injury and illness by identifying hazards and making sure that employees are properly trained and that all procedures are applicable and safe
  - It is a way for employees to voice concern as well

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When to use a Job Hazard Analysis

- On jobs that
  - Have high injury or illness rate
  - Have the potential to cause severe or disabling injuries or illnesses
  - Could cause severe injury or accident caused by human error
  - Are new to your operation or have undergone changes in the process
  - Are complex enough to require written instruction

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How to build a Job Hazard Analysis

- Involve the employees
  - They usually have the best idea on how a job is usually done and it will create a sense of ownership as well
- Review accident history
  - Where have people gotten hurt in the past? Can the hazard or hazards be mitigated?
- Conduct a preliminary job review
  - Understand the current job hazards associated with the tasks and correct them
- Set priorities on hazardous jobs
  - If a job exists with unacceptable risks, be sure to prioritize fixing those issues first
- Outline steps and tasks that will be involved
  - Outline the steps to be taken in the task to reduce potential for harm (like remembering to turn off pressure before working on a system)

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What should you consider?

- What can go wrong?
- What are the consequences?
- How could it happen?
- What are the contributing factors?
- How likely is the hazard to occur?

- It is also good to include
  - Where it is happening
  - Who or what is it happening to?
  - What would cause the hazard?
  - What would the outcome be?

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Job Location: Metal Shop	***Analyst:*** Joe Safety	***Date:***

Task Description: Worker reaches into metal box to the right of the machine, grasps a 15-pound casting and carries it to grinding wheel. Worker grinds 20 to 30 castings per hour.

Hazard Description: Picking up a casting, the employee could drop it onto his foot. The casting's weight and height could seriously injure the worker's foot or toes.

Hazard Controls:

1. Remove castings from the box and place them on a table next to the grinder.
2. Wear steel-toe shoes with arch protection.
3. Change protective gloves that allow a better grip.
4. Use a device to pick up castings.

Job Location: Metal Shop	***Analyst:*** Joe Safety	***Date:***

Task Description: Worker reaches into metal box to the right of the machine, grasps a 15-pound casting and carries it to grinding wheel. Worker grinds 20 to 30 castings per hour.

Hazard Description: Castings have sharp burrs and edges that can cause severe lacerations.

Hazard Controls:

1. Use a device such as a clamp to pick up castings.
2. Wear cut-resistant gloves that allow a good grip and fit tightly to minimize the chance that they will get caught in grinding wheel.

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Knowledge Check 1

- What is one of the circumstances that would alert you to write a job hazard analysis before you begin work?

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Knowledge Check 1

It is important to write a job hazard analysis for jobs that:

- Have high injury or illness rate
- Have the potential to cause severe or disabling injuries or illnesses
- Could cause severe injury or accident caused by human error
- Are new to your operation or have undergone changes in the process
- Are complex

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OSHA Action Item 4: Conduct Incident Investigations

- Investigate reports of injury, illnesses, close calls and near misses as well as reports of concerns around the workplace, this should give you a pretty good idea where the hazards exist

- Conduct investigations with a mix of management and workers to identify the root causes and shortcomings that allowed a hazard to exist
- Ask yourself
  - Why?
  - What lead to a failure?
  - How could this have been prevented?
  - What were the circumstances?

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OSHA Action Item 5: Identify Hazards Associated with Emergencies

- Emergencies and non-routine operations present specific and special hazards outside of the realm of normal operations. Even shutdown routines can present hazards

- Identify foreseeable emergency situations and make plans to mitigate the hazards
  - Fires and explosions
  - Chemical releases
  - Hazardous material spills
  - Startups after shutdowns
  - Structural issues
  - Medical emergencies

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OSHA Action Item 6: Characterize the Nature of Hazards

- Assess the hazards that were found in the workplace and create controls and interim controls to protect the workers. This is also a triage method that puts the hazards with the most risk associated in top priority to be fixed first

- Categorize the hazards based on the severity of the outcome if there was an emergency situation
- Use interim controls on hazards that are less emergent

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