

# **Five Basic Steps to Conducting a Job Hazard Analysis**

# Job Hazard Analysis

## What is a Job Hazard Analysis?

A Job Hazard Analysis (sometimes called a “Job Safety Analysis”) is a technique that focuses on job tasks as a way to identify hazards before they occur. It focuses on the relationship between the worker, the task, the tools, and the work environment. Ideally, after you identify uncontrolled hazards, you will take steps to eliminate or reduce them to an acceptable risk level.

## Why is job hazard analysis important?

Many workers are injured and killed at the workplace every day in the United States. Safety and health can add value to your business, your job, and your life. You can help prevent workplace injuries and illnesses by looking at your workplace operations, establishing proper job procedures, and ensuring that all employees are trained properly. One of the best ways to determine and establish proper work procedures is to conduct a job hazard analysis. A job hazard analysis is one component of the larger commitment of a safety and health management system.

## What is the value of a job hazard analysis?

Supervisors can use the findings of a job hazard analysis to eliminate and prevent hazards in their workplaces. This is likely to result in fewer worker injuries and illnesses; safer, more effective work methods; reduced workers’ compensation costs; and increased worker productivity. The analysis also can be a valuable tool for training new employees in the steps required to perform their jobs safely. For a job hazard analysis to be effective, management must demonstrate its commitment to safety and health and follow through to correct any uncontrolled hazards identified.

Otherwise, management will lose credibility and employees may hesitate to go to management when dangerous conditions threaten them.

## What jobs are appropriate for a job hazard analysis?

A job hazard analysis can be conducted on many jobs in your workplace. Priority should go to the following types of jobs:

- Jobs with the highest injury or illness rates;
- Jobs with the potential to cause severe or disabling injuries or illness, even if there is no history of previous accidents;
- Jobs in which one simple human error could lead to a severe accident or injury;
- Jobs that are new to your operation or have undergone changes in processes and procedures; and
- Jobs complex enough to require written instructions.

### Where do I begin?

1. **Involve your employees.** It is very important to involve your employees in the hazard analysis process. They have a unique understanding of the job, and this knowledge is invaluable for finding hazards. Involving employees will help minimize oversights, ensure a quality analysis, and get workers to “buy in” to the solutions because they will share ownership in their safety and health program.
2. **Review your accident history.** Review with your employees your worksite’s history of accidents and occupational illnesses that needed treatment, losses that required repair or replacement, and any “near misses” —events in which an accident or loss did not occur, but could have. These events are indicators that the existing hazard controls (if any) may not be adequate and deserve more scrutiny.
3. **Conduct a preliminary job review.** Discuss with your employees the hazards they know exist in their current work and surroundings. Brainstorm with them for ideas to eliminate or control those hazards.

**If any hazards exist that pose an immediate danger to an employee’s life or health, take immediate action to protect the worker.** Any problems that can be corrected easily should be corrected as soon as possible. Do not wait to complete your job hazard analysis.

This will demonstrate your commitment to safety and health and enable you to focus on the hazards and jobs that need more study because of their complexity. For those hazards determined to present unacceptable risks, evaluate types of hazard controls.

#### **4. List, rank, and set priorities for hazardous jobs.**

List jobs with hazards that present unacceptable risks, based on those most likely to occur and with the most severe consequences. These jobs should be your first priority for analysis.

**5. Outline the steps or tasks.** Nearly every job can be broken down into job tasks or steps. When beginning a job hazard analysis, watch the employee perform the job and list each step as the worker takes it. Be sure to record enough information to describe each job action without getting overly detailed.

Avoid making the breakdown of steps so detailed that it becomes unnecessarily long or so broad that it does not include basic steps. You may find it valuable to get input from other workers who have performed the same job.

Later, review the job steps with the employee to make sure you have not omitted something. Point out that you are evaluating the job itself, not the employee’s job performance. Include the employee in all phases of the analysis—from reviewing the job steps and procedures to discussing uncontrolled hazards and recommended solutions.

Sometimes, in conducting a job hazard analysis, it may be helpful to photograph or videotape the worker performing the job. These visual records can be handy references when doing a more detailed analysis of the work.

### How do I identify workplace hazards?

A job hazard analysis is an exercise in detective work. Your goal is to discover the following:

- What can go wrong?
- What are the consequences?
- How could it arise?
- What are other contributing factors?
- How likely is it that the hazard will occur?

To make your job hazard analysis useful, document the answers to these questions in a consistent manner. Describing a hazard in this way helps to ensure that your efforts to eliminate the hazard and implement hazard controls help target the most important contributors to the hazard.

Good hazard scenarios describe:

- Where it is happening (environment),
- Who or what it is happening to (exposure),
- What precipitates the hazard (trigger),
- The outcome that would occur should it happen (consequence), and
- Any other contributing factors.

Rarely is a hazard a simple case of one singular cause resulting in one singular effect. More frequently, many contributing factors tend to line up in a certain way to create the hazard.

Here is an example of a hazard scenario:

In the metal shop (environment), while clearing a snag (trigger), a worker's hand (exposure) comes into contact with a rotating pulley. It pulls his hand into the machine and severs his fingers (consequences) quickly.

To perform a job hazard analysis, you would ask:

**What can go wrong?** The worker's hand could come into contact with a rotating object that "catches" it and pulls it into the machine. Also, a worker could improperly lift heavy stock and injure their back. Flying debris could injure an employee especially if it hits them in their eyes.

**What are the consequences?** The worker could receive a severe injury and lose fingers and hands.

**How could it happen?** The accident could happen as a result of the worker trying to clear a snag during operations or as part of a maintenance activity while the pulley is operating. Obviously, this hazard scenario could not occur if the pulley is not rotating.

**What are other contributing factors?** This hazard occurs very quickly. It does not give the worker much opportunity to recover or prevent it once his hand comes into contact with the pulley. This is an important factor, because it helps you determine the severity and likelihood of an accident when selecting appropriate hazard controls. Unfortunately, experience has shown that training is not very effective in hazard control when triggering events happen quickly because humans can react only so quickly.

**How likely is it that the hazard will occur?** This determination requires some judgment. If there have been “near-misses” or actual cases, then the likelihood of a recurrence would be considered high. If the pulley is exposed and easily accessible, that also is a consideration. In the example, the likelihood that the hazard will occur is high because there is no guard preventing contact, and the operation is performed while the machine is running. By following the steps in this example, you can organize your hazard analysis activities.

A standard JHA form helps you organize your information to provide these details:

<b>Task</b> Lathe Operation		<b>Analyzed By</b> D. A. Casavant
<b>Department</b> Machine Shop		<b>Date</b> 8/23/01
<b><u>Possible issues:</u></b> Noise Ergonomics ✓ Ventilation Blood / OPIM Temperature Lighting Slip / trip Pinching / rolling ✓ Electric shock Stored energy Adjacent activities ✓ Other: Flying Debris ✓		<b><u>Engineering Controls</u></b> Machine Guarding must be installed properly at all times  <b><u>Work Practice Controls</u></b> Employee must first complete the "Safe Lifting" training class  Employee must first complete the "Safe Machine Guarding & Operation" training class  <b><u>Personal Protective Equipment</u></b> Gloves Safety glasses Steel toe footwear
<b>Basic steps</b>	<b>Potential hazards</b>	<b>Recommended protection</b>
Select stock	Lifting – muscle strain	Over 25lb, keep stock close to body. Assistance if needed
Load stock	Dropping stock	Steel toe footwear
Operate Lathe	Moving parts – pinch Flying stock waste	Watch hands, no loose clothes Wear safety glasses
Remove snag	Moving parts	Prior to removing snag, ensure that rotating parts have stopped moving
Remove stock	Dropping stock	Steel toe footwear
Move stock	Dropping stock	Steel toe footwear
Clean up area	Improper squat, Sharp refuse	Steel toe footwear, gloves, use proper squat techniques

### How do I correct or prevent hazards?

After reviewing your list of hazards with the employee, consider what control methods will eliminate or reduce them.

The most effective controls are **engineering controls** that physically change a machine or work environment to prevent employee exposure to the hazard. The more reliable or less likely a hazard control can be circumvented, the better. If this is not feasible, **administrative controls** may be appropriate. This may involve changing how employees do their jobs.

Discuss your recommendations with all employees who perform the job and consider their responses carefully. If you plan to introduce new or modified job procedures, be sure they understand what they are required to do and the reasons for the changes.

### What else do I need to know before starting a job hazard analysis?

The job procedures discussed in this booklet are for illustration only and do not necessarily include all the steps, hazards, and protections that apply to your industry.

When conducting your own job safety analysis, be sure to consult the Occupational Safety and Health Administration standards for your industry. Compliance with these standards is mandatory, and by incorporating their requirements in your job hazard analysis, you can be sure that your health and safety program meets federal standards.

Twenty-four states and two territories operate their own OSHA-approved safety and health programs and may have standards that differ slightly from federal requirements. Employers in those states should check with the appropriate state agency for more information.

### Why should I review my job hazard analysis?

Periodically reviewing your job hazard analysis ensures that it remains current and continues to help reduce workplace accidents and injuries. Even if the job has not changed, it is possible that during the review process you will identify hazards that were not identified in the initial analysis. It is particularly important to review your job hazard analysis if an illness or injury occurs on a specific job.

Based on the circumstances, you may determine that you need to change the job procedure to prevent similar incidents in the future. If an employee's failure to follow proper job procedures results in a "close call," discuss the situation with all employees who perform the job and remind them of proper procedures. Any time you revise a job hazard analysis, it is important to train all employees affected by the changes in the new job methods, procedures, or protective measures adopted.

## Job Hazard Analysis - Example

<b>Task</b> Insect Bite & Poisonous plants		<b>Analyzed By</b> David A. Casavant
<b>Department</b> Grounds & maintenance		<b>Date</b> 6/22/2005
<b><u>Possible issues:</u></b>  Noise Ergonomics ✓ Ventilation Temperature ✓ Lighting Slip / trip Pinching / rolling Electric shock Stored energy Adjacent activities ✓ Other: ✓ Poisonous plants ✓ Poisonous animals	<b><u>Engineering Controls</u></b>  Use insect repellants	
	<b><u>Work Practice Controls</u></b>  Carry emergency medication for stings and bites  Train certain employees in first aid measures.  Train employees to recognize hazards in the field	
<b><u>Personal Protective Equipment</u></b>  Wear long sleeve shirt and pants that are tucked in to limit exposure		
<b><i>Specific Tasks</i></b>	<b><i>Hazard</i></b>	<b><i>Abatement</i></b>
Avoiding / Treating Tick Bites	Lyme Disease etc.	<p>A. Spray clothing with insect repellent as a barrier.</p> <p>B. Wear light colored clothing that fits tightly at the wrists, ankles, and waist.</p> <p>C. Each outer garment should overlap the one above it.</p> <p>D. Cover trouser legs with high socks or boots.</p> <p>E. Tuck in shirt tails.</p> <p>F. Search the body on a regular basis, especially hair and clothing; ticks generally do not attach for the first couple of hours.</p> <p>G. If a tick becomes attached, pull it by grasping it as close as possible to the point of attachment and pull straight out with gentle pressure. Wash skin with soap and water then cleanse with rubbing alcohol. Place the tick in an empty container for later identification, if the victim should have a reaction. Record dates of exposure and removal.</p> <p>H. Do not try to remove the tick by burning with a match or covering it with chemical agents.</p> <p>I. If you can not remove the tick, or the head detaches, seek prompt medical help.</p> <p>J. Watch for warning signs of illness: a large red spot on the bite area; fever, chills, headache, joint and muscle ache, significant fatigue, and facial paralysis are reactions that may appear within two weeks of the attack. Symptoms specific to Lyme disease include: confusion, short-term memory loss, and disorientation.</p>



Avoiding / Treating Bee Stings	Allergic reactions, painful stings	<p>A. Be alert to hives in brush or in hollow logs. Watch for insects traveling in and out of one location.</p> <p>B. If you or anyone you are working with is known to have allergic reactions to bee stings, tell the rest of the crew and your supervisor. Make sure you carry emergency medication with you at all times.</p> <p>C. Wear long sleeve shirts and trousers; tuck in shirt. Bright colors and metal objects may attract bees.</p> <p>D. If you are stung, cold compresses may bring relief.</p> <p>E. If a stinger is left behind, scrape it off the skin. Do not use a tweezers as this squeezes the venom sack, worsening the injury.</p> <p>F. If the victim develops hives, asthmatic breathing, tissue swelling, or a drop in blood pressure, seek medical help immediately. Give victim antihistime, (Benadryl, chlo-amine tabs).</p>
Avoiding / Treating Mosquito Bites	Skin irritation, encephalitis	<p>A. Wear long sleeves and trousers.</p> <p>B. Avoid heavy scents.</p> <p>C. Use insect repellants. If using DEET, do not apply directly to skin, apply to clothing only.</p> <p>D. Carry after-bite medication to reduce skin irritation.</p>
<p>Certified By: _____ Title: _____ Date _____</p>		