



Conducting An Effective


Job Hazard Analysis

An introduction to the “Five Step Process” of Job Hazard Analysis (JHA)






Job Hazard Analysis

 **Goals**


- **You will be able to:**
 - Explain to others why JHA's are important
 - Recognize how the JHA can be a valuable planning, production, and safety tool.
 - Know the five-step process and complete a JHA



Job Hazard Analysis

Why a Job Hazard Analysis (JHA)


- Injuries occur every day in the workplace
- Sometimes injuries happen because employees are not trained in the proper job procedure, or because hazards are hidden in the job itself.
- You can help prevent injuries by doing a JHA
- It will help you identify these “hidden” hazards and write safe and efficient work procedures.




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5 steps to JHA

1. Select jobs to analyze
2. Involve the employee
3. Do the Job Hazard Analysis
4. Make changes / recommendations
5. Write “Safe Operating Procedures”





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 **Form Teams**

- Elect a shop team leader
- Select a representative from each group
- Everyone is involved

Let's get to work!






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JHA Key Terms

- **What's a Job?**
- **What's a Hazard?**
- **What's an exposure?**
- **What is Analysis?**



Job Hazard Analysis

Activity

- In some industries, workers in their first year with their employer account for more than 50% of claims.

Why?

(list three possible explanations)



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JSA Purpose

- Effective JHA's help the employer recognize and control hazards and exposures in the workplace.

How might the employee's perception of a "hazard" differ from that of the employer or supervisor?



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Activity

Why is a JHA more effective than walk-around inspections in reducing accidents in the workplace?

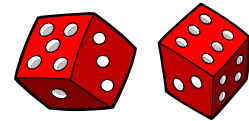


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Probability

- Probability is defined as: the chance that a given event will occur.



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Probability

- We can determine the safety probability based on the following:
 - The number of employees exposed;
 - The frequency and duration of exposure;
 - The proximity of employees to the danger zone;

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Probability

- We can determine the safety probability based on the following:
 - Factors which require work under stress;
 - Lack of proper training and supervision or improper workplace design; or
 - Other factors which may significantly influence the degree of probability of an accident occurring.

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Probability Rating

- The probability rating is:
 - **Low** - If the factors considered indicate it would be unlikely that an accident could occur;
 - **Medium** - If the factors considered indicate it would be likely that an accident could occur; or
 - **High** - If the factors considered indicate it would be very likely that an accident could occur.

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Severity

- The degree of injury or illness which is reasonably predictable.



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Severity

- The severity is based on the following schedule:
 - Other Than Serious - Conditions that could cause injury or illness to employees but would not include serious physical harm. (first aid for example)
 - Serious Physical Harm - (example: all recordable injuries and illnesses)
 - Death

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		Severity		
		Other Than Serious	Serious Physical Harm	Death
Probability	Low	1	2	3
	Medium	2	4	6
	High	3	6	9

Activity

- **Picking Apples:**
 - There are 20 workers picking apples.
 - The orchard is made up of 400 trees.
 - The workers are paid based on how much each one of them picks.
 - Well-maintained equipment is provided but there is no training. The owner or the foreman will be in the general area most of the time.

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Activity



		Severity		
		Other Than Serious	Serious Physical Harm	Death
Probability	Low	1	2	3
	Medium	2	4	6
	High	3	6	9

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JHA Step 1



- Step One - Watch the work being done

What are some effective methods to watch the work being done?



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JHA Step 1

- Step One - Watch the work being done

Why is it important to involve the employee?



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JHA Step 2

- Step Two - Break the job down into steps

Job Hazard Analysis Worksheet	
JHA Number: _____	Page ____ of ____
Job Description: _____	
Step 1	Hazard(s) _____ Control Measure(s) Required _____
Step 2	Hazard(s) _____ Control Measure(s) Required _____
Step 3	Hazard(s) _____ Control Measure(s) Required _____
Step 4	Hazard(s) _____ Control Measure(s) Required _____

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JHA Step 3

- Step Three - Describe the hazards in each step of the task.

One of the primary purposes of the JHA is to make the job safer.

The information gathered in this step will be valuable in helping to eliminate and/or reduce hazards associated with the job, and improve the system weaknesses that produced them.

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Identifying types of hazards

- Acceleration: When we speed up or slow down too quickly
- Toxic: Toxic to skin and internal organs.
- Radiation: **Non-ionizing** - burns, **Ionizing** - destroys tissue.

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Identifying types of hazards

- Ergonomics: Eight risk factors
 - 1. **High Frequency**;
 - 2. **High Duration**;
 - 3. **High Force**;
 - 4. **Posture**;
 - 5. **Point of Operation**;
 - 6. **Mechanical Pressure**;
 - 7. **Vibration**;
 - 8. **Environmental Exposure**.

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Identifying types of hazards

- **Pressure:** Increased pressure in hydraulic and pneumatic systems.
- **Mechanical:** Pinch points, sharp points and edges, weight, rotating parts, stability, ejected parts and materials, impact.
- **Flammability/Fire:** In order for combustion to take place, the fuel and oxidizer must be present in gaseous form.

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Identifying types of hazards

- **Biological:** Primarily airborne and blood borne viruses.
- **Violence In The Workplace:** Any violent act that occurs in the workplace and creates a hostile work environment that affects employees' physical or psychological well-being.

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Identifying types of hazards

- **Explosives:** Explosions result in large amounts of gas, heat, noise, light and over-pressure.
- **Electrical Contact:** Inadequate insulation, broken electrical lines or equipment, lightning strike, static discharge etc.
- **Chemical Reactions:** Chemical reactions can be violent, can cause explosions, dispersion of materials and emission of heat.

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Accident Types

- **Struck-by:**
 - A person is forcefully struck by an object. The force of contact is provided by the object.
- **Struck-against:**
 - A person forcefully strikes an object. The person provides the force or energy.
- **Contact-by:**
 - Contact by a substance or material that, by its very nature, is harmful and causes injury.

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Accident Types

- **Contact-with:**
 - A person comes in contact with a harmful substance or material. The person initiates the contact.
- **Caught-on:**
 - A person or part of his/her clothing or equipment is caught on an object that is either moving or stationary. This may cause the person to lose his/her balance and fall, be pulled into a machine, or suffer some other harm.
- **Caught-in:**
 - A person or part of him/her is trapped, or otherwise caught in an opening or enclosure.

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Accident Types

- **Caught-between:**
 - A person is crushed, pinched or otherwise caught between a moving and a stationary object, or between two moving objects.
- **Fall-to-surface:**
 - A person slips or trips and falls to the surface he/she is standing or walking on.
- **Fall-to-below:**
 - A person slips or trips and falls to a level below the one he/she was walking or standing on.

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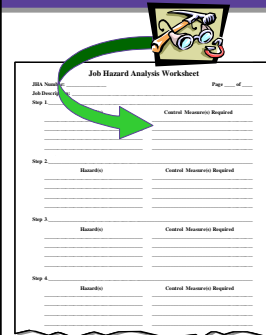
Accident Types

- **Over-exertion:**
 - A person over-extends or strains himself/herself while performing work.
- **Bodily reaction:**
 - Caused solely from stress imposed by free movement of the body or assumption of a strained or unnatural body position. A leading source of injury.
- **Over-exposure:**
 - Over a period of time, a person is exposed to harmful energy (noise, heat), lack of energy (cold), or substances (toxic chemicals/atmospheres).

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JHA Step 4



The diagram shows a 'Job Hazard Analysis Worksheet' with a grid for recording hazards and control measures. A green arrow points to the 'Control Measures Required' column for Step 4. An icon of a toolbox with a wrench and screwdriver is positioned above the worksheet.

Step Four – Control Measures.

It is now time to identify the desired control measures for each hazard.

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The Hierarchy of Controls

- **Engineering controls.**
- **Management controls.**
- **Personal Protective Equipment (PPE).**

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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

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Management Controls

- 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.

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Personal Protective Equipment

- When exposure to hazards cannot be engineered completely out of normal operations or maintenance work, and when safe work practices and administrative controls cannot provide sufficient additional protection from exposure, personal protective clothing and/or equipment may be required.

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JHA Step 5

• Step Five - Safe Operating Procedure

The "Safe Operating Procedure" is the last page of the JHA. It is a narrative or written summary of the JHA worksheets. Note that there are three sections:

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Safe Work Procedure

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Job Hazard Analysis Form

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JHA Example

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Any Questions



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Thank You For Attending

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