

*Conducting An
Effective*



Job Hazard Analysis

*An introduction to the
“Five Step Process” of
Job Hazard Analysis
JHA-JSA-SWMS-AHA*



Welcome!



- **Introductions**

- What do you know about Job Hazard Analysis (JHA's) ?
- Does OSHA require JHA's?
- Does a Client, GC, Corp. of Engineer's require one?
- Where does it say so?

Goals



- **Given the information and exercises in this workshop, you will be able to:**
 - Explain to others why JHA's are important
 - Recognize how the JHA can be a valuable planning, production, profit and safety tool.
 - Know the five-step process and complete a JHA

JHA Key Terms



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

Activity



- Workers in their first year with their employer account for more than 50% of disabling claims.

Why?

Possible explanations



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?



Activity



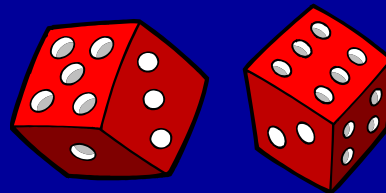
Why is a JHA more effective than walk-around inspections in reducing accidents in the workplace?

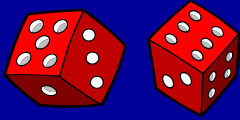


Probability



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

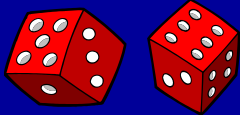




Probability



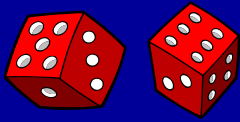
- We can determine the safety probability based on the following:
 - The number of employees exposed;
 - The frequency and duration of exposure;
 - The proximity of employees to the danger zone;



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.



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.

Severity



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



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

Decision Making Matrix



		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.

Activity



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



JHA Step 1



Step One - Watch the work being done

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



JHA Step 1



- **Step One - Watch the work being done**

Why is it important to involve the employee?



JHA Step 2



- **Step Two - Break the job down into steps**

The image shows a 'Job Hazard Analysis Worksheet' form with four steps. Each step has a 'Hazard(s)' column and a 'Control Measure(s) Required' column. Green arrows on the right side of the form point to each step, labeled 'Step 1', 'Step 2', 'Step 3', and 'Step 4'.

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
_____	_____
_____	_____
_____	_____

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.

Identifying types of hazards



- Fire
- Pressure
- Work @ heights
- Pinch Points
- Hot Objects
- Access
- Chemicals
- Dusts
- Sharp Objects
- Noise
- Flammability
- Elevated Load
- Muddy Site conditions
- Explosion
- Work at Depth
- Heat / Cold Exposure
- Electricity
- Fumes
- Weather
- High Winds
- Underground Utilities
- Vibration

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.

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.

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.

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).

JHA Step 4



Job Hazard Analysis Worksheet

JHA Number: _____ Page ____ of ____

Job Description: _____

Step	Hazard(s)	Control Measure(s) Required
Step 1	_____	_____
Step 2	_____	_____
Step 3	_____	_____
Step 4	_____	_____

Step Four – Control Measures.

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

The Hierarchy of Controls



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

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
- Eliminate the risk of falls of people or materials by design and/or employing construction methods which avoid or reduce the need for work at heights. For example, pre-fabricating permanent works (such as unitized, glazed curtain walling) and then lifting them into place rather than constructing them at height; reducing the size of service risers to prevent falls of people or materials; use of a long-handled paintbrush to avoid the need to work at height.

Netting for stick built



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.
- **Implement measures to prevent (or mitigate) the risk of falls that will protect all.** – By employing collective measures to protect people or materials from the risk of falling where work at heights cannot be eliminated. (Examples: designing and employing edge protection systems which can be installed as soon as practical and remain in place as long as possible (eg: guardrails fitted to steel beams at ground level during erection and located such that they can remain in place for cladding works); use of slip-form formwork systems with integral working platforms use of MEWPS for erection of steelwork: use of scissor lifts rather than step ladders for installing M&E systems: use formwork systems that can be erected from the permanent floor slab or a low level working platform below the decking level and which allow installation of edge protection (guardrails) without the need for high level access: installation of stairs with permanent guard rails fitted; nets fitted at working level to minimize consequence of falls during roof installation; use of air bags; debris netting fitted at both external and internal floor edges to prevent fall of materials, scaffold fans or nets to protect public).

Toilet Trailers For the workers!



A place to sit and eat with heat or ventilation



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.
- **Personal fall prevention and mitigation systems – May only be used as a last resort** as they rely on the individuals at risk to use them correctly and they only protect those individuals using them. Systems need to be designed by competent persons to ensure their effectiveness (including rescue procedures) and use needs to be limited to specific trained personnel. Preference should be given to fall prevention system (restraint) rather than fall arrest systems, which limit the distance people can fall (mitigation). (Example: full body harness secured by fixed length lanyard restricting access to point of work preferred to use of retractable line (inertia) system.

Fall Protection



Netting



Horizontal Netting



Make sure you include on the JHA the following:



- | | |
|--|--|
| <ul style="list-style-type: none"> • How is the material to be delivered • Travel route • Jobsite driving directions • How will the material get to the building, floor(s) • MSDS provided? | <ul style="list-style-type: none"> • Truck, delivery schedule, county/city hour limits • Logistics plan • Hoist, carried, PPE, Fall Hazards, wall/window opening etc. • Don't accept a chemical without the MSDS |
|--|--|

How will the trash/debris be removed?



- | | |
|---|--|
| <ul style="list-style-type: none"> • Did you cover that in your contract? • Who is to remove and how frequent? • What hazards are presented? • By what means? | <ul style="list-style-type: none"> • <i>Do you hold the contract?</i> • <i>Daily or as needed</i> • <i>Fire, over limit of load, chemical, fall of material barricade below</i> • <i>Hoist, trash chute, thrown, stairs, dumpsters, dumpster pulls</i> • <i>Forklifts, trash boxes etc.</i> |
|---|--|

Does where does it say you have to conduct a JHA?





• Part Title: Safety and Health Regulations for Construction
 • Subpart: 8
 • Subpart Title: Electrical
 • Standard Number: 1926.400
 • Title: General Requirements

1926.400(a)

Approval. All electrical conductors and equipment shall be approved.

1926.400(b)

Construction, installation, and use of equipment:

1926.400(b)(1)

Construction. The employer shall ensure that electrical equipment is free from recognized hazards that are likely to cause death or serious physical harm to employees. Safety of equipment shall be determined on the basis of the following considerations:

1926.451(b)(1)(ii)

1926.451(b)(1)(ii)

Where the employer makes the demonstration provided for in paragraph (b)(1)(i) of this section, the platform shall be planked or decked as fully as possible and the remaining open space between the platform and the uprights shall not exceed 9 1/2 inches (24.1 cm).

Exception to paragraph (b)(1). The requirement in paragraph (b)(1) to provide full planking or decking does not apply to platforms used solely as walkways or solely by employees performing scaffold erection or dismantling. In these situations, only the planking that the employer establishes is necessary to provide safe working conditions is required.



**Any
Questions**

