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Job Hazard Analysis (JHA)

Analyzing health & safety hazards in your workplace

Our presentation will begin soon

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Insurance Companies

Job Hazard Analysis (JHA)

Analyzing health & safety hazards in your workplace

ICW Group Risk Management

Today's presenter

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Sr. Risk Management Consultant

Risk Management Services

ICW Group

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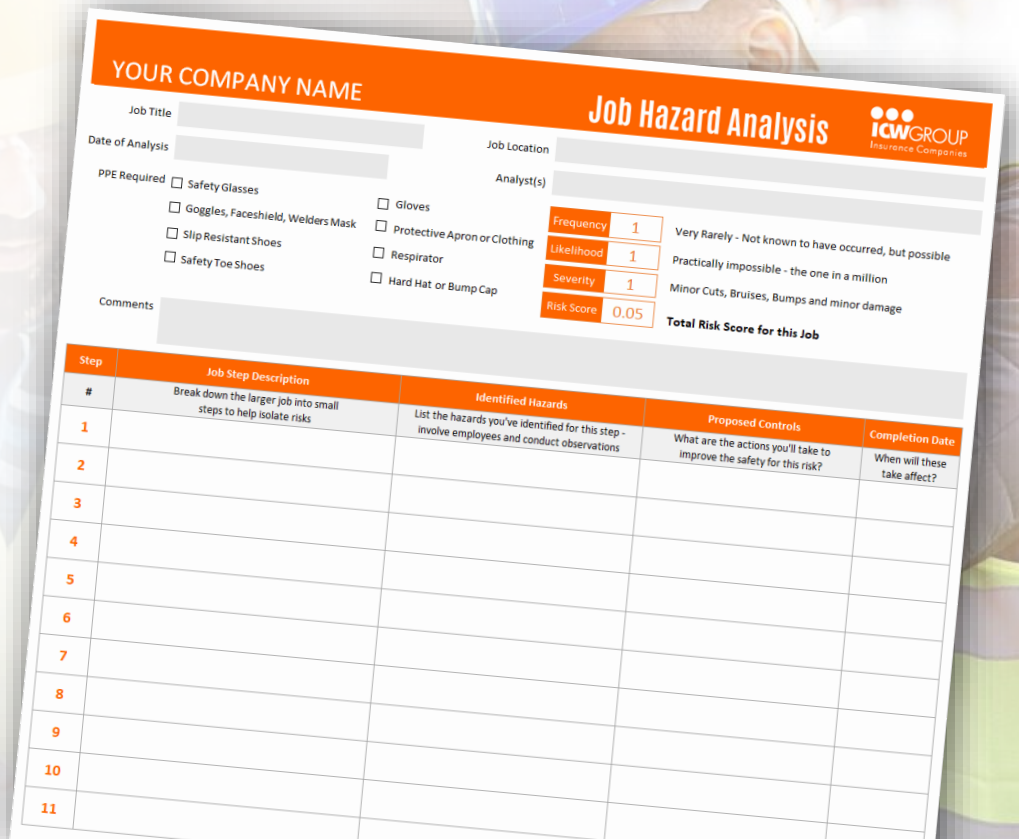
What is Job Hazard Analysis (JHA)?

A method for systematically identifying and evaluating **HAZARDS** associated with a Job or Task

Why conduct a job hazard analysis?

The Job Hazard Analysis Form

- Customizable for your company
- Helps break down each job into steps and analyze specific hazards



YOUR COMPANY NAME

Job Hazard Analysis

Job Title

Date of Analysis

Job Location

Analyst(s)

PPE Required

- ☐ Safety Glasses
- ☐ Goggles, Faceshield, Welders Mask
- ☐ Slip Resistant Shoes
- ☐ Safety Toe Shoes
- ☐ Gloves
- ☐ Protective Apron or Clothing
- ☐ Respirator
- ☐ Hard Hat or Bump Cap

Comments

Frequency	1
Likelihood	1
Severity	1
Risk Score	0.05

Very Rarely - Not known to have occurred, but possible

Practically impossible - the one in a million

Minor Cuts, Bruises, Bumps and minor damage

Total Risk Score for this Job

Step #	Job Step Description Break down the larger job into small steps to help isolate risks	Identified Hazards List the hazards you've identified for this step - involve employees and conduct observations	Proposed Controls What are the actions you'll take to improve the safety for this risk?	Completion Date When will these take affect?
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

Seven-step Process

1. **SELECT** job to analyze
2. **DETAIL JOB** into key steps
3. **SPOT RISKS** for each step
4. **CONTROL** hazards
5. **TAKE ACTIONS** needed
6. **DOCUMENT** all actions
7. **REASSESS** periodically

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01 - Select The Job to Analyze

- Focus on one job at a time
- Take a FRESH look with an open mind
- Avoid “we’ve always done it this way” mentality
- Even if injury hasn’t happened, hazard may still exist

Accepting Risk or Hazard is NOT the same as **Eliminating or Controlling** it!

Include High Risk Jobs

Any job or task meeting the following condition(s) should have a JHA conducted for it:

- History of injuries or near misses.
- Catastrophic potential – fire, explosion, large chemical releases, massive equipment failure.
- Simple human error could lead to serious injury

Include High Risk Jobs

Any job or task meeting the following condition(s) should have a JHA conducted for it:

- New people doing task,
- Tasks that have changed,
- Rarely performed jobs,
- Any job done under a “Safety Permit”

    - Confined space permit, Hot Work permit, etc.

Check Injury History

Examine jobs where workers have been injured using:

- Your accident or incident reports
- Your Worker Compensation claims
- Industry or trade association data

Conduct preliminary worksite walk-around to observe or identify hazardous jobs or tasks.

Add Selected Job to JSA

- Company
- Job Title
- Location
- Date
- Analyst

ABC WELDING COMPANY — Job Hazard Analysis

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Job Title	Welder - Base	Job Location	Weld Shop
Date of Analysis	7/22/2019	Analyst(s)	Rick Fineman, CSP

PPE Required

- ☐ Safety Glasses
- ☐ Gloves
- ☐ Goggles, Faceshield, Welders Mask
- ☐ Protective Apron or Clothing
- ☐ Slip Resistant Shoes
- ☐ Respirator
- ☐ Safety Toe Shoes
- ☐ Hard Hat or Bump Cap

Frequency	1	Very Rarely – Not known to have occurred, but possible
Likelihood	1	Practically impossible – the one in a million
Severity	1	Minor Cuts, Bruises, Bumps and minor damage
Risk Score	0.05	**Total Risk Score for this Job**

Comments

02 - Drill Down to the Details

- Detail the job into sub-tasks or steps
- List all hazards associated
- Break into components that make sense
  - *Too much detail makes JHA cumbersome*
  - *Too little detail may omit hazards*
- Generally, limit steps to 10 or less

Asking employees for assistance

Improves Ownership and Acceptance!

Example - Changing a Light Bulb

Details that Make Sense

Too **Much** Detail	Too **Little** Detail	***The Right Amount!***
1. Get ladder from storage. 2. Get new light bulb from storage. 3. Carry ladder and light bulb to light needing change. 4. Place ladder under light to be changed. 5. Ensure light switch is in the off position. 6. Climb ladder. 7. Remove light cover. 8. Twist bulb counter clock-wise to free from socket. 9. Remove old light bulb. 10. Insert new light bulb into socket. 11. Turn in a clock-wise direction until tightened. 12. Replace light cover. 13. Descend ladder. 14. Carry ladder back to storage.	1. Get a ladder and new light bulb. 2. Change bulb. 3. Put ladder away and throw out old light bulb.	1. Get ladder and new light bulb. 2. Turn light switch off. 3. Place ladder under light to be changed. 4. Using ladder, change bulb. 5. Put ladder back in storage.

Add Job Details to JHA

- List each step
- Remember to keep details at a level that make sense

Step	Job Step Description	Identified Hazards
#	Break down the larger job into small steps to help identify the risks	List the hazards you've identified for Involve employees and conduct obse
1	Get base, cap and arm for welding from parts cart and place onto workstation jig	
2	Check Welder for safe operating condition and turn on welder and local exhaust ventilation	
3	Complete side, top and bottom welds on cap. Completed arm weld to side of base.	
4	Clean weld using magnaflux cleaner while in jig	
5	Polish Part using hand polisher while in jig	
6	Remove finished part from jig and place onto cart for transport	
7		

03 - Spot the Hazards

- Watch workers doing jobs, to identify potential hazards that may lead to injuries
- Pay attention to time worker is exposed to hazard
- Ask them:
  - *What do they feel is the most hazardous part?*
  - *Are the tasks they are currently doing typical?*

Get to Root Cause

How people get hurt	*What causes them to get hurt?*
Ladders tipping over	▪ Ladder not on level surface ▪ Ladder on soft ground and leg sunk in ▪ Person reached out too far ▪ Ladder wasn't high enough to reach safely –person stood up near top ▪ Ladder broken or damaged
Lifting heavy objects	▪ Trying to lift too heavy objects ▪ Bending over at waist when lifting ▪ Turning (twisting) back while lifting
Slipping on floor	▪ Spilled liquids not cleaned up ▪ Small objects dropped on floor and left there ▪ People wear wrong shoes for conditions
Using bench grinder	▪ Flying particles get in eyes ▪ If grinder wheel breaks, chunks fly off at high speed ▪ High noise level can injure hearing

Add Hazards to JHA Form

Job Step Description	Identified Hazards	
Break down the larger job into small steps to help identify the risks	List the hazards you've identified for this step. Involve employees and conduct observations	
cap and arm for welding from parts cart and place station jig	1. Lifting parts can strain back or upper extremity 2. Some parts have sharp edges and can cut hand	
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side, top and bottom welds on cap. Completed to side of base.	1. UV and IR Radiation from Welder 2. Potential Hot Slag or contact with hot surface 3. Breathing Welding Fumes 4. Contact with Electrical	
d using magnaflux cleaner while in jig	1. Skin irritation from cleaner	
using hand polisher while in jig	1. Noise from Polisher 2. Vibration 3. Struck by or against	
nished part from jig and place onto cart for	1. Lifting parts can strain back or upper extremity 2. Some parts have sharp edges and can cut hand.	

List the specific hazard for each step

Rating Hazards using Risk Scale

Rating Hazards using Risk Scale

ISO Risk Assessment Scale - Expectations for Best in Class Safety Programs

FREQUENCY
NUMBER OF TIMES EXPOSED TO HAZARD

LIKELIHOOD
CHANCE SEVERITY WILL OCCUR

SEVERITY
CONSEQUENCES OF OCCURRENCE

Scale	The Hazard Event Occurs
10	Continuously (or many times a day)
6	Frequently - Approximately once a day
3	Occasionally - Once weekly to once monthly
2	Unusually - Once monthly to once yearly
1	Rarely - It has been know to occur
0.5	Very Rare - Not known to occur, but possible

Scale	For the Accident to Occur for Event
10	Most likely and expected if event occurs
6	Quite possible, not unusual – 50/50 chance
3	Unusual sequence or coincidence
1	Remotely possible- has been known to occur
0.5	Extremely remote but possible, never happened
0.1	Practically impossible - one in a million

Scale	Most Likely Outcome if Realized
100	Catastrophic - Numerous fatalities, extensive damage
50	Several fatalities, $500K - $1M damage
25	Fatality, $100K to $500K damage
15	Extreme serious injury (PPD), $1K - $100K
5	Disabling injuries, $1K damage
1	Minor cuts, bruises, bumps, minor damage

Rating Hazards using Risk Scale

Heavily weighted towards severity to demonstrate catastrophic exposures

FREQUENCY
NUMBER OF TIMES EXPOSED TO HAZARD

✖

LIKELIHOOD
CHANCE SEVERITY WILL OCCUR

✖

SEVERITY
CONSEQUENCES OF OCCURRENCE

Scale	The Hazard Event Occurs
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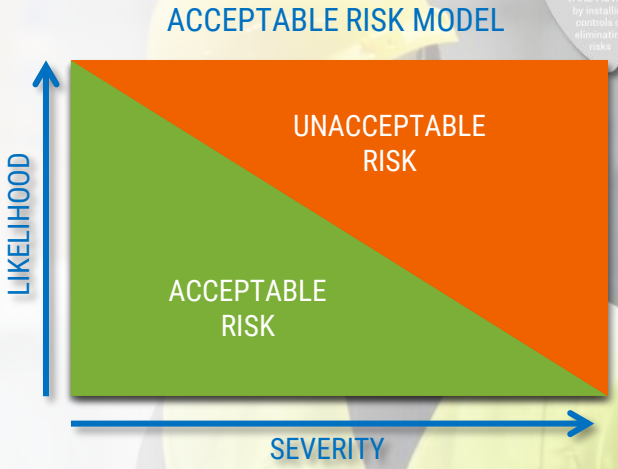
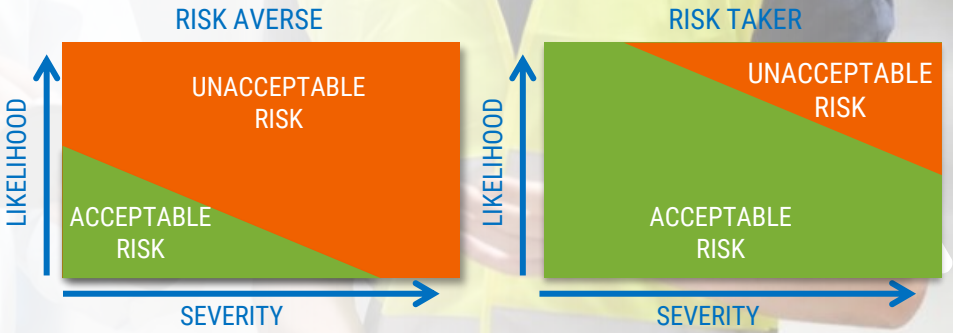
What is Acceptable Risk?

- Organization establishes level of acceptable risk
- Lack of planning causes assumed risk by default
- Frequency of exposure to activities increases organizational risk





Prioritizing Risks

- Which one to tackle first?
  - ***Frequency*** *job task occurs*
  - ***Probability*** *of injury each time incident occurs*
  - ***Severity*** *if incident occurs*
  - *How significant or* ***serious***

- An infrequent job having potential for fatality or frequent job causing less severe injuries

Prioritizing Risks

Use number drop-down

- Tasks performed more often
- More likely to cause injuries
- Fatal or serious injury potential

Risk Score populates

Job Hazard Analysis

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n	Weld Shop	
s)	Rick Fineman, CSP	
Frequency	6	Continuously (or many times a day)
Likelihood	3	Would be remotely possible - has been known to occur
Severity	2	Disabling injuries, damage to $1000
Risk Score	50	**Total Risk Score for this Job**

04 – Controlling Hazards

JOB STEPS

Identify activities driving exposure (quantify Frequency)

HAZARDS & CONTROLS

Evaluate controls, compliance to best practice (quantify Likelihood)

FREQUENCY
NUMBER OF TIMES EXPOSED TO HAZARD

✖

LIKELIHOOD
CHANCE SEVERITY WILL OCCUR

✖

SEVERITY
CONSEQUENCES OF OCCURRENCE

REDUCE RISK

CONSEQUENCES

Calculate severity worse-case and expected (quantify Likelihood)

What Type of Control?

- Start at top and work down
- Elimination & substitution are strongest controls
- Isolation and Engineering controls preferred over Administrative and/or PPE
- PPE and Train – Last option

Control	Examples
Elimination	Redesign job to remove hazardous activity
Substitution	Substituting chemical with lower hazard
Isolation	Card key access to restricted area
Engineering Control	Point of operation guard on punch press
Administrative Control	Providing training on equipment and processes
Personal Protective Equipment	Providing gloves, mask and glasses to prevent exposure to blood and OPIM

A combination of controls may be necessary to fully protect workers!

Administrative Controls

- Administrative controls act on worker, not hazard
  - *Hazard still exists*
  - *Worker avoids the hazard when doing job*
- Limiting **time** worker is exposed to hazard
- Limiting **number of workers** exposed
- Limiting **exposure** through specific practices
- Often combined with engineering controls

Personal Protection Equipment

- PPE is last resort for controls
- Employees must understand nature of hazard and PPE limitations
- Requires constant management to ensure:
  - *PPE appropriate for hazard*
  - *Properly trained employees*
  - *Readily available replacements*

Example Safe Practices

How people get hurt	*What causes them to get hurt?*	*Safe practices or PPE needed*
Ladders tipping over	▪ Ladder not on level surface ▪ Ladder on soft ground and leg sunk in ▪ Person reached out too far ▪ Ladder wasn't high enough to reach safely –person stood up near top ▪ Ladder broken or damaged	▪ Set ladder feet on solid level surfaces. ▪ When reaching out, keep belt buckle between side rails of ladder. ▪ Don't stand on top of stepladder or on first step down from top ▪ Replace or repair ladder
Lifting heavy objects	▪ Trying to lift too heavy objects ▪ Bending over at waist when lifting ▪ Turning (twisting) back while lifting	▪ Proper lifting practices (bend knees, don't twist) ▪ For very heavy objects, use mechanical devices or get another person to help.
Slipping on floor	▪ Spilled liquids not cleaned up ▪ Small objects dropped on floor and left ▪ People wear wrong shoes for conditions	▪ Wipe up all spills, pick up items immediately. ▪ Wear sturdy shoes with slip-resistant soles
Using bench grinder	▪ Flying particles get in eyes ▪ If grinder wheel breaks, chunks fly off at high speed ▪ High noise level can injure hearing	▪ Wear safety glasses & earplugs when using grinder. ▪ Keep tongue guards adjusted properly (see sticker on grinder for spacing).

Add Controls to Form

Identified Hazards	Proposed Controls
List the hazards you've identified for this step. Involve employees and conduct observations	What are the actions you'll take to improve the safety for this risk?
1. Lifting parts can strain back or upper extremity 2. Some parts have sharp edges and can cut hand	1. Keep heavier parts at waist level on carts - waist level to waist level lifts 2. Carts positioned far to reduce twisting 3. Gloves to avoid hand injuries
1. UV and IR Radiation from Welder 2. Potential Hot Slag or contact with hot surface 3. Breathing Welding Fumes 4. Contact with Electrical	1. Welding hood with tinted lense - Flash guard barriers between stations 2. Gloves & welding leathers for hot surface and slag 3. Steel Toe boots for dropped items 4. Local Exhaust Ventilation for fumes 5. Inspect welder and grounding for electrical
1. Skin irritation from cleaner	1. Use tool for application and cleaning 2. Wash hands if contact with cleaner
1. Noise from Polisher 2. Vibration 3. Struck by or against	1. Keep part in jig while polishing 2. Hearing protection optional 3. Vibration Damping Gloves available upon

List the specific controls you need to take for each hazard

05 - Take Action

- Complete all control changes
- Train all employees affected by changes in job methods, procedures, or protective measures adopted
- Add signage and reminders

Take Action to Implement Controls

Needs List:

- Purchase leather work gloves
- Proper tint on welding hoods
- Safety shoe reimbursement program
- Noise monitoring
- Possible audiometric testing

Add dates for your records

Proposed Controls	Completion Date
What are the actions you'll take to improve the safety for this risk?	When will these take affect?
1. Keep heavier parts at waist level on carts - waist level to waist level lifts 2. Carts positioned far to reduce twisting 3. Gloves to avoid hand injuries	8/15/2019
1. Welding hood with tinted lense - Flash guard barriers between stations 2. Gloves & welding leathers for hot surface and slag 3. Steel Toe boots for dropped items 4. Local Exhaust Ventilation for fumes 5. Inspect welder and grounding for electrical	8/1/2019
1. Use tool for application and cleaning 2. Wash hands if contact with cleaner	7/24/2019
1. Keep part in jig while polishing 2. Hearing protection optional 3. Vibration Damping Gloves available upon	7/24/2019
1. Keep heavier parts at waist level on carts - waist level to waist level lifts 2. Carts positioned far to reduce twisting	8/1/2019

06 - Document All JHAs

Be sure to document in writing (use form):

- Workplace and job evaluated
- Date of hazard assessment
- Person certifying assessment has been pre- informed
- Hazards found and controls enacted

Complete the JHA Form

ABC WELDING COMPANY — Job Hazard Analysis

Job Title	Welder - Base	Job Location	Weld Shop
Date of Analysis	7/22/2019	Analyst(s)	Rick Fineman, CSP

PPE Required

- ☐ Safety Glasses
- ☑ Goggles, Faceshield, Welders Mask
- ☑ Slip Resistant Shoes
- ☑ Safety Toe Shoes
- ☑ Gloves
- ☑ Protective Apron or Clothing
- ☑ Respirator
- ☐ Hard Hat or Bump Cap

Frequency	6	Continuously (or many times a day)
Likelihood	3	Would be remotely possible - has been known to occur
Severity	2	Disabling injuries, damage to $1000
Risk Score	50	**Total Risk Score for this Job**

Comments

Step #	Job Step Description Break down the larger job into small steps to help isolate risks	Identified Hazards List the hazards you've identified for this step - involve employees and conduct observations	Proposed Controls What are the actions you'll take to improve the safety for this risk?	Completion Date When will these take affect?
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5	Polish Part using hand polisher while in jig	1. Noise from Polisher 2. Vibration 3. Struck by or against	1. Keep part in jig while polishing 2. Hearing protection optional 3. Vibration Damping Gloves available upon	7/24/2019
6	Remove finished part from jig and place onto cart for transport	1. Lifting parts can strain back or upper extremity 2. Some parts have sharp edges and can cut hand.	1. Keep heavier parts at waist level on carts - waist level to waist level lifts 2. Carts positioned far to reduce twisting 3. Gloves to avoid hand injuries	8/1/2019
7				
8				
9				
10				

07 - Reassess Regularly

- Review job hazard analysis:
  - *Periodically, even if job hasn't changed*
  - *If illness or injury occurs*
  - *Report of near misses, close calls, situations where injury barely avoided*
  - *Based on feedback from workers*
- Make sure to stay on target!

Update Form as Needed

ABC WELDING COMPANY

Job Hazard Analysis

Job Title: Welder - Base
Date of Analysis: 7/22/2019
Job Location: Weld Shop
Analyst(s): Rick Fineman, CSP

PPE Required:
- ☐ Safety Glasses
- ☑ Goggles, Faceshield, Welders Mask
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Frequency	6	Continuously (or many times a day)
Likelihood	3	Would be remotely possible - has been known to occur
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ICW Group Policyholder Website!

icwgroup.com/**safety**

- Safety and Risk Management area!
- Safety Webinars
- Job Hazard Analysis

ICW Group Policyholder Website!

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- JHA Form
- 7 Steps to JHA
- Root Cause Investigations
- Tips for Safety Observations

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QUESTIONS?

CONTACT US:

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Thank you!

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