



Job Hazard Analysis (JHA)

Analyzing health & safety hazards in your workplace

Our presentation will begin soon





Job Hazard Analysis (JHA)

Analyzing health & safety hazards in your workplace

ICW Group Risk Management



Today's presenter

Rick Fineman

Vice President

Risk Management Services

ICW Group



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?

Identify
hazards to
eliminate or
control them

Ensure workers
have training,
equipment and
supplies to work
safely

Develop
accident
prevention
program
(IIPP)

Prevent
work-related
death, injury,
illness

Use in loss
prevention
efforts,
environment
pollution
prevention, fire
protection

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

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

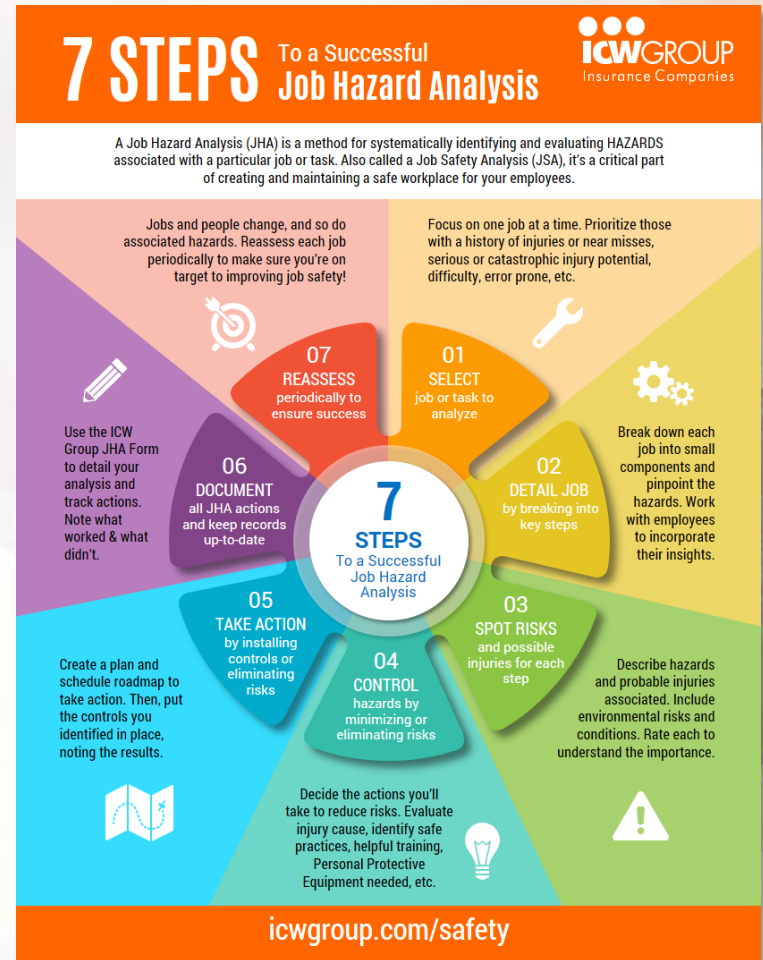
Comments _____

Total Risk Score for this Job

Step #	Job Step Description	Identified Hazards	Proposed Controls	Completion Date
1	Break down the larger job into small steps to help isolate risks	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?	When will these take affect?
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

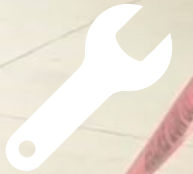


01 - Select The Job to Analyze



- 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!**

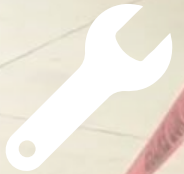


Include High Risk Jobs



Any job or task meeting following condition should have 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 following condition should have 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.



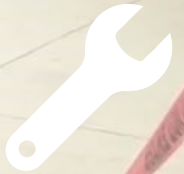
Check Injury History



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
- Location
- Analyst
- Job Title
- Date

ABC WELDING COMPANY		Job Hazard Analysis		icwGROUP Insurance Companies	
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 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	
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 observations
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 their currently doing typical?*



Get to Root Cause



<i>How people get hurt</i>	<i>What causes them to get hurt?</i>
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

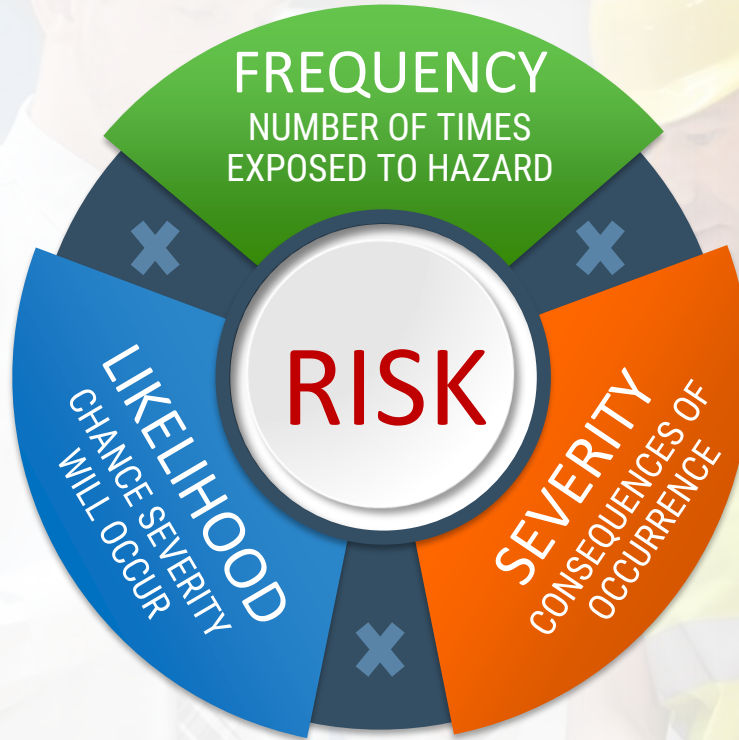


Job Step Description	Identified Hazards	
Break down the larger job into small steps to help identify the risks	List the hazards you've identified for this step. Involve employees and conduct observations	
Cap and arm for welding from parts cart and place in station jig	1. Lifting parts can strain back or upper extremity 2. Some parts have sharp edges and can cut hand	
Order for safe operating condition and turn on local exhaust ventilation		
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	
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	
Finished 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



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

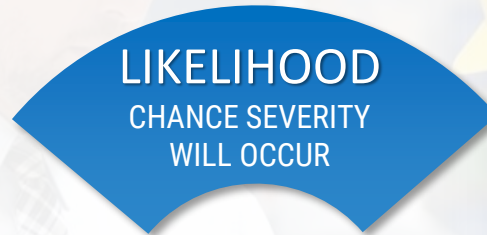
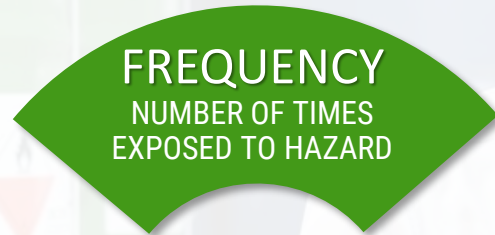
Scale	For the Accident to Occur for Event
10	Most likely and expected if event occurs
6	Quite possible, not unusual – 50/50 chance
3	Unusual sequence or coincidence
1	Remotely possible- has been known to occur
0.5	Extremely remote but possible, never happened
0.1	Practically impossible - one in a million

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



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

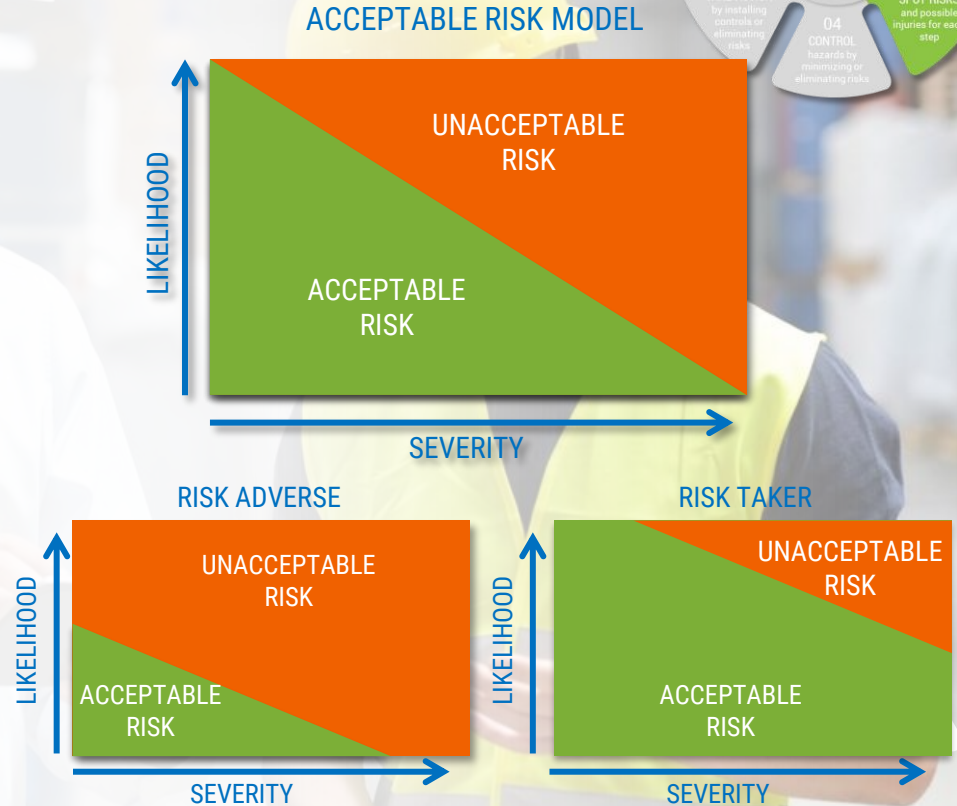
Scale	For the Accident to Occur for Event
10	Most likely and expected if event occurs
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1	Minor cuts, bruises, bumps, minor damage

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
icwGROUP Insurance Companies

Weld Shop

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

WARNING
AUTHORIZED
PERSONNEL
ONLY



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



<i>How people get hurt</i>	<i>What causes them to get hurt?</i>	<i>Safe practices or PPE needed</i>
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 1. Lifting parts can strain back or upper extremity 2. Some parts have sharp edges and can cut hand	What are the actions you'll take to improve the safety for this risk? 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**

Date of Analysis **7/22/2019**

Job Location **Weld Shop**

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**

Likelihood **3**

Severity **2**

Risk Score **50**

Comments

Total Risk Score for this Job

Step	Job Step Description	Identified Hazards	Proposed Controls	Completion Date
#	Break down the larger job into small steps to help isolate risks	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?	When will these take affect?
1	Get base, cap and arm for welding from parts cart and place onto workstation jig	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	8/15/2019
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.	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	8/1/2019
4	Clean weld using magnaflux cleaner while in jig	1. Skin irritation from cleaner	1. Use tool for application and cleaning 2. Wash hands if contact with cleaner	7/24/2019
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 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 ☒ 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	Identified Hazards	Proposed Controls	Completion Date
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3	Complete side, top and bottom welds on cap. Completed arm weld 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	1. Welding hood with tinted lense - Flash guard 2. Barriers between stations 3. Gloves & welding leathers for hot surface and slag 4. Steel Toe boots for dropped items 5. Local Exhaust Ventilation for fumes 6. Inspect welder and grounding for electrical	8/1/2019
4	Clean weld using magnaflux cleaner while in jig	1. Skin irritation from cleaner	1. Use tool for application and cleaning 2. Wash hands if contact with cleaner	7/24/2019
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7				
8				
9				



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

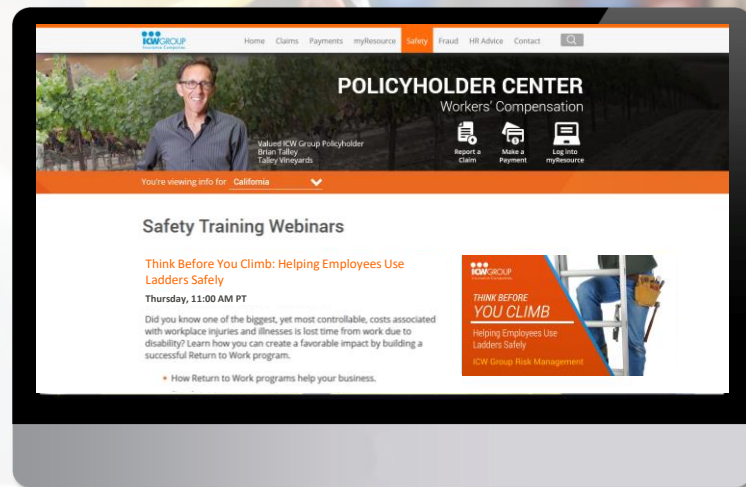


ICW Group Policyholder Website!



icwgroup.com/**safety**

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



ICW Group Policyholder Website!



icwgroup.com/safety

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

5 TIPS For More Impactful SAFETY OBSERVATIONS

7 STEPS To a Successful Job Hazard Analysis

STEP UP TO A SAFER WORKPLACE Root Cause Investigation Form

Job Hazard Analysis

YOUR COMPANY NAME

Job Title: _____ Job Location: _____

Date of Analysis: _____ Analyst(s): _____

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: 3 Minor Cuts, Bruises, Bumps and minor damage
Risk Score: 0.05 Total Risk Score for this Job

Comments: _____

Step	Job Step Description	Identified Hazards	Proposed Controls	Completion Date
1	Break down the larger job into small steps to help isolate risks	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?	When will these take affect?
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11				

Dig deep to get to the cause
Complete to uncover the root cause of incidents, corrective actions and add your own plan.

Part 1 - Equipment and PPE

1.1 Defect in equipment, tools, material considered to have caused conditions

1.2 Hazardous condition was recognized but not reported

1.3 Improper procedure used to isolate risks

1.4 Existing inspection procedure did not identify hazardous condition

1.5 The incorrect equipment, material or method was used

1.6 Control was not installed

1.7 Improper use of equipment

1.8 Improper use of material

01 SELECT Is the task to analyze?

02 DETAIL JOB by breaking into key steps

03 SPOT RISKS and possible sources for each step

Focus on one job at a time. Prioritize those with a history of injuries or near misses, serious or catastrophic injury potential, difficulty, error prone, etc.

Break down each job into small components and pinpoint the hazards. Work with employees to incorporate their insights.

Describe hazards and probable injuries associated with environmental risks and conditions. Rate each to understand the importance.



QUESTIONS?

CONTACT US:

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Thank you!

riskmanagement@icwgroup.com

