



JOB SAFETY ANALYSIS (JSA)

Defining How You Do What You Do

AGENDA



- Introduction
- Preparing for Analysis
- Define the Job
- Identify the Hazards
- Apply Controls
- Tabletop Exercise





INTRODUCTION

INTRODUCTION

This class is built upon the Occupational Safety and Health publication OSHA 3071, 2002 (Revised)



INTRODUCTION

The “Job Safety Analysis” goes by many names...

- Job Safety Analysis (JSA)
- Job Hazard Analysis (JHA)
- Activity Hazard Analysis (AHA)
- Risk Assessment

A formal “Risk Assessment” is often a more complex process using essentially the same concept

INTRODUCTION

What is a “hazard”?

“

A hazard is the potential for harm. In practical terms, a hazard often is associated with a condition or activity that, if left uncontrolled, can result in an injury or illness.

OSHA Publication 3071, 2002 (Revised)

INTRODUCTION

What is a “hazard”?

What is a “job hazard analysis”?

“

A job hazard 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.

OSHA Publication 3071, 2002 (Revised)

INTRODUCTION

What jobs are appropriate for a job hazard analysis?

- 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
- Jobs complex enough to require written instructions
- When the OSHA Standards call for them
- Contractual obligations

INTRODUCTION

Whose job is it to complete this process?

- EHS personnel are typically the instigator...but we don't have to be
- Who is the expert?
- Is the JSA process really a one-person job?
- A well done JSA is a highly marked-up document!

A construction worker wearing a brown hard hat, safety glasses, and an orange high-visibility vest over a grey long-sleeved shirt is leaning over a table. He is looking down at a set of blueprints, holding a pen in his right hand. The background shows a construction site with concrete walls and wooden framing. The text "PREPARING FOR ANALYSIS" is overlaid in large white letters on a semi-transparent dark blue rectangular background.

PREPARING FOR ANALYSIS

PREPARING FOR ANALYSIS

There's no specific form but there is a basic format.

- Analysis Date
- Job Name (Short 1-line description)
- Job Location
- Task Description
- Hazard Description
- Hazard Controls

A VERY SIMPLE EXAMPLE JSA

DATE	JOB	LOCATION
TASK	HAZARD	CONTROLS
List Each Task Separately	Note the first hazard associated with the task	Indicate how this hazard will be abated or controlled to protect the worker
	Note the second hazard, if there is one	Do the same as above for this hazard
	Keep adding hazards until all are identified	Keep addressing hazards until all of them are addressed

A NOT SO SIMPLE EXAMPLE JSA

EQM		ACTIVITY HAZARD ANALYSIS (AHA)					
Activity/Work Task	Excavation and Backfill	Highest Risk Assessment Code (RAC)				H	
AHA Signature Log #							
Project Location		RAC MATRIX					
Contract Number		Probability					
Date Prepared		Severity	Frequent	Likely	Occasional	Seldom	Unlikely
SSHO Signature		Catastrophic	E	E	H	H	M
Superintendent Signature		Critical	E	H	H	M	L
QC Manager Signature		Marginal	H	M	M	L	L
Subcontractor (Foreman Name and Signature)		Negligible	M	L	L	L	L
QA Reviewed by (Name/Title)		Step 1: Review each Hazard with identified safety "Controls." Determine RAC (see above).		RAC CHART			
Notes: (Field Notes, Review Comments, etc.) General Operations and other job steps should be reviewed to determine site specific conditions. Chemical exposure should be revised to address specific site COC to adjust the PPE and RAC.		Probability: Likelihood the activity will cause a Mishap (Near Miss, Incident, or Accident).		E = Extremely High Risk			
		as Frequent, Likely, Occasional, Seldom, or Unlikely. The outcome if a mishap occurred.		H = High Risk			
		Identify as Catastrophic, Critical, Marginal, or Negligible		M = Moderate Risk			
		Step 2: Identify the RAC (probability vs. severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of the AHA.		L = Low Risk			
JOB STEPS (WORK SEQUENCES)	SPECIFIC ANTICIPATED HAZARDS	CONTROLS				RAC	
General Onsite Operations	All activities	<i>Note:</i> For general onsite activities, see AHA 001, <i>General Operations</i> .				See AHA	
Moving the Heavy Equipment Onsite and Into Position	Contacting electrical lines	<ul style="list-style-type: none"> When possible, deenergize and lock-out the electrical generation source. Never operate equipment within ten (10) feet of energized overhead utility lines. Underground utilities must be located and properly marked Mark electrical lines with signage below them so that operators are aware of their presence. Brief electrical line locations at tailgate meetings and other sessions designed to alert workers to onsite hazards. 				H	

Conforms With EM385-1-1 (30NOV14) UFGS 103526 11/15

EQM AHA-002-Rev1(30Nov18)

PREPARING FOR ANALYSIS

Gather information on the Job

- Involve your employees
- Review H&S Records
- Conduct a preliminary review
- Prioritize the jobs from high risk to low risk

NOTE: Always address immediate hazards immediately!

PREPARING FOR ANALYSIS

There are no wrong answers at this point

This is where the brainstorming is paramount

Sometimes the “crazy suggestion” identifies a truth

- It may betray a deeper concept
- There may be hidden hazards
- The task might be more complex than thought
- Yes, it may be a crazy suggestion, but...
...be careful on turning away the observer.





DEFINE THE JOB

DEFINE THE JOB

Make sure to put it on paper

- There is no required format, so just get your thoughts on paper
- There are no size requirements for JSAs, except to cover the job
- JSAs define each “job” by their “tasks”
- Good JSAs are a compilation of tasks
- Follow the sequence the job requires



DEFINE THE JOB

Rightsizing

- Rarely is the whole workplace one job
- Often, it's best to separate jobs into individual processes
- Break each process into manageable bites
- Each bite becomes a task
- Keep task descriptions to a single sentence
- If you think your task description is too broad or slim...it probably is...!
- Don't be too specific, unless you must
 - Use enough detail to identify the task
 - Mentioning specific equipment, products, titles, etc., it commits you to them

DEFINE THE JOB

Always follow the KISS principle!

- Don't lose the point while doing the process
 - Be VERY, VERY, careful when cutting and pasting
 - Word processors tend to increase word counts
- If it's getting too complicated, your topic is too big or you're being too detailed
 - Break the bigger tasks into subsequent tasks
 - Keep in mind the average worker must be able to perform the steps
 - You're writing for the worker's performing the steps
 - Highly technical tasks can have highly complex processes



A photograph of an industrial worker in a dark, hazardous environment. The worker is wearing a white hard hat, a blue long-sleeved shirt, and orange safety gear. They are standing near a large, dark, cylindrical object, possibly a tank or pipe, which is emitting a bright, intense light or heat. The scene is dimly lit, with the primary light source being the bright area near the worker. The overall atmosphere is one of a high-risk industrial setting.

IDENTIFY THE HAZARDS

IDENTIFY THE HAZARDS

Evaluate each task for its hazards

- What if a step has no hazards? (*Official trick question*)
 - The analysis wasn't broad or deep enough
 - Hazards don't have to be massive or life threatening
 - The process isn't the point
- Know the difference between "Possible" and "Probable"
 - Just because it can happen, doesn't mean it will
 - We can't protect for everything
- "A picture is worth 1,000 words"
 - Video a worker performing the task for analysis
 - Stop with each change in the task to record what the worker is doing

IDENTIFY THE HAZARDS

Ask good questions.

- What can go wrong?
- What are the consequences?
- How could it happen?
- What are other contributing factors?
- What is the likelihood that hazard will occur?
- How can we “fail” safely?



IDENTIFY THE HAZARDS

“Those who don’t learn from history are doomed to repeat it!”

- OSHA 300 forms
- Near misses
- Work Stop Authority instances
- Employee experiences
- Other companies performing the same work



IDENTIFY THE HAZARDS

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 uses the “five Ws”

- Who is it happening to (exposure)?
- What is the probable outcome should it happen (consequence)?
- When is it likely the hazard will appear (probability)?
- Where does it happen and are there any contributing factors (environment)?
- Why does the hazard occur (trigger)?

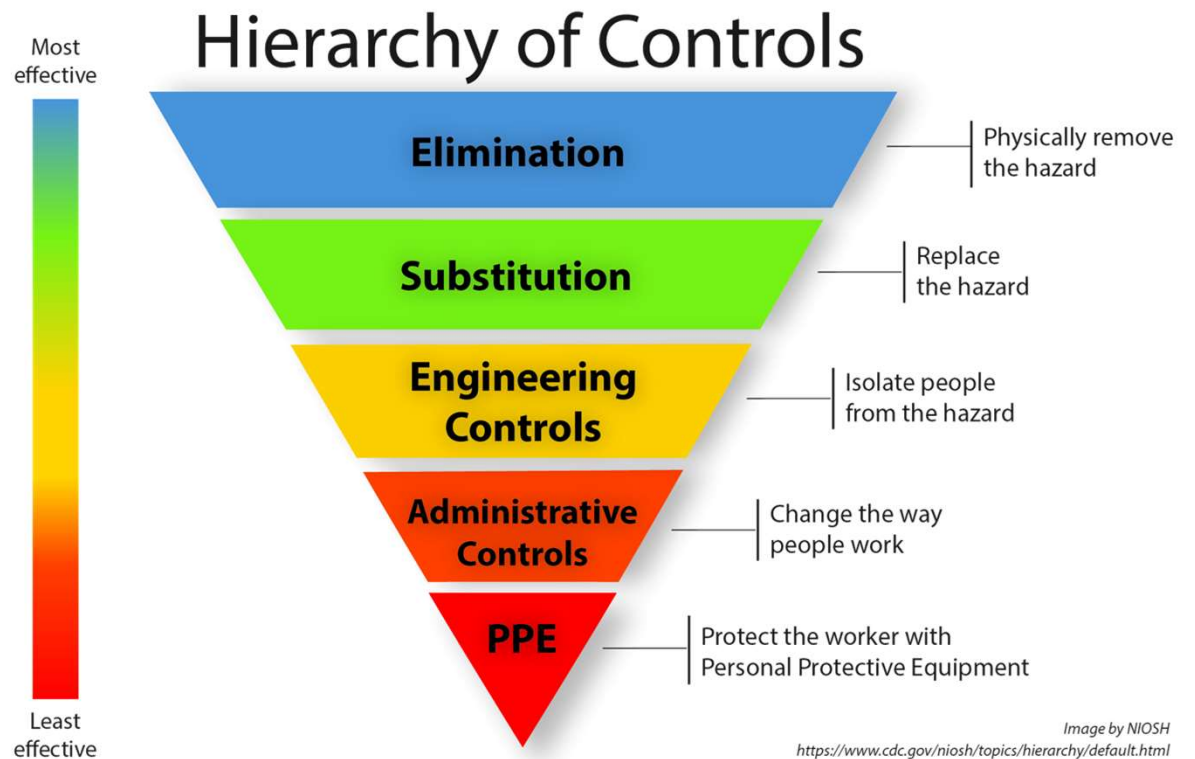


APPLY CONTROLS

APPLY CONTROLS

The hierarchy of controls

- Elimination
- Substitution
- Engineering
- Administrative
- PPE

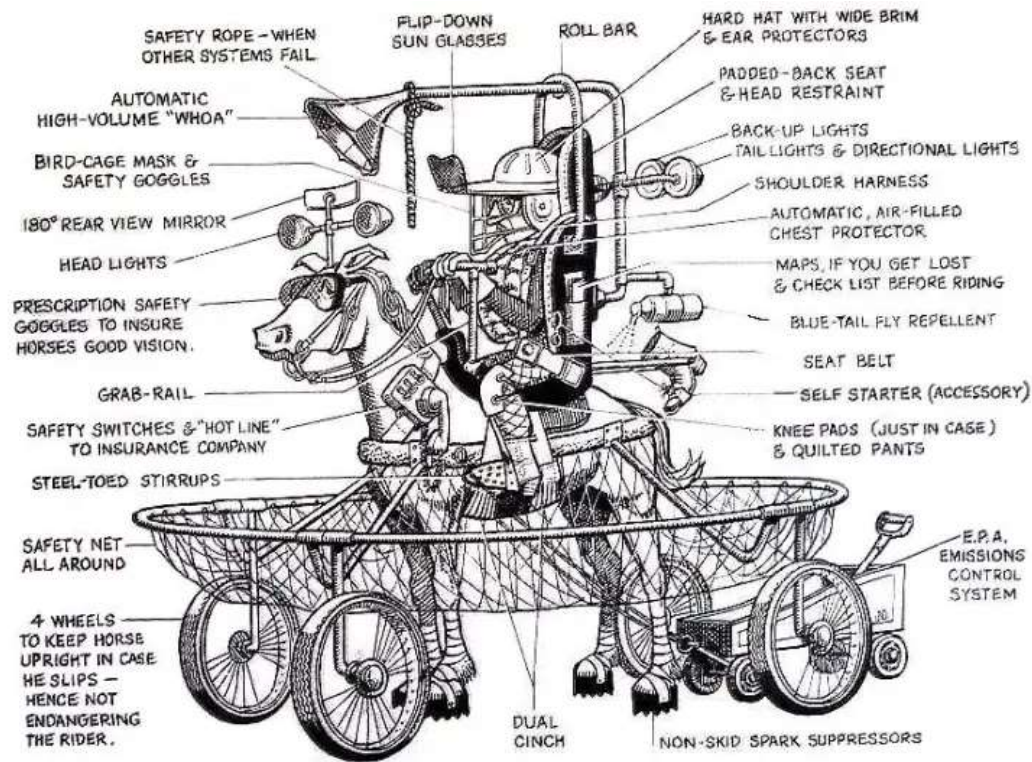


APPLY CONTROLS

Controls often lower the risk without eliminating it completely

- Elimination absolutely removes the risk...otherwise...
- Make sure to get below the OEL
- Residual risk is a good time to reevaluate!
- Don't build the "Safety Horse"

APPLY CONTROLS



Cowboy after O.S.H.A. Inspection

WESTERN TRADING CO.
P. O. BOX 755
HELDEN, NEB. 68027
PHONE: 408-652-0242

APPLY CONTROLS

Address each hazard with a control

- There may be more than one control, depending on the task
- What do we do if we can't control the hazard? (*Another trick question*)
- Make sure your controls are feasible and rational



APPLY CONTROLS

The best controls are...

- Feasible
- Achievable
- Cost effective
- Worker Friendly
- Simple to apply



A yellow ASV skid steer loader is shown in a wooded area with autumn foliage. The loader is equipped with a large black drum attachment. A person wearing a white protective suit and a respirator is operating the machine. The text "PUTTING THE JSA INTO ACTION" is overlaid on the image in large white letters. The ASV logo is visible on the loader's canopy, and "POWERTRACK XTREME DUTY" is visible on the side of the machine.

PUTTING THE JSA INTO ACTION

PUTTING THE JSA INTO ACTION

Use the JSA and watch the process occur

When you see overlooked tasks or mismatched controls...fix them!

Once you are sure the JSA covers everything...post it!

Wash...Rince...Repeat...!

Remember...the only wrong answers are the ones that get workers hurt...!



A photograph of two workers in safety gear. The man on the left wears an orange hard hat, glasses, a blue shirt, and an orange safety vest. The woman on the right wears a white hard hat, sunglasses, a pink shirt, and a high-visibility orange and yellow safety vest. They are standing outdoors, looking at a tablet computer held by the man. The woman is pointing at the screen. There are papers and a clipboard on the surface in front of them. The background shows green trees and a white fence.

TABLETOP EXERCISE

TABLETOP EXERCISE

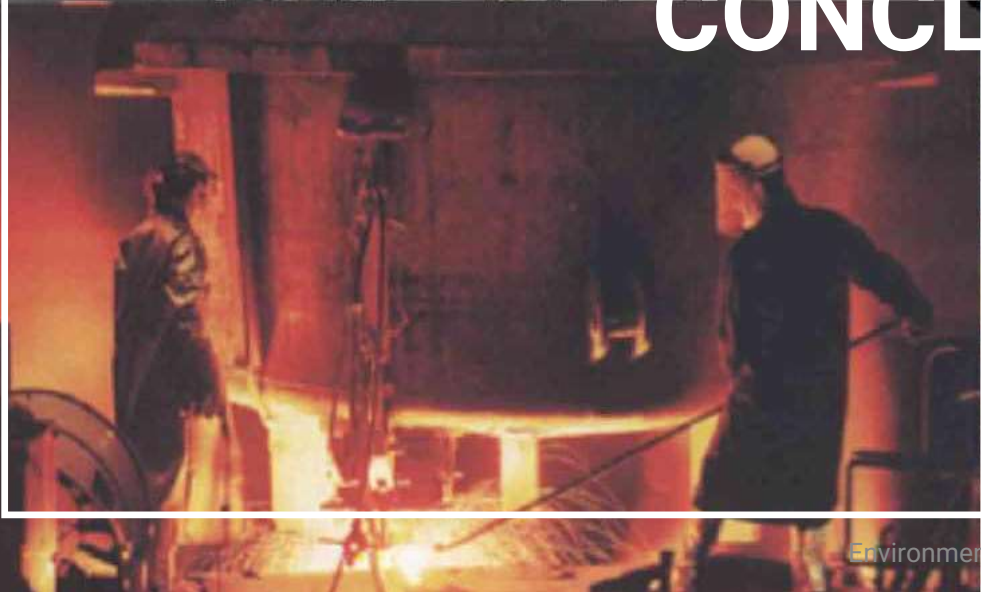
You are now the new EH&S director for “Cheap-Tires-R-Us”.

Each worksite performs many services upon customer request, such as changing oil, replacing filters, installing new wiper blades, topping off essential fluids, and of course...installing new tires.

You were going through the company records and noticed there were no procedures for changing tires. So, you decide the best way to address this oversight is to make a JSA.

Using the supplied worksheets, create a JSA for this process...

CONCLUSION



CONCLUSION



- Preparing for Analysis
- Define the Job
- Identify the Hazards
- Apply Controls
- Tabletop Exercise





AN ASRC INDUSTRIAL COMPANY

Environmental Quality Management, Inc.

1800 Carillon Boulevard

Cincinnati, OH 45240

Phone: 513.825.7500

EQM.COM



Biographical Information

David Arthur, CSP
Health & Safety Director
Environmental Quality Management | MBE
1800 Carillon Blvd.
Cincinnati, OH 45240
Mobile | 513.205.3759
Direct | 513.742.7297
darthur@eqm.com

Mr. Arthur began his HS&E career in 1982 when, as a young Air Force NCO, he took over a program that managed hazardous materials transportation by air. From that time, Mr. Arthur has worked in the government as well as private industry providing environmental, health, and safety support in the remediation, manufacturing, medical, consulting, and national defense sectors. Skilled in both project and individual task management, Mr. Arthur is now the corporate Health and Safety Director for EQM, Inc., an Arctic Slope Regional Corporation subsidiary. He holds a BS in Environmental Health, an additional AAS degree in Safety and is a Certified Safety Professional (CSP) from the Board of Certified Safety Professionals. Mr. Arthur also holds another AAS degree in Instructional Technology and was a USAF Technical Training Instructor during his tenure with the Air Force.