

# Job Safety Analysis Best Practices



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## Introduction

We all know that OSHA under 1910.132 (d) requires the employer to do a safety or hazard assessment of their workplace to determine if hazards are present, or are likely to be present, which necessitate the use of personal protective equipment (PPE). When hazards are present, or likely to be present, the employer is required to have each affected employee use, the types of PPE that will protect the employee from the hazards identified in the assessment. That is just basic safety. How do you protect employees from serious life threatening injuries? This can be accomplished by conducting a thorough all-encompassing Job Safety Analysis. It outlines each task, the hazards associated with the task and the controls that can be implemented to preform each task safely. Simply put, it is a tool to aid in identifying unsafe work practices before an accident occurs.

## Job Safety Analysis

An all-encompassing Job Safety Analysis covers not just PPE but all aspects of what the person does while he or she performs their job. It can be job specific or machine specific. Why conduct an all-encompassing JSA? It is an excellent behavioral modification tool for supervisors and managers to use to discourage new hires and employees with bad work habits from working outside the scope of established safe operating procedures. It keeps employees safe when followed and used consistently out in the field or at the workplace through behavioral observations. It is a pro-active approach rather than reactive when it comes to the safety and health of your employees.

## The JSA can be broken down into three steps:

### 1. Essential functions of the job

It is important to analyze all jobs within your organization, but the first step is to prioritize what jobs you want to analyze first. Jobs that have a high severity hazard or a high frequency of employee exposure should be analyzed first. This can be accomplished by reviewing loss runs or the OSHA 300 Log to determine if there are any common hazards or trends. If hazards or trends are present, this would be a good starting point.

Next, outline the essential functions of the job that involves what the person is expected to do or operate. You want to take time to really focus on each function. Involve your employees and get their input. If necessary, you may want to perform the task yourself to get a good perspective of what the hazards are or are likely to be. Review equipment manuals. They are a good resource and typically have procedures listed for safely operating equipment. Safety Data Sheets (SDS) may be referred to as well if engineering controls such as ventilation is needed. If you have a conditional job offer policy where it is contingent upon the successful completion of a post offer physical exam, consider using the physical requirements when determining how to perform manual material handling tasks safely.

## 2. Potential Hazards

The second step is to determine what the potential hazards are that are associated with each corresponding task needed to perform the job. Again, this can be done by observing a seasoned employee with good work habits or perform the task yourself to get an appreciation of physical, environmental and health hazards of the job.

## 3. Safe operating procedures

The last step is to outline the safe operating procedures. This lists show how to perform each function of the job in a safe manner. It involves two critical components other than what personnel protective equipment is needed – engineering and administrative controls.

It outlines engineering controls to use and administrative controls to follow when performing work or operating equipment. An example of an engineering control for a welding bench would be using an exhaust fan to remove fumes generated when welding. An example of an administrative control is keeping the work area free of debris to prevent a slip, trip or fall.

## Let's look at an example of a JSA for a

Public Works Garage Mechanic.

Job Title:

Employee Name:

Department Supervisor:

JSA Conducted by:

Date training was conducted:

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Essential Functions of the Job: Step 1 Vehicle Repair / Maintenance

**Potential Hazard: Falls**

### Safe operating procedures

- When working on top of a truck or equipment, fall protection is required such as a certified, horizontal safety line, setting scaffolding up on either side of the vehicle to act as a catch platform to prevent a fall at heights that exceed 4 feet.
- When working on a ladder always work within the confines of the ladder. Secure ladder prior to use. Ladder should be set at a 1 to 4 pitch.
- Never work off a closed step ladder.
- Do not perform work on the top two steps of the step ladder
- Keep the work area free of debris and work in an area that is well lit.

### Potential Hazard: Slipping & Tripping hazards

#### Safe operating procedures

- Keep the work area free of debris and work in an area that is well lit.

### Potential Hazard: Caught between, crushing hazards or caught in hazards

#### Safe operating procedures

- When working under vehicles, or equipment always use two methods of support (jack & jack stands)
- Never operate power tools with loose clothing.
- If hair is shoulder length, it must be tied back prior to operating power tools.
- It is a requirement to wear steel toed shoes.
- Use lockout and tag out in accordance to department procedure.

### Potential Hazard: Eye injuries

#### Safe operating procedures

- Wear safety glasses /eye protection when working under vehicles, grinding, cutting, when changing tires, or when operating power tools and when using a hammer and chisel.
- When pulling parts off the top of an open stock shelf wear eye protection because of dust
- Eye protection is required when operating a cutting torch. For light cutting, the shade rating is 3 or 4, for medium cutting the shade rating is 4 or 5 and for heavy cutting the shade rating is 5 or 6. For metal arc welding up to ¼ electrodes use a shade rating of 12 and for up to 3/8 electrodes use a shade rating of 14.

### Potential Hazard: Foot Injuries

#### Safe operating procedures

- Always wear safety shoes when moving heavy loads.

### Potential Hazard: Electrical shock

#### Safe operating procedures

- Lockout and tag out in accordance to department procedure.
- When working on a vehicle's electrical system, remove the negative cable from the battery terminal first to reduce the possibility of coming into contact with steel while trying to disconnect the positive terminal.
- Use double insulated electrical hand tools or ones with integrated grounding
- Make sure electrical outlets are properly grounded.
- Inspect power cords for defects prior to use.

**Potential Hazard: Chemical exposure**

**Safe operating procedures**

- Always refer to the SDS sheets when using new products such as lubricants, degreasers, penetrants, windshield washer, touch up spray paint etc.

**Potential Hazard: Hand Injuries**

**Safe operating procedures**

- Always inspect your tools prior to use.
- Replace worn out wrenches or other hand tools that can slip off from the point of contact when loosening or tightening.
- Never place your hand near moving parts. (Drill bits, saws, pulleys, V-belts, snow blower fans and augers).
- When operating power tools never place your hand in the direct path of any type of cutting tool.
- Never wear loose clothing, dangling jewelry, or allow loose long hair while operating power tools.
- If possible, rotate the use of each hand when operating power tools, tightening or loosening or buffing to prevent hand strains.
- Take mini hand stretch breaks.
- When operating a bench grinder the bottom tongue guard should be no more than 1/8" from the grinding wheel and the top guard should be no more than 1/4" from the grinding wheel.

**Potential Hazard: Hearing Loss**

**Safe operating procedures**

- Hearing protection is required when ambient noise level is above 85db and is recommended when ambient noise level is above 80db.

**Potential Hazard: Knee Injuries**

**Safe operating procedures**

- Use knee pads when working on your knees and switch from knee to knee when working for prolonged periods of time.

**Potential Hazard: Burns**

**Safe operating procedures**

- Let the vehicle cool off when working on exhaust systems.
- If that is not possible, wear heat resistant gloves.
- Always wear heat resistant gloves when operating a cutting torch or welding.
- Do not wear nylon clothing when cutting or welding.

### Potential Hazard: Struck by injuries

#### Safe operating procedures

- A cage will be used when inflating a tire that is mounted to a split rim.
- Never stand in the trajectory path of a split rim wheel when handling it.
- Never stand in front of a grinding wheel when operating a bench grinder. Ring test a grinding wheel prior to mounting.
- Never stand in front of regulator when opening the valves of a cutting torch.

### Potential Hazard: Back and shoulder injuries

#### Safe operating procedures

- Use mechanical lifting devices when possible.
- Always lift within the company lifting guidelines. Use proper lifting techniques. Get help if necessary.
- Whenever possible, push loads rather than pull them. Your legs are the strongest muscle in your body.
- Stretch periodically during long periods of awkward posture.

### Potential Hazard: Fires

#### Safe operating procedures

- Prior to operating a cutting torch or welding, inspect the work area for sources of ignition and remove them from the work area (25 feet).
- Always perform cutting during the am hours for fire detection purposes – never at the end of a work shift unless a fire watch will be present for 30 minutes after the job is completed.
- Know where all fire extinguishers are located in the garage. If a fire extinguisher is required to be used, use the PASS (Pull the pin, Aim at the base of the fire, Squeeze the trigger & Sweep the hose) method to put the fire out.
- Never try to fight a fire that has gotten out of control.
- Store all cylinders used for cutting and welding in a secure upright position.
- Oxygen is required to be stored 20 feet from combustible materials or separated by a barrier 5 feet high with a fire resistant rating of ½ hour.

### Potential Hazard: Carbon monoxide poisoning

#### Safe operating procedures

- Use an exhaust extraction system when working on a running vehicle indoors.

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## Essential Functions of the Job: Step 2. Parts Run

**Potential Hazard:** Auto Accident

### Safe operating procedures

- Perform a visual inspection of the vehicle prior to use.
- Make sure the windshield is clear.
- Make sure mirrors are clean.
- Make sure to remove snow from all windows.
- Always wear seat belts.
- If windshield wipers are on make sure lights are on.
- Make sure loads are secured.
- Do not drive while distracted. This includes the following activities:
  - Talking on cell phone
  - Wearing head phones
  - Eating
  - Prolonged attention to radio/tape deck/CD player
  - Use of laptop
  - Texting
  - You **MUST** pull over and stop before performing any type of activity that will be a distraction
  - Do not drive over the speed limit.

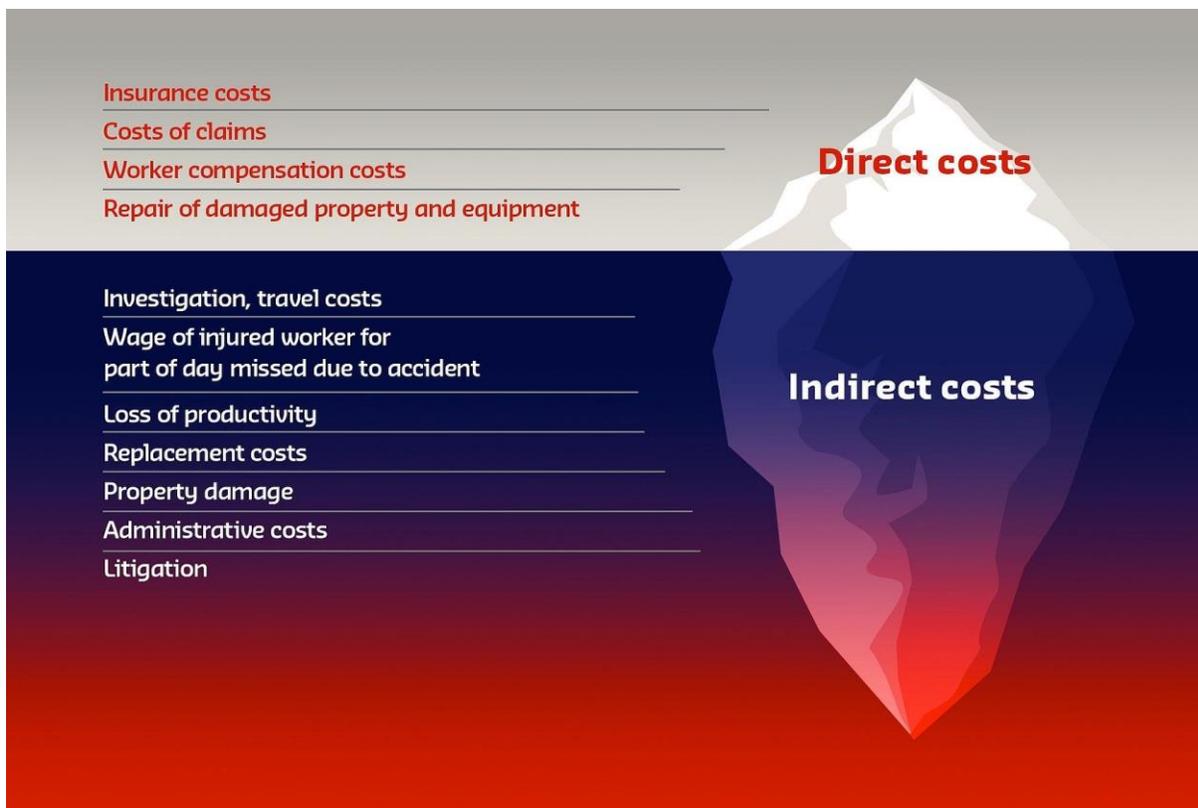
As you can see there is a lot to performing a Job Safety Analysis. It is important that the JSA is as detailed as it can be. The JSA is a working document. It can be modified at any time to include any unforeseen incident that has occurred. You determine what additional controls are necessary to prevent reoccurrence. Just simply describe the hazard associated with the task and add the new controls implemented to prevent reoccurrence. The JSA can also be revised when there is a change in operations or equipment. After making the revisions it is recommended to train all affected employees.

## Training

Training and follow through is a critical component. You should conduct documented training during orientation and after revisions have been made as discussed earlier. Department heads and supervisors can use the JSA as a method of modifying behavior. If employees who have received documented training are observed performing work in an un-safe manner outside of the scope of the JSA out in the field or at the workplace, they may be disciplined. Conversely, they may receive recognition for performing work in a safe manner.

## Benefits

The increasing costs of Worker Compensation should never be considered a cost of doing business. It is imperative that Department Heads have the desire to have their employees leave after a day's work feeling like they did when they started work. By having and using all-encompassing JSA's for the positions you have will help reduce injuries, reduce hiring and training costs when replacing injured employees, improves worker moral, increase productivity and reduce Workers Compensation Costs. It is a known fact that there are many hidden cost associated with workplace injuries. A phrase called the "Iceberg Theory" applies when trying to determine all cost associated with an injury. It takes into account the direct cost of an injury which is the top part of the ice burg and indirect cost of an injury which are costs you don't see located below the surface of the water. Below is a caption of the example.



The formula for determining all cost is as follows:

Accident cost = (a) let's say a = \$ 2000.00

Associated costs: Investigations, loss in productivity, equipment downtime etc. = 5 X (a)

In this case 5 x \$2,000.00 = \$10,000.00

Replacement costs: overtime, new employee, retraining etc. = 1 X (a) in this case 1x  
\$2,000.00 = \$2,000.00

Now add the totals of each cost segment together and you will get your REAL cost of an accident. In our scenario the total cost of the accident is \$ 14,000.00

To give you a good idea as to how much sales you would need to generate if your profit margin is 5% to pay to cover the direct and indirect cost of the injury is:

\$ 14,000.00 /.05 = \$ 280,000.00. **That hurts!**

### **Accountability**

If an employee is injured, as part of the accident investigation process, it should be determined if the injured employee has received documented JSA training. If not, department heads or supervisors can be held accountable by means reviewing training documentation or lack thereof during annual performance reviews by top management.

Attached with this Best Practice is Appendix A that can be used as guide when developing either a job specific or machine specific JSA.

As you can see by reviewing the best practices, if less or more steps are required, you can make as many as you feel necessary to accurately describe all of the tasks required to perform the job or operate the equipment along with listing the potential hazards and corresponding safe work procedures. Please contact Risk Management Services if more information or a training session is needed. Email at [rmslosscontrol@memun.org](mailto:rmslosscontrol@memun.org) or call **1-800-590-5583** and ask for the Loss Control Technician or Loss Control Manager.

This information is intended to assist you in your loss control efforts. "Best Practices" are developed from available current information but may not address every possible cause of loss. We do not assume responsibility for the elimination of all hazards that could possibly cause accidents or losses. Adherence to these recommendations does not guarantee the fulfillment of your obligation under local, state, or federal laws.

# Appendix A - Sample Job Safety Analysis form

## Job Safety Analysis

Job Title:

Employee Name:

Department Supervisor:

JSA Conducted by:

Date training was conducted:

### Step 1

- Describe task to preform job.
- List the potential Hazards.
- Describe the safe work procedures that may include Engineering controls, Administrative controls or PPE needed to perform the task safely.

### Step 2

- Describe task to preform job.
- List the potential Hazards.
- Describe the safe work procedures that may include Engineering controls, Administrative controls or PPE needed to perform the task safely.

### Step 3

- Describe task to preform job.
- List the potential Hazards.
- Describe the safe work procedures that may include Engineering controls, Administrative controls or PPE needed to perform the task safely.

### Step 4

- Describe task to preform job.
- List the potential Hazards.
- Describe the safe work procedures that may include Engineering controls, Administrative controls or PPE needed to perform the task safely.

### Step 5

- Describe task to preform job.
- List the potential Hazards.

- Describe the safe work procedures that may include Engineering controls, Administrative controls or PPE needed to perform the task safely.

#### Step 6

- Describe task to preform job.
- List the potential Hazards.
- Describe the safe work procedures that may include Engineering controls, Administrative controls or PPE needed to perform the task safely.

#### Step 7

- Describe task to preform job.
- List the potential Hazards.
- Describe the safe work procedures that may include Engineering controls, Administrative controls or PPE needed to perform the task safely.