

**COUNTY OF RIVERSIDE
STANDARD SAFETY OPERATIONS MANUAL**

DOCUMENT NUMBER:	2006	DATE ISSUED:	01/31/94
SUBJECT:	JOB SAFETY ANALYSIS	EFFECTIVE DATE:	01/31/94
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PURPOSE: To establish County-wide procedures for implementing the Job Safety Analysis (JSA) process.

POLICY: Managers and supervisors should develop written Job Safety Analyses (JSA) for each of the jobs under their direction and review each written JSA with the employee(s) who are performing that job at least annually. Managers and supervisors should immediately review the written JSA for any job in which an employee suffers an injury to make sure it remains both appropriate and complete. If the JSA is found lacking in some area, changes to improve or expand it should be made as soon as possible.

OBJECTIVE: Job Safety Analyses will help prevent workplace injuries by identifying hazards associated with workplace jobs, establishing proper job work procedures, and facilitating training of all employees in safer and more efficient work methods.

SCOPE: All Managers, Supervisors and employees in all County Departments.

I. WHAT IS A JOB SAFETY ANALYSIS?

A Job Safety Analysis (also known as a JSA, Job Hazard Analysis or JHA) is a technique that focuses on the job tasks, or steps, as a way to identify hazards before they occur. It breaks down the job into the individual steps necessary to complete it and examines the relationship between the worker, the task, the tools used in performing the steps and the work environment to identify uncontrolled hazards that exist during each step. Ideally, once the uncontrolled hazards associated with each step are identified, control measures can be implemented to eliminate or reduce the hazards to an acceptable level of risk.

II. BENEFITS OF PERFORMING A JOB SAFETY ANALYSIS

When used as an integral tool in a workplace safety program, a Job Safety Analysis:

- Identifies actual and potential physical hazards in the work environment and appropriate methods for managing those hazards.
- Can help to reveal the hazardous behaviors and work practices allowing for correction of those found.
- Improves overall staff safety awareness by allowing supervisors and employees to fully understand all the hazards associated with specific workplace jobs they supervise or perform.
- Can be used as a part of an accident investigation process to help determine the cause or causes of an accident after it has occurred.
- Creates a tool that supervisors can use to train employees in proper and safe execution of specific workplace jobs.
- Improves workplace efficiency, job productivity and reduces workers' compensation costs by identifying incorrect work practices and procedures that can then be eliminated or revised.
- Can enhance employee relations and moral by increasing employee participation in the safety process, which can foster positive working relationships between management and employees.

SELECTING WORKPLACE JOBS FOR ANALYSIS
DOCUMENT NUMBER: 2006

III. SELECTING WORKPLACE JOBS FOR ANALYSIS

A Job Safety Analysis can be, and ultimately should be, performed for every job in the workplace, regardless of its level of complexity (whether it requires one or multiple steps to complete) or whether it is a routine or non-routine job. However, when selecting jobs to perform Job Safety Analyses on, priority should be given to the following types of jobs:

- Jobs with the highest injury or illness rates;
- Jobs where “close calls/near misses” have occurred.
- Jobs with the potential to cause severe, disabling or fatal injuries and 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 or procedures;
- Jobs complex enough to require written instructions;
- Every job remaining after all the jobs in the above categories have been addressed.

Managers and supervisors should gather data and information from all available resources, such as the “Safety Statistical Report” published monthly by the County Safety Division, job injury and illness reports internally generated by their Department or accident or injury history records at their facility, to help them establish the jobs with higher priority for having Job Safety Analyses performed. Eventually, a Job Safety Analysis should be performed for every job in each County workplace and be made available to the employee(s) performing the job.

IV. INVOLVING THE EMPLOYEE

After selecting a job for a Job Safety Analysis, Managers and Supervisors should discuss the process with the employee(s) performing the job and explain its purpose. Point out that it's the job, and not the employee's job performance, that is being examined. Involve the employee in all phases of the analysis – from breaking down and reviewing the steps of the job to identifying the potential hazards to developing the hazard control solutions. You should also talk to other employees who have performed the job in the past. Employees who are performing the job, or have performed the job in the past, have a unique understanding of that job and have knowledge that will be invaluable to the Manager or Supervisor in developing a Job Safety Analysis. Employees who are asked to contribute to the development of a Job Safety Analysis, are more likely to feel they are a valued part of the safety team and feel that they share ownership in the overall safety and health program.

IV. PERFORMING THE JOB SAFETY ANALYSIS

Before actually beginning the Job Safety Analysis, conduct a preliminary review of the job selected. This preliminary job review will help in establishing the general conditions under which the job is performed, and the parts, supplies, equipment and tools needed to perform the job. Develop a checklist of questions that may need to be asked. Below are some sample questions:

1. Are there materials on the floor that could lead to a trip and fall hazard?
2. Is the workplace lighting adequate?
3. Are there any live electrical hazards in the workplace?
4. Are there any explosive hazards associated with the job or likely to develop?

SELECTING WORKPLACE JOBS FOR ANALYSIS
DOCUMENT NUMBER: 2006

IV. PERFORMING THE JOB SAFETY ANALYSIS - continued

5. Are any of the following that are used in need of repair: hand tools, power tools, machines or equipment?
6. Is there excessive noise in the work area, hindering worker communication or endangering employee hearing?
7. Is fire suppression equipment in operable condition, readily accessible and have employees been trained to use it?
8. Are emergency exits clearly marked and is access to them unobstructed?
9. Are heavy trucks and equipment properly equipped with functioning brake and steering systems, seat belts, rollover protective structures, backup alarms and warning horns, as needed or required?
10. Are all employees wearing proper personal protective equipment, when required, for the jobs they are performing?
11. Have any employees complained of headaches, breathing problems, dizziness or strong odors?
12. Is ventilation adequate, especially in confined spaces?
13. Have tests been made for oxygen deficiency and toxic fumes?

Naturally, this list is by no means complete because each work site has its own characteristics, requirements and environmental conditions. Each Manager or Supervisor should add his or her own questions to the list. Taking photographs or videos of the workplace and conducting a detailed review of them might also yield additional pertinent information about the work environment that one might not notice with the naked eye.

V. BREAKING DOWN THE JOB

Nearly every job can be broken down into specific steps that must be executed in a sequential order to complete the job. In the first part of the Job Safety Analysis, list each specific step of the job, in order of occurrence, as you watch the employee performing the job. If a photo or video profile of the job has been developed, review the photos and video as well. Be sure to record enough information to describe each job task or step, but avoid getting overly detailed. Later, go over the job steps listed with the employee to make sure none have been omitted.

VI. IDENTIFYING JOB HAZARDS

After recording the job steps, examine each step to determine the known hazards that exist or potential hazards that might occur. A Job Safety Analysis is an exercise in detective work. The goal is to discover the following:

- What can go wrong in each job step?
- What are the consequences when a hazardous event occurs in the job step?
- How could that hazardous event arise?
- What are other contributing factors which could allow the hazardous event to arise?
- How likely is it that the hazardous event will occur?

SELECTING WORKPLACE JOBS FOR ANALYSIS

DOCUMENT NUMBER: 2006

VI. IDENTIFYING JOB HAZARDS - continued

Asking yourself additional questions like the ones that follow may also help you to focus in on the answers to the above questions:

1. Is the worker wearing personal protective clothing and equipment, including safety belts or harnesses that are appropriate for the job?
2. Are work positions, machinery, pits, holes and hazardous operations adequately guarded?
3. Are lockout procedures used for machinery deactivation during maintenance procedures?
4. Is the worker wearing clothing or jewelry that could get caught in the machinery?
5. Are there fixed objects that may cause injury, such as sharp machine edges?
6. Is the flow of work improperly organized (i.e., is the worker required to make movements that are too rapid?)
7. Can the worker get caught in or between machine parts?
8. Can the worker be injured by reaching over moving machinery parts or materials?
9. Is the worker at any time in an off-balance position?
10. Is the worker's position relative to the machine potentially dangerous?
11. Is the worker required to make movements that could cause hand or foot injuries, or strain from lifting?
12. Can the worker be struck by an object or lean against or strike a machine part or object?
13. Can the worker fall from one level to another?
14. Can the worker be injured from lifting or pulling objects, or from carrying heavy objects?
15. Do environmental hazards (dust, chemicals, radiation, welding rays, heat or excessive noise) result from the performance of the job?

Repeat the above job observation process as often as necessary until all the hazards associated with each job step have been identified.

VII. JOB HAZARD CONTROL MEASURES

After you have listed each known hazard or potential hazard associated with each job step and have reviewed them with the employee(s) performing the job, determine the most appropriate method(s) of correcting or mitigating the hazards.

There are three generally accepted methods of correcting and/or mitigating identified job hazards. They are:

- Engineering controls.
- Work process controls.

SELECTING WORKPLACE JOBS FOR ANALYSIS

DOCUMENT NUMBER: 2006

VII. JOB HAZARD CONTROL MEASURES - continued

- Administrative controls.

Engineering controls change the way a job is done so that the previously identified hazards associated with the job no longer exist. Essentially, the job hazards are engineered out and eliminated so they no longer exist. Because engineering controls actually eliminate job hazards, this is the most preferred way of correcting and preventing identified job hazards. However, the application of engineering controls is not always feasible. An example would be designing and installing a permanent fixed barrier guard on a metalworking machine so the employees holding the metal being machined can't get their fingers into the point of operation where the fingers could be injured or amputated.

Work process controls may be used when it is impossible to engineer out the identified hazards associated with a specific job step. Work process controls involve changing the way a job step is done to reduce and control (mitigate), but not eliminate, the hazard. An example would be having an employee use a wheel cart to carry a heavy box from the delivery dock to the storage area instead of having the employee carry the heavy box manually between the delivery dock and the storage area.

Administrative controls may be used when it is impossible to engineer out the hazards associated with a job step or change the way a job step is done. Administrative controls typically reduce the time an employee is exposed to a hazard or provide the employee with additional protection against the hazard. An example would be having four clerical employees each perform two hours of data entry a day on a computer keyboard, instead of having just one employee perform eight hours of data entry a day on a computer keyboard, as a method of reducing the occurrence of carpal tunnel syndrome to any computer data entry employee.

Examine all the possible methods and options for correcting and/or mitigating the hazards identified in each job step. Explore whether engineering controls (purchasing newer and safer equipment, repositioning equipment, installing permanent machine guards, etc.) are feasible. Explore whether the work process can be changed or altered (using less hazardous chemicals, better and safer tools, mechanical devices to reduce manual material handling, etc.). Explore whether employee exposure to the hazard can be reduced (using additional safety or personal protection equipment, limiting the time duration of employee exposure to the hazard, etc.). Ultimately, Managers and Supervisors must determine which correction method and option is the most effective in correcting and/or mitigating the identified hazards associated with each job step and should list their final recommendations for hazard correction and/or mitigation.

If better or safer job steps are developed, list each new step, such as describing a new method for handling or disposing of material. List exactly what the worker needs to know in order for them to perform the job using a new method. Do not make general statements about the procedure, such as "be careful". Be as specific as you can in your recommendations.

Go over the new job step recommendations with all employees performing the job. Their input about the hazards and proposed recommendations may be valuable. Be sure that they understand what they are required to do and the reasons for the changes in the job procedure.

Managers and supervisors may wish to set up a training program using the Job Safety Analysis in order to train their employees in the new procedures, especially if they are working with highly toxic substances or in dangerous situations. (Note: Some OSHA Standards require that formal training programs be established for employees regarding specific workplace hazards).

VIII. REVISING THE JOB SAFETY ANALYSIS

A Job Safety Analysis can do much toward reducing accidents and injuries in the workplace, but it is only effective if it is reviewed and updated periodically. Even if no changes have been made in a job, hazards that were missed in an earlier analysis may be detected and addressed.

SELECTING WORKPLACE JOBS FOR ANALYSIS
DOCUMENT NUMBER: 2006

VIII. REVISING THE JOB SAFETY ANALYSIS - continued

If an accident or injury occurs on a specific job, the Job Safety Analysis should be reviewed immediately to determine whether changes are needed in the job procedure. In addition, if an accident has resulted from an employee's failure to follow job procedures, this should be discussed with all employees performing the job.

Anytime a Job Safety Analysis form is revised, training in the new job methods or procedures should be provided to all employees affected by the change. A Job Safety Analysis also can be used to effectively train new employees on job steps and job hazards.

IX. RECORDKEEPING

When the Job Safety Analysis has been reviewed with an employee, the supervisor will have the employee sign and date the Job Safety Analysis. The supervisor will then sign and date the finished Job Safety Analysis form. The form will be retained in the employee's personnel file for a retention period of 3 years.

X. JOB SAFETY ANALYSIS FORM

A standardized Job Safety Analysis form is attached. Managers and Supervisors can use this form to conduct a Job Safety Analysis at their specific facilities on specific job titles and tasks. Some sample Job Safety Analyses have also been included to provide Managers and Supervisors with reference guides for completing a Job Safety Analysis.

**SELECTING WORKPLACE JOBS FOR ANALYSIS
DOCUMENT NUMBER: 2006**

JOB SAFETY ANALYSIS (JSA) FORM

SAMPLE

County of Riverside, H.R./Safety Division	Department: H.R./Safety Division	Facility: County Safety Office 3901 Lime St., Ste. 100 Riverside, CA 92502
	Date of Initial Job Safety Analysis: December 11, 2003	Analysis Performed By: Tom Sproal, County Safety Officer
Job Title: Office Assistant 1		Date JSA Reviewed:
Job Task: Storing incoming office supplies delivery		Date JSA Reviewed:
Required Safety Equipment: 2-wheel or 4-wheel dolly or 4-wheel cart.		
Recommended Tools, Equipment, Supplies: Step stool or utility ladder (if storing supplies in overhead storage locations)		
Job Steps	Hazards	Hazard Control Procedures
<ol style="list-style-type: none"> 1. Load boxes containing supplies on dolly or cart. 2. Move boxes containing supplies from staging to storage area. 	<ul style="list-style-type: none"> • Manual material handling, causing strains. • Slip, trip and falls while walking, causing contusions. • Striking fixed objects or personnel with dolly or cart. • Striking arms, legs or body on fixed furnishings while walking, causing contusions. • Manual material handling from moving loaded dollies or cart, causing strains. 	<ul style="list-style-type: none"> • If boxes must be lifted on to available dolly or carts, use proper lifting techniques (bend at knees and waist, establish solid two point grip, keep head up and back straight, lift with legs, turn body as unit and place boxes on dollies or cart). Don't stack boxes high enough to block forward vision. • Check path of travel to storage area for loose carpeting, small objects, wet surfaces, cords, obstructions and impediments to aisle. • If using 2-wheel dolly, establish solid grip on handles, tilt and balance dolly, push (don't pull) dolly to storage area (making controlled turns, slowly upright dolly and carefully pull out from under boxes. • If using 4-wheel dolly or cart, slowly push (don't pull) the loaded dolly or cart to the storage area, making controlled turns.

SELECTING WORKPLACE JOBS FOR ANALYSIS

DOCUMENT NUMBER: 2006

Job Title: Office Assistant I

Job Task: Storing incoming office supplies delivery - continued

Job Steps	Hazards	Hazard Control Procedures
3. Open boxes to access office supplies. 4. Remove office supplies from boxes and place in final storage area (racks, storage cabinets, shelves, etc.)	<ul style="list-style-type: none">• Cuts from using box or utility knife. • Manual material handling, causing strains.• Overreaching, causing strains.• Fall from heights, causing contusion (if on step stool or utility ladder to reach high storage locations).	<ul style="list-style-type: none">• Use box or utility knife with sharp, self-retracting blade.• Use cutting motion going away, not towards, other body parts. • Use proper lifting techniques (as outlined in item one above) and avoid reaching above the shoulders or outward from the body trunk.• Use proper step stool or utility ladder to elevate your body to safely reach high storage locations.• Don't lean your body to the side when standing on a step stool or utility ladder.

I have reviewed the above JSA, and am familiar with the required job tasks.

Employee Name (Print)

Signature

Date

Supervisor Name (Print)

Signature

Date

SELECTING WORKPLACE JOBS FOR ANALYSIS
DOCUMENT NUMBER: 2006

JOB SAFETY ANALYSIS (JSA) FORM

SAMPLE

Issued by the Acme Manufacturing Co.	Department: Castings Finishing	Facility: Acme Manufacturing Co. 4321 Peach St. Anyplace, CA 99999
	Date of Initial Job Safety Analysis: December 11, 2003	Analysis Performed By: Bill Smith, Safety Director
Job Title: Castings Grinder Job Task: Grinding iron castings		Date JSA Reviewed:
Required Safety Equipment: Leather gloves, steel-toe safety shoes, safety goggles and local exhaust and dust collection systems.		
Recommended Tools, Equipment, Supplies: Anchored pedestal grinder with in place scatter shield, wheel enclosure guard and adjustable work rest.		
Job Steps	Hazards	Hazard Control Procedures
<ol style="list-style-type: none"> 1. Inspect pedestal grinder to verify all guards are in place, then turn on grinder. 2. Reach into castings holding container at right of grinder, grasp and remove casting and position for grinding. 3. Rest casting on grinder work rest, push against grinding wheel and grind off rough casting edges. 	<p>None identified.</p> <ul style="list-style-type: none"> • Manual material handling, causing strains. • Striking hand against castings or holding container, causing contusions and cuts. • Rough edges on casting, causing cuts. • Dropping casting on foot, causing contusions. • Casting suddenly getting caught between grinding wheel and work rest. • Hands or fingers contacting the moving grinding wheel. • Airborne grindings getting into eyes. 	<p>Not applicable.</p> <ul style="list-style-type: none"> • Use proper lifting techniques (establish solid grip, keep head up and back straight, lift with legs, turn body as unit and place casting on pedestal grinder); don't overreach. • Wear leather gloves to protect hands/fingers from rough casting edges. • Don't reach blindly for casting; look at casting you are reaching for. • Wear steel-toe safety shoes. • Make sure clearance between work rest and grinding wheel does not exceed 1/8 th inch. • Wear leather gloves, but keep hands/fingers away from moving grinding wheel. • Wear safety goggles. • Make sure local dust and exhaust ventilation systems are working when grinding.

SELECTING WORKPLACE JOBS FOR ANALYSIS
DOCUMENT NUMBER: 2006

Job Title: Castings Grinder
 Job Task: Grinding iron castings - continued

Job Steps	Hazards	Job Hazard Control Measures
4. Place ground castings in holding container to left of grinder.	<ul style="list-style-type: none"> • Manual material handling, causing strains. • Striking hand against edges of the holding container , causing contusions and cuts. • Dropping casting on foot, causing contusions. 	<ul style="list-style-type: none"> • Use proper lifting techniques (establish solid grip, keep head up and back straight, lift with legs, turn body as unit and place casting into holding container); don't overreach. • Wear leather gloves to protect hands/fingers from edges of the holding container. • Look at holding container as you place the ground castings in it. • Wear steel-toe safety shoes.

I have reviewed the above JSA, and am familiar with the required job tasks.

Employee Name (Print)

Signature

Date

Supervisor Name (Print)

Signature

Date

**SELECTING WORKPLACE JOBS FOR ANALYSIS
DOCUMENT NUMBER: 2006**

JOB SAFETY ANALYSIS (JSA) FORM

SAMPLE

Issued by the ABC Manufacturing Co.	Department: Shipping Department	Facility: ABC Manufacturing Co. 9876 Date Lane Hometown, CA 10203
	Date of Initial Job Safety Analysis: December 11, 2003	Analysis Performed By: Bob Jones, Safety Director
Job Title: Shipping Clerk		Date JSA Reviewed:
Job Task: Banding pallets of finished product.		Date JSA Reviewed:
Required Safety Equipment: Leather gloves, steel-toe safety shoes, safety glasses and full face shield.		
Recommended Tools, Equipment, Supplies: Portable banding machine on mobile cart and hand wire cutter tool.		
Job Steps	Hazards	Hazard Control Procedures
<ol style="list-style-type: none"> 1. Position portable banding cart next to pallet. 2. Place bander on top of boxes stacked on the pallet. 3. Withdraw strapping and place one end into bander and secure in place. 4. Feed strapping down, under and back over pallet, inserting other loose end into jaws of bander ratchet and secure in place. 	<ul style="list-style-type: none"> • Cart positioned too close to pallet (employee may strike body, arms or legs against the cart or pallet). • Manual material handling, causing strains. • Dropping bander on foot, causing contusions. • Sharp edges of banding strapping may cause cuts. • Overexertion injuries to hands/fingers when pressing down strapping clamp. • Sharp edges of banding strapping may cause cuts. • Overexertion injuries to arms/shoulders when pulling on ratchet arm to secure remaining loose end of strapping. 	<ul style="list-style-type: none"> • Leave adequate room between cart and pallet to safely feed strapping around loaded pallet. • Use proper lifting techniques (establish solid two hand grip, keep head up and back straight, lift with legs, turn body as unit and place bander on boxes); don't overreach. • Wear steel-toe safety shoes. • Wear leather gloves. • Make sure strapping clamp is well lubricated and moves freely. • Wear leather gloves. • Grip ratchet arm securely and pull slowly, in controlled manner. • Make sure ratchet arm is well lubricated and moves freely.

SELECTING WORKPLACE JOBS FOR ANALYSIS
DOCUMENT NUMBER: 2006

Job Title: Shipping Clerk
 Job Task: Banding pallets of finished product – continued

Job Steps	Hazards	Job Hazard Control Measures
5. Tighten strapping around loaded pallet using the bander ratchet.	<ul style="list-style-type: none"> • Strapping may break unexpectedly and loose end may whiplash into employee's face or eyes, causing injury. • Overexertion injuries to arms/shoulders when pulling on ratchet arm to secure remaining loose end of strapping. 	<ul style="list-style-type: none"> • Wear safety glasses and full safety shield. • Grip ratchet arm securely and pull slowly, in controlled manner. • Make sure ratchet arm is well lubricated and moves freely.
6. Apply and crimp strapping clamp to overlapping ends of strapping.	<ul style="list-style-type: none"> • Manual material handling when picking up crimping tool, causing strains. • Overexertion injuries to arms/shoulders when compressing arms of crimping tool to crimp the strapping clamp. 	<ul style="list-style-type: none"> • Use proper fitting techniques (establish solid two hand grip on crimping tool, keep head up and back straight, lift with legs, turn body as unit and place crimping end of tool on the clamp); don't overreach. • Grip crimping tool securely in both hands and compress slowly, in controlled manner. • Make sure crimping tool is well lubricated and moves freely.
7. Cut away extra strapping material using wire cutters.	<ul style="list-style-type: none"> • Sharp edges of banding strapping may cause cuts. • Overexertion injuries to hands/fingers when squeezing wire cutter to cut the strapping. 	<ul style="list-style-type: none"> • Wear leather gloves. • Make sure wire cutter jaws are sharp and wire cutter is well lubricated and moves freely.

