

JOB SAFETY ANALYSIS

I. Introduction

The Job Safety Analysis (JSA) is a method that can be used to identify hazards and the potential for damage or personal injury that can develop while doing a job or task. The JSA provides a step by step outline used to develop actions or solutions for the avoidance, elimination, reduction or safeguarding of personnel and property from hazards.

The Job Safety Analysis can be used to review accidents for cause, define quickly and clearly potential new or high risks, establish safety program priorities, improve training and orientation, and develop effective controls over loss producing conditions.

These comments outline the JSA method by using a “real life” cable system example to provide insight into how to complete and use the JSA process.

II. Job Safety Analysis Procedure .

The Job Safety Analysis follows a structured approach in the review of how a job or task is completed. Using a special worksheet, the steps required to complete a task are listed. Each step is reviewed for possible hazards or potential to cause injury or damage. Recommendations or controls are listed for consideration or action to eliminate, avoid, reduce or control the hazard.

Targeting Loss Producing Areas

In establishing a program that uses the JSA, the first step is to make a list of the jobs completed or assigned to personnel. Each job title (installer, technician, etc.), is required to do various jobs that keep the cable system operating. Some of these have limited or little potential to cause injury or damage. Other jobs might, if done wrong or poorly, result in fatality, (electrocution, fall from bucket, auto accident or damage to a customer’s property).

To begin the JSA process, an inventory of jobs by title is completed. The inventory is compared with injury and damage information looking for jobs that have a high potential for loss or injury. The safety coordinator and/or safety committee and the supervisor establish JSAs on jobs with the worst or highest potential for loss in order of priority. Data might include jobs or tasks with:

1. Higher than average frequency of injuries or damage. OSHA logs, ABC claims loss runs (workers compensation, general and automobile liability and property damage), and accident investigations can be reviewed for problem producing areas.
2. Potentially severe injury or damaging loss producing events. From experience and telecommunications/cable industry history, situations may be known that could cause a loss, even if it has not occurred at the cable system.
3. Newly established jobs developed as technology or operations change or expand.
4. Jobs in which changes have been made due to new tools, materials, methods or technology entering the system.

A format has been provided to assist in completing the initial inventory.

Using a Team Approach

The JSA should be completed using a team approach. The cable system safety manager or coordinator, working with management would identify the jobs having the highest loss potential. The safety coordinator/manager would work with the first line supervisor and the person normally assigned to do the job to complete the initial JSA. The employee (technician, installer, etc.) normally assigned to the task must be involved since they are the most familiar with the job. The cable system benefits from a JSA developed by a team effort in that “ownership” of the process is spread through the safety, supervisory and technical staff.

The selection and preparation of the employee to assist in the JSA must assure that the person is:

1. Is knowledgeable, cooperative, and safety-conscious.
2. Trained on the purpose and use of the JSA.
3. Understands the concept for JSA of the job/task.
4. Understands cable system safety requirements.
5. Accepts project and desires to be involved.

Identification of hazards

The JSA method requires a basic knowledge of how to recognize and categorize a hazard. Hazards fall into a short list of categories that must be evaluated. These categories cause injury or damage if they are intense or strong enough to break through the natural or provided defenses of the human body or target property. As example, the human body may be able to sustain a mild very low amperage electrical shock. However, over approximately 300 miliamps, the potential for fatal injury dramatically increases. These categories include:

1. Environmental hazards - developed by naturally occurring weather, water, mists, etc.
2. Heat or Cold - temperature extremes that could cause burns or fires or explosions.
3. Electrical - amperage and voltage from equipment or exposure to primaries or batteries.
4. Chemical – from materials that are acidic, alkaline, toxic, health hazards, flammable/combustible.
5. Kinetic – exposures with fall potential (off ladders, out of buckets, slips/falls), or from objects that are thrown (flying chips, parts, etc.), or could catch, pinch or strike (machines, gears, vehicles).
6. Biological – various exposures to living things (pollution, bloodborne pathogens, poisonous plants, animals, insects, germs or virus, etc.
7. Acoustic – loud undesired noise

Potential control of hazards

The primary intent of the JSA is to develop solutions, actions or plans to avoid, reduce or control the identified hazards. The JSA allows a structured management process used to control loss-producing conditions. The strategies for control of hazards consists of the following

1. Prevent the hazard being created by eliminating the task or hazard source. Examples – Not working in trenches or confined spaces, not using harmful chemicals.
2. Reduce the amount of hazard – Examples – not speeding; using less harmful chemicals.
3. Prevent a hazard's release – Examples – maintaining electrical conduit, keeping flammable liquids in safety cabinets or containers, use of fall protection.
4. Modify the rate of hazard spread or release – Examples – pressure relief valves, electrical circuit breakers, vehicle brakes, sprinkler systems.
5. Separate the hazard from the person or object that may be injured or damaged by time and/or space – Examples- separating acetylene and gas cylinders, maintaining line or bucket distance from primaries, parking trucks out of traffic lanes, completing work at low traffic times.
6. Separate the hazard from the person or object that may be injured or damaged by barriers – Examples - vehicle post guards, guard rails, personal protective equipment, fire walls, machine guards.
7. Modify the basic hazard – Examples – reduce voltage or amperage, eliminate rough or sharp edges on equipment, use rough surfaces on slippery floors.
8. Make the person or object more resistant to the hazard – Examples – employee selection, drug testing, physical conditioning, and fire resistant buildings.

The JSA should also consider the need for emergency plans and recovery should a hazard cause injury or damage. As example, materials safety data sheets must be available to provide medical personnel with the nature and treatment for a chemical exposure; types of fire extinguishing, chemical spill cleanup.

The JSA should provide a comprehensive step-by-step review of a job or task, its hazards at each step of the job or task and the recommendations to control the hazard.

Involving Management

The final JSA provides supervision and management with information that may require additional actions or changes with the targeted job or task. These needs and objectives may require any of the following:

1. A budget for equipment, materials, training, or personal protective equipment required.
2. New or modified equipment to complete the job/task
3. New or modified materials for the job or task
4. Personal protective or other safety devices to protect people or objects
5. Additional employee selection, training or supervision
6. Modification of the job or task – If a high risk should or can it be eliminated, transferred to others or changed to reduce the hazard.

The Job Safety Analysis provides a structured methodology for management to make appropriate decisions for the reducing of loss producing jobs or tasks.

References:

Accident Prevention Manual for Industrial Operations, 11th edition, Chapter 6, National Safety Council, 1121 Spring Lake Drive, Itasca, Illinois 60143-3201.

Supervisor's Safety Manual, 9th edition, Chapter 5, National Safety Council, 1121 Spring Lake Drive, Itasca, Illinois 60143-3201

Performing a Job Hazard Analysis, Tel-A-Train, 309 N. Market Street, Chattanooga, TN 37405.

JOBS REQUIRING SPECIAL SAFETY EMPHASIS

Facility: _____ **Department:** _____ **Section:** _____
Date of review: _____ **Completed by:** _____

Instructions: Record the job titles under your supervision at the head of the columns of 10 blank spaces. Under each job title, record on the numbered lines the jobs/tasks done by that position which require special emphasis on safety because of their potentially hazardous nature. The objective is to establish a list by job title of the most hazardous jobs for JSA development.

Position: _____	Position: _____
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____
6. _____	6. _____
7. _____	7. _____
8. _____	8. _____
9. _____	9. _____
10. _____	10. _____

Position: _____	Position: _____
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____
6. _____	6. _____
7. _____	7. _____
8. _____	8. _____
9. _____	9. _____
10. _____	10. _____

Position: _____	Position: _____
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____
6. _____	6. _____
7. _____	7. _____
8. _____	8. _____
9. _____	9. _____
10. _____	10. _____

JOB SAFETY ANALYSIS WORKSHEET

<u>Department:</u>	<u>Job Analyzed:</u>	<u>Date Completed:</u>
<u>Location:</u>	<u>Task Completed By:</u>	<u>Supervisor:</u>
	<u>Analysis By:</u>	
	<u>Approved By:</u>	<u>Reviewed By:</u>
<u>Required Personal Protective and Emergency Equipment:</u>		

SEQUENCE OF JOB STEPS	POTENTIAL HAZARDS	CONTROLS/ PREVENTION MEASURES

**JOB SAFETY ANALYSIS
Additional Worksheet**

Location of Job or Task: _____

Employee performing Job or Task: _____

1. Job or Task title : _____

2. Training required to complete job/task:

3. Detailed description of job as currently completed:

4. Types of tools, equipment, vehicles, materials or machines used in job:

5. Amount of job/task spent: Standing _____% Walking _____% Sitting _____%

6. Job /task is _____%Inside buildings _____% Outside(exposed to weather)

7. While performing the job, the employee is required to:

Description	Yes	No	How often:	How long per day:
Twisting				
Stoop or bend				
Squat				
Kneel				
Crawl				
Climb Ladders				
Climb Stairs				
Walk on uneven ground				
Grasp, or feel				
Work above ground				
Operate vehicle/equipment				
Other				

8. The heaviest weight lifted while sitting or standing in one place weighs: _____ pounds

Object lifted: _____ Average times lifted daily: _____

Size of object: _____

The object is lifted from: _____ to: _____

9. The heaviest weight lifted while walking weighs: _____ pounds

Object lifted: _____ Average times lifted daily: _____

Size of object: _____

The object is lifted from: _____ to: _____

10. The heaviest weight pushed/pulled weighs: _____ pounds.

Object: _____ Average times pushed or pulled daily: _____

Distance pushed or pulled: _____

11. Visual and Hearing Requirements:

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Risk/Safety Manual

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Talking: Ordinary Conversation: _____ Above Noise: _____

Hearing: Ordinary Conversation: _____ Above Noise : _____

Vision: Near: _____ Far: _____

Depth Perception: _____

Color: _____ Field of Vision: _____

12. Physical Activity Required:

Activity	Never	Frequency per hour	Under one hour	Hours performed daily			
				1-2	3-4	5-6	7-8
<i>Lifting</i> <10 lbs 10-25 lbs 25-50 lbs 50<lbs							
<i>Carrying:</i> Under 10 lbs 10-25 lbs 25-50 lbs 50<lbs							
<i>Reaching:</i> Above Shoulder At Shoulder Below Shoulder							

13. Job/ Task Environment: Check those applicable and make comments

?	Description	Comments
	Chemicals	
	Heat/Cold	
	Confined Space	
	Contact with Public/Customers	
	Water, Dampness	
	Dust	
	Electrical Hazards	
	Emotional Demands	
	Explosives	
	Fumes	
	Chemical Vapors/Mist	
	Lighting critical to task	
	Machine paced work	
	Odors	
	Noise – estimated decibel:	
	Vibration	
	Skin irritation	
	Radiation – Type:	
	Sun	
	Work at heights	
	Working alone	
	Other:	

14. Protective equipment worn:

15. Additional Summary Comments:

Date: _____ **Completed By:** _____ **Title:** _____