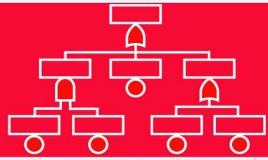


Job Safety Analysis

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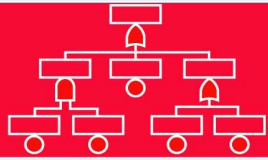
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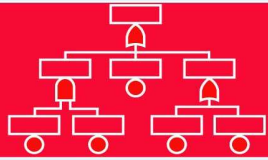
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A Job Safety Analysis (JSA) is a qualitative analysis of a *job procedure or practice* to:

- ❑ Identify hazards and potential accidents that may occur during the execution of the job
- ❑ Determine appropriate equipment and controls to reduce the risk

Some JSA's also include a description of the potential consequences and/or a risk ranking of the identified hazards and potential accidents.



What Is Job Safety Analysis? - (2)

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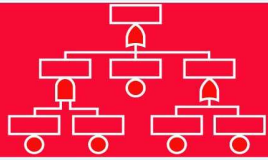
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The JSA is also known under other names, like

- ☐ Job Hazard Analysis (JHA)
- ☐ Safe Job Analysis (SJA)
- ☐ Task Hazard Analysis (THA)

Most of the approaches are very similar.



What can JSA be used for?

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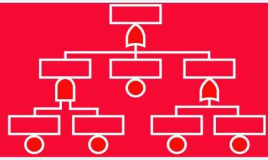
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JSA is applied to jobs where:

- ☐ Accidents or near-accidents have occurred.
- ☐ One or more of those involved in the job are not familiar with all hazards and/or how to protect against these hazards.
- ☐ A new team of workers are working together.
- ☐ Safe execution of the work requires close cooperation and coordination between several people.
- ☐ New equipment or new processes are being introduced.



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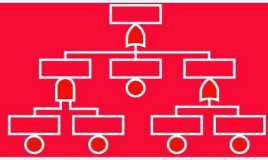
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The purpose of a JSA is to identify and evaluate hazards that:

- ❑ May have been overlooked during the design of the job procedures, machinery, equipment, etc.
- ❑ Are caused by changes in work procedures or personnel
- ❑ May have developed after the initial job was carried out

The main objective of the JSA is to find a safe way of performing a specified function (the job or an alternative job).



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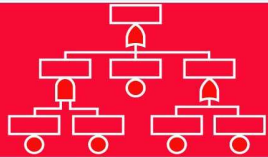
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- ❑ The JSA is carried out by team of people, comprising workers who are actually doing, or will do the job, supervisors, safety staff, and various experts (if required).
- ❑ The main analysis is carried out in one, or more meetings.
- ❑ The results are recorded on a specific JSA worksheet (or in a computer program).



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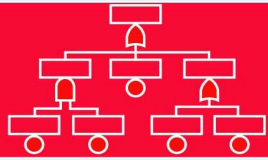
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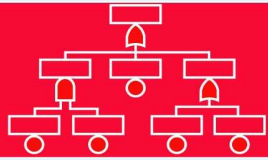
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A JSA will normally comprise the following steps:

1. JSA prerequisites
2. Break down the job into discrete steps
3. Identify hazards, unsafe conditions, and unsafe work practices associated with each step
4. Identify possible consequences associated with each step
5. Evaluate hazards
6. Determine the equipment and controls required to control each of the hazards identified
7. Summarize and follow up the findings

Steps 4 and 5 may not be covered in all JSA's.



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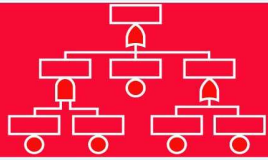
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1. Establish JSA team
2. Select, define, and delimit the job to be analyzed
3. Collect necessary background information
4. Select a suitable JSA worksheet



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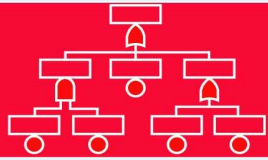
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A typical JSA team may consist of:

- ❑ A team leader (facilitator) with competence and experience in the method to be used.
- ❑ A secretary who will record the findings (this function may sometimes be carried out by the team leader).
- ❑ Team members (2-10 persons) who can provide necessary knowledge and experience of the job being analyzed, and of the associated equipment and processes.



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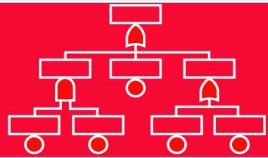
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The team should include at least a two workers who are familiar with the job. The workers understand the activities and tasks they perform and are can assist in identifying potential hazards, and in identifying control measures to minimize or eliminate hazards.

- ❑ The team members should know the work tasks before attending the JSA meeting(s)
- ❑ It is important to make sure that the team members are available and that enough time has been allocated to the JSA meeting(s)
- ❑ Personnel with special expertise required to understand the work tasks and the hazards should be invited to attend the JSA meeting(s)



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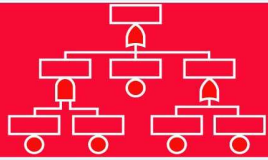
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- ❑ Jobs with the worst accident history have priority and should be analyzed first!
- ❖ **Accident frequency.** A job that has repeatedly caused accidents is a candidate for an immediate JSA.
- ❖ **Accident severity.** Every job that has produced a lost time injury (LTI) or required medical treatment should be analyzed.
- ❖ **Accident potential.** Every job with a potential for a severe accident should be analyzed (e.g., jobs involving lifting of heavy equipment).
- ❖ **New jobs, non-routine jobs, or job changes.** These are also prime candidates for JSA.
- ❖ **Routine jobs.** Routine jobs with inherent hazards that the worker is exposed to.



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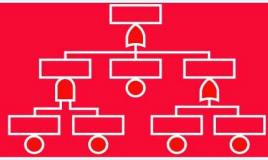
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The following information about the job (i.e., the analysis object) should be provided:

- ❑ A summary description of the job and the purpose of the job.
- ❑ A preliminary job review (e.g., observation of the job and the location made by the team leader). The review report may preferably be supplemented by photos and video.
- ❑ A listing of required training for access to the work location, to operate equipment/vehicles, to work at heights, etc.
- ❑ A listing of required/recommended personal protective equipment against hazards when performing the job in the specified location.



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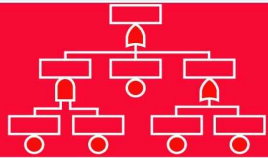
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Before the analysis is started, collection of information may be necessary

- ☐ Interviews
- ☐ Written procedures
- ☐ Manuals
- ☐ Observation of execution of work steps
- ☐ Review of reports from accidents and incidents



Selection of JSA Worksheet

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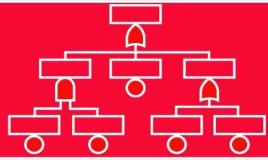
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The results of the JSA are usually reported by using a JSA worksheet (or, a computer program). A simple worksheet is shown below. Some analyses may require further columns.

Job description:	Required job training/certificates:	Analyzed by:	
Job location:	Required personal protection equipment:	Date:	Page: of

Step no.	Description of step (in proper sequence)	Potential accidents or hazards	Recommended safe job procedures	Comments



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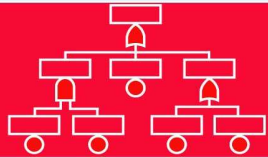
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- ☐ The job must be split into a sequence of discrete steps.
- ☐ Judgement must be used to avoid either excessive or insufficient detail (For most jobs it is sufficient with less than 10 steps).
- ☐ Include every step, from the beginning to the end.
- ☐ Each step should tell what is done, not why it is done.
- ☐ Describe the steps by verbs like: insert, install, lift, open, pick up, place, remove, etc.
- ☐ Verify the recorded steps with a or more workers to ensure completeness and accuracy.



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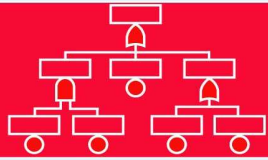
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To decide a suitable job break-down structure it is usually beneficial to observe how the job is performed (if possible).

- ❑ Select the right worker to observe
 - ❖ Experienced, capable, and cooperative staff who is willing to share ideas
 - ❖ Observe other staff to compare differences (especially on other shifts – if relevant)
 - ❖ Explain the purpose and benefits of the JSA to the staff
- ❑ Observe the worker perform the job
 - ❖ Recording/videotaping
 - ❖ To determine the basic steps ask the following:
 - what step starts the job?
 - what is the next basic step?



Separate the Job Into Basic Steps - (3)

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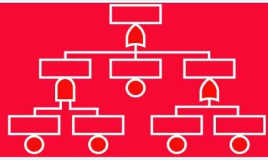
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Instead of (or in addition to) observing the the job being performed, we may also use

- ❑ Discussion method
 - ❖ Several staff who perform the job provide input on job steps and hazards
- ❑ Recall and check method
 - ❖ Staff does his own JSA using recollection of the job



Hazard Identification

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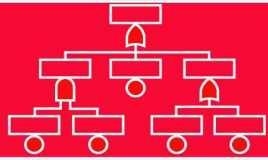
Conclusions

During the hazard identification, the JSA team should ask questions like:

- ☐ What can go wrong?
- ☐ What are the consequences?
- ☐ How can it happen?
- ☐ May there be other contributing factors?
- ☐ How likely is it that the hazard will occur?
- ☐ What safety measures, if any, are currently in place?

When safety measures are identified, the JSA team should check and make sure that the measures are (in fact) implemented and that they are understood by all involved in the job.

To identify hazards it may often be beneficial to use a hazard checklist (e.g., as given in EN 1050)



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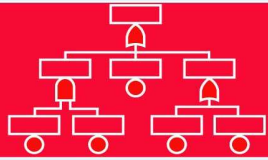
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As a minimum, the following should be considered:

- ☐ Is there danger for striking against, being struck by, or otherwise making harmful contact with an object?
- ☐ Can the worker be caught in, by, or between objects?
- ☐ Is there potential for a slip or trip?
- ☐ Can the worker fall from one level to another or even on the same level?
- ☐ Can pushing, pulling, lifting, bending, or twisting cause strain?
- ☐ Is the environment hazardous to safety or health?
- ☐ Are there concentrations of toxic gas, vapor, fumes, or dust?
- ☐ Are there potential exposures to heat, cold, noise, or ionizing radiation?
- ☐ Are there flammable, explosive, or electrical hazards?



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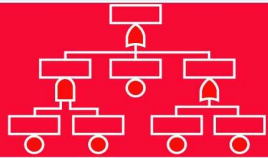
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Suggested methods to control the identified hazards should be listed. Engineering or administrative controls to isolate workers from hazards are preferred over the use of personal protective equipment.

- ☐ Find a new way to do the job
- ☐ Change the physical conditions that create the hazards
- ☐ Revise the work procedure or process
- ☐ Reduce the frequency of the job
- ☐ Enhance training before performing the job
- ☐ Increase monitoring and supervision during the job
- ☐ Implement administrative controls when the hazard cannot be eliminated by engineering controls
- ☐ Prescribe personal protective equipment when appropriate



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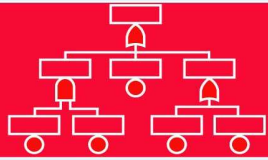
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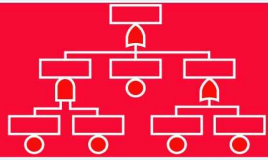
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- ☐ Identifies actual and potential hazards related to a job, and helps determine how these should be managed
- ☐ Giving individuals training in safe and efficient job protection
- ☐ Preparing for planned safety observations
- ☐ Intrusting new worker on the job
- ☐ Giving pre-job instructions on irregular jobs
- ☐ Reviewing job procedures after accident occurs
- ☐ Studying jobs for possible improvements in job methods
- ☐ Identifying what safeguards need to be in place
- ☐ Supervisors learn about jobs they supervise
- ☐ Increases worker involvement in the safety process
- ☐ Worker participation in workplace safety
- ☐ Positive attitudes about safety



Repeating the JSA

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If any aspect of a job changes with respect to new materials, new equipment, new methods, a JSA should be performed again.

If a serious accident occurs on a job, a new JSA may help to identify the cause of the accident and determine ways to prevent future incidents.

JSA's should be performed on a periodic basis, even if nothing has changed. This will ensure that workers are following correct methods of operation, and that equipment is in proper working condition.