# Job Safety Analysis (JSA) Training Outline for GSFC Managers

This outline is designed to assist supervisors at the Goddard Space Flight Center (GSFC) in conducting a Job Safety Analysis (JSA) in their work area.

The following 8 steps explain what a Job Safety Analysis is and contains guidelines for conducting your own step – by – step analysis for the different jobs located in your work area. A sample of a completed Job Safety Analysis and blank Job Safety Analysis form are provided.

Although this guideline is designed for GSFC supervisors/team leaders and contractor supervisors, employees are encouraged to use the information contained in the outline to analyze their own jobs, be aware of workplace hazards, and report any hazardous conditions to their supervisors.

## STEP 1: SELECTING JOBS FOR ANALYSIS

A job safety analysis can be performed for all jobs in the workplace, whether the job is "special" (non-routine) or routine. Even one-step jobs, such as those in which only a button is pressed, can and perhaps should be analyzed by evaluating surrounding work conditions.

**Conduct a Job Safety Analysis (JSA) for the following jobs:**

1. **Jobs with highest rates of accidents and disabling injuries.**
2. **Jobs where "close calls/near misses" have occurred.**
3. **New jobs and jobs where changes have been made in processes and procedures.**

Supervisors must review the Completed job safety analysis with the effected employees.

## STEP 2: INVOLVE THE EMPLOYEE

Once you have selected the jobs for analysis, discuss the procedure with the employee performing the job and explain its purpose. Point out that you are studying the job itself not checking on the employee's job performance. Involve the employee in all phases of the analysis – from reviewing the job steps to discussing potential hazards and recommended solutions. You also should talk to other workers who have performed the job.

## STEP 3: CONDUCT THE JOB SAFETY ANALYSIS

Before actually beginning the job safety analysis, take a look at the general conditions under which the job is performed and develop a checklist. Below are some sample questions you might ask. This list is by no means all-inclusive because each worksite has its own requirements and environmental conditions. You should add your own questions to the list.

- Are there materials on the floor that could trip a worker?
- Is lighting adequate?
- Are there any live electrical hazards at the job site?
- Are there any explosive hazards associated with the job or likely to develop?
- Are emergency exits clearly marked?
- Are trucks or motorized vehicles properly equipped with brakes, overhead guards, backup signals, horns, steering gear and identification, as necessary?
- Are tools, including hand tools, machines, and equipment in need of repair?
- Is there excessive noise in the work area hindering worker communication and increasing risk of hearing loss?
- Are all employees operating vehicles and equipment properly trained and authorized?
- Are employees wearing proper personal protective equipment (PPE) for the jobs they are performing?
- Have any employees complained of headaches, breathing problems, dizziness or strong odors?
- Is ventilation adequate?
- Does the job involve entry into a confined space?
- Have tests been made for oxygen deficiency and toxic fumes?

## STEP 4: BREAK DOWN THE JOB

In the first part of the jab safety analysis, list each step of the job in order of occurrence as you watch the employee performing the job.

## STEP 5: IDENTIFY THE HAZARDS

After you have recorded the job steps, next examine each step to determine the hazards that exist or that might occur. Ask yourself these kind of questions:

- Is the worker wearing clothing or jewelry that could get caught in the machinery?
- Are there fixed objects that may cause injury, such as sharp machine edges?
- Can the worker get caught in or between machine parts?
- Can the worker be injured by reaching over moving machinery parts or materials?
- Is the worker at any time in an off-balance position?
- Is the worker positioned to the machine in a way that is potentially dangerous?
- Is the worker required to make movements that could cause hand or foot injuries, repetitive motion injuries, or strain from lifting?
- Can the worker be struck by an object, lean against or strike a machine part or object?
- Do suspended loads or potential energy (such as compressed springs, hydraulics or jacks) pose hazards?
- Can the worker fall from one level to another?
- Can the worker be injured from lifting objects, or from carrying heavy objects?
- Do environmental hazards – dust, chemicals, radiation, welding rays, heat or excessive noise Result from the performance of the job?

## STEP 6: EVALUATE THE HAZARD

The next step is to look into what would cause these hazards. You need to think about what events could lead to an injury or illness for each hazard you identified. Typical questions are:

- Is the worker wearing protective clothing and equipment, including safety belts or harnesses that are appropriate for the job? Does it fit properly?
- Has the worker been trained to use appropriate **P**ersonal **P**rotective **E**quipment
- Are work positions, machinery, pits or holes, and hazardous operations adequately guarded?
- Are Lockout Tagout procedures used for deactivation during maintenance procedures?
- Is the flow of work improperly organized (e.g., is the worker required to make movements that are too rapid)?
- How are dusts and chemicals dispersed in the air?
- What are the sources of noise, radiation and heat?
- What causes a worker to contact sharp surfaces?
- Why would a worker be tempted to reach into moving machine parts?

In general the most reliable protection is to eliminate the source or cause of the hazard. Redesigning equipment, changing tools, installing ventilation, or adding machine guards might eliminate hazards.

If the hazard cannot be eliminated, the danger should be reduced as much as possible. Improving the procedure or using **P**ersonal **P**rotective **E**quipment are some of the primary ways to reduce the danger.

## STEP 7: RECOMMEND SAFE PROCEDURES AND PROTECTION

After you have listed each hazard or potential hazard and have reviewed them with the employee performing the job, determine whether the job could be performed in another way to eliminate hazards, such as combining steps or changing the sequence, whether safety equipment is needed to reduce the hazards, or whether training is needed to recognize hazards.

If safe and better job steps can be used, list each new step, such as describing a new method for disposing of material. List exactly what the worker needs to know to perform the job using a new method. Try to avoid general statements such as "Be Careful." Be as specific as you can in your recommendations.

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

## STEP 8: REVISE THE JOB SAFETY ANALYSIS

Review and update periodically. Even if no changes have been made in a job, hazards that were missed in an earlier analysis could be detected.

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.

Any time a jab safety analysis is revised, training in the new job methods or protective measures should be provided to all employees affected by the change.

To show how a job safety analysis form is prepared, a sample worksheet for rocket motor staging at WFF is provided.