



Department of the Air Force
HQ AEDC (AFMC)
Arnold AFB, TN 37389

Safety, Health, and Environmental Standard

Title: JOB SAFETY ANALYSIS

Standard No.: A10

Effective Date: 05/31/2011

The provisions and requirements of this standard are mandatory for use by all personnel engaged in work tasks necessary to fulfill the AEDC mission. Please contact your safety, industrial health and/or environmental representative for clarification or questions regarding this standard.

Approved:

Contractor/ATA Director
Safety and Health Group

Air Force Functional Chief



Safety, Health, and Environmental Standard

JOB SAFETY ANALYSIS

1.0 INTRODUCTION/ SCOPE/APPLICABILITY

- 1.1 Introduction – This standard provides criteria for preparing a Job Safety Analysis (JSA).
- 1.2 Scope – All suitable jobs at AEDC should be analyzed and documented using a JSA Form GC-1707. (An example is provided as an annex to this standard.) Particular attention should be paid to jobs that have historically resulted in accidents and/or have the potential for producing severe injury, or jobs which are newly created. Subcontractors may use equivalent documentation or request a copy of the GC-1707 from their project manager or contract monitor.
- 1.3 Applicability – This standard applies to AEDC personnel and subcontractors whose responsibilities and activities involve work, services, support, or test activities on and/or in facilities or systems at AEDC. Organizations develop work- and/or test-specific JSAs using the content herein as minimum guidelines for JSA development.

2.0 BASIC HAZARDS/HUMAN FACTORS

The JSA is intended to document and identify methods of control of elimination of basic hazards.

3.0 DEFINITIONS

Job – A job is a sequence of separate steps or activities that together accomplish a work goal. Broadly defined jobs (conduct a test) or narrowly defined jobs (hammer a nail) are unsuitable for Job Safety Analysis (JSA). Jobs suitable for JSA consideration (e.g. off load a truck, remove and replace a guard rail, repair a machine, change a motor, replace a pump, etc.) may be established by the supervisor.

Job Safety Analysis (JSA) – A safety analysis technique which lists task steps, identifies hazards for each step, devises a safe plan of corrective action to eliminate or control each hazard, and lists equipment and resources to achieve the safe plan.

Operating Contractor – A long-term contractor directly accountable to the Air Force for the AEDC mission; term used to identify the AEDC Operation, Maintenance, Information Management and Support Contractor.

Outside Contractor/Subcontractor – An organization employed by a contractor or the Air Force to do construction, maintenance, repair or other work at AEDC. There is no employment relationship, control or supervision of the subcontractor's employees by AEDC contractors. Also referred to as the construction contractor.

Supervisor – Supervisor, craft coach, team leader, craft lead man, or any other person serving in a lead capacity for a group of workers assigned to a task that is being analyzed using a JSA.

Task Team Member – Any person who contributes to the accomplishment of the task and/or has input to the JSA.

4.0 REQUIREMENTS/RESPONSIBILITIES

4.1 Requirements

- 4.1.1 At AEDC no work task that is suitable for a JSA shall be accomplished without first preparing a JSA.
NOTE: Work tasks whose hazards have been analyzed and suitable countermeasures developed using a system safety hazard analysis per AEDC Safety, Health, and Environmental Standard A4 System Safety do not require a JSA. However, *this will generally not be the case since system safety hazard analyses are usually done on a much broader scale than the task level of the JSA.*
- 4.1.2 Both pages of the Form GC-1707 Job Safety Analysis shall be completed in order to have a valid JSA.
- 4.1.3 Work accomplished by an outside contractor at AEDC shall not proceed without preparation of a JSA by the worker(s) performing the tasks of the job. This preparation must be coordinated with the appropriate AEDC supervisor by the project manager or contract monitor.

- 4.1.4 The JSA for the work in progress shall be kept at the jobsite for reference by workers involved in the task.
- 4.1.5 All workers shall be briefed on the requirements outlined in the JSA for the tasks that they are to accomplish before the work begins, especially if they did not participate in preparation of the JSA.
- 4.1.6 All aspects of the job must be covered on a JSA even if multiple crafts are required. A single JSA for the job prepared by all crafts together or multiple JSA's per craft is acceptable.
- 4.1.7 Some work is very fluid and requirements and tasks change depending on the environment and work conditions. When this happens, JSAs must be modified or tailored to include new or changing tasks.
- 4.1.8 Routine tasks that do not change/remain consistent may be covered on a single JSA; however, the JSA must be reviewed and initialed/dated daily, or when changes in conditions occur, the scope of the job and/or hazards change or, when any work stoppage exceeds four hours.
- 4.1.9 Test article changes for which User customers are paying for occupancy require a JSA. The JSA should be prepared in advance for each scenario of test article installation to minimize cost and turnaround time for AEDC customers.
- 4.1.10 A JSA must be kept on file in the supervisor's office for 30 days after completion of the job for which it was prepared.
- 4.1.11 JSAs that could assist an organization in similar future work should be kept as a reference document for as long as the organization requires.
- 4.1.12 Completed evaluation forms along with the associated JSA must be routed to the contractor safety office, who will determine if further action is required.
- 4.1.13 A JSA may be used to assist in the development of safe procedures for the operating environment.

4.2 Responsibilities

4.2.1 Organizational Director

Should an organization choose to use an alternate form other than the GC-1707, the director of that organization must ensure it provides the same level of planning detail or greater. The proposed form must be coordinated with the Operating Contractor Safety and Health Director for approval before being used.

NOTE: AEDC Safety, Health and Environmental Standard A6 outlines outside contractor JSA requirements.

4.2.2 Functional Manager and/or Project Manager

- 4.2.2.1 Ensure all personnel comply with this standard when applicable.
- 4.2.2.2 Ensure engineering staff make input to the JSA to provide vital system information that might not normally be available at the working level.
- 4.2.2.3 Ensure employees involved in work tasks make every effort to be involved in the preparation of the JSA and have input to a safe plan of action.

4.2.3 Supervisor

- 4.2.3.1 Ensure work orders issued to line workers provide enough information for workers to prepare a valid JSA.
- 4.2.3.2 Before approving the Supervisor or Working Foreman shall, verify the content of the JSA with regards to the following:
 - 4.2.3.2.1 Is the JSA is properly completed, legible, available and understandable to affected employees?
 - 4.2.3.2.2 Is the JSA Checklist portion of Form GC-1707 is completed properly?
 - 4.2.3.2.3 Is the process or task that the JSA addresses broken down into the appropriate number of steps?
NOTE: A JSA that provides too few steps may not adequately address all the hazards of the task, while a JSA that provides too many steps may become complicated and hard to understand.
 - 4.2.3.2.4 Is there a safe plan of action for each identified hazard?
 - 4.2.3.2.5 Are training and PPE requirements adequately addressed?
 - 4.2.3.2.6 Does the JSA adequately identify inspection requirements for fall protection gear, cranes, forklifts, and similar equipment?

- 4.2.3.2.7 Are adequate planning, engineering drawings, specifications, and any technical information made known to workers prior to task assignment?
- 4.2.3.2.8 Have all task team members reviewed and initialed the current JSA?
- 4.2.3.2.9 Did all task team members initial the JSA each time work was interrupted by shift change, holiday, etc?

4.2.4 Employees

- 4.2.4.1 Break the job down into successive steps or activities and plan how these actions are to be performed. For example, a single step labeled “remove and replace valve” is not an adequate description of the work tasks for a JSA written for a valve replacement job.
- 4.2.4.2 Identify hazards for potential accidents on the job along with associated safe work procedures to eliminate or control the hazards of the job.
- 4.2.4.3 Identify equipment and resources required to do the job safely.
- 4.2.4.4 Based on personal knowledge and previous operating history, attempt to predict abnormal operations and their effect on the task.
- 4.2.4.5 Whenever task conditions change and new hazards are observed, modify the current JSA and communicate the hazards and controls to the employees conducting the task.
- 4.2.4.6 Take the initiative to prepare a JSA for work tasks before they are accomplished.
- 4.2.4.7 Review and initial the completed JSA before beginning work and again following any interruption in work greater than four hours. (See Frequently Asked Questions, Numbers 11 and 12 in the annex to this standard.)

4.2.5 Operating Contractor Safety and Health Group (SHG)

Assist in the safe development and implementation of projects, operations, and procedures involving JSAs. Monitor for compliance with this standard.

5.0 TRAINING

- 5.1. All operating contractor employees shall complete initial JSA training provided by SHG.
- 5.2 Training to convey changes in JSA requirements shall be conducted by supervision.
- 5.3 Outside contractors shall ensure employees are knowledgeable in the completion and use of the JSA.

6.0 INSPECTION/AUDITS

Operating Contractor SHG shall conduct spot and annual inspections which include verifying proper use of the JSA.

7.0 REFERENCES

AEDC Safety, Health and Environmental Standard A6 User and Subcontractor Safety

OSHA Publication No. 3071, Job Hazard Analysis

8.0 ANNEX

Job Safety Analysis Example

SHE Standard A10, Job Safety Analysis

Annex: Job Safety Analysis Example and Frequently Asked Questions

JOB SAFETY ANALYSIS

JOB OR PROJECT NUMBER/NAME <p style="text-align: center;">Example JSA</p>	LOCATION <p style="text-align: center;">Building 1478, Carpenter Shop</p>	WORK ORDER NO. <p style="text-align: center;">0000000/00</p>
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1. WRITE JOB/TASK IN THE SPACE PROVIDED AND DIVIDE THE TASK INTO INDIVIDUAL STEPS, AS APPROPRIATE.
 2. IN THE HAZARD COLUMN, LIST ALL POSSIBLE HAZARDS ANTICIPATED IN THE INDIVIDUAL STEP OF THE TASK OR JOB
 3. IN THE SAFE PLAN COLUMN, PROVIDE THE CORRECTIVE ACTIONS THAT WILL BE TAKEN TO PREVENT THE HAZARDS.
 4. IN THE RESOURCES COLUMN, LIST THE EQUIPMENT AND RESOURCES THAT ARE NEEDED TO ACHIEVE THE "SAFE PLAN."
 5. EACH TEAM MEMBER WHO WORKS UNDER THIS JSA MUST REVIEW AND VERIFY BY PRINTING HIS OR HER NAME AND INITIALING BELOW; WHEN THE CONTINUATION SHEET IS USED, THAT SHEET MUST ALSO BE VERIFIED. WHEN WORK IS INTERRUPTED DUE TO SHIFT CHANGE, HOLIDAY, ETC., ALL EMPLOYEES MUST INITIAL THAT THE JSA/SAFE PLAN IS STILL IN PLACE BEFORE RESUMING WORK.

DESCRIBE JOB OR TASK, <p>Offload pallets from flat bed truck.</p>	DATE (MM/DD/YYYY)
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STEP	DESCRIBE INDIVIDUAL TASK STEPS	HAZARD	SAFE PLAN	EQUIPMENT & RESOURCES
1.	Un-strap pallets from truck and remove straps	Hand cuts from straps or winch, could hit someone from thrown straps	Let driver un-strap, maintain a safe area around truck.	None for me; gloves for driver.
2.	(Un-strap pallets—continued)	Slip, trip, and fall	Watch footing, keep area clear of obstructions	Safety shoes, gloves; hard hat; safety glasses
3.	Get forklift	Normal driving hazards	Checkout fork truck using checklist	Rag, checklist, pen
4.	Offload pallet with fork truck	Damage pallet with forks; drop load; run into something;	Check weight w/in limits; carry close to mast	Spotter
5.	(Offload pallet—continued)	Pinch points Crush	Keep hands clear of pinch points Keep feet clear of lowered objects	None
6.	Return fork truck	Normal driving hazards	Use caution	None
7.	Guide truck from area	Other vehicles in area; personnel Crush	Use spotter Ensure spotter is out of danger	Spotter
8.				
9.				
10.				

EXAMPLE

WHEN WORK IS INTERRUPTED BEYOND THE END OF THE SHIFT, ALL EMPLOYEES MUST INITIAL THAT THE JSA/SAFE PLAN IS STILL IN PLACE BEFORE RESUMING WORK.

JSA REVIEWED AND ACCEPTED BY	DAY					JSA REVIEWED AND ACCEPTED BY	DAY					JSA REVIEWED AND ACCEPTED BY	DAY					JSA REVIEWED AND APPROVED BY SUPERVISOR(S)	DAY							
	1	2	3	4	5		1	2	3	4	5		1	2	3	4	5		1	2	3	4	5			
	INITIALS	INITIALS	INITIALS	INITIALS	INITIALS		INITIALS	INITIALS	INITIALS	INITIALS	INITIALS		INITIALS	INITIALS	INITIALS	INITIALS	INITIALS		INITIALS	INITIALS	INITIALS	INITIALS	INITIALS			
TASK TEAM MEMBERS	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	
Zeke H. Eaton	ZHE 8/3/08	ZHE 8/4/08	ZHE 8/5/08	ZHE 8/8/08	ZHE 8/9/08											Elgin P. Springbok	EPS 8/3/08	EPS 8/4/08	EPS 8/5/08	EPS 8/8/08	EPS 8/9/08					
M.D. Neal	MDN 8/3/08	MDN 8/4/08	MDN 8/5/08	NA 8/8/08	ZHE 8/9/08																					

GC-1707, EXAMPLE FOR USE IN SHE STANDARD A10, JOB SAFETY ANALYSIS

This is an uncontrolled copy when printed.

SHE Standard A10, Job Safety Analysis

JOB SAFETY ANALYSIS CHECKLIST			
JOB OR PROJECT NUMBER/NAME		DATE (MM/DD/YYYY)	
<p>A NEW JSA IS REQUIRED IF THE JOB SCOPE OR WORK CONDITIONS CHANGE. IF WORK IS INTERRUPTED FOR LONGER THAN 4 HOURS, ALL EMPLOYEES MUST REVIEW AND INITIAL THE JSA BEFORE RESUMING WORK.</p>			
REQUIRED PERMITS	HAZARDS	SAFE PLAN	
<input type="checkbox"/> Master Work Permit <input type="checkbox"/> Hold Order/ Caution Order <input type="checkbox"/> Lock Out/Tag Out or <input type="checkbox"/> Administrative Control <input type="checkbox"/> Confined Space <input type="checkbox"/> Scaffold <input type="checkbox"/> Hot Work <input type="checkbox"/> Excavation <input type="checkbox"/> Critical Lift <input type="checkbox"/> Other	<input checked="" type="checkbox"/> Slips, Trips and Falls	<input type="checkbox"/> Inspect for trip hazards <input type="checkbox"/> Hazards marked <input type="checkbox"/> Tools & material properly stored <input type="checkbox"/> Extension cords properly secured <input type="checkbox"/> Work zone free of debris <input type="checkbox"/> Additional information below	
	<input checked="" type="checkbox"/> Pinch Points	List potential pinch points: _____ <input type="checkbox"/> Working near mobile equipment <input type="checkbox"/> Hand/Body positioning: <input type="checkbox"/> Additional information below	
	<input type="checkbox"/> Hand Hazards	List sharp tools, material, equipment: _____ <input type="checkbox"/> Deburring tool <input type="checkbox"/> PPE <input type="checkbox"/> Protected sharp edges as necessary <input type="checkbox"/> Additional information below	
	<input type="checkbox"/> Heavy Lifting/ Ergonomic Hazard	<input type="checkbox"/> Reviewed proper lifting tech <input type="checkbox"/> Identified material requiring lifting equipment <input type="checkbox"/> Hand protection required <input type="checkbox"/> Proper tools/equipment <input type="checkbox"/> Additional information below	
	<input type="checkbox"/> Crane or other Lifting Equipment	<input type="checkbox"/> Signalman assigned <input type="checkbox"/> Tag lines in use <input type="checkbox"/> Area around crane barricaded <input type="checkbox"/> Lifting equip. inspected <input type="checkbox"/> Personnel protected from overhead load	
	REQUIRED PPE		
	<input checked="" type="checkbox"/> Hard Hat <input type="checkbox"/> Safety Vest Eye Protection: <input checked="" type="checkbox"/> Safety Glasses <input type="checkbox"/> Face Shield <input type="checkbox"/> Chemical Goggles <input type="checkbox"/> Welding Hood Hand Protection: <input checked="" type="checkbox"/> Work Gloves <input type="checkbox"/> Cut Resistant <input type="checkbox"/> Nitrile Gloves <input type="checkbox"/> Surgical Gloves <input type="checkbox"/> Rubber Gloves <input type="checkbox"/> Elect. Insulated Gloves <input type="checkbox"/> Arm Sleeves <input type="checkbox"/> Cryogenics Foot Protection: <input checked="" type="checkbox"/> Safety Toe Boots <input type="checkbox"/> Metatarsal Protection <input type="checkbox"/> Rubber Boots w/ Safety Toe <input type="checkbox"/> Rubber Boots Covers <input type="checkbox"/> Dielectric Footwear Respiratory Protection: <input type="checkbox"/> Dust Mask <input type="checkbox"/> Air Purifying <input type="checkbox"/> Supplied Air <input type="checkbox"/> SCBA <input type="checkbox"/> Emergency Egress Protective Clothing: <input type="checkbox"/> Cotton Coveralls <input type="checkbox"/> HV Nomex <input type="checkbox"/> Nomex <input type="checkbox"/> Poly Coated Tyvek <input type="checkbox"/> Saranex <input type="checkbox"/> Tyvek <input type="checkbox"/> Other (Specify) _____ Other PPE (Specify) <input type="checkbox"/> _____ <input type="checkbox"/> _____	<input type="checkbox"/> Vehicular Traffic or Heavy Equipment	<input type="checkbox"/> Traffic Barricades <input type="checkbox"/> Cones <input type="checkbox"/> Signs <input type="checkbox"/> Flagmen <input type="checkbox"/> Lane closure <input type="checkbox"/> Communication with equipment operator <input type="checkbox"/> Additional information below
	<input type="checkbox"/> Fire Hazard	<input type="checkbox"/> Permit <input type="checkbox"/> (2) 10lb (or equiv.) Fire Extinguishers <input type="checkbox"/> Fire watch <input type="checkbox"/> Adj. Area protected <input type="checkbox"/> Unnecessary flammable mat. removed <input type="checkbox"/> Additional information below	
	<input type="checkbox"/> Hand & Power Tools:	<input type="checkbox"/> Inspect general condition <input type="checkbox"/> GFCI in use <input type="checkbox"/> Identified PPE required for each tool <input type="checkbox"/> Reviewed safety requirements in operators manual(s) <input type="checkbox"/> Guarding <input type="checkbox"/> Additional information below	
	<input type="checkbox"/> Electrical	<input type="checkbox"/> Lock Out/Tag Out <input type="checkbox"/> Confirm that equipment is de-energized <input type="checkbox"/> Flash zone defined <input type="checkbox"/> Reviewed electrical safety procedures <input type="checkbox"/> PPE identified	
<input type="checkbox"/> Heat Stress Potential	<input type="checkbox"/> Heat stress monitoring (>70 deg) <input type="checkbox"/> Liquids available <input type="checkbox"/> Cool down periods <input type="checkbox"/> Sun Screen <input type="checkbox"/> Reviewed Heat Stress symptoms <input type="checkbox"/> Additional Info below		
<input type="checkbox"/> Cold Stress Potential	<input type="checkbox"/> Proper clothing (i.e., gloves, coat, coveralls) <input type="checkbox"/> Wind chill <32 deg <input type="checkbox"/> Reviewed Cold Stress symptoms <input type="checkbox"/> Warm up periods <input type="checkbox"/> Additional. info below		
<input type="checkbox"/> Noise >85 dB	Hearing protection is required: <input type="checkbox"/> Ear plugs <input type="checkbox"/> Ear Muffs <input type="checkbox"/> Both <input type="checkbox"/> Additional information below		
<input type="checkbox"/> Noise >110 dB			
<input type="checkbox"/> Ladders	<input type="checkbox"/> Inspect general condition before use <input type="checkbox"/> Ladder inspected within last quarter <input type="checkbox"/> Ladder tied off <input type="checkbox"/> Proper angle and placement <input type="checkbox"/> Reviewed ladder safety		
<input type="checkbox"/> Excavations	<input type="checkbox"/> Permits <input type="checkbox"/> Inspected prior to entering by competent persons <input type="checkbox"/> Proper sloping/shoring <input type="checkbox"/> Pedestal <input type="checkbox"/> Trench box <input type="checkbox"/> Access/egress provided <input type="checkbox"/> Protection from accumulated water <input type="checkbox"/> Confined Space <input type="checkbox"/> Engineered shoring		
<input type="checkbox"/> Scaffolds	<input type="checkbox"/> Inspect general condition before use by competent person <input type="checkbox"/> Properly secured <input type="checkbox"/> Guardrails/Toe boards <input type="checkbox"/> Footings <input type="checkbox"/> Materials stored on scaffold		
<input type="checkbox"/> Working w/Chemicals	<input type="checkbox"/> Reviewed MSDS hazards and precautions <input type="checkbox"/> Proper containers and labels <input type="checkbox"/> HAZCOM training <input type="checkbox"/> PPE		
<input type="checkbox"/> Underground Utilities	<input type="checkbox"/> Reviewed as-built <input type="checkbox"/> Subsurface surveys <input type="checkbox"/> Received digging permit <input type="checkbox"/> Complied with all clearance steps		
<input type="checkbox"/> Overhead Utilities	<input type="checkbox"/> Power de-energization required <input type="checkbox"/> Insulation blankets required <input type="checkbox"/> Additional spotters required Required clearance distance = _____ Ft. <input type="checkbox"/> Safe work zone Marked		
<input type="checkbox"/> Environmental	<input type="checkbox"/> Air emissions <input type="checkbox"/> Water discharge <input type="checkbox"/> Hazardous wastes <input type="checkbox"/> Other wastes <input type="checkbox"/> Pollution prevention <input type="checkbox"/> Waste Minimization <input type="checkbox"/> Asbestos <input type="checkbox"/> Lead		
<input type="checkbox"/> Work at Elevation	Describe fall protection if over 6 feet:		
<input type="checkbox"/> F. O. D.	<input type="checkbox"/> Received F.O.D. Training		
<input type="checkbox"/> Natural or Site Hazards	<input type="checkbox"/> Weather <input type="checkbox"/> Terrain <input type="checkbox"/> Adjacent operations or processes <input type="checkbox"/> Biological (insects, rodents, snakes, Lime Disease)		
MATERIALS/TOOLS/ EQUIPMENT		Safe Plan	