

**ACCIDENT PREVENTION PROGRAM
HAZARD ANALYSIS**

SAFETY HEIRARCHY

Engineering Controls

Work Practices

Personal Protective Equipment (PPE)

**ACCIDENT PREVENTION PROGRAM
HAZARD ANALYSIS**

AHA IS PUTTING



SAFETY

FIRST!

WHAT ARE WE TRYING TO AVOID ON OUR JOB SITES?

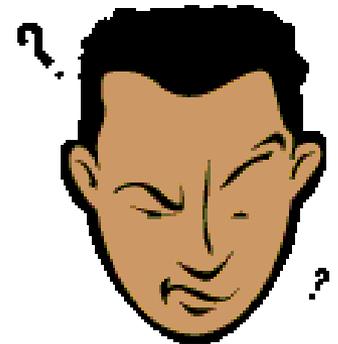


AHA'S PRE-PLAN ACTIVITIES TO AVOID UNPLANNED EVENTS

**ACCIDENT PREVENTION PROGRAM
HAZARD ANALYSIS**

**WHEN DOES THE
CONTRACTOR
SUBMIT THE**

A.H.A.?



ACTIVITY HAZARD ANALYSIS

PRIOR TO START OF ANY NEW PHASE OR TYPE OF WORK PRESENTING HAZARDS NOT PREVIOUSLY EXPERIENCED

A NEW/DIFFERENT WORK CREW OR SUB-CONTRACTOR ARE EMPLOYED.



**ACCIDENT PREVENTION PROGRAM
HAZARD ANALYSIS**

**Who would normally
develop the A.H.A.?**



**THE
CONTRACTOR
WHO WILL
ACTUALLY
BE DOING
THE WORK**

**DOES THE
PRIME CONTRACTOR
SUBMIT HIS A.H.A
WITH THE ACCIDENT
PREVENTION PLAN?**



**I SAW
SOMETHING
IN THE APP??**



ACCIDENT PREVENTION PROGRAM HAZARD ANALYSIS

Submit the AHA for the Preparatory Phase before each phase of work and at initial phase meeting. Submit subsequent AHA for each major phase of work prior to start of that phase. Format subsequent AHA as amendments to the Accident Prevention Plan specs section 013526

NO WORK WILL START UNTIL THE AHA HAS BEEN ACCEPTED BY THE GOVERNMENT REPRESENTATIVE.

APPENDIX A MINIMUM BASIC OUTLINE FOR ACCIDENT PREVENTION PLANS SECTION 2 BACKGROUND INFORMATION (d)
Brief project description, description of work to be performed and location; phases of work anticipated (these will require an AHA)

SAFETY HEIRARCHY

Engineering Controls Example:

Three foot high parapet wall on building

Work Practice Examples:

**Working from bucket truck to
bolt steel instead of climbing steel**

Personal Protective Equipment

Safety Harness

ACCIDENT PREVENTION PROGRAM HAZARD ANALYSIS

AHA can be used to evaluate and identify all substances, agents, and environments that present a hazard and the recommendations for control measures. Physical controls should be considered first (work practices), and in cases where not possible, then PPE may be used.

Yea I Remember!

1st Engineering Controls

2nd Work Practices (physical controls)

3rd PPE



- **AHAs:**

- Risk Assessment Tool
- Defines the Activity or Work to be Performed
- Identifies Hazards
- Establishes Controls to Reduce the Hazard to an Acceptable Risk Level
- Living Document
 - Changes with Site Conditions or Operations
 - Changes of competent/qualified personnel

Contractor Required – AHA (New Format)

Activity Hazard Analysis (AHA)

Activity/Work Task:	Overall Risk Assessment Code (RAC) (Use highest code)					
Project Location:	Risk Assessment Code (RAC) Matrix					
Contract Number:	Severity	Probability				
Date Prepared:		Frequent	Likely	Occasional	Seldom	Unlikely
Prepared by (Name/Title):	Catastrophic	E	E	H	H	M
Reviewed by (Name/Title):	Critical	E	H	H	M	L
	Marginal	H	M	M	L	L
Notes: (Field Notes, Review Comments, etc.)	Negligible	M	L	L	L	L
	Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)					
"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.				RAC Chart		
"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible				E = Extremely High Risk		
Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.				H = High Risk		
				M = Moderate Risk		
				L = Low Risk		
Job Steps	Hazards	Controls			RAC	
Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)		Inspection Requirements			

Contractor Required - AHA

- **COE EM 385-1-1, para 01.A.13.a:** AHAs shall define the activities being performed and identify the work sequences, the specific anticipated hazards, site conditions, equipment, materials and the control measures to be implemented to eliminate or reduce each hazard to an acceptable level of risk.
- **COE EM 385-1-1, para 01.A.13.b:** Work will not begin until the AHA for the work activity has been accepted by the Government Designated Authority (GDA) and discussed with all engaged in the activity, including the Contractor, subcontractor(s), and Government on-site representative at preparatory and initial control phase meetings.
- **COE EM 385-1-1, para 01.A.13.c:** Identify the names of the Competent/Qualified person(s) required for a particular activity as specified by OSHA and EM 385-1-1. (i.e., Excavation, Fall Protection, Scaffolding, etc.)
- **COE EM 385-1-1, para 01.A.13.d:** AHAs shall be reviewed and modified as necessary to address changing site conditions, operations, or change of competent/qualified personnel. ****Living document****

Develop Site Specific AHAs

Six Step Process

- **Step 1:**
 - Identify: **Definable Features of Work**
 - ✓ Reference
 - Contractor Quality Control Plan
 - Contractor Project Schedule
 - Subcontractors and suppliers working on the project shall also contribute in developing an accurate “Project Schedule”.
 - Within each “Definable Features of Work” there may be other sub-phases of work to complete the “Definable Features of Work” such as
 - ✓ Set-up/Demobilization of office trailers
 - ✓ Staging of construction materials
 - ✓ Demolition of walls, HVAC systems, etc.
 - ✓ Asbestos/Lead abatement activities

How to Develop Site Specific AHAs

Six Step Process

- **Step 1:**

- Identify: **Definable Features of Work**
 - Reference
 - Contractor Quality Control Plan
 - Contractor Project Schedule
 - Subcontractors and suppliers working on the project shall also contribute in developing an accurate "Project Schedule".
- Within each "Definable Features of Work" there may be other sub-phases of work to complete the "Definable Features of Work" such as
 - Set-up/Demobilization of office trailers
 - Staging of construction materials
 - Demolition of walls, HVAC systems, etc.
 - Asbestos/Lead abatement activities

Definable Features of Work

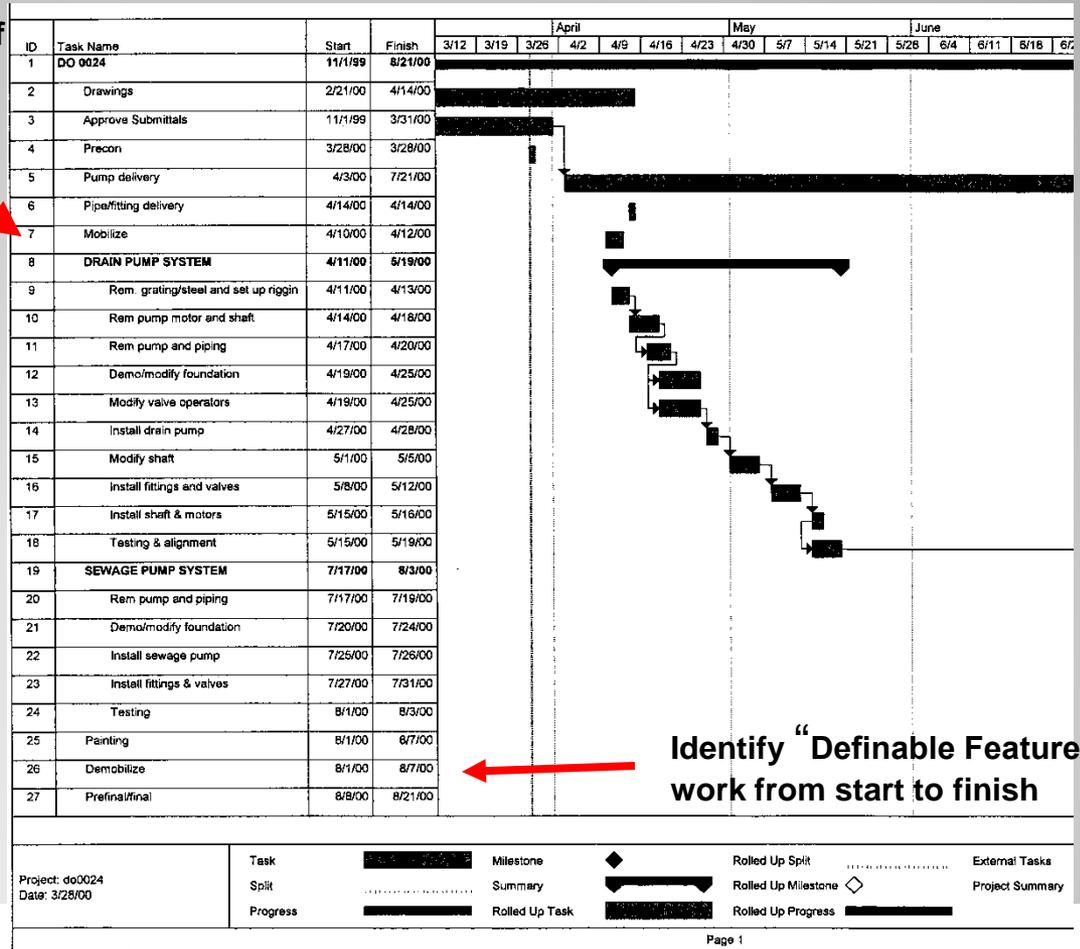
Examples of “Definable Features of Work” from start to finish

Within each “Definable Features of Work” there may be other sub-phases of work to complete the “Definable Features of Work”

For Example: Mobilization

Sub-phases:

- Placement of project field office
- Utilities tie-in
- Erection of project fencing
- Establishing lay-down areas
- Environmental controls
- Erection of USACE project sign
- Etc.



Identify “Definable Features” of work from start to finish

Project: do0024
Date: 3/28/00

Task		Milestone		Rolled Up Split		External Tasks	
Split		Summary		Rolled Up Milestone		Project Summary	
Progress		Rolled Up Task		Rolled Up Progress			

Definable Features of Work

List “Definable Features of Work” and sub-phases of work on AHAs under “Job Steps:

For Example:

Mobilization

Placement of project field office

Utilities tie-in

Erection of project fencing

Establishing lay-down areas

Environmental controls

Erection of NAVFAC project sign

Activity Hazard Analysis (AHA)

Activity/Work Task:	Overall Risk Assessment Code (RAC) (Use highest code)															
Project Location:	Risk Assessment Code (RAC) Matrix															
Contract Number:	Severity	Probability														
Date Prepared:		Frequent	Likely	Occasional	Seldom	Unlikely										
Prepared by (Name/Title):	Catastrophic	E	E	H	H	M										
Reviewed by (Name/Title):	Critical	E	H	H	M	L										
	Marginal	H	M	M	L	L										
	Negligible	M	L	L	L	L										
Notes: (Field Notes, Review Comments, etc.)		<p>Step 1: Review each “Hazard” with identified safety “Controls” and determine RAC (See above)</p> <p>“Probability” is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.</p> <p>“Severity” is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible</p> <p>Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each “Hazard” on AHA. Annotate the overall highest RAC at the top of AHA.</p> <table border="1"> <tr> <td colspan="2">RAC Chart</td> </tr> <tr> <td>E = Extremely High Risk</td> <td></td> </tr> <tr> <td>H = High Risk</td> <td></td> </tr> <tr> <td>M = Moderate Risk</td> <td></td> </tr> <tr> <td>L = Low Risk</td> <td></td> </tr> </table>					RAC Chart		E = Extremely High Risk		H = High Risk		M = Moderate Risk		L = Low Risk	
RAC Chart																
E = Extremely High Risk																
H = High Risk																
M = Moderate Risk																
L = Low Risk																
Job Steps	Hazards	Controls			RAC											
Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)		Inspection Requirements													

Hazards

- **Step 2:**

- Identify: Recognized or anticipated hazards for each definable and/or sub-phases of work
 - **Ask yourself the following to help identify hazards (not all inclusive):**
 - Is there a danger of the employee of being struck by something (falling objects, moving equipment, etc.) from above, side, behind or in front?
 - Can the employee slip or trip?
 - Can the employee be caught in or between objects, machinery, collapsing walls, confined space, etc.?
 - Strains or sprains?
 - Electrical shock?
 - Can the employee fall from same or different levels?
 - Can employee or equipment come into contact with overhead lines or underground utilities?
 - Can employee be exposed to hazardous environments or chemicals?
 - **Utilize past experiences, Accident Trends, common sense, etc. to help identify hazards**

Hazards

List “Hazards” on the AHAs under Hazards”

Examples of Hazards (not all inclusive)::

- Struck By
- Struck by Falling Object
- Struck Against
- Fall on Same Level
- Fall on Different Level
- Slipped/ Tripped (No fall)
- Punctured By
- Laceration
- Caught On
- Caught By
- Caught Between
- Lifted, Strained by (Single Action)
- Contacted by (Object was moving)
- Electric Shock
- Impaled
- Downing
- Oxygen Deficient Atmosphere
- Exposed To
- Stung By
- Equipment Failure
- Equipment Rollover
- Fire
- Cave-In

Activity Hazard Analysis (AHA)

Activity/Work Task:	Overall Risk Assessment Code (RAC) (Use highest code)					
Project Location:	Risk Assessment Code (RAC) Matrix					
Contract Number:	Severity	Probability				
Date Prepared:		Frequent	Likely	Occasional	Seldom	Unlikely
Prepared by (Name/Title):	Catastrophic	E	E	H	H	M
Reviewed by (Name/Title):	Critical	E	H	H	M	L
	Marginal	H	M	M	L	L
	Negligible	M	L	L	L	L
Notes: (Field Notes, Review Comments, etc.)	<p>Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)</p> <p>"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.</p> <p>"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible</p> <p>Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.</p>					
	RAC Chart					
		E = Extremely High Risk				
		H = High Risk				
		M = Moderate Risk				
		L = Low Risk				
Job Steps	Hazards	Controls			RAC	
Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)	Inspection Requirements				

Controls

- **Step 3:**

- Identify: Site specific control measures to eliminate or reduce each hazard to an acceptable risk level
 - Ask yourself the following (not all inclusive):
 - How can the working condition or process be changed?
 - Can the hazard be eliminated with engineering controls?
 - What type of PPE can we use?
 - Can the hazard be eliminated with administrative controls?
 - What can the employee do to prevent an accident or eliminate the hazard?
- Utilize past experiences, Lessons Learned, After Action Reports, Accident Trends, common sense, etc. to help formulate control measures.
- GOAL: Reduce each Hazard to Acceptable Risk Level

Controls

Job Steps	Hazards	Controls	RAC
<p>Mobilization:</p> <p>Project field office placement</p> <p>Utilities tie-in</p>	<p>Stuck by moving equipment</p> <p>Fall from elevated heights</p>	<p>Wear reflective vests.</p> <p>Establish "No Zone" with flagging or barrier tape. Authorized personnel only!</p> <p>Back up alarms.</p> <p>Operators maintain eye contact with spotters at all times.</p> <p>Provide ladder for safe access to roof.</p> <p>Personnel shall wear full body harness with lanyard.</p> <p>Install manufacture approved anchor point at least 6 ft (1.8 m) from the roof line.</p> <p>100 percent tie-off at all times.</p>	

Competent/Qualified Personnel

- **Step 4:**

- Identify: Names of the Competent or Qualified Personnel required for the activity or job step
 - Reference
 - EM 385-1-1
 - OSHA
 - Proof of competency/qualification shall be submitted to the GDA for acceptance prior to start of work
 - Attached competency/qualification documentation to AHA
 - Examples of Competent/Qualified Personnel
 - Excavation
 - Scaffolding
 - First Aid/CPR
 - Electrical
 - Confined Space

Competent/Qualified Personnel

- Names of the Competent or Qualified Personnel required for the activity or job step

- Reference

EM 385-1-1
OSHA

- Attached competency/qualification documentation to AHA

Activity Hazard Analysis (AHA)

Activity/Work Task:	Overall Risk Assessment Code (RAC) (Use highest code)					
Project Location:	Risk Assessment Code (RAC) Matrix					
Contract Number:	Severity	Probability				
Date Prepared:		Frequent	Likely	Occasional	Seldom	Unlikely
Prepared by (Name/Title):	Catastrophic	E	E	H	H	M
Reviewed by (Name/Title):	Critical	E	H	H	M	L
	Marginal	H	M	M	L	L
	Negligible	M	L	L	L	L
Notes: (Field Notes, Review Comments, etc.)	<p>Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)</p> <p>"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.</p> <p>"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible</p> <p>Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.</p>					
					RAC Chart	
					E = Extremely High Risk	
					H = High Risk	
					M = Moderate Risk	
					L = Low Risk	
Job Steps	Hazards	Controls			RAC	
Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)		Inspection Requirements			

Risk Assessment Code (RAC)

- **Step 5:**

- Identify: Risk Assessment Code (RAC)
- Review each "Hazard" for "**Probability**" and "**Severity**" per Risk Assessment Code Matrix chart
 - **Probability:** Likelihood of the hazard to cause a incident, near miss, or accident
 - Frequent - Occurs very often, known to happen regularly
 - Likely - Occurs several times, a common occurrence
 - Occasional - Occurs sporadically, but is not uncommon
 - Seldom - Remotely possible, could occur at some time
 - Unlikely - Can assume will not occur, but not impossible

Risk Assessment Code (RAC)

- **Step 5 con't:**

- **Severity:** Outcome/degree of the incident, near miss, or accident
 - Catastrophic - Death or permanent total disability; Major property damage
 - Critical - Permanent partial disability or temporary total disability; Extensive damage to equipment or systems
 - Marginal - Lost workdays due to injury or illness; Minor damage to equipment or systems, property, or the environment
 - Negligible - First aid or minor medical treatment; Slight equipment or system damage, but fully functional or serviceable; Little or no property or environmental damage

Risk Assessment Code (RAC)

- **Step 5 con't:**

- Ask yourself: How often (**probability**) will this hazard result in a incident, near miss, or accident?
 - For Example:
 - Employee falling from roof or elevated heights (Hazard)
 - Probability: Occasional
- Ask yourself: What will be the outcome or degree (**severity**) of injury or property damage if the incident, near miss, or accident did occur on site?
 - For Example:
 - Broken arm or leg with lost time (outcome or degree)
 - Severity: Marginal
- Review "Risk Assessment Code (RAC) Matrix" chart to determine Risk Assessment Code (RAC) as E, H, M, or L
- RAC: M (Moderate Risk)

Risk Assessment Code (RAC)

Probability: Occasional

Activity Hazard Analysis (AHA)

Activity/Work Task:	Overall Risk Assessment Code (RAC) (Use highest code)					
Project Location:	Risk Assessment Code (RAC) Matrix					
Contract Number:	Severity	Probability				
Date Prepared:		Frequent	Likely	Occasional	Seldom	Unlikely
Prepared by (Name/Title):	Catastrophic	E	E	H	H	M
Reviewed by (Name/Title):	Critical	E	H	H	M	L
	Marginal	H	M	M	L	L
Notes: (Field Notes, Review Comments, etc.)	Negligible	M	L	L	L	L
	<p>Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)</p> <p>"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.</p> <p>"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible.</p> <p>Step 2: Identify the RAC (Probability*Severity) as E, H, M, or L for each "hazard" on AHA. Annotate the overall highest RAC at the top of AHA.</p>					
Job Steps	Hazards	Controls			RAC	
					M	
Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)	Inspection Requirements				

Risk Assessment Code (RAC)

- Moderate Risk (M)
- Identify (M) as RAC for the hazard on AHA
- Repeat RAC process for each hazard

Risk Assessment Code (RAC)

Job Steps	Hazards	Controls	RAC
Mobilization: Project field office placement	Stuck by moving equipment	Wear reflective vests. Establish "No Zone" with flagging or barrier tape. Authorized personnel only! Back up alarms. Operators maintain eye contact with spotters at all times.	L
	Fall from elevated heights	Provide ladder for safe access to roof. Personnel shall wear full body harness with lanyard. Install manufacture approved anchor point at least 6 ft (1.8 m) from the roof line. 100 percent tie-off at all times.	M

Most RACs will be (M) or (L) after safety controls have been identified, but some RACs may be classified as (H) or (E) after safety controls have been identified. See next slide.

C CM/ET/GDA Action Based on Accepted AHA

- 1. AHA's with Risk Assessment Codes that are E (Extremely High Risk) or H (High Risk) require on site visit to verify all conditions agreed to in accepted AHA are as stated before beginning work.**
 - a. First time high risk operations must have mutual GO/NO GO point where the contractor and GDA agree it is safe to continue work.**
- 2. AHA's for sites with previous mishaps involving the same type of work require a site visit to verify conditions are as stated in accepted AHA**
- 3. Sites with AHA's that require a visit to check on conditions;**
 - a. Remote Locations**
 - b. New contractor teams i.e. first time working with a new sub.**
 - c. After hours-work**
 - d. Lessons learned in the past for same contractor**

Special Note: This is also the time to check for changed conditions, either in the AHA stated objectives or site conditions

Equipment, Training, and Inspection

- **Step 6:**

- Identify: Equipment to be Used, Training Requirements, and Inspection Requirements

- Reference:

- EM 385-1-1
- OSHA 29 CFR 1926
- Manufacture Instructions/Recommendations (Operator Manual)
- Industry Practices

- Utilize past experiences,
- Lessons Learned,
- After Action Reports, Accident Trends, common sense, etc.

- Communicate with subcontractors, suppliers, etc.

Risk Assessment Code (RAC)

- **Step 5 con't**

- RACs that are **E (Extremely High Risk)** or **H (High Risk)** after safety controls
 - Contact QAET, CM/PM/DM,
 - Potential E or H activities or job steps
 - Contractor diving operations
 - Entry into Permit Required Confined Spaces
 - Hot Work on or around fuel systems
 - Critical lift crane ops
 - Many others
 - Review and acceptance from GDA for all (E) or (H) mandatory prior to work beginning.

Risk Assessment Code (RAC)

Job Steps	Hazards	Controls	RAC
<p>Mechanical Works</p> <p>Installation of new 200 ton HVAC cooling tower</p>	<p>Loss of load during crane lift</p>	<p>Develop critical lift plan IAW EM 385-1-1, para 16.H.</p> <p>Submit critical lift plan to GDA for acceptance and review plan with all involved with the lift.</p> <p>Inspect rigging.</p> <p>Detail rigging plan</p> <p>Verify wind speed prior to lift</p> <p>Inspect crane prior to use</p> <p>Load test crane</p>	<p>H</p>

RACs classified as (H) or (E) after identifying safety controls require additional review and acceptance from GDA. Seek guidance or instruction from GDA before start of work.

- **Step 6:**

- Identify: Equipment to be Used, Training Requirements, and Inspection Requirements

- Reference:

- EM 385-1-1
- OSHA 29 CFR 1926
- Manufacture Instructions/Recommendations (Operator Manual)
- Industry Practices
- Utilize past experiences, Lessons Learned, After Action Reports, Accident Trends, common sense, etc.
- Communicate with subcontractors, suppliers, etc.

Equipment, Training, and Inspection

Equipment, Training, and Inspection

Equipment to be Used	Training Requirements	Inspection Requirements
<p>Excavator Generator Scaffolding (Frame or Tube Clamp?) Full body Harness with Lanyard Portable Toilets 5 Ma GFCI Power Cord Sets Crane First Aid Kit Safety Shoes Safety Glasses Hardhat Respiratory Protection</p>	<p>30 OSHA Construction Safety Indoctrination Training First Aid/CPR Fall Protection Daily Tool Box Meetings (Japan) Weekly/Monthly Safety Training Respirator Emergency Response Procedures Fire Extinguisher Qualified Crane Operator Qualified Heave Equipment Operator Qualified Electricians Qualified Scaffold Erectors</p>	<p>SSHO/QC Daily Site Inspections Scaffolding Shoring Systems for Excavation Monthly First Aid Kits Fall Protection PPE and Anchors All Heavy Equipment Power Cord Sets (Daily) GFCIs (at least Monthly) Grounding (Monthly)</p>

Conclusion

- Construction work is inherently dangerous
- AHAs are a risk management tool to help identify hazards or risks and formulate controls to reduce the hazard to an acceptable risk level
- Communicate with subcontractors, suppliers,
- AHAs shall be reviewed and modified as necessary to address changing site conditions, operations, or changes of competent/qualified personnel
- Safety requires a TEAM EFFORT!

**“Life is tough, but it’s
tougher if you’re
stupid”**

Sergeant John M.
Stryker, USMC, in
“The Sands of
Iwo Jima”



ACTIVITY HAZARD ANALYSIS

THE NAMES OF THE COMPETENT/QUALIFIED PERSON(S) REQUIRED FOR A PARTICULAR ACTIVITY (*COMPETENT PERSON MENTIONED over 75 TIMES IN EM-385 AND QUALIFIED PERSON MENTIONED over 71 TIMES.*)

FOR EXAMPLE,

EXCAVATIONS, SCAFFOLDING, FALL PROTECTION,

Other Activities As Specified By OSHA And This Manual, Shall Be

Identified And Included In The AHA. Proof Of Their

Competency/Qualification Shall Be Submitted To The GDA For

Acceptance Prior To The Start Of That Work Activity

APP must state requirements that no work shall be performed unless a designated competent person is present on the job site.

Appendix Q (9) (d)



QUESTION?



Once the AHA has been completed and accepted by the Government the project work can start.

Is it necessary to do another AHA for this same phase of work on this same project?



CONTRACTOR QC DUTIES

**AS PART OF THEIR QUALITY
CONTROL RESPONSIBILITIES
CONTRACTOR QC PERSONNEL
SHALL CONDUCT & DOCUMENT
DAILY SAFETY INSPECTIONS**

01.A.12 b & SPECS. 013526

WHAT IS AN ACCEPTABLE A.H.A.?

CLASS EXCERISE AHA



Construct new masonry wall that is 12 foot high and 20 foot long.

ACCIDENT PREVENTION PROGRAM HAZARD ANALYSIS

Prime Contractor: ABC Construction

Superintendent : Joe Can Do

Masonry Sub-Contractor: Masonry Inc.

Forman for Sub-Contractor: I. Know-It-All

Materials: All Materials on site

Equipment: On site ready to perform work

Electric Mortar Mixer

Forklift on Site

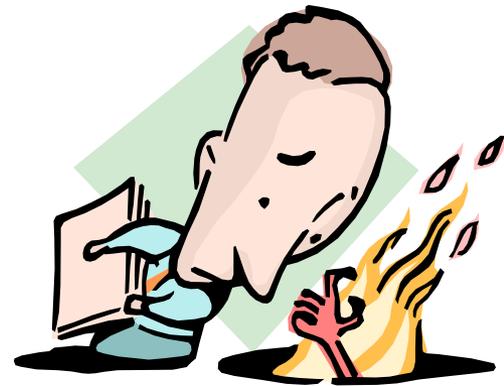
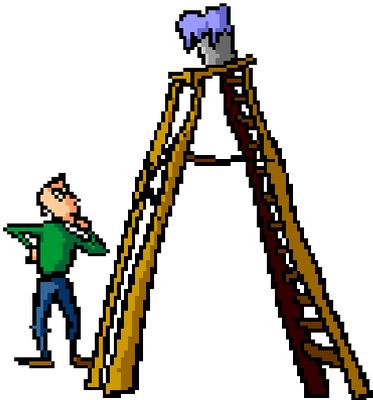
Scaffolding on Site

**Personnel All Prime and Masonry sub-
contractor personnel on site**



QUESTION?

Under what circumstances should a contractors work operations be stopped?





IMMINENT DANGER !!!!!

IMMINENT DANGER DEFINITION

Immediately dangerous to life or health

(IDLH –respiratory hazard):

an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere

Immediately dangerous to life or health

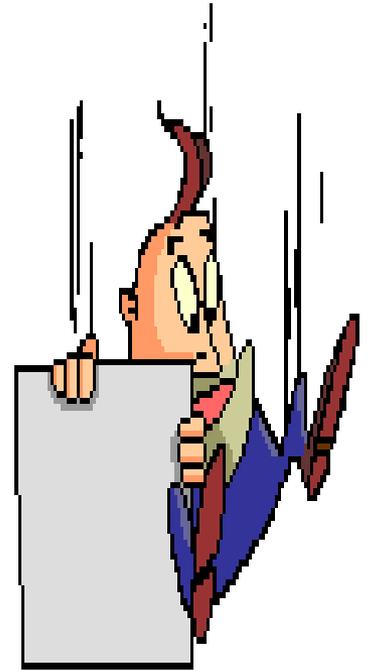
(IDLH-confined space):

any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or would interfere with an individual's ability to escape unaided from a permit space



ACTION

The observation of ANY IMMINENT DANGER situation---the work and/or situation shall immediately stop... the imminent danger eliminated then resolution action can be worked out after employees/situation are no longer in jeopardy



SUMMARY

Prime Contractor submit APP listing phases of work and qualifications of personnel, QC does document safety

AHA submitted before work starts to be accepted by GDA

Imminent danger requires ACTION!

SAFETY QUESTION

**WHEN SHOULD A CONTRACTOR
SUBMIT HIS ACCIDENT PREVENTION
PLAN?**



SAFETY QUESTION

WHAT IS THE NAME OF THE DOCUMENT THAT MUST BE COMPLETED AND ACCEPTED BY THE GOVERNMENT REPRESENTATIVE BEFORE ANY PHASE OF WORK IS STARTED?

SAFETY QUESTION

**WHO USUALLY IS RESPONSIBLE
FOR COMPLETING THE AHA?
WHY?**



**We can't start
work until you
finish the AHA!**



SAFETY QUESTION

WHAT OTHER DUTIES DOES THE CONTRACTOR QUALITY CONTROL PERSON HAVE BESIDES QUALITY CONTROL?



SAFETY QUESTION

**WHEN YOU ARE VISITING
A JOB SITE. HOW CAN YOU
KNOW WHAT PHASES OF
WORK ARE IN PROGRESS?**

**I am praying
for a break
from this class**

**Why are you
on your knees??**



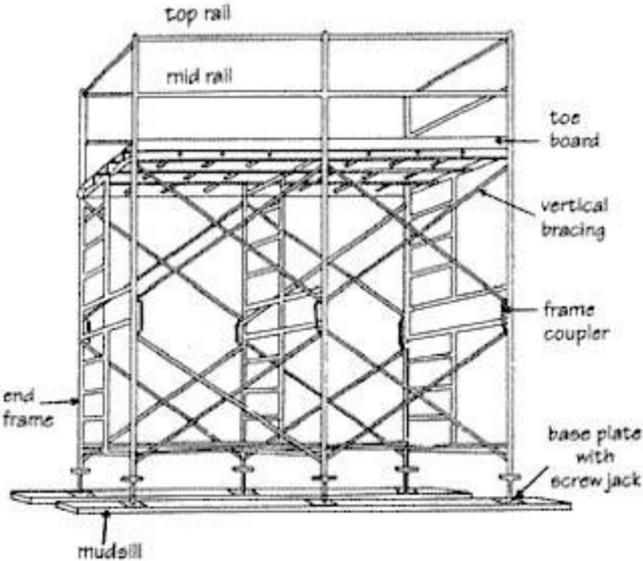
HINT: See 01.A.06d

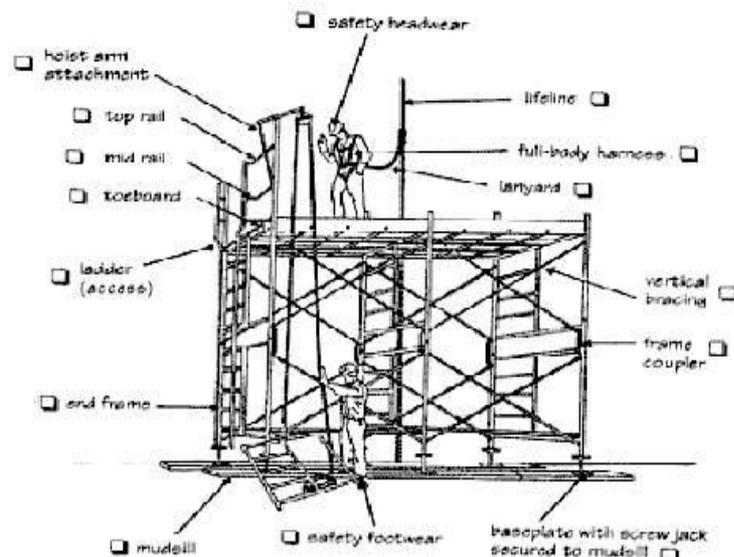
Activity Hazard Analysis (AHA)

Activity/Work Task: Scaffolding Erection	Overall Risk Assessment Code (RAC) (Use highest code)	M
Project Location:	Risk Assessment Code (RAC) Matrix	
Contract Number:	Severity	Probability
Date Prepared:		Frequent Likely Occasional Seldom Unlikely
Prepared by (Name/Title):	Catastrophic	E E H H M
Reviewed by (Name/Title):	Critical	E H H M L
	Marginal	H M M L L
	Negligible	M L L L L
Notes: (Field Notes, Review Comments, etc.) Crane set-up and use are on a separate AHA.		
Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)		
"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.		RAC Chart
"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible		E = Extremely High Risk
Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.		H = High Risk
		M = Moderate Risk
		L = Low Risk
Job Steps	Hazards	Controls
General Safety Requirements all Steps	Exposure to Cold or Hot Weather Dehydration **Add additional potential hazards for general on site safety requirements. ** The above hazards are not all inclusive and the Site Safety and Health Officer including the Quality Assurance Representative (QAR) shall review the AHAs	<u>Minimum Personal Protective Equipment Dress:</u> <ul style="list-style-type: none"> Long Pants Shirts with Sleeves Hardhat Covered Shoes (Steel Toe Preferred) Safety Glasses (Potential Eye Hazard Areas) <u>Weather:</u> <ul style="list-style-type: none"> Wear appropriate clothing for hot or cold weather. (List specific clothing or refer to Company quick sheet, SOPs, plan, etc. for specific details) <ul style="list-style-type: none"> Sun block Lip balm <u>Dehydration:</u> <ul style="list-style-type: none"> Drink at least ½ liter of water an hour. Refer to Company quick sheet, SOPs, plan, etc. for specific details on heat stress signs and symptoms.
		RAC L

Job Steps	Hazards	Controls	RAC
1.. Set-Up	<p>1. Back Strain from uploading or moving scaffold components.</p> <p>2. Lacerations on hands</p> <p>3. Scaffold failure due to damaged scaffolding components.</p> <p>4. Struck by mechanized equipment.</p> <p>**See above "Notes box"***</p> <p>5. Loss of load.</p> <p>6. Stuck by suspended loads or material.</p> <p>7. Electrical Shock</p> <p>8. Scaffold failure due to improper set-up</p>	<p>1a. Utilize proper lifting techniques. 1b. Size up load before lifting. 1c. Ask for help when lifting heavy items more than 50 lbs.</p> <p>2. Wear leather gloves.</p> <p>3a. INSPECT all scaffolding components defects or damage such as cracks, excessive rust, metal fatigue, unauthorized repairs, bent tubing or frame, etc.</p> <ul style="list-style-type: none"> • Frames • Tubing • Base Plates • Locking Pins • Access Ladder • Planking (Wood or Metal) • Cross Braces <p>3b. REMOVE damaged or defective scaffold components immediately. 3c. Attach tag or label "DO NOT USE" on scaffold component.</p> <p>4a. ALWAYS maintain eye contact with operator of equipment. 4b. NEVER stand behind (Blind Spots) equipment. 4c. NEVER stand near unloading or moving of scaffold components. 4d. ONLY qualified operators shall operate equipment.</p> <p>5a. Secure loads from displacement with ropes, cables, chains, etc. before movement. 5b. Ensure load to be lifted is secured, balanced, etc. 5c. Keep hands, fingers, or other body parts away from pinch points.</p> <p>6a. NEVER stand underneath suspended loads. 6b. Use taglines to control loads when elevated.</p> <p>7a. Check above for overhead power lines. 7b. NEVER erect scaffolding within 10 ft (3 m) of overhead power lines. Refer to EM 385-1-1, Table 11-1 for Minimum Clearance from Energized Overhead Electrical Lines 7c. NEVER string or hang temporary power cords, wires, etc. on metal scaffolding. Consult with Safety Officer.</p> <p>8a. Inspect ground conditions (level and firm). 8b. Stable base is necessary for proper scaffold assembly. 8c. Scaffold shall be tied into structure when the scaffold height exceeds four times the minimum scaffold base dimension per EM 385-1-1, para 22.B.09</p>	<p>L</p> <p>L</p> <p>L</p> <p>M</p> <p>M</p> <p>L</p> <p>M</p> <p>M</p>

Job Steps	Hazards	Controls	RAC
2. Assembly of Scaffolding	1 Fall from Elevated Heights	<p>1a. 100 percent fall protection required during assembly.</p> <p>1b. Personnel shall not be exposed to unprotected sides or falls greater than 6 ft (1.8 m).</p> <p>1c. Scaffolding shall not exceed 14 inches (35.5 cm) from the planking to the face of the building or structure.</p> <p>1d. Scaffolding more than 14 inches (35.5 cm) from the planking to the face of the building or structure shall be guardrails and/or the use of personal fall protection.</p> <p>1e. Personnel shall be tied off to a vertical lifeline with a rope grab during assembly of scaffolding.</p> <p>1f. Vertical lifeline shall be secured to an anchor point of at least 5,000 lbs (2,267.9 kg) per individual.</p> <p>Develop a site specific Fall Protection Plan IAW EM 385-1-1, para 21.C.01 and refer to EM 385-1-1, Section 21.</p> <p>1g. Contact Safety Officer for additional guidance on fall protection requirements.</p>	M
	2. Scaffold Failure	<p>2a. See diagram below and refer EM 385-1-1, Section 22 for specific requirements (i.e., toe boards, guard rails, safe access, etc.)</p> <p>2b. Scaffolding shall be assembled on mud sills and base plates.</p> <p>2c. Mud sills shall be at least 2 times the size of the base plates to disperse total weight of scaffolding.</p> <p>2d. Scaffolding shall be plumb and level.</p> <p>2e. Working levels shall be fully decked and/or planked.</p> <p>2f. Planking shall extend over the end supports not less than 6 in (30.4 cm),</p> <p>2g. Planking shall be secured, supported, or braced to prevent excessive spring or deflection and secured to prevent loosening, tipping, or displacement. Use of tie wire, cleats, etc. are options.</p> <p>2h. Planking shall overlapped at least 12 inches (30.4 cm) or secured from movement.</p> <p>2i. Scaffold shall be capable of supporting without failure at least 4 times the maximum anticipated loads.</p> <p>2j. Scaffolding shall be all required cross, horizontal, or diagonal braces to secure vertical members laterally.</p> <p>2k. Scaffolding shall be rigid.</p>	M
	3. Back Strain	<p>3a. Utilize proper lifting techniques.</p> <p>3b. Size up load before lifting.</p> <p>3c. Ask for help when lifting heavy items more than 50 lbs.</p>	L
	4. Lacerations on hands	<p>4. Wear leather gloves.</p>	L

Job Steps	Hazards	Controls	RAC
2. Assembly of Scaffolding (Diagram)			M
3. Use of Scaffolding	<p>1. Scaffold Failure</p> <p>2. Falls from Heights</p> <p>3. Slips, Trips, or Fall</p>	<p>1a. DO NOT overload more than 4 times the maximum load rating.</p> <p>1b. DO NOT attached hoists or other material lifting devices without Safety Officer approval.</p> <p>1c. Scaffolding shall be tied into building whenever height of the scaffold exceeds 4 times the minimal base. Refer to EM 385-1-1, para 22.B.09 for additional guidance.</p> <p>1d. Scaffold usage shall cease during high winds or severe inclement weather conditions.</p> <p>2a. Guardrails shall be used as primary fall protection. Guard rails shall installed IAW EM 385-1-1, para 21.B.02.</p> <p>2b. Securing of personal fall protection devices to scaffolding is prohibited.</p> <p>2c. Personnel shall have fall protection whenever above 6 ft (1.8 m).</p> <p>2d. Climbing of braces or cross bracing is prohibited.</p> <p>2e. Safe access (ladder) shall be provided.</p> <p>2f. Personnel shall not stand on mid rails.</p> <p>2g. Ladders shall extend at least 3 ft (0.9 m) past the work area.</p> <p>3. Walking surfaces on and around scaffolding shall be clear of debris.</p>	<p>M</p> <p>M</p> <p>L</p>

Job Steps	Hazards	Controls	RAC
3. Use of Scaffolding		<p style="text-align: center;">Scaffold Inspection Checklist</p>  <p style="text-align: center;">Frame Scaffold</p> <p>The scaffold checklist is not all inclusive of the safety requirements for the assembly, use, and disassembly of scaffolding. Competent Person onsite for work platform safety shall review EM 385-1-1 Safety and Health Requirements Manual, Host Nation safety laws, contract specifications, manufacture specifications, etc. as additional guidance or information for work platform safety.</p>	M
4. Disassembling of Scaffolding	1 Fall from Elevated Heights	<p>1a. 100 percent fall protection required during disassembly.</p> <p>1b. Personnel shall not be exposed to unprotected sides or falls greater than 6 ft (1.8 m).</p> <p>1c. Personnel shall be tied off to a vertical lifeline with a rope grab during assembly of scaffolding.</p> <p>1d. Vertical lifeline shall be secured to an anchor point of at least 5,000 lbs (2,267.9 kg) per individual.</p> <p style="background-color: #90EE90;">Develop a site specific Fall Protection Plan IAW EM 385-1-1, para 21.C.01 and refer to EM 385-1-1, Section 21.</p> <p>1e. Contact Safety Officer for additional guidance on fall protection requirements.</p>	M

Job Steps	Hazards	Controls	RAC
4. Disassembling of Scaffolding	2. Back Strain 3. Lacerations on hands	2a. Utilize proper lifting techniques. 2b. Size up load before lifting. 2c. Ask for help when lifting heavy items more than 50 lbs. 3. Wear leather gloves.	L L

Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)	Inspection Requirements
Scaffold components Hammers Mud sills Full body harness Lanyard Lifeline Fall protection anchor points Float Crane Electric Hand Tools (Battery type) Portable Generator 5 Ma GFCIs Power Cords Ladders First Aid Kit	Competent/Qualified Personnel: Mr. ----- – CP/Scaffolding Mr. Safety Man – QP/First Aid and CPR Mr. Work Man – QP/First Aid and CPR Mr. Fall Safety – CP/Fall Protection Mr. Shocker Cord – QP/Electrical Mr. Lift Boom – QP/Crane Operator Training Requirements: Scaffold Assembly Fall Protection Inspection of Work Platforms Heat or Cold Hazards Daily/Monthly safety toolbox meetings	Inspect scaffold components prior to use Inspect scaffold daily (Use Checklist) Inspect level and plumb of scaffoldings during erection and daily when in use. Daily Housekeeping of work areas and scaffolding Inspect PPE to include fall protection harnesses and lanyards prior to use. Inspect fall protection anchor points. Inspect crane IAW manufacture instructions. Inspect power cord sets prior to use. Inspect temporary power panel box, circuit breakers, grounding, etc. at least monthly. Inspect first aid kit at least monthly. Daily site safety inspections by SSHO and CQC.

AHA PRACTICE

CONSTRUCT A 12' HIGH x 20' LONG MASONRY WALL

- 1) PPE (STANDARD) 2) ADDITIONAL PPE?? (Block Cutter)
- 3) ELECTRICAL CORDS?
- 4) SCAFFOLDING (COPY OF GUIDANCE FROM THE SCAFFOLDING, SHORING, AND FORMING INSTITUTE ON SITE?)
- 5) COMPETENT PERSON AHA DETAILING INFEASIBILITY OF FALL PROTECTION SUBMITTED AND ACCEPTED?
- 6) WHAT WEIGHT WILL BE ON THE SCAFFOLD? MUST SUPPORT 4 TIMES THE MAXIMUM ANTICIPATED LOAD.
- 7) EQUIPMENT/QUALS/TRAINING
- 8) MSDS INFORMATION (Mortar)
- 9) DESIGNATED **COMPETENT** PERSON AND USING A COLOR CODED TAGGING SYSTEM (GREEN=SAFE, RED=UNSAFE)
- 10) MORTAR MIXER (GFCI)
- 11) BLOCK SAW (GFCI)
- 12) TRAINING DOCUMENTATION
- 13) LIMITED ACCESS ZONE??
- 14) BRACING OF WALL OVER 8 FOOT?

FINAL QUESTION: WHAT TIME IS IT?

