



Proof of Training

Print name: _____ Signature: _____ Date: _____

Cranes

Purpose

The purpose of this program is to ensure the protection of employees, subcontractors, members of the public, clients and neighbors of the client from the hazards associated with crane lifts.

Scope

This policy will apply to all work performed by employees and subcontractors including, but not limited to the following activities: construction, installation, demolition, remodeling, relocation, refurbishment, testing, and servicing or maintenance of equipment or machines and at other times when using mobile cranes.

Responsibilities

Management (Board of Directors and Project Managers)

Management is responsible for ensuring that the materials (e.g., tools, equipment, personal protective equipment) and other resources (i.e., worker training materials) required to fully implement and maintain this program are readily available where and when they are required. Additionally, management will monitor the effectiveness of the program, provide technical assistance as needed, and review the program bi-annually.

Program Manager

Dave Simpson is responsible for the development, documentation, training and administration of the program. This position carries the responsibility of insuring this program is adhered to and that proper reporting is executed.

Supervisors (Superintendents and Foreman)

Supervisors are responsible for ensuring that a task specific job hazard analysis (JHA), also known as a safe work plan, is developed. The JHA will select, implement and document the appropriate site-specific control measures as defined within this policy. Supervisors will direct the work in a manner that ensures the risk to workers is minimized, adequately controlled and that practices defined by this policy will be followed. Supervisors are responsible for ensuring Unger Construction employees and subcontractors are following expectations. Supervisors will be held accountable for enforcing the requirements of this program. Undesirable behavior will not resolve itself, therefore supervisors must be directly involved with modifying behaviors inconsistent with program expectations. Supervisors will be held accountable for enforcing Unger Construction's disciplinary program.

Workers (Employees and Subcontractors)

Unger Construction has high expectations and requires safety excellence for each employee, crew, project and for our entire company. Workers are required to follow the minimum procedures outlined in this program. Workers are responsible for knowing the hazards and the control measures established in the JHA. Workers are responsible for using the assigned PPE in an effective and safe manner. Workers are responsible for stopping unsafe acts and correcting unsafe conditions on the spot as soon as they are discovered. Any deviations from this program must be immediately brought to the attention of your supervisor. Workers that choose to conduct themselves in a manner that is inconsistent with these expectations will be held accountable for those decisions and may incur disciplinary actions.

Training

Before any employee is allowed to perform work with a crane, they must first receive training. Each employee must demonstrate an understanding of the required training, and the ability to use the crane program properly, before being allowed to work with cranes.

Proof of training is available on the "S" drive. The training data base can be sorted by employee name or by subject. This ensures supervisors and employees are able to confirm they have the necessary training and if they don't which employees do. Employees that need training should contact their project manager or superintendent to make arrangements for them to be trained.

Retraining

The need for retraining will be indicated when: An employee's work habits or knowledge indicate a lack of necessary understanding, motivation or skills required to properly use the PPE, New equipment is installed that requires new or different PPE, Changes in the workplace make previous training obsolete, Changes in the types of PPE to be used make previous training obsolete or Upon a supervisor request.

Job Hazard Assessment (Safe Work Plan)

Unger Construction utilizes JHA's as our means of hazard assessment and establishing a safe work plan. JHA's are performed by supervisors and/or workers. Our library of hazard assessments is maintained on the "S" drive. Before beginning a new task refer to the JHA library, generally speaking all scopes of our work are covered. For situations that have not yet been covered select one that is substantially similar and use it as a baseline. JHA's on the "S" drive are organized by work area and job description. JHA's include strategies for elimination, substitution, engineering and administrative controls. After applying all appropriate reduction and elimination technique, the remaining hazards will be analyzed and the proper PPE to reduce the hazards will be selected. PPE will be identified for hazards that are in the process of being reduced or eliminated and/or when hazard-reduction efforts are not 100% effective in eliminating the hazards.

For complex or moderate to high hazard tasks, tasks where an additional level of safety planning is needed, the safety director will perform the JHA with the supervisor and workers.

Crane Lift Plan

A Crane Lift Plan is required whenever a mobile crane lift is being performed. The Crane Lift Plan is to be completed by the respective party who will be performing the crane lift, and is submitted in conjunction with a Safe Work Plan, or a Job Hazard Analysis. The crane lift plan and supporting documentation shall be submitted to the Director of Safety for review and approval a minimum of five days prior to commencing work. Information to be included in crane lift plan is to include the following: type of crane and manufacturer, exact size and weight of the loads to be lifted, description of the rigging including their weight, the load chart for the crane, a diagram showing crane position and location around buildings, the height of the lift, the load radius, and boom length and angle for the entire range of the lift, the evacuation plan for areas under the lift zone, a barricading plan and traffic control for pedestrians and vehicles and the environmental conditions under which lift operations are to be stopped.

Notification

Anytime there is a lift over an occupied area, the area under the lift radius with an additional perimeter safety buffer will be evacuated. Coordination with affected parties will be discussed during the Lift plan review. If at any time a crane will block a designated fire lane, the owners' representative and the responding fire house must be notified.

Crane Assembly

The crane must be assembled and disassembled per the manufacturer's instructions, under the direction of the crane company's competent and qualified person.

Alteration, Modification, Servicing, Repairing

Cranes cannot be modified or altered in any way without written approval from the manufacturer or formal approval from a Professional Engineer registered in the State of California. Additionally, approval shall be received from Unger Construction's Director of Safety, Director of Risk Management and the Vice President of Operations.

Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, warnings and limitations. Crane's shall be only operated, serviced and repaired by qualified personnel. Before performing any services or repair work all equipment must be stopped and positively secured against any movement or operation.

Lift Area Inspection

Inspection of work site for power lines, equipment/system hazards, and underground utilities. Ground conditions, outrigger or crawler track requirements, and adequacy of mats, steel plates, or cribbing to assure stability. Ensure adequate footings that are not endangered by excavations or unstable soil conditions; sufficient space for outriggers so they can be fully extended.

Certification Check

Only qualified persons may operate the crane. Crane(s) will not be allowed to operate without all required certifications. The operator must have a copy of their crane operator's license available for review. Collect a copy of the license to verify the issue and expiration dates. Riggers (everyone handling the rigging and/or making rigging connections) must have a copy of their certification available for review. Collect a copy of the certification to verify the issue and expiration dates.

Documentation Check

Only properly rated and maintained cranes are allowed on site. Crane(s) will not be allowed to operate without all required certifications. The owner's manual for the crane must be readily available in the cab. The manufacturer's instructions must be followed to the letter. The operator must have a copy of the cranes annual certifications and maintenance logs. Collect a copy and verify the expiration dates and maintenance intervals. Annuals and recommended service intervals must be within the designated time frames. Monthly inspections of the equipment by a competent person shall be documented.

Capacity

The cranes capacity will vary significantly based on the crane configuration and the reach distance. Each lift has a maximum weight capacity which could change significantly as the reach distance changes. The cranes capacity will be determined by the crane configuration and the load charts from the owner's manual. Whenever the operation exceeds 70 percent of the units rated capacity Unger's Director of Safety shall be involved in approving the safe work plan or job hazard analysis. Don't exceed 80% of the rated maximum value listed for the configuration in the load charts.

Load Check

DO NOT GUESS. The exact weight of the load(s) to be lifted is required and needs to be incorporated with the reach check. Include crane & rigging components that would add to the weight. Include information on any ancillary components or equipment that would add to the weight (e.g., if lifting a chiller, is the chiller completely dry or is it filled with water?)

Use the manufacturers' data for the materials to be lifted or the trucking manifest. Some cranes will have strain gauges to determine the loads weight. Identify the weights for all items being lifted. Verify the relationship of the load weight, boom angle, and its radius (the distance from the cranes center of rotation to the center of load) to the center of gravity of the load.

Reach Check

DO NOT GUESS. Reach (distance from the crane to the final landing point) for each load needs to be determined. Measure the actual reach distance for all items being lifted. In some situations the superintendent will need to review "as-built" drawings.

Load Chart Confirmation

Review the individual weight and reach for each load and compare each load the cranes load chart. Walk the job or use site drawings to determine the crane(s) position(s) and location(s) around the building. Check the height of lift, the load radius, and boom length and angle for the entire range of the lift. Do not exceed 80% of the cranes capacity.

Site Specific Walk Through

A site specific walk through shall be conducted for each lift and each shift.

Inspect the work site for power lines, equipment/system hazards, underground utilities, excavations or unstable soil conditions. Determine the controlled access zone(s) and the location of the barricades to ensure unauthorized entry. Ensure emergency evacuation routes are not blocked. The crane operator along with the superintendent will walk the site to observe ground conditions. Review the outrigger or crawler track requirements, adequacy of mats, steel plates, or cribbing to ensure stability. Ensure all clearance requirements are met when working around or near electrical power lines. The clearance distance from power lines for all items associated with the lift shall be > 20 feet. If any item associated with the lift must be within 20 feet of an overhead power line the power line must be de-energized and locked out during the lift. The crane operator and signal person shall attach locks to the energy control point. (Refer to the Control of Hazardous Energy Program). Determine sufficient space for outriggers so they will not intrude into roadways and other access routes. Ensure that the crane operator set the crane up level and in a position for safe rotation and operation. Depending upon the weight of the crane and the load a report may need to be generated by a soils engineer or structural engineer. Set up the controlled access zone(s) with proper barricades.

Inspect Rigging

Rigging shall be inspected before each lift and each shift. Rigging equipment when not in use shall be removed from the immediate work area.

Prior to each lift the rigging shall be inspected. Ensure rigging is adequate for the load, all rigging is to be inspected prior to each use. Rigging must be inspected to ensure its condition and capacity. Do not exceed 80% of the riggings rated capacity. Rating/capacity tags must be readable. Never use ropes, chains, or slings that are defective or are missing capacity labels. If damaged, or questionable take it out of service. Damaged rigging shall be removed from service and destroyed. Riggers must be qualified and designated as a competent person. Make sure all loads are centered in slings before lifting and use extreme care in removing slings from piled stock. When lifting over occupied buildings redundant (double) rigging will be used. No single point of failure other than the hook. All hooks must have self-closing latches.

Pre-lift Meeting

Pre-lift meetings shall be conducted before each lift and each shift.

Because conditions can change from the pre-planning stage to when the crane actually arrives on site, the team performing the lifting operation must hold pre-lift meetings to ensure all hazards have been controlled and all inspections have been completed. All personnel participating in the lift must attend.

The pre-lift meeting should include at a minimum: Completed daily inspection checklist. Evaluation of current weather conditions and determination of limits (i.e. high wind conditions). A walk around inspection must be conducted prior to the lift to ensure that the machine is in proper working order. Only qualified persons may operate the crane. The operator must have a copy of their crane operator's license available for review. Ensure that inspection and maintenance records are available and verify that the appropriate operator's manual and load charts for the particular crane in use are readily available. Ensure that the crane operator set the crane up level and in a position for safe rotation and operation. Ensure the outriggers, where applicable, are extended and being used in accordance with manufacturer's recommendations. Ensure the surface below outriggers is protected. Verify the relationship of the load weight, boom angle, and its radius (the distance from the cranes center of rotation to the center of load) to the center of gravity of the load. Establish signaling plans and assignment of personnel authorized to signal crane movement. Ensure all clearance requirements are met working around or near electrical power lines, the load, rigging and crane components shall remain at least 20 feet away from overhead power lines.

All safety devices must be confirmed to be in proper working order before operations begin.

The crane lift operator, signal person and the Unger Construction superintendent are in charge of the lift. All three have the authority to shut down and stop the lift if there is a safety concern.

Work Being Performed by Others

Workers in the general area of the lift zone must be moved to a clear zone except for those working directly with the crane. Anytime there is a lift over an occupied area, the area under the lift radius must be evacuated for the entire time the load is in the air. As an additional protective the areas under the lift zones will be barricaded and a flagger placed in the area to ensure the area remains evacuated during the lift.

There are certain safety precautions for workers in the operating areas of cranes, but who are not directly involved with their operation or use. These individuals must be aware of the warning signal from overhead hoisting equipment. Workers shall never stand or walk under a load, whether it's moving or stationary and shall always obey barricades and warning signs.

Signal Person

A signal person is required when the operators view is obstructed, or if the operator determines that one is necessary. Certain site specific hazards or site conditions could dictate that more than one signal person or spotter is required. The crane operator and signal person(s) will review and confirm all signaling commands and reactions. One person is designated as the signal person. Only one (1) signalman is allowed to signal a load at a time. Spotters and assistants are to communicate directly with the signal person, not the crane operator.

Making the Lift

Before releasing the binders on a loaded truck, it must be certain that the load will not shift once released. Whenever possible, a special binder must be installed around all but the top layers, or it must be insured that each layer is wedged before releasing the load binders. It is important that the top layer be secured in such a way as to prevent the skids and/or pallets from flipping the load.

Test the load for stability before swinging or transporting the load. Attach tag lines to assist with stability and final positioning. Attach a guideline or "tag line" to all equipment and materials being lifted to higher levels. Tag lines shall be added to assist in placing the load and to control spin. All loads are to be secured properly and tied off when being transported by vehicles. Cherry pickers, crawlers, and truck cranes are to use tag lines while moving loads.

Workers must never place their hands between the slings or chokers and the load when rigging or handling loads. When removing the rigging stand clear the load could shift.

Lifting of personnel by crane is prohibited, unless done by means of a crane basket designed specifically for that purpose and equipped with wall protection.

Crating materials, banding straps, etc., must be promptly disposed of to prevent needless tripping hazards for all workers and the general public.

Place and bolt up

Workers hands, feet, other body parts caught between the object and the point of final placement. Workers must keep their hands, feet, bodies away from pinch points. Use tools to push pull or maneuver when appropriate. Final placement will be coordinated through and approved by all assistants before the movement is made. No sudden or unexpected movements.