

Garmong Construction Services					
<i>EMPLOYEE SAFETY POLICY HANDBOOK – Crane Safety</i>					
Last Revised:	January 24, 2012	By	Douglas Mahurin, MS, CSP	This Copy Printed:	1/24/2012 7:11:00 PM

Crane Safety

A non-critical lift can be performed under the supervision of the site superintendent. The superintendent and the crane operator are allowed to reference the operating manual and complete a field lift plan on site.

A critical lift requires a completed **Lift Plan** submitted the GCS Project Manager for their review prior to the lift. We recognize that some pieces of equipment will require further notice to GCS Management Team and those items will be coordinated through the project manager and superintendent.

A critical lift is defined as any lift that:

- The load exceeds 75% of the crane or rigging rated lifting capacity based upon the actual field lifting conditions
- The load endangers existing facilities, due to restriction of movement, energized power lines, pressurized pipe, etc.
- The load is to be lifted by two cranes simultaneously
- The load requires specialized rigging
- The complexity of the lift requires input from a professional engineer
- The load is not symmetrical

Loads will never be lifted directly overhead of personnel

Crane Setup

Cranes will only be setup in areas where the ground is capable of supporting the crane and its intended load. The ground must be firm, drained, and graded to a sufficient extent so that when used with supporting materials, the manufacturer's specifications are met.

The crane will be assembled and disassembled under the direction of a competent and qualified person identified by the company. The manufacturer's instructions and prohibitions must be followed at all times. The manufacturer must approve all modifications/additions to the equipment in writing or a registered professional engineer that must be qualified with respect to the equipment involved, and must insure the original safety factor of the equipment is not reduced.

The competent person will conduct a preoperational hazard assessment to identify hazards in the area of operation. One main hazard is overhead power lines. The work zone will be identified by available means (caution tape, cones, flags). If it is determined that any part of the equipment or the load being lifted, may be within 20 feet of the power line then at least one of the following must be taken:

1. Ensure the power lines have been de-energized and visibly grounded.
2. Ensure no part of the equipment , load line, or load gets closer than 20'
3. Determine the line's voltage and minimum approach distance permitted in Table A.

Proper fall protection must be provided when any member of the setup crew is working at a level over 6'.

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Inspections

The crane will be visually inspected prior to operation each shift by the competent person. The inspection will consist of observations of apparent deficiencies. Inspection items will include at least: control mechanisms, pressurized lines, hooks and latches, wire rope, electrical apparatus, tires (if appropriate), and ground conditions.

Monthly inspections will be conducted by a competent person and these inspections will be documented and maintained in the cab of the crane. The documentation will include at least the following: items checked, results of the inspection, name and signature of the inspector. The documentation will be maintained in the cab of the crane for at least three months, the documentation will then be forwarded to the main office for record maintenance.

An annual competent third party inspection will be made and the results of that audit maintained in the cab of the crane.

Crane Operators

Operators must be certified by a recognized certifying body, qualified by the US military as an operator, Licensed by a government entity, or has completed the company operator certification process. A copy of the operator certification will be forwarded to site safety.

Working around Cranes

The Safety devices are required to be on all equipment and must be in proper working condition before the operation of the equipment begins. The safety devices will be identified by the Manufacturer. If any safety devices are not in working order, the equipment must be tagged and taken out of service and operations must not resume until the safety device is working again.

All manufacturer procedures applicable to the operational functions of the equipment, including its use with attachments, must be complied with. These manufacturer procedures will be maintained in the equipment cab at all times. These procedures will include at least: rated capacities (load charts), recommended operating speeds, special hazard warnings, instructions and the operator's manual.

The operator has the authority to stop and refuse to handle loads wherever there is a safety concern until a qualified person has determined that safety has been assured.

The perimeter of the swing radius of the counterweights of the crane will be protected by a red danger zone line. No employees are allowed in the red zone other than the crane operator and the oiler.

The swing of the radius of the boom of the crane will be protected by a yellow caution line. No employees are allowed in the caution zone other than those directly involved in the rigging of the lift. No lift will travel overhead of any employees.

Watch out for a swing or roll. Anticipate the direction of the swing or roll and work away from it. Never place yourself between material, equipment or other stationary objects and the load. Stay away from stacked material that may be knocked over by a swinging load.

Never get under a suspended load, and keep out from under the crane's boom too.

Protect your hands. If it isn't possible to release the chain, sling, or choker, be sure your hand is clear of pinch points. Keep your hand far enough away so that a frayed wire or splinter on the chain can't catch your glove and jerk your hand into a pinch point.

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When guiding a load, use a tag line or hook. If you have to walk with a load, keep it as close to the ground as possible. Before hand, look over the spot where the load is to be landed. Remove unnecessary blocks or the objects that might fly up when struck by the load.

When lowering or setting a load, keep your feet and all other parts of your body out from under. Set the load down easily and slowly. Then, if it rolls on the blocking, it will shift slowly and you'll be able to get away.

Make sure the crane hand signals below are mounted on the outside of the crane.

The headache ball should have a safety latch to prevent loads from coming off the hook during a lift.

A fire extinguisher will be maintained in working order in the cab or the crane.

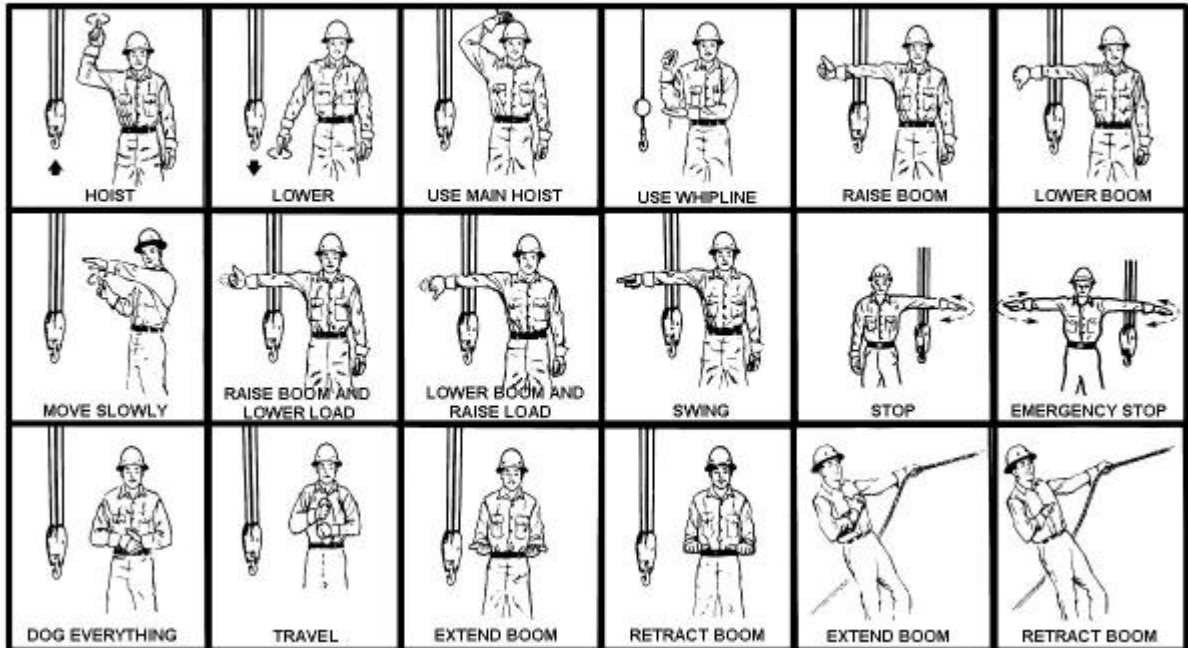
No part of the crane or the load should ever come within 20' of a power line.

SIGNAL MAN

A competent and qualified signal man must be provided. Proof of that training must be maintained on the person at all times while signalling a crane.

The signal man will be properly trained and authorized by the company to signal cranes on site. The crane operator will not to accept signals from anyone else other than the designated signal man. The signal man must not order a move until getting an "all ready" from each crew member. The signal man should maintain constant communication with the crane operator at all times. (See the Crane Signal Chart Below)

Crane Hand Signals



Garmong Construction Services					
<i>EMPLOYEE SAFETY POLICY HANDBOOK – Rigging</i>					
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RIGGING

Only certified riggers will be used on site. Riggers must have completed rigger training and have a course completion card on file. Trainers that have completed the Crosby ASME Rigging Trainer Development class may be authorized to provide a rigging certification class onsite.

All rigging equipment (shackles, slings, chain hoists, etc.) is required to be inspected by a competent person for any defects prior to each use. Any defective equipment is not to be used. Tag the equipment out of service and return it to the main office or destroy the rigging (if possible) and remove from site. A **monthly documented inspection** will be made by a competent person of all rigging equipment. A log of the inspection will be kept in the job trailer and noted on the Monthly rigging Inspection Form.

Riggers must know the weight of the load to be picked. Properly size and install the rigging components according to the labelling on the rigging or established load charts. Contact the crane subcontractor and/or office for assistance in sizing the rigging for the load to be lifted. Refer to the Working Load Limit (WLL) on each shackle for capacity limits. Refer to the Load Capacity label on each nylon sling for application details. Refer to the Load Reference Chart for Wire Rope slings for guidance.

Any rigging used in an overhead load will be tagged with its working load limit on the manufacturer's tag. The tag will be legible.