

**Crane & Derrick Operation Procedures for Construction**

The written Crane & Derrick Operation Procedures establish guidelines to be followed whenever any of our employees work with cranes or derricks at this company. The rules are established to:

- Provide a safe working environment,
- Govern operator use of cranes and derricks, and
- Ensure proper care and maintenance of cranes and derricks.

These procedures establish uniform requirements designed to ensure that crane and derrick safety training, operation, and maintenance practices are communicated to and understood by the affected employees. These requirements are also designed to ensure that procedures are in place to protect the health and safety of all employees.

It is our intent to comply with the requirements of 29 CFR 1926.550 for construction activities. This regulation has requirements for crane and derrick operations. We also comply with the applicable requirements of:

<b>Standard or Regulation:</b>	<b>Name:</b>	<b>Details:</b>
ANSI B15.1-1958	<i>Safety Code for Mechanical Power Transmission Apparatus</i>	For guarding
ANSI B30.5-1968 or SAE J959-1966	<i>Mobile and Locomotive Cranes</i> or <i>Lifting Crane, Wire-Rope Strength Factors for Rope Safety Factors</i>	
ANSI B30.6-1969	<i>Safety Code for Derricks</i>	For derricks
Power Crane and Shovel Association Mobile Hydraulic Crane Standard No. 2		
SAE J743a-1964	<i>Pipe Layers and Side Booms—Tractor Mounted-Specifications and Tests</i>	For side boom cranes mounted on wheel or crawler tractors
29 CFR 1926.106	<i>Working Over or Near Water</i>	For work over water
29 CFR 1926, Subpart M	<i>Fall Protection</i>	For fall protection
29 CFR 1926.605	<i>Marine Operations and Equipment</i>	For marine vessels
49 CFR 177	<i>Carriage by Public Highway</i>	For transporting fuel by vehicles on public highways
49 CFR 393	<i>Parts and Accessories</i>	For transporting fuel by

	<i>Necessary for Safe Operation</i>	vehicles on public highways
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### **Administrative Duties**

The Project Manager is responsible for developing and maintaining the written Crane & Derrick Operation Procedures. These procedures are kept in our written Safety and Health Program and at our corporate offices.

As specified under OSHA 29 CFR 1926.550, our Crane & Derrick Operation Procedures are administered under the direction of our competent person(s), someone capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. The Project Manager is considered our companies competent person.

### **Cranes and Derricks at Our Workplace**

EMA may utilize or have subcontractors on site that utilize various cranes and derricks:

### **Training**

It is the policy of EMA to permit only trained and authorized personnel to operate cranes and derricks. The Project Manager will identify all new employees in the employee orientation program and make arrangements with department management to schedule training.

Before we begin training a new employee, our Project Manager determines if the potential crane or derrick operator is capable of performing the duties necessary to be a competent and safe operator. This is based upon his/her physical and mental abilities to perform job functions that are essential to the operation of the crane or derrick

These capabilities include the level at which the operator must:

- See and hear within reasonably acceptable limits. This includes the ability to see at distance and peripherally;
- Endure the physical demands of the job; and
- Endure the environmental extremes, such as the ability of the person to work in areas of excessive cold or heat. An operator must be able to climb onto and off of a crane, to sit in the crane for extended periods of time, and to turn his/her body to look in the direction of travel when driving in reverse.

Once our Project Manager determines that a potential operator is capable of performing crane and derrick duties, initial training and evaluation shall be conducted. The instructor(s) has the necessary knowledge, training, and experience to train new crane and derrick operators.

### *Initial Training*

Each type of crane or derrick has a different "feel" to it, and that makes operating it slightly different from operating other cranes or derricks. The work areas where these cranes or derricks are being used also present particular hazards. For these reasons, it is impractical to develop a single

"generic" training program that fits all of our cranes and derricks. Accordingly, during training, EMA covers the operational hazards of our cranes and derricks. Training consists of both classroom and practical evaluations.

- Hazards associated with the particular make and model of the crane and derrick;
- Hazards of the workplace; and
- General hazards that apply to the operation of all or most cranes and derricks.

Each potential operator who has received training in any of the elements of our training program for the types of cranes or derricks which that employee will be authorized to operate and for the type of workplace in which the cranes or derricks will be operated need not be retrained in those elements before initial assignment in our workplace if EMA has written documentation of the training and if the employee is evaluated to be competent.

### *Training Certification*

After an employee has completed the training program, the instructor will administer a performance test or practical exercise to determine whether the potential operator can safely perform the job. At this point the instructor will determine if the training has been adequate. All crane and derrick trainees are tested on the type of equipment they will be operating.

The Project Manager is responsible for keeping records certifying that each operator has successfully completed training and testing. Each certificate includes the name of the operator, the date(s) of the training, and the signature of the person who did the training and evaluation.

### *Performance Evaluation*

Each certified crane/derrick operator is evaluated to verify that the operator has retained and uses the knowledge and skills needed to operate safely. This evaluation is done annually. If the evaluation shows that the operator is lacking the appropriate skills and knowledge, the operator is retrained by our instructor(s). When an operator has an accident or near miss or some unsafe operating procedure is identified, we do retraining.

### *Current Crane/Derrick Operators*

Under no circumstances shall an employee operate a crane or derrick until he/she has successfully completed this company's crane/derrick training program. This includes all new operators regardless of claimed previous experience.

## **Inspections**

### *Initial Inspections*

Our company inspects and tests all cranes and derricks to ensure they are capable of safe and reliable operation when initially set or placed in service and after any major repairs or design modification. Prior to operation, the operator must check all systems, controls, and safety devices to ensure they are functioning properly, there are no interferences, and that boom and hoisting configurations necessary to reach the work location will allow the operator to remain within the

50%load limit of the hoists rated capacity.

### *Frequent Inspections*

The company requires a competent person to perform pre-operational crane and derrick checks prior to beginning each shift. This person walks around the crane or derrick looking for defects or problem areas. Components that have a direct bearing on the safety of the crane or derrick and whose status can change from day to day with use, must be inspected daily, and when possible, observed during operation for any defects that could affect safe operation. There are four frequent inspections: Pre-Operational Site Activity and Inspection, Pre-Operational (Daily) Walk Around Inspection, Pre-Start-Up (In Cab) Inspection, and Crane Operation Checklist.

### Pre-Operational Site Activity and Inspection

Accidents can be avoided by careful job planning. Our competent person(s) has a clear understanding of the work to be performed and considers all potential dangers at the job site. The following checklist helps us plan a lifting operation:

### LIFTING OPERATIONS

- We have a pre-lift plan for the job and have explained it to all personnel involved in the lift.. The plan could includes: \* A list of items to be moved, including a description of each item's weight, dimensions, center of gravity, and presence of hazardous or toxic materials. \* Rigging sketches that serve as a guide of what will happen. The sketches may include lifting points, methods of attachment, sling angles, load vectors, boom and swing angles, crane orientations, rated capacities, and other factors affecting equipment operation. \* Step-by-step operating procedures that include applicable rigging precautions and safety measures. \*A pre-lift meeting to review the plan, held before the actual lift, attended by the operator, signalers, competent person and others as required.
- We do not have any modifications or additions that would affect the capacity or safe operation of the crane or derrick. The original safety factor of the equipment must never be reduced.
- The crane or derrick operator and other personnel involved in the lift are knowledgeable of basic crane capacities, limitations, and specific job site restrictions, such as location of overhead electric power lines, unstable soil, or high wind conditions
- Workers in the vicinity are aware of hoisting activities or any job restrictions imposed by crane or derrick operators.

### OVERHEAD LINES

- Cranes or derricks are used to handle materials or loads stored anywhere but under electric power lines.
- The use of cage-type boom guards, insulating links, or proximity warning devices on cranes or derricks does not alter the requirements of any other OSHA regulation even if such device is required by law or regulation.
- All electrical distribution and transmission lines are de-energized and visibly grounded

where you are working.

- For lines rated 50 kV. or below, minimum clearance between the lines and any part of the crane or load shall be 10 feet;
- For lines rated over 50 kV., minimum clearance between the lines and any part of the crane or load shall be 10 feet plus 0.4 inch for each 1 kV. over 50 kV., or twice the length of the line insulator, but never less than 10 feet; and
- In transit with no load and boom lowered, the equipment clearance shall be a minimum of 4 feet for voltages less than 50 kV., and 10 feet for voltages over 50 kV., up to and including 345 kV., and 16 feet for voltages up to and including 750 kV.
- Insulating barriers not a part of, or an attachment to, the equipment or machinery are erected to prevent physical contact with the lines.
- A designated "clearance" observer is present to give timely warning for all operations where it is difficult for the operator to maintain the desired clearance by sight.
- If you are working near transmitter towers where an electrical charge can be induced in the equipment or load, the transmitter is de-energized or tested to determine if electrical charge is induced on the crane or derrick AND precautions are taken when necessary to dissipate induced voltages
- The equipment shall be provided with an electrical ground directly to the upper rotating structure supporting the boom;
- Ground jumper cables shall be attached to materials being handled by boom equipment when electrical charge is induced while working near energized transmitters. Crews shall be provided with nonconductive poles having large alligator clips or other similar protection to attach the ground cable to the load.
- Combustible and flammable materials shall be removed from the immediate area prior to operations.
- Nonconductive taglines, rather than direct contact lines, are used to stabilize the load.
- Insulating boots and gloves are used when workers connect loads or contact the crane or derrick while in the vicinity of overhead lines.

#### HAND SIGNALS

- The signal person and the operator are familiar with the hand signals required by the ANSI standard for the crane type you are operating.
- A chart illustrating the hand signals for the type of crane you are operating is posted at the job site

#### BARRICADES

- Barricades are set up to protect employees from being struck or crushed by the rotating superstructure of the crane.

- Accessible areas within the swing radius of the rear of the crane, either permanently or temporarily mounted, are barricaded
- Special attention is given to guarding of the swing radius when near buildings or other structures.

#### STABILITY

- Crane leveling is checked to 1 degree.
- Outriggers, where applicable, are fully extended and being used in accordance with manufacturer's recommendations.

#### SUSPENDED PERSONNEL PLATFORM HOIST (DESIGN CRITERIA)

- The personnel platform is designed with a minimum safety factor of five, and is designed by a qualified engineer or a qualified person who is competent in structural design.
- The suspension system is designed to minimize tipping due to movement of workers riding in the platform.
- Each personnel platform is provided with a standard guardrail system that is enclosed from the toe board to the mid-rail to keep tools, materials, and equipment from falling on employees below.
- The platform has a grab rail, overhead protection when needed, and adequate headroom for employees.
- A plate, or other permanent marking, that clearly indicates the platform's weight and rated load capacity or maximum intended load is present.
- An access gate, if provided, does not swing outward during hoisting and has a restraining device to prevent accidental opening.
- Employees are not exposed to any rough edges on the platform. All rough edges are ground smooth to prevent injuries.
- Welding is performed by a qualified welder who is knowledgeable of weld grades and types as well as the materials specified in platform design.

#### SUSPENDED PERSONNEL PLATFORM HOIST (CRANE/DERRICK REQUIREMENTS FOR PERSONNEL PLATFORM OPERATIONS)

- Cranes and derricks with variable angle booms have a boom angle indicator that is visible to the operator.
- Cranes with telescoping booms are equipped with a device that clearly shows the boom's extended length, or the load radius must be accurately determined before hoisting workers.
- Cranes and derricks are equipped with:

- An anti-two-blocking device that prevents contact between the load block or overhaul ball and the boom tip
- or A two-block damage feature that deactivates the hoisting action before damage occurs.

#### OTHER SITE REQUIREMENTS

- A ladder or steps are provided to give access to a cab roof, where necessary for rigging or service requirements

#### Pre-Operational (Daily) Walk Around Inspection

Inspection of all cranes, derricks, and equipment will be made at the start of each shift and during usage to make sure they are in a safe operating condition. This inspection is the responsibility of our company competent person(s). Any deficiencies will be repaired, or defective parts replaced, before the equipment can be used.

#### Pre-Start-Up (In Cab) Inspection

Our pre-start-up (in cab) inspection, performed by a designated competent person, includes, but is not limited to, the following:

#### CAB

- Inspection and maintenance records, operator's manual, and appropriate load charts for the loads being lifted are present.
- The cab is clean and free of clutter.
- All controls are labeled as to their function and are free to return to the neutral position when released unless designed to do otherwise.
- All gauges and warning lights are operable
- Signal horn and back up alarms work properly.
- Service/parking brake operate properly.
- The seat is securely attached and the cab door opens outward and operates smoothly.

#### FIRE EXTINGUISHER

- An accessible fire extinguisher of 5BC rating, or higher, is at all operator stations or cabs.

#### FIELD OF VISION

- The window glass is not broken or cracked to the point where it may affect the view of the operator.
- Cab windows are made of safety glass, or equivalent, with no visible distortion that would interfere with safe operation.

#### PLACARDS

- Rated load capacities, recommended operating speeds, special hazard warnings, i.e., electrical power line clearance requirements, or instructions, are posted and visible to the operator while at the control station.

## OPERATION

- Outriggers, when used, are fully extended and tires are off the ground.
- All brakes and clutches are inspected and tested for proper adjustment and operation.
- Boom hoist lockout and other operator aids, such as anti-two-block devices (ATB) and load moment indicators (LMI), operate and calibrate properly.
- While the engine was running, all gauges and warning lights were checked for proper readings and all controls were operated to see that they are functioning properly.

## LOAD RATING CHART

- A durable rating chart(s) with legible letters and figures is attached to the crane in a location accessible to the operator while at the controls.
- Crane operators know how to read the load rating chart. It is not enough to just have load charts available. You may be asked by an OSHA inspector to show adequate understanding and proficient use of the charts as related to the equipment in use and for the loads being lifted.

## LOAD CHART REVIEW

- Load charts take into consideration the manufacturer's operating notes supplied with the machine containing important information concerning proper set-up, operation and additional points that need to be considered when calculating load handling capacities of cranes.
- The following operational conditions are also considered: \* It is very dangerous to lift a load without knowing whether it is within the rated capacity of the crane. \* Load capacity and working radius always stay within the rated limits. Under adverse field conditions, our operators must reduce the load capacity until it is determined the machine can safely handle the lift. \* When working at boom lengths or radii between the figures shown on the load capacity chart, the next lower capacity rating will be used. It is dangerous to guess the capacity for boom lengths or radii between those listed on the rating plate. \* No loads are lifted when winds create an unsafe or hazardous condition. Even a light wind can blow the load out of control, collapse a boom, or tip the machine. \* Proper precautions are taken when the velocity of wind exceeds 20 mph. If possible, booms will be lowered or secured under high wind conditions. \* No counterweights heavier than the manufacturer's specified weight are used. \* When the machine set is not level, crane capacity and structural integrity can be adversely affected. \* Our operators will keep their feet on the pedals while foot pedal brake locks are in use. Brakes could cool allowing the load to fall.

## SUSPENDED PERSONNEL PLATFORM HOIST

- No loads are hoisted while personnel platforms are in use.

- If the crane is equipped with a variable angle boom, it has a boom angle indicator that is visible to operators during operation.
- If the crane is equipped with a telescoping boom, it is equipped with a device that clearly shows the boom's extended length, or the load radius must be accurately determined before hoisting workers.
- The crane is equipped with: \* An anti-two-blocking device that prevents contact between the load block or overhaul ball and the boom tip; or \* A two-block damage feature that deactivates the hoisting action before damage occurs.
- Hooks are equipped with positive locking safety latches.
- The combined weight of the loaded platform and its rigging does not exceed 50 percent of the rated capacity of the crane or derrick.
- The rated load capacity of the platform is not exceeded. Only authorized personnel, their tools, equipment, and materials needed for the job are allowed on the platform.
- Materials and tools are secured and evenly distributed to balance the load while the platform is in motion.
- The operator has full control over the movement of the platform.
- The crane or derrick controls are not left when the engine is running or when the platform is occupied.
- All hoisting operations are stopped if there are signs of dangerous weather conditions or other impending danger.
- Any movement is performed slowly and cautiously without any sudden jerking of the crane or platform.
- The operator stays in view of, or in direct communication with, signal person and vice versa. If this is not possible, and the use of a signal person would create a greater hazard, direct communication alone, such as by radio, may be used.
- When the occupied platform is in a stationary position, all brakes and locking devices on the crane or derrick are set.
- Personnel hoisting is prohibited while the crane is traveling except when the employer demonstrates that it is the least hazardous way to accomplish a task or when portal, tower, or locomotive cranes are used.
- When cranes are moving while hoisting personnel, the following rules are obeyed: \* Travel must be restricted to a fixed track or runway. \* Travel must be limited to the radius of the boom during the lift. \* The boom must be parallel to the direction of travel. \* There must be a complete trial run before employees occupy the platform. \* If the crane has rubber tires, the condition and air pressure of the tires must be checked and the chart capacity for lifts must be applied to remain under the 50 percent limit of the hoist's rated capacity.

#### Crane Operation Checklist

Our crane operation checklist, performed by a designated competent person, includes, but is not limited to, the following:

- Only qualified and properly designated people will operate the crane. A qualified person is one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems relating to the subject matter, the work, or the project. A designated person is an authorized person approved or assigned by the employer to perform a specific type of duty or duties or to be at a specific location or locations at the job site.
- All employees will be kept clear of loads about to be lifted and suspended loads.
- Outriggers will be visible to the operator or a signal person during extension or setting.
- No one except the oiler, instructor, or competent person will be allowed on an operating crane.
- The operator will not hoist, lower, swing, or travel while anyone is on the load or hook. This includes riding a bare hook or a load of material such as beams, girders, or concrete buckets.

#### *Periodic Inspections*

Periodic inspections include both monthly and annual inspections.

#### Monthly Periodic Inspection

The monthly periodic inspection interval may vary depending on crane use and site conditions. The monthly inspection, performed by a designated competent person, includes those items listed for daily inspections as well as, but not limited to:

- No structural damage to the crane.
- No deformed, cracked, or corroded members in the load/stress bearing structure.
- No cracked welded connections.
- No sheaves which: \* Are cracked, grooving, or damaged from two-blocking; \* Have undue looseness in the bearing or bushing; \* Do not have a smooth groove surface; \* Are an improper size for the wire rope being used; \* Are missing sheave guard pins.
- No main hoist and auxiliary drums which have: \* Drum lagging and flanges with cracks or other deficiencies. \* Winch mounting bolts. \* Any undue movement of the drum on its bearings. \* Wire ropes that do not meet manufacturer's specifications. \* Over spooling (Note: With rope fully spooled, the drum flanges must extend above the top wrap of the rope.) \* Proper functioning of spooling devices such as rollers and drum rotation indicator.
- Wire rope is spooled evenly on the hoist drum.
- Wire rope is the proper diameter, length, and type of construction for our particular crane.
- No excessive wear on brake and clutch system parts, linings, pawls, and ratchets.
- No worn, cracked, or distorted parts such as pins, bearings, shafts, gears, rollers, locking devices, hook roller brackets, removable outrigger attachments lugs, and welds.

- Where the topside of the boom on hydraulic cranes (where the extension sections exert an upward force) main boom, jib and boom extensions are inspected for: \* Tight connecting pins, bolts, and rivets; \* Proper adjustment of wear pad; and \* No cracks, bends, corrosion, or other deformities.
- Repaired boom members are certified and documented that they meet manufacturer's original design standard.
- Load hooks and hook block are inspected for: \* Cracks or throat openings more than 15 percent of normal or twisted off center more than 10 degrees from the longitudinal axis, \* Unauthorized welding or evidence of heating, \* Proper labels showing capacity and weight, \* Connecting bolts on block cheek plates, \* Hook swivels and sheave guards, and \* Hooks used to hoist personnel have effective positive locking safety latches.
- No excessive wear on drive sprockets and/or chain stretch.
- All jibs have positive stops to prevent their movement of more than 5 degrees above the straight line of the jib and boom on conventional type crane booms. The use of cable type belly slings does not constitute compliance with this rule.
- No deterioration of components of hydraulic and pneumatic hoses, fittings, and tubing.
- The working pressure stamped on flexible hoses is more than the working pressure it will be exposed to.
- Turntable is checked for: \* No weld cracks and loose or missing bolts; \* Gears and rollers are free of damage, wear and properly adjusted and the components are securely locked and free of cracks or damage; and \* The swing locking mechanism is functional (pawl, pin) and operable from the cab.
- Identification number is permanently and legibly marked on jibs, blocks, equalizer beams, and all other accessories.
- Counterweight is secure and locked if so equipped.
- Guardrails conform to ANSI B30.5-1968 and steps are provided for easy access to the car and cab.
- Fuel tank filler pipe is located or protected so that spills or overflow of fuel will not run onto the engine, exhaust, or electrical equipment of any machine being fueled.
- Outrigger number, locations, types and type of control are in accordance with manufacturer's specifications.
- Boom stops function properly. Check this by raising the boom very slowly until contact is made and power for boom movement is stopped.
- Boom hoist disconnects are working properly and automatically stops the boom from hoisting when it reaches a predetermined high angle.

- Boom angle indicator (mechanical or electronic) operates properly. Check that the readout is displayed in the cab and that it is giving an accurate readout.
- Jib stops operate properly. They warn the operator and protect the jib from being raised to the point that it overturns onto the boom sections.
- All anti-two-block, two-block warning, and two-block damage prevention systems operate properly.
- All indicators, including load and boom angle indicators, operate and are calibrated properly.
- Steering, braking, and locking device function correctly.
- All other functional operating mechanisms such as brakes, locking mechanisms, hooks, rollers, brackets, outrigger components, limit switches, safety devices, hydraulic cylinders, instruments, and lights are checked.
- All power plants operate properly.

#### Annual Periodic Inspection

A thorough, annual inspection of the crane is made by a designated competent person. The annual inspection includes those items listed for daily inspections under the "Pre-Operational (Daily) Walk Around Inspection" section, all monthly periodic inspection items, as well as, but not limited to, the following:

- Magnetic particle or other suitable crack-detecting inspections have been performed at least once each year by an inspection agency retained by the owner.

#### **Operating Procedures**

Cranes and derricks can create certain hazards that only safe operation can prevent. That's why we have created a set of operating procedures. Our operating procedures follow:

#### GENERAL PROCEDURES

- Outriggers will be visible to the operator or a signal person during extension or setting. \* No one except the oiler, instructor, or competent person will be allowed on an operating crane. \* All equipment will comply with the manufacturer's specifications and limitations at all times. \* All attachments used with heavy construction equipment will not exceed the capacity, rating, or scope recommended by the manufacturer.

#### PROCEDURES FOR OPERATORS

- Do not operate a crane or derrick unless you are qualified and properly designated. A qualified person is one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems relating to the subject matter, the work, or the project. A

designated person is an authorized person approved or assigned by the employer to perform a specific type of duty or duties or to be at a specific location or locations at the job site. \* Do not hoist, lower, swing, or travel while anyone is on the load or hook. This includes riding a bare hook or a load of material such as beams, girders, or concrete buckets. \* Do not use a crane or derrick to handle materials or loads stored under electric power lines. \* Use nonconductive taglines, rather than direct contact lines, to stabilize the load. \* Use insulating boots and gloves when connecting loads or contacting the crane or derrick while in the vicinity of overhead lines. \* Signal persons must understand the hand signals for the type of crane you are working with. (These hand signals are posted at the job site.) \* When performing duties on the horizontal boom of hammerhead tower cranes that do not protect you with guardrails, protect yourself against falling by wearing safety belts and lanyards attached to lifelines. \* Keep the crane clean and free of clutter. \* Know how to read the load rating chart. \* Do not lift a load without knowing whether it is within the rated capacity of the crane or derrick. \* Stay within the rated load capacity and working radius. Under adverse field conditions, reduce the load capacity until it is determined the crane or derrick can safely handle the lift. \* When working at boom lengths or radii between the figures shown on the load capacity chart, use the next lower capacity rating. It is dangerous to guess the capacity for boom lengths or radii between those listed on the rating plate. \* Do not lift a load when winds create an unsafe or hazardous condition. Even a light wind can blow the load out of control, collapse a boom, or tip the machine. \* Take proper precautions when the velocity of wind exceeds 20 mph. If possible, lower or secure booms under high wind conditions. \* Do not use counterweights heavier than the manufacturer's specified weight. \* When the machine set is not level, understand that the crane capacity and structural integrity can be adversely affected. \* Keep your feet on the pedals while foot pedal brake locks are in use. Brakes could cool allowing the load to fall.

#### PROCEDURES FOR ALL EMPLOYEES

- All employees will be kept clear of loads about to be lifted and suspended loads.

#### PROCEDURES FOR EMPLOYEES WHEN USING THE SUSPENDED PERSONNEL PLATFORM HOIST

- Employees can also contribute to safe personnel hoisting operations and help to reduce the number of accidents and injuries associated with personnel hoisting operations. Employees must adhere to the following safe work practices: \* Never ride the load; use only platforms specifically designed for personnel lifting. \* Use tag lines where they are practical and do not create an unsafe condition. \* Keep all body parts inside the platform during raising, lowering, and positioning. \* Make sure the platform is secured before exiting or entering unless it creates an unsafe situation. \* Use fall protection equipment properly. (Refer to appropriate OSHA regulations). \* Do not hoist any load while personnel platforms are in use. \* Perform any movement slowly and cautiously without any sudden jerking of the crane or platform. \* Stay in view of or in direct communication of the signal person. If this is not possible, and use of a signal person would create a greater hazard, direct communication alone, such as by radio, may be used. \* Do not hoist personnel while the crane is traveling except when the employer demonstrates that it is the least hazardous way to accomplish a task or when portal, tower, or locomotive cranes are used. When cranes are moving while hoisting personnel, obey these rules: \* Restrict travel to a fixed track or runway. \* Limit travel to the radius of the boom during the lift. \* Keep the boom parallel to the direction of travel. \* Do not allow employees to occupy the platform until a complete trial run has been performed. \* Do not hoist personnel until the condition and air pressure of the tires (if made of rubber) is checked and the chart capacity for lifts is applied to remain under the 50 percent limit of the hoist's rated capacity.

## **Maintenance**

Any deficiencies found in our cranes and derricks are repaired, or defective parts replaced, before continued use. However, no modifications or additions that affect the capacity or safe operation of the equipment may be made without the manufacturer's written approval. If such modifications or changes are made, the capacity, operation, and maintenance instruction plates, tags, or decals, must be changed accordingly. In no case may the original safety factor of the equipment be reduced. The Project Manager is responsible for ensuring the cranes and derricks are capable of safe and reliable operation after any major repair or design modification.

While defective parts may be found, we prefer to invest time and effort into the proper upkeep of our equipment, which results in day to day reliability. Keeping up with the manufacturer's recommended maintenance schedules, and completing the proper records, will also increase our cranes' and derricks' longevity and enhance their resale value.

Periodic maintenance (those completed monthly or less frequently) is done by a factory-trained-expert, or a dealer.

## **Posting**

In order to aid in the use of consistent hand signals for crane and derrick operations, we post the signals at the job site. We have attached a copy of this poster to these written procedures.

Rated load capacities, recommended operating speeds, special hazard warnings, i.e., electrical power line clearance requirements, or instructions, are posted and visible to the operator while at the control station.

## **Record keeping & Certification**

The Project Manager is responsible for maintaining the following records on file in (enter your answer):

- The log of all monthly periodic inspections on critical items in use (i.e., brakes, crane hooks, and ropes), and include:
  - The date the crane items were inspected,
  - The signature of the person who inspected the crane items,
  - A serial number, or other identifier, for the crane inspected, and
  - The most recent certification record (maintained on file until a new one is prepared).
  - The most recent monthly periodic inspection (certification) record.
- A record of the annual inspection for each hoisting machine and piece of equipment used, including the dates and results of the inspection.
- Inspection reports for the annual magnetic particle or other suitable crack detecting inspection.
- Maintenance records.

- Any results of any equipment specifications and limitations made by a qualified engineer. (If we do not have manufacturer's specifications and limitations for our equipment, determination of those limitations is made by a qualified engineer.)
- Any written approval from the manufacturer of any modifications or additions that affect the capacity or safe operation of our equipment. In no case will the original safety factor of the equipment be reduced.
- Any tests to see that employees are not exposed to unsafe concentrations of toxic gasses or oxygen-deficient atmospheres. (If our crane is going to be operated in an enclosed space, tests will be made.)