



ENVIRONMENTAL HEALTH AND SAFETY

CRANE LIFT MANUAL

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Contact(s)	Implementation Date	Comments
Dylan Epperson, EHS	May 2023	Manual created.

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A: INTRODUCTION

Many types of cranes, hoists, and rigging devices are used at Oklahoma State University (OSU) for lifting and moving materials. The purpose of the EHS Crane Lift Manual is to define the work practices and inspection procedures associated with overhead cranes to protect operators, employees, and the public from hazards related to the movement of equipment and material. When it comes to the use of crane lifts, there are significant safety issues to be considered, both for the operators and for workers in proximity to them. The Occupational Safety and Health Administration (OSHA) has established regulations and guidelines (29 CFR 1926 Subpart CC) for the protection of workers and facilities relating to power-operated equipment in construction.

This program applies to power-operated equipment used in construction that can hoist, lower, and/or horizontally move a suspended load. Such equipment includes but is not limited to: articulating cranes; crawler cranes; floating cranes; cranes on barges; locomotive cranes; mobile cranes; multi-purpose machines used to hoist, lower, move, or suspend a load; industrial cranes; dedicated pile drivers; service/mechanic trucks with a hoist device; tower cranes; pedestal cranes; overhead and gantry cranes; derricks, and other variations of such equipment. In addition, this program applies to any building, research facility, or equipment owned or operated by OSU and all faculty, staff, students, contractors, and subcontractor personnel who use such devices.

The crane lift plan provides an in-depth evaluation and plan for all heavy and/or complicated lifts and must be completed before attempting the lift.

B: GENERAL REQUIREMENTS

To be qualified as an operator, the candidate shall be certified by an accredited crane operator testing organization. Operators must renew their license every five years. The following are also required:

- Only certified employees shall operate a crane or hoist.
- Cranes and hoists shall go through a pre-use, monthly and annual inspection.
- Any unsafe condition noted during an inspection shall be corrected before the equipment is used.
- Operators shall comply with the manufacturer's specifications and limitations applicable to the operation of the equipment.
- Where manufacturer's specifications are not available, the limitations assigned to the equipment shall be based on the determinations of a qualified engineer competent in this field and such determinations will be appropriately documented and recorded.
- Operators shall follow safe work practices when operating power-operated equipment.

At least 14 days before work using a crane lift begins, a Construction Permit must be completed and sent to the University Fire Marshal. The Construction Permit can be found on the [EHS website](#).

Submission of the Construction Permit should include:

- Crane Lift Plan
- Pre-lift checklist
- Crane operator credentials
- Annual crane inspection documentation
- Site assessment plan

SAFETY RULES FOR POWER-OPERATED EQUIPMENT

Operators shall comply with the following rules when operating cranes and hoists:

- Do not engage in any practice that will divert your attention while operating the crane.
- Respond to signals only from the person who is directing the lift, or any appointed signal person. Always obey a stop signal, no matter who gives it.
- Do not move a load over people. People shall not be placed in jeopardy by being under a suspended load. Also, do not work under a suspended load unless the load is supported by blocks, jacks, or a solid footing that will safely support the entire weight. Have a crane or hoist operator remain at the controls or lock open and tag the main electrical disconnect switch.
- Ensure that the rated load capacity of a crane's bridge, individual hoist, or any sling or fitting is not exceeded. Know the weight of the object being lifted or use a dynamometer or load cell to determine the weight.
- Check that all controls are in the OFF position before closing the main line disconnect switch.
- If spring-loaded reels are provided to lift pendants clear off the work area, ease the pendant up into the stop to prevent damaging the wire.
- Avoid side pulls. These can cause the hoist rope to slip out of the drum groove, damaging the rope or destabilizing the crane or hoist.
- To prevent shock loading, avoid sudden stops or starts. Shock loading can occur when a suspended load is accelerated or decelerated and can overload the crane or hoist. When completing an upward or downward motion, ease the load slowly to a stop.

PERSONNEL PROTECTIVE EQUIPMENT (PPE)

All employees who handle the wire slings and the hoist cables shall wear leather gloves to prevent any hand injury.

C: LIFT PLAN PROCEDURE

Cranes and derricks pose a significant threat to contractors, staff, and students on the Oklahoma State University campus. To mitigate potential incidents, it is crucial that we follow the proper procedures to perform lifts in a safe manner. This will contribute to Oklahoma State University's commitment to Environmental Health and Safety.

This procedure applies to all projects & students, contractors and staff using specified equipment cranes or derricks to lift and transport material for Oklahoma State University Projects. This includes, but are not limited to, the following: articulating cranes; cranes on barges; crawler cranes; dedicated pile drivers; derricks; floating cranes; locomotive cranes; mobile cranes; overhead and gantry cranes; pedestal cranes; portal cranes; service/mechanic trucks; side boom cranes; and/or tower cranes.

The Crane Lift Plan provides an in-depth evaluation for all heavy and/or complicated lifts and must be completed before attempting the lift to ensure the safety of everyone involved.

Employees and outside contractors shall not operate a crane until the following requirements have been met:

- Documentation of Crane Lift Plan
- Pre-lift inspections completed by EHS and the operator
- Training documentation for the operator from a nationally recognized organization
- Workers are adequately trained on proper crane communication hand signals
- All other employees working on the job site have a clear understanding of their responsibilities

- Proper PPE has been selected and issued to affected employees

A crane may not be operated until every single requirement is met. If conditions cannot be met, the crane will be restricted to employees and others by erecting barriers, installing locks (LOTO), and/or posting warning signs until the requirements have been met.

CRANE LIFT PLAN

Review the Crane Lift Plan at the lift site immediately prior to making the lift. The Crane Lift Plan must include:

- Current certification of the crane operator
- Documentation of competent/qualified person and designation forms for rigger and signal person
- Lift plan responsible persons
- Type of crane(s), assembly requirements, and current certification
- Detailed crane type information
- Load details
 - Description of the load including dimensions and weight
 - Crane configurations including the number of sections, boom size, radius, etc.
 - Where the load is to be moved, radius needed for the lift, hazard analysis
- Load test results if applicable
- Type of rigging that will be used including rated capacity
- Most recent annual inspection records including the name and qualifications of the person conducting the inspection
- Weather conditions that may delay the lift
- Crane locations/clearances
 - Overhead hazards such as power lines, guidelines etc. deemed safe by 20ft clearance of cranes radius.
- Soil/ground conditions
 - Identify any subsurface vaults, underground storage tanks, duct-banks, storm water sewers, etc. Ensure soil and mats under crane are of sufficient bearing capacity.
- Communication plan
 - Will radio or hand signals be used? How will other affected stakeholders in the area be notified?
- Will tag lines be used?
 - If yes: how will they be used, is there sufficient room, what are the hazards, etc.?
- Contingency plans for mechanical failure and incorrect load calculation resulting in exceeding 90% of crane capacity
- Written calculations of the lift, including the configuration of the rigging and load
- Safety precautions for all employees in the area, including personnel employed by other contractors
- Additional calculations for lifts out of water
- Review of crane inspection and maintenance documentation
- Pre-lift huddle including all employees involved in making the lift to advise of hazards and inform of a plan
- Briefing of all other contractor's superintendents who have employees working within the area, if applicable.
- Review and update of all associated Job Hazard Analyses

The contractor shall comply with all federal, state, and local laws and regulations regarding the inspections, maintenance, and operation of the cranes within their fleet.

OSHA prohibits hoisting personnel by crane or derrick except when no safe alternative is possible. Based on the review of the record, OSHA determined that hoisting with crane or derrick suspended personnel platforms

constitutes a significant hazard to hoisted employees and must not be permitted unless conventional means of transporting employees are not feasible or unless they present greater hazards.

D: OPERATION

PRE-OPERATION TEST

At the start of each work shift, operators shall do the following steps before making lifts with any crane or hoist:

- Test the upper-limit switch. Slowly raise the unloaded hook block until the limit switch trips.
- Visually inspect the hook, load lines, trolley, and bridge as much as possible from the operator's station; in most instances, this will be the floor of the building.
- If provided, test the lower-limit switch.
- Test all direction and speed controls for both bridge and trolley travel.
- Test all bridge and trolley limit switches, where provided, if operation will bring the equipment in close proximity to the limit switches.
- Test the pendant emergency stop.
- Test the hoist brake to verify there is no drift without a load.
- If provided, test the bridge movement alarm.
- Lock out and tag for repair any crane or hoist that fails any of the above tests.

MOVING A LOAD

- Center the hook over the load to keep the cables from slipping out of the drum grooves and overlapping, and to prevent the load from swinging when it is lifted. Inspect the drum to verify that the cable is in the grooves.
- Use a tag line when loads must traverse long distances or must otherwise be controlled.
- Manila rope may be used for tag lines.
- Plan and check the travel path to avoid personnel and obstructions.
- Lift the load only high enough to clear the tallest obstruction in the travel path.
- Start and stop slowly.
- Land the load when the move is finished. Choose a safe landing.
- Never leave suspended loads unattended. In an emergency where the crane or hoist has become inoperative, if a load must be left suspended, barricade and post signs in the surrounding area, under the load, and on all four sides. Lock open and tag the crane or hoist's main electrical disconnect switch.

PARKING A CRANE OR HOIST

- Remove all slings and accessories from the hook. Return the rigging device to the designated storage racks.
- Raise the hook at least 2.1 m (7 ft.) above the floor.
- Store the pendant away from aisles and work areas or raise it at least 2.1 m (7 ft.) above the floor.
- Place the emergency stop switch (or push button) in the OFF position.

E: RIGGING

Only select rigging equipment that is in good condition. All rigging equipment shall be inspected annually; defective equipment is to be removed from service and destroyed to prevent inadvertent reuse. The load capacity limits shall be stamped or affixed to all rigging components.

Nylon sling potential damage includes:

- Abnormal wear
- Torn stitching
- Broken or cut fibers
- Discoloration or deterioration

Alloy steel chain sling potential damage includes:

- Cracked, bent, or elongated links or components.
- Cracked hooks.
- Shackles, eye bolts, turnbuckles, or other components that are damaged or deformed.

Wire-rope sling potential damage includes:

- Kinking, crushing, bird-caging, or other distortions.
- Evidence of heat damage.
- Cracks, deformation, or worn end attachments.
- Six randomly broken wires in a single rope lay.
- Three broken wires in one strand of rope.
- Hooks opened more than 15% at the throat.
- Hooks twisted sideways more than 10 deg. from the plane of the unbent hook.

RIGGING A LOAD

Do the following when rigging a load:

- Determine the weight of the load. Do not guess.
- Determine the proper size for slings and components.
- Do not use manila rope for rigging.
- Make sure that shackle pins and shouldered eye bolts are installed in accordance with the manufacturer's recommendations.
- Make sure that ordinary (shoulder less) eye bolts are threaded in at least 1.5 times the bolt diameter.
- Use safety hoist rings (swivel eyes) as a preferred substitute for eye bolts wherever possible.
- Pad sharp edges to protect slings. Remember that machinery foundations or angle-iron edges may not feel sharp to the touch but could cut into rigging when under several tons of load. Wood, tire rubber, or other pliable materials may be suitable for padding.
- Do not use slings, eye bolts, shackles, or hooks that have been cut, welded, or brazed.
- Install wire-rope clips with the base only on the live end and the U-bolt only on the dead end.
- Determine the center of gravity and balance the load before moving it.
- Initially lift the load only a few inches to test the rigging and balance.

CRANE OVERLOADING

Cranes or hoists shall not be loaded beyond their rated capacity for normal operations. Any crane or hoist suspected of having been overloaded shall be removed from service by locking open and tagging the main disconnect switch. Overloaded cranes shall be inspected, repaired, load tested, and approved for use before being returned to service.

WORKING AT HEIGHTS ON CRANES OR HOISTS





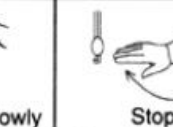

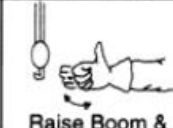

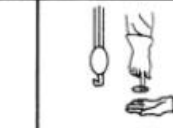
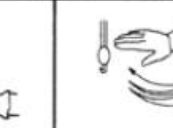
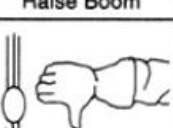
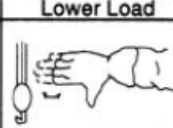
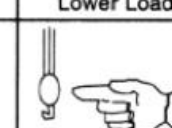
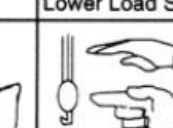
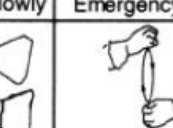
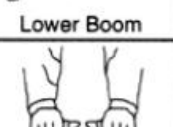
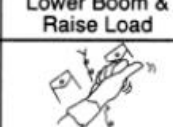
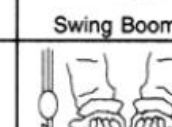
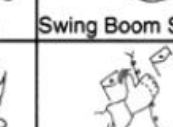
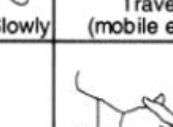
Anyone conducting maintenance or repair on cranes or hoists at heights greater than 6 ft. shall use fall protection. Fall protection should also be considered for heights less than 6 ft. Fall protection includes safety harnesses that are fitted with a lifeline and securely attached to a structural member of the crane or building or properly secured safety nets.

Use of a crane as a work platform should only be considered when conventional means of reaching an elevated worksite are hazardous or not possible. Personnel shall not board any bridge crane unless the main disconnect switch is locked and tagged open.

- Personnel shall not use bridge cranes without a permanent platform (catwalk) as work platforms. Bridge catwalks shall have a permanent ladder access.
- Personnel shall ride seated on the floor of a permanent platform with approved safety handrails, wear safety harnesses attached to designated anchors, and be in clear view of the crane operator at all times.
- Operators shall lock and tag open the main (or power) disconnect switch on the bridge catwalk when the crane is parked.

HAND SIGNALS

Signals to the operator shall be in accordance with the standard hand signals unless voice communications equipment (telephone, radio, or equivalent) is used. Signals shall be visible or audible at all times. Some special operations may require addition to or modification of the basic signals. For all such cases, these special signals shall be agreed upon and thoroughly understood by both the person giving the signals and the operator and shall not conflict with the standard signals. Hand signal charts must be posted on the equipment or conspicuously posted in the vicinity of hoisting operations.

 Main Hoist	 Auxiliary Hoist	 Hoist Load	 Hoist Load Slowly	 Stop
 Raise Boom	 Raise Boom & Lower Load	 Lower Load	 Lower Load Slowly	 Emergency Stop
 Lower Boom	 Lower Boom & Raise Load	 Swing Boom	 Swing Boom Slowly	 Travel (mobile eqpt)
 Retract Boom 2 hands	 Retract Boom 1 hand	 Extend Boom 2 hands	 Extend Boom 1 hand	 Dog Everything

F: INSPECTION, MAINTENANCE, AND TESTING

All tests and inspections shall be conducted in accordance with the manufacturer's recommendations.

- If any unsafe conditions exist, the equipment shall be removed from service.
- In order to remove a crane or hoist from service it shall be locked out and tagged out to prevent use.
- Cranes and hoists not in regular use shall be given a monthly inspection before placing in service.
- Prior to initial use, all new, altered, modified, or repaired cranes and hoists shall have the following testing performed by the installation company or third party:
 - Hoisting and lowering
 - Trolley travel
 - Bridge travel
 - Limit switches, locking and safety devices
- Load tests shall not be more than 125% of the rated load unless otherwise recommended by the manufacturer.

SHIFT INSPECTIONS

A competent person must begin a visual inspection prior to each shift and at a minimum inspection must include the following:

- Control mechanisms for maladjustments interfering with proper operation.
- Control and drive mechanisms for apparent excessive wear of components and contamination by lubricant, water, or other foreign matter.
- Air, hydraulic, and other pressurized lines for deterioration or leakage, particularly those which flex in normal operation.
- Hydraulic system for proper fluid level.
- Hooks and latches for deformation, cracks, excessive wear, or damage such as chemicals or heat.
- Wire rope reeving for compliance with the manufacturer's specifications.
- Wire rope, in accordance with 1926.1413(a)
- Electrical apparatus for malfunctioning, signs of apparent excessive deterioration, dirt or moisture accumulation.
- Tires (when in use) for proper inflation and condition.
- Ground conditions around the equipment for proper support, including ground settling under and around outriggers/ stabilizers and supporting foundations, ground water accumulation, or similar conditions.
- The equipment for level within the tolerances specified by the equipment manufacturer's recommendations, before each shift and after each move and setup.
- Operator cab windows for significant cracks, breaks, or other deficiencies that would hamper the operator's view.
- Rail, rail stops, rail clamps and supporting surfaces when the equipment has rail traveling.
- Safety devices and operational aids for proper operation.

MONTHLY TEST AND INSPECTIONS

- All in-service cranes and hoists shall be inspected monthly and the results documented.
- Defective cranes and hoists shall be locked and tagged "out of service" until all defects are corrected.

ANNUAL INSPECTIONS

- The responsible party shall schedule and supervise (or perform) annual preventive maintenance (PM) and annual inspections of all cranes and hoists. The annual PM and inspection shall cover:
 - Hoisting and lowering mechanisms.
 - Trolley travel or monorail travel.
 - Bridge travel.
 - Limit switches and locking and safety devices.
 - Structural members.

- Bolts or rivets.
- Sheaves and drums.
- Parts such as pins, bearings, shafts, gears, rollers, locking devices, and clamping devices.
- Brake system parts, linings, pawls, and ratchets.
- Load, wind, and other indicators over their full range.
- Gasoline, diesel, electric, or other power plants.
- Chain-drive sprockets.
- Crane and hoist hooks.
- Electrical apparatus such as controller contractors, limit switches, and push button stations.
- Wire rope.
- Hoist chains.

LOAD TESTING

- Newly installed cranes and hoists shall be load tested at 125% of the rated capacity by designated personnel.
- Slings shall have appropriate test data when purchased. It is the responsibility of the purchaser to ensure that the appropriate test data are obtained and maintained.
- Re-rated cranes and hoists shall be load tested to 125% of the new capacity if the new rating is greater than the previous rated capacity.
- Fixed cranes or hoists that have had major modifications or repair shall be load tested to 125% of the rated capacity.
- Cranes and hoists that have been overloaded shall be inspected prior to being returned to service.
- Personnel platforms, baskets, and rigging suspended from a crane or hoist hook shall be load tested initially, then re-tested annually thereafter or at each new job site.
- All cranes and hoists with a capacity greater than 2722 kg (3 tons) should be load tested every four years to 125% of the rated capacity. Cranes and hoists with a lesser capacity should be load tested every eight years to 125% of the rated capacity.
- All mobile hoists shall be load tested at intervals to be determined.

G: RECORDKEEPING

TRAINING RECORDS

Retain qualifications and training records for operators and stand-by personnel for at least ten years after the person has retired or is no longer employed with the University.

EQUIPMENT INSPECTIONS

- Retain any written evidence of daily/pre-use inspections for the last year.
- Retain all inspections for the last three years.
- For crane, hoist and rigging, initial load tests for less than three ton rated cranes, and quadrennial load tests for over three ton rated cranes, tests for all cranes and "job-made" rigging, retain records for the life of the crane or hoist.

RECORD RETENTION REQUIREMENTS

- Retain indefinitely records of annual shop inspections that include cranes or hoists.
- Retain indefinitely records of training.
- Retain indefinitely copies of load testing and load rating reduction tests until equipment is dismantled or destroyed.

H: TRAINING AND INFORMATION

Qualified crane operators receive documented training on the operation of the crane, hoist and associated rigging they use before they are allowed to use the equipment. A "Qualified Person/Operator" may train a stand-by person for a specific and designated lift as long as the operator discusses all safe-lift aspects and known hazards concerning the lift with the stand-by person, and coordinates their lift/rigging planning, prior to conducting the lift.

The responsible party owning the crane or hoist has the option of providing training through:

- A training provider outside the University.
- Training within the department by a "Qualified Person".
- Training must be completed prior to any use of a crane or hoist. Training of crane and hoist operators should consist of classroom instruction & hands-on training.
- Classroom instruction, hands-on training and operator evaluations can be conducted by either a competent trainer in the work unit, the equipment manufacturer, a safety consultant and/or a vendor who specializes in crane/hoist training. Hands-on training and hands-on evaluation portions of the training can also be conducted by an employee in the department/work unit who is experienced and competent with the equipment. This person could be a trained operator, supervisor/manager, or safety officer.
- Training must be specific to the type of equipment being used.
- Training shall include the following:
 - Characteristics of safe crane and hoist operation.
 - Inspection procedures.
 - Basic load handling considerations.
 - Operator responsibilities.
 - Communication used during crane and hoist operation.
 - Hands-on equipment training.
- Trainees must successfully complete hands-on training before being allowed to operate the equipment independently. Trainees will be given adequate supervision and time to learn basic operating skills.
- Refresher training in relevant topics will be provided to a crane or hoist operator when any of the following occur:
 - The operator has been observed to be using the equipment in an unsafe manner.
 - The operator has been involved in an accident or a near-miss incident.
 - The operator is assigned to operate a different type of equipment.
 - Conditions in the workplace changes in a manner that could affect safe operation of the equipment.

I: REFERENCES

Occupational Safety and Health Administration (OSHA):

- [29 CFR 1910.179 Materials Handling and Storage, Overhead and Gantry Cranes](#)
- [29 CFR 1926.1400 Cranes and Derricks in Construction, Scope](#)
- [29 CFR 1926.1427 Operator training, certification, and evaluation](#)
- [29 CFR 1926.1417 Cranes and Derricks in Construction, Operation](#)
- [29 CFR 1926.1419 Signals-General Requirements](#)

J: DEFINITIONS

- Competent person – OSHA defines a competent person as “one who is 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.”
- Qualified Person – OSHA defines a qualified person as “one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.”
- Critical Lift - A critical lift has one or more of the following conditions:
 - Load is over 75% of the crane’s rated capacity for current configuration.
 - Load is more than 50 tons.
 - Lift over any operating unit, shelter, building, or pipeline.
 - Lift requires the use of two (2) or more cranes.
 - Any lift in which a significant risk of personnel injury or equipment damage is possible.
- Lift Plan Supervisor - The contractor’s supervisor who is responsible for the completion of the lift.
- Operator - The operator who will be operating the crane and making the lift.
- Rigger - The contractor’s employee responsible for planning and executing the rigging being used for the lift.
- Signal Person - The contractor’s qualified, competent person responsible for providing signals to operator while lift is underway.
- EHS Representative - Oklahoma State University’s EHS representative responsible for reviewing and approving contractor lift plans.
- Ground Conditions - The ability of the ground to support the equipment (including slope, compaction, and firmness) (29 CFR 1926.1402).
- Assembly/Disassembly - Means the assembly and/or disassembly of equipment covered under this standard. Regarding tower cranes, “erecting and climbing” replaces the term “assembly” and “dismantling” replaces the term “disassembly”. Regardless of whether the crane is initially erected to its full height or is climbed in stages, the process of increasing the height of the crane is an erection process.
- Average Ground Bearing Pressure (AGBP) - $\text{Force/Area} = \text{AGBP}$. The average pressure exerted onto the ground under a specified area.
- Outrigger - A beam which extends from the lower works of a crane to increase the crane’s stability. The beams may be either extendible/retractable or fixed length and typically utilize some type of pad to distribute loads to the ground surface.

K: DIRECTORY

1202 W. Farm Road / (405) 744-7665

Environmental Health and Safety
1202 W. Farm Road Suite 002 / (405) 744-7241

University Health Services

University Police Department
104 USDA Building / (405) 744-6523

Facilities Management
402 North Willis / (405) 744-7154

Stillwater, Oklahoma
Emergency - Ambulance, Fire, Police
(911)

Damage to natural gas line or other pipeline or
system containing flammable, toxic or corrosive gas
or liquid:

- Fire and Police Response - 911
- OSU Work Control - (405)744-7154
- Emergency OKIE Notification - 811

Damage to all other utilities:

- OSU Work Control - (405)744-7154
- Emergency OKIE Notification - 811

L: EXAMPLE LIFT PLAN

1. PROJECT DATA			
Project name:	Location:	Contractor:	
Job number:	Work order by:		
Main crane lifting points:	Main boom:	Jib point:	
Lift accomplishment date:	Work performed:		
2. CRANE DEFINITION	3. LOAD DATA		
Manufacturer:	Lift description:		
Model:			
Serial no:	Equipment no/name:		
Crane description (rated):	Dimensions (L/W/H):		
Capacity:	Total gross weight:		
Area of operation:	From location to location:		
Crane yearly inspection date:	Max. operation radius (ft):		
4. CRANE CONFIGURATION			
No. of main boom sections:	Jib to be used:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Boom size:	No. sections:		
Boom length:	Jib size:		
Boom type:	Jib length:		
Weight hoisting from main boom:	Jib type:		
Main boom line size (diameter):	Jib offset angle:		
Max capacity of line:	Jib capacity of line at parts:		
Max load radius:	Jib max load radius:		
Main boom max:	Jib max capacity of lift point:		
Capacity of lift point:	Jib length of boom:		
Length of main boom:	Jib angle of boom at pick (deg):		
Angle of main boom at pick (deg):	Jib angle of boom at set (deg):		
Angle of main boom at set (deg):	Ground compact and stable:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	Type of surface size:		
	Structural supports required:	<input type="checkbox"/> Yes	<input type="checkbox"/> No

5. LIFT WEIGHT DATA AND CALCULATIONS			
Weight of load to be lifted:		Other:	
Max. load:		Down haul weight:	
Line weight:		Jib stowed:	
Load block weight:		Weight of crane components:	
Lifting capacity:		Percent capacity of max load weight:	
Crane rigging type:	<input type="checkbox"/> Beams	<input type="checkbox"/> Slings	<input type="checkbox"/> Shackles
Rigging capacity:			

PRE-LIFT WORKSHEET

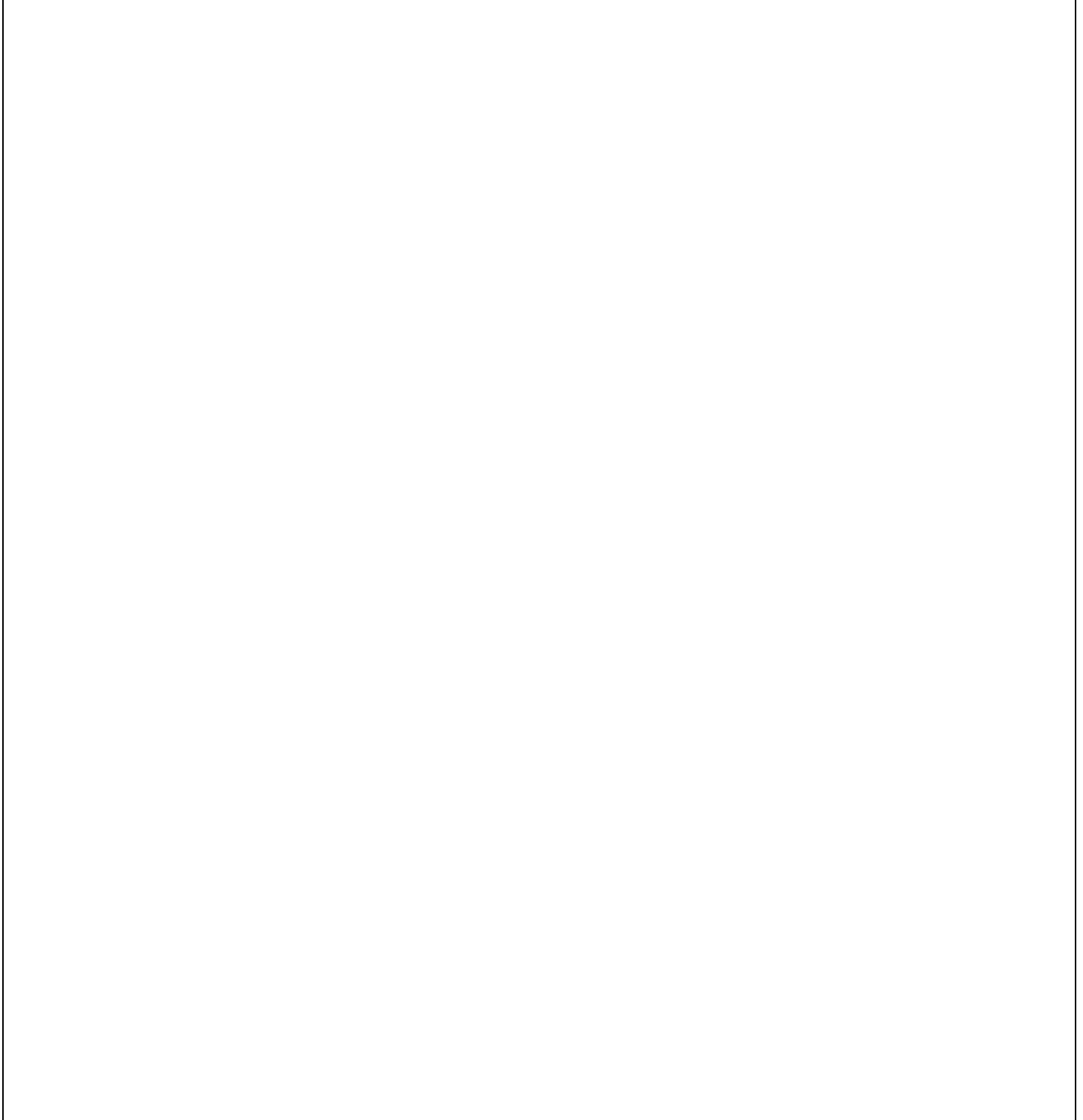
6. LIFT ADMINISTRATION CHECKLIST				
Has pre-lift meeting been held with signal person, rigger, operator, and site supervisor?			<input type="checkbox"/> Yes	<input type="checkbox"/> No
Lift operator name:		Lift operator signature:		
Operator holds certification card:		<input type="checkbox"/> Yes	<input type="checkbox"/> No	Certification card expiration date:
Signal person name:		Signal person signature:		
Communications:	<input type="checkbox"/> Hand	<input type="checkbox"/> Radio	<input type="checkbox"/> Both	<input type="checkbox"/> Other:
Have JHAs been completed?			<input type="checkbox"/> Yes	<input type="checkbox"/> No
Has swing clearance been checked?			<input type="checkbox"/> Yes	<input type="checkbox"/> No
Has the area been checked for safe entry and exit?			<input type="checkbox"/> Yes	<input type="checkbox"/> No
Are taglines to be used?			<input type="checkbox"/> Yes	<input type="checkbox"/> No
Tagline diameter:		Tagline length:		

Name of person responsible for lift plan:	Signature:	Date:
Supervisor name:	Signature:	Date:
EHS representative:	Signature:	Date:
Other:	Signature:	Date:

CRITICAL LIFTS

1. Any lift over an operating unit, shelter or building.
2. Any lift with a load greater than 50 tons.
3. Any lift in which the combination of weight and lift radius will load the crane in the use above 75% of its rated capacity.
4. Any lift requiring the use of more than one crane.
5. Any lift in which a significant risk of personal injury or equipment damage is possible.

LIFT PLAN SKETCH



Lift plan supervisor:

Date:

EHS representative:

Date:

M: EXAMPLE INSPECTION CHECKLIST

Project: _____

VISUAL INSPECTION	PASS	FAIL	N/A
Engine fluid level correct (check dip stick or sight glass)			
Hydraulic fluid level correct (check dip stick or sight glass)			
Hydraulic system exhibits no apparent weeping or leaks			
Air system exhibits no audible leaks			
Tire pressure acceptable and tire not damaged			
Telescoping boom exhibits no damage to structure, wear pads, boom stops, or cylinder			
Wire rope is spooled correctly and free of dirt, and excess lube, kinks, or wires			
Reeving is correct			
Wedge sockets and wire rope clips not distorted, cracked, or missing			
Block not damaged			
Ball and hook is free to swivel and rotate			
Guards are in place			
Outrigger float(s) secured with pad pin			
Cab			
Handrails in place and not damaged			
Operator's manual in vehicle			
Load chart legible and visible to operator			
Hand signal chart visible to workers			
Charged fire extinguisher in place			
Cab glass not cracked and wipers are functional			
GAUGES AND INDICATORS	PASS	FAIL	N/A
Load moment indicator operational			
Drum rotation indicator functioning			
Boom length indicator functioning			
Boom angle indicator functioning			
Engine: hydraulic, air, electrical, oil pressure, temperature, and fuel			
Operational inspection			
Correct counterweight for the load			
Main hoist control functioning			
Auxiliary hoist control functioning			
Anti-two block in place and functioning			
Swing brake			
Lights and horns functional			

The operator completes the inspection before beginning work, keeps the form on the crane during work, and forwards to the equipment custodian once work is completed.

IMPORTANT: Operator makes a service request if any item fails inspection.

Operator:	Crane number:
Signature:	Model number:
Comments:	Date: