RESPONSIBILITIES FOR MUNICIPAL OWNED DOCK MOUNTED CRANES

ARXCIS, INC.
TYPICAL TYPES OF CRANES FOUND ON DOCKS

PEDESTAL HYDRAULIC

SWINGING BOOM
OSHA REQUIREMENTS FOR CRANES

Cranes involved in Longshoring, governed by 29 CFR 1917.45 & .50

Cranes involved in Ship Repair, governed by 29 CFR 1910 & 1915.111
USES OF DOCK CRANES

LONGSHORING

Longshoring operations mean the loading, unloading, moving, or handling of cargo, ship's stores, gear, etc., into, in, on, or out of any vessel; 29 CFR 1910.16(c)(1)
DOCKS USED FOR LONGSHORING ARE CONSIDERED A MARINE TERMINAL

*Marine terminal* means wharves, docks, .... and adjacent structures associated with the primary movement of cargo or materials from vessel to shore or shore to vessel. (paraphrased)

29CFR 1917.2

ARXCIS, INC.
USES OF DOCK CRANES

SHIP REPAIR

*Ship Repair* means any repair of a vessel including but not restricted to alterations, conversions, installations, cleaning, painting and maintenance work.

29CFR 1915.4
TWO PARTS OF A CRANE OPERATION

THE CRANE

THE OPERATOR

ARXCIS, INC.
WHAT THE CRANE NEEDS

• ROUTINE MAINTENANCE

• REGULAR INSPECTIONS
WHEN TO INSPECT

Frequently: On the day of each use, a designated person(s) shall visually inspect for defects in functional operating components and shall report any defects found.

Periodic: On a monthly basis, a designated person(s) shall thoroughly inspect all functional components and accessible structural features. Any defects found shall be reported. A record of monthly inspections shall be maintained for six months.

Annual: On an annual basis, each crane shall be examined by an OSHA accredited inspector and load tested every four years. Certification documents are issued.
Check lists are useful for performing frequent and periodic inspections. They also provide a record of the inspections for compliance requirements.
TYPICAL AREAS FOR PROBLEMS

- Pedestal
- Turret
- Lift Cylinder
- Winch
- Boom
- Boom Tip
- Wire Rope
- Dock Mounting
- Hook
- ARXCIS, INC.
EXAMPLES OF WHAT TO LOOK FOR

- **Hydraulic Leaks**
- **Hook & Safety Latch**
- **Controls & Proper Labels**
EXAMPLES OF WHAT TO LOOK FOR

Attachment to Dock

Damaged Crane Structure

Damaged Wire Rope
## Alaska Marine Crane Model MCT-1250 Load Capacity Chart

<table>
<thead>
<tr>
<th>Boom Retracted</th>
<th>Boom Extended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boom Angle (Deg.)</td>
<td>Load Dist. (Feet)</td>
</tr>
<tr>
<td>63</td>
<td>10</td>
</tr>
<tr>
<td>47</td>
<td>15</td>
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<tr>
<td>30</td>
<td>20</td>
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<tr>
<td>1</td>
<td>22</td>
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<td>50</td>
<td>30</td>
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<td>45</td>
<td>35</td>
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<tr>
<td>38</td>
<td>40</td>
</tr>
<tr>
<td>27</td>
<td>45</td>
</tr>
</tbody>
</table>

**CAUTION:** This load capacity chart reflects the lifting capacity of the crane boom lift cylinders. The safe working load of the crane is determined by the rigging in use at the time. The crane maximum load rating therefore is the safe working load of the rigging.

**WARNING:** This crane has not been certified for personal handling.
PROPER DOCUMENTATION

Operator’s Manual

SC-542c  SC-552c

Acme Cranes

HAND SIGNALS
OPERATING THE CRANE
I DON’T NEED TRAINING!!

- I've carefully thought out all the angles.
- I've done it a thousand times.
- It comes naturally to me.
- I know what I’m doing, I have been doing it my whole life.
- Nothing could possibly go wrong.
29 CFR 1917.27 specifies the qualifications for employees:
- By experience
- By training

The employer is responsible for determining the competency of their employees to operate a crane.
HARBOR’S RESPONSIBILITIES WHEN RENTING CRANES

EXCEPT IN A FEW CASES, THERE ARE NO REGULATORY REQUIREMENTS FOR RENTING ORGANIZATIONS TO ASSURE THE COMPETENCY OF THE RENTER.

TORT REFORM HAS NOT DIRECTLY ADDRESSED THESE ISSUE; THEREFORE, THESE ORGANIZATIONS ARE MORE VULNERABLE TO LITIGATION.

LIABILITY IN TORT CASES HAS EXTENDED TO THE RENTING ORGANIZATION.
HARBOR’S RESPONSIBILITIES WHEN RENTING CRANES

• PROVIDE A CRANE WITH NO DEFECTS

• DETERMINE THE LEVEL OF INSTRUCTION THAT SATIFIES THE REQUIREMENT FOR **REASONABLE TRAINING**
SHOULD THE HARORS REQUIRE OPERATOR TRAINING?

+  

-  

• SAFETY OF THOSE INVOLVED  
• REDUCE ABUSE OF CRANES  
• REDUCE LIABILITY  

• DISGRUNTLED USERS  
• TIME & MONEY TO IMPLEMENT  
• MONITORING THE PROGRAM
SELF-TAUGHT BASIC OPERATOR TRAINING

Training on CD

Instruction Pages

Test Pages

ARXCIS, INC.
Whether the crane is the straight boom or knuckle boom type, the components are very similar.

- The pedestal, which is mounted to the dock, is typically a cylindrical tube or a box. The height will vary depending on the crane’s usage.
- The turret is mounted on a bearing which is mounted to the pedestal. The boom, lift cylinder(s) and swing motor(s) are mounted on the turret.
Communications between the operator and those assisting with the load are critical for a safe lift. Many people have been injured and killed by mistaken communications.

For each lift, an individual needs to be designated as the signal person. This person is responsible for giving clear and standard hand signals to the operator. Prior to the lift, the operator and the signal person should review the operation and establish the use of clear and standard hand signal.
Two of the factors which affect the lift capacity of the crane are: Boom Angle and Boom Length.

On telescopic boom cranes, as the boom is extended out, the lift capacity of the crane decreases. Also, as the boom angle to the horizon decreases, the capacity of the crane also decreases. Extending the boom and/or lowering the boom will result in an increase in the radius. This increase in radius directly affects load capacity.
Cargo nets are used to handle loads of various sizes. Like other load handling equipment, these need to be load rated. The Safe Working Load needs to be on the cargo net indicating how much weight it can hold. Prior to use, the net needs to be inspected. If any defects are found, the net needs to be removed from service.
Synthetic fiber rope slings are often made by the individuals that are using them. These, like all slings used for lifting are to load rated. Dependent on the type of material the sling is made of, the proper safety factor needs to be applied when establishing its safe working load. Slings that are not load rated, show signs of wear or damaged should not be used.
Pedestal Crane Operator Safety Training

1. The crane operator is responsible for inspecting the crane prior to using it.
   a. True
   b. False

2. Crane controls are not required to be labeled.
   a. True
   b. False

3. Safety latches are not required on cranes hooks.
   a. True
   b. False

4. The primary cause for crushed wire rope on a crane is poor spooling on the winch.
   a. True
   b. False

5. The Gross Load for a crane is
   a. The weight of the load only
   b. The weight of any special lifting hardware
   c. The weight of the hook and wire rope hoist line
   d. All of the above added together
ONE TRAINING PROGRAM FOR ALL HARBORS?

- Common standard
- Universally accepted by all harbors
- Shared experience with implementation
- All receive upgrades at same time