Purpose

This document is intended to serve as a reminder of safe work practices and is not a complete presentation of this topic. It should be used by individuals trained and competent in this subject. It is not intended to replace or supersede company procedures, industry standards and/or applicable governmental laws and regulations.

Definitions

Cranes: a machine for lifting and lowering a load and moving it horizontally, with the hoisting mechanism an integral part of the machine. Types of cranes are: Cantilever gantry, floor operated, gantry, semi-gantry, overhead, automatic, wall mounted, jib and boom. These cranes can be operated from a cab, pulpit, floor, or remotely.

Mobile cranes: cranes which are mounted on a truck, crawler or trailer, that are capable of moving from one location to another.

Slings: adapters used in conjunction with cranes or hoists to facilitate the movement of materials. They can be made from steel chain, wire rope, metal mesh, and natural or synthetic fibers.

Operator: A person qualified on the operation and use of the crane, hoist and slings being used.

Applications

Cranes	Gin Pole (A Frame) Trucks
Slings	Side Booms
Winches (mobile or stationary)	Hoists

Hazards

- Suspended loads could fall on personnel or equipment
- Wire ropes, chains or slings under tension could fail, striking personnel or equipment
- Crane or hoist could be overloaded and fail
- Crane frame/cables or winch poles/cables could touch overhead electrical power lines.

General Information

Cranes, winches and slings used to lift loads should only be operated by only:

- Qualified operators designated by the employer.
- A trainee under the supervision of a qualified operator.
- Maintenance, test personnel and inspectors, while performing their duties.

Any new, modified or repaired lifting device (i.e. crane, hoist, crane framework, trolley or lifting sling, etc.) should be proof loaded prior to use. The proof load documents should be kept and available for examination.

Inspections of all lifting devices should be performed immediately prior to use. Additionally, periodic inspections and if necessary load tests performed and documented on all lifting devices, according to the manufacturer's recommendations, and/or 29 CFR 1910.179 - .184, depending upon the frequency of use.

Guidelines

General (For all types hoists, cranes, slings)

- Personnel should stand clear of the load, and never be between the load and another object, or beneath the load.
- A suspended load should never be moved above personnel in the working area.
- Loads should be centered under the load line, when possible.
- Lift the load a few inches to observe the balance and reset slings to balance load.
- Make every effort to ensure that the load is balanced prior to the lift.
- Never wrap the hoist line around the load, use slings instead.
- Ensure chains or slings are placed properly on the hook.
- Keep clear of overhead power lines; clearance should be at least 10 feet from the crane or any object protruding or suspended from it. (**See Electrical/Grounding Hazards SWP)**
- Leather palm gloves should be used when working with wire rope lines.
- Use standard crane hand signal system on all lifting operations.
- Only one person should be designated as the signal person to the operator.
- Movement of the load should not occur until the signal person is within sight. *(Operator should obey an emergency stop signal by anyone.)*
- Use radio communication in addition to hand signals, if applicable.
- A portable weight indicator can be used on the load line to determine the unknown weight of a load.
- When a lift is in progress, the operator should neither perform any other work or leave the controls until the load has been safely landed.
- Use tag lines for guiding loads whenever possible.
- All hooks used should be self-closing. When lifting personnel, lock type lifting devices with keeper pins must be used.
- No one should ride on loads, buckets or hooks suspended from crane, boom, winch, or derrick.
- Evaluate safety considerations during outdoor lifting operations when wind speeds are excessive.

Slings and Lifting Devices

- Select a sling with a rating capacity equal to or greater than the intended load weight.
- When lifting an object, proper hoisting device(s) and rigging procedures should be followed.
- Inspect slings prior to use, examining it for damage, frayed or worn areas.
- Protect the sling from any sharp corners which could damage, crimp or cut it.
- Avoid kinks, loops, or twists in the legs of the sling.
- Keep hands, fingers, feet and body parts in general, from between the load line or sling and the load.
- When possible, start the lift slowly to avoid unnecessarily stressing or shocking the

sling or lifting device.

- Block up the load to allow space to remove the sling/chain. Do not pull slings or chains from under a load when the load is resting on the sling/chain.
- Do not shorten a sling by knotting, by wire rope clips or any other means.
- Do not inspect a wire sling by passing bare hands over the sling.
- Keep wire rope slings well lubricated to prevent corrosion. Use the manufacturers recommended lubricants.
- Synthetic slings that do not meet standard requirements (29 CFR 1910.184) should not be used until repaired by a sling manufacturer or equivalent entity. If not repairable, destroy them.

Winch Line or Gin Pole Truck

- Establish the size of the load to ensure that it does not overload the truck or poles.
- Ensure that poles are evenly anchored and positioned.
- Do not stretch winch cables across a road or street without roadblocks.
- Attach slings to loads so that the angle between the sling and the load will not be less than 45°.
- Secure the load before moving the truck. Minimize the distance that suspended loads are carried.
- Stand clear and keep fingers clear whenever tension is being applied to a winch line.
- Slowly take up slack in the winch line.
- Never let the winch line pass or slide through your hands.
- Spool the line evenly on the winch line drum to prevent line tangles on the drum.
- Lift the load a few inches to observe the balance and reset slings to balance load.
- Carefully release load binders (boomers). Stand to the side of the binder handle when releasing the tension.
- Secure the winch line and disengage the winch line drum drive when not in use.
- Keep fingers clear of the tailboard when securing the hook.

Cranes

- All cranes should have load charts and boom angle indicators located at the operator's position.
- Mobile cranes should be placed on a firm, level foundation and properly secured in place before being operated.
- An appropriate fire extinguisher should be located in the cab of a mobile crane, or in the area near an overhead crane operation.
- Rest the mobile crane boom in its cradle when the crane is not in use, in case of a cable or hydraulic failure.

References

29 CFR 1910.179 Cranes
29 CFR 1910.180 Crawler and Truck Cranes
29 CFR 1910.184 Slings
29 CFR 1910.306 (b) Specific Electric Requirements for Cranes

Crane Manufacturers Association of America, Inc. Specification # 61
ANSI B20.2.0-67 Safety Code for Overhead Cranes
ANSI B20.5-68 Safety Code for Crawler, Truck Cranes
ASTM A 391-65 (ANSI G61.1-1968) Steel Alloy Chain