

## HOISTING OPERATIONS

Contents	Page
General .....	1
Safety Precautions .....	1
Personnel .....	3
Equipment Required .....	4
Rigging Methods .....	5
Hoisting Central Office Equipment .....	6
Hoisting Office Furniture .....	8

### 1. GENERAL

1.01 This practice outlines work methods and safety precautions to be followed in connection with the power hoisting of materials and equipment from the ground to upper floors and between floors of buildings.

1.02 Methods described for the assembling of hoisting apparatus may be considered as general and applicable at all locations where the building hoisting boom is of the standard sliding type; except at Mutual Office, 433 South Olive Street, Los Angeles, where hoisting by company employees is prohibited.

### 2. SAFETY PRECAUTIONS

2.01 The lifting and suspending of objects of considerable size and weight presents many potential hazards. It is therefore absolutely essential that the safety measures established for work of this nature be rigidly enforced. The following specific precautions and any others that may be applicable shall be strictly observed:

- (a) Careful consideration shall be given to the capacity of the apparatus being used and to the amount of strain to which it will be subjected.
- (b) Each tool and article of equipment to be used shall be inspected by the foreman in charge of the work before any operations begin.
- (c) Gloves in good condition should be worn, especially by those workmen who handle the rope or steel lines.
- (d) A distance of at least 50 feet on each side of the hoisting truck shall be roped off along the sidewalk and red flags displayed to divert pedestrian traffic; also, as great an area as is permissible under local ordinances shall be roped off ahead of the hoisting truck to warn and divert traffic.
- (e) The foreman shall issue explicit instructions as to what duties each workman shall perform and at which point he shall be stationed.
- (f) None other than those appointed to do so shall give any signals governing the movement of the power equipment.
- (g) Workmen shall not at any time occupy the area below a suspended load.
- (h) Workmen stationed at upper floor doorways or windows shall not approach the openings any closer than is necessary, and in no instance shall reach out to grasp a load and

risk the loss of foot balance. Use the grab hook described in Paragraph 4.02 to pull the guide line inward through the door or window opening.

- (1) Strict and constant attention by all workmen to the details and movements involved in the work is necessary in order to reduce to a minimum the possibility of accidents. An error caused by inattention may result in serious injury to fellow workmen and damage to buildings or equipment.

### 3. PERSONNEL

3.01 The foreman in charge of hoisting operations shall appoint workmen to specific duties on the basis of individual aptitude and experience. Workmen who are assigned to pass signals, for instance, shall be selected because of their knowledge of this work, their discretionary powers and their application to the job.

3.02 Depending upon the extent of work, if materials are being hoisted to various floors, floor foremen should be located at each floor to direct the work at that point.

3.03 Because of the varied structure of framework and other pieces to be hoisted, one man shall be assigned to the task of tying and fastening articles to the hoist line.

3.04 One man, also, shall operate the guy line attached to the hoisting hook, which is used to direct the travel of the load and to return the hoisting hook to the ground level.

#### 4. EQUIPMENT REQUIRED

4.01 Certain stake body, flat decked trucks are selected for hoisting operations. These trucks and their winches are specially serviced and inspected to insure good mechanical condition.

4.02 The following items of equipment are generally required:

- 2 Metal snatch blocks (10") fitted with locking device
- 1 Hoisting hook
- 1 Winch rope hook, "S" shaped (Dwg. 206-B-24)
- 1 Steel clevis
- 2 Chains, 3/8", 12' long or more
- 1 Rope cargo net
- 1 Canvas bag with metal bottom
- 1 Grab hook (to snare the guide line from position inside the building)
- 100' Rope, 3/8", manila
- 2 Wire rope slings, 6' to 8' long, with eyes spliced in both ends
- 4 Manila rope slings, 3/4", 8' to 12' long, with eyes spliced in both ends
- 2 Manila rope slings, 1/2", 10' long, eyes spliced in both ends, with 1/2" harness snap fastened in one eye of each sling
- 4 Red flags
- 2 Window guards
- Window sill guards (1 for each window)
- Planking sufficient for floor covering

## 5. RIGGING METHODS

5.01 The hoisting truck shall be located so that the winch is lined up with, but not directly under, the boom which projects from the roof.

5.02 In order to attach the first snatch block, the tie-on man proceeds through the building to the roof taking the coil of guy rope with him. Before sliding the boom to the outward position, the guy line is placed through the iron ring attached to the boom end and both ends are lowered to the ground. One 10-inch snatch block is attached, hoisted up by hand, and placed securely in the iron ring.

5.03 The guy line is threaded through the snatch block, the locking device set, and the boom pushed out to the hoisting position and only to such length as will provide reasonable clearance between the building wall and the objects being hoisted. Then the hoisting line is attached to the rope guy line, pulled upward through the snatch block and returned to the ground. The clevis is placed through the eye of the hoisting line, the hoisting hook attached and the clevis fastened securely.

5.04 The second 10-inch snatch block is arranged on the truck in the following manner:

One end of the wire rope sling is secured to the truck trailer connection and the other end is passed downward between the truck body and chassis and back to the deck of the truck. The hook of the snatch block is then passed through the eye in this end of the wire rope sling. One iron linked chain shall be attached in the same manner to insure safety in case the wire rope sling should break.

5.05 The hoisting line is now placed in the sheave of the snatch block, providing a continuous run of the hoisting line from the winch drum through the snatch block on the truck deck, upward and through the boom snatch block, the end of the line returning to the ground. Then the hoisting hook is attached to the truck body and, with light strain, the slack taken up in the line.

5.06 Using the  $\frac{1}{2}$ -inch rope slings, a guy line is placed from each side of the snatch block to the sides of the truck. This action maintains the snatch block in the center of the truck body and in such a position that the hoisting line will thread on the winch drum in the proper manner.

5.07 The foreman in charge shall make a complete inspection of the apparatus after it is set up and before hoisting begins.

5.08 All hand trucks, dollies, window guards and planking for floor protection shall be hoisted to the floors on which they are required and set in place in advance of hoisting operations.

## 6. HOISTING CENTRAL OFFICE EQUIPMENT

6.01 Much of the unassembled central office equipment, as shipped, is bulky and of irregular dimensions. It cannot be moved manually to upper floors and between floors without entailing the possibility of injury to the workmen and damage to the interior wall surfaces and fixtures. The methods of hoisting such equipment are described in the following paragraphs and should be applied.

6.02 Lengths of lumber, short sections of iron, and main frame strips are hoisted in a canvas bag with a metal bottom. One end of materials of this type is placed in the bag and a half-hitch is made in the hoisting line just above the center of balance. The hoist line hook is then attached to the rope handle

of the bag and the slack in the line adjusted to relieve the entire weight from the bag. The guy line should be attached so that the vertical balance of the load is controlled.

6.03 The relation of load length to possible hoisting height must be taken into consideration to insure that the lower end of the load will swing through the doorway or window. By directing the guy line, the bottom of the bag can be placed in position for entry through the opening and, when entry is effected, the hoist line is slowly lowered and the load carried into the building.

6.04 The proximity of power lines and their clearance shall be studied and respected. At no time shall the load be maneuvered to such a position that arcing or contact is possible.

6.05 In hoisting the standard 30 or 80-line switchboard, the switchboard is placed on a furniture pad and tipped slightly to allow placing the hoisting line under the pad and crosswise with the switchboard. Additional padding should be placed to protect the wood finish and the hoist line adjusted so that the hook is at the top center. To prevent the pads from slipping on the polished surface, the 3/8-inch guy line is tied horizontally around the board, engaging the hoist line on each side. The remainder of the guy line is used to direct the travel of the load.

6.06 The methods used in preparing to hoist or lower large sections of "A" switchboard depend upon the local conditions of floor height, size of window or door openings, etc. These sections are shipped in various stages of assembly and consequently there will be differences in weight balance. All of the contributing factors shall be surveyed and analyzed before any attempt is made to suspend the weight; however, the following method will generally apply.

6.07 All paneling or readily detachable parts should be removed first in order to decrease the weight. Then the hoist line is passed lengthwise through the framework of the switchboard and, with the padding in place, the hook is engaged at the top center of the board. A 3/4-inch manila rope is secured around the board at right angles to the hoist line in order to maintain balance.

## 7. HOISTING OFFICE FURNITURE

7.01 In preparation for hoisting furniture, window sills shall be padded so as to protect the finished surfaces. All of the drawers of desks, cabinets, and filing cases shall be removed or tied closed securely with heavy twine. Ink bottles and any other fluids or easily broken items shall be removed. Then with the padding in place, 3/4-inch rope slings are placed securely around desks, cabinets, and lockers in such a manner as to incline sliding drawers and doors in the closed position. Smaller items, such as waste baskets, letter trays, etc., are placed in cargo nets, and chairs may be grouped together and bound with rope slings passed through the rungs or open work of the chairs.