ERECTING FRAMES
HOISTING METHODS

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1. GENERAL

1.1 Scope

1.11 This section covers common information on methods of erecting frames at a Hoisting Center or In-Place. (Specific Methods for Duct and ESS frameworks are covered in Handbook 30 and Handbook 261, respectively.)

1.12 General precautions to be taken against personal injury, equipment damage and service interruptions are covered in Handbook 0 and are to be observed at all times, as they apply to the operations being performed. Specific precautions, when applicable, are included in this section with the associated method.

2. ERECTING FRAMES (GENERAL)

2.1 The R-72068 or R-3764 U-bolt used for direct support of the chain hoists should always be installed with the lower nuts run down to the end of the threads. This arrangement minimizes the bending stress to which the bolt is subjected due to the sidewise pull of the hoists.

2.11 When suspending the chain hoists from the U-bolts, the following method will facilitate raising the hoists to the position where they can be attached:

(a) Place a rope (3/8" or greater in diameter) over the framing bars (or A-frame bar) adjacent to the U-bolt (or support bar). Attach one end of the rope to the top hoist hook and raise the hoist up. With another man holding the slack, attach the hoist to the hoisting center.

CAUTION: HOISTS SHOULD BE INSPECTED FOR THE FOLLOWING ITEMS TO INSURE THAT THEY ARE IN GOOD CONDITION. IF THERE IS THE SLIGHTEST DOUBT AS TO THE CONDITION OR PROPER FUNCTION OF A HOIST, IT SHOULD BE RETURNED TO REGIONAL SERVICE CENTER.

(1) HOOKS DAMAGED OR OPENED BEYOND FOLLOWING LIMITS:

1-3/8" FOR 1 TON HOIST

(2) LINKS VISIBLY DAMAGED OR SHOWING EVIDENCE OF HAVING BEEN STRETCHED.

NOTE: SOME CHAIN HOISTS ARE MADE WITH AN OPEN LINK IN THE OPERATING CHAIN BUT NEVER IN THE LOAD CHAIN. THIS LINK, WHICH IS MARKED WITH CHISEL IDENTATIONS, IS PROVIDED TO FACILITATE ADDING LINKS WHERE A LONGER CHAIN IS DESIRED, AND SHOULD NOT BE CONSIDERED DEFECTIVE.

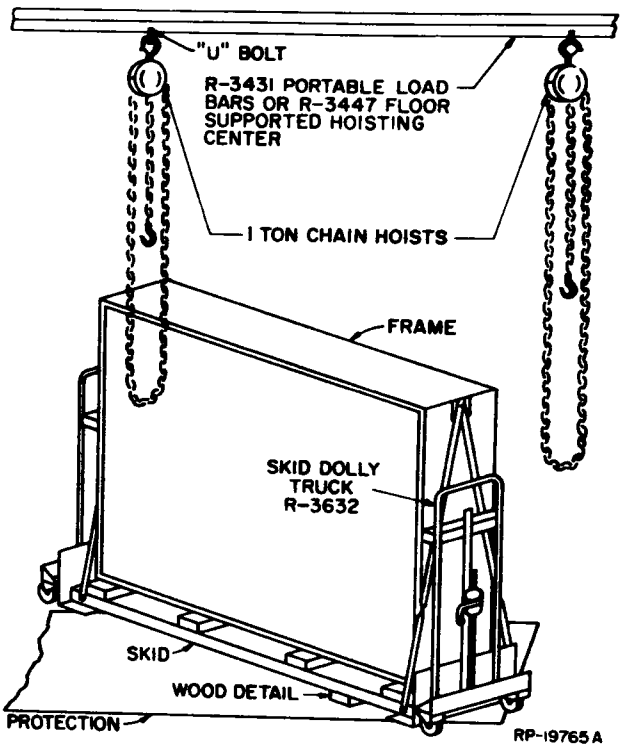
(3) ROPE SHOWING CONSIDERABLE WEAR OR CONTAINING A BROKEN STRAND.

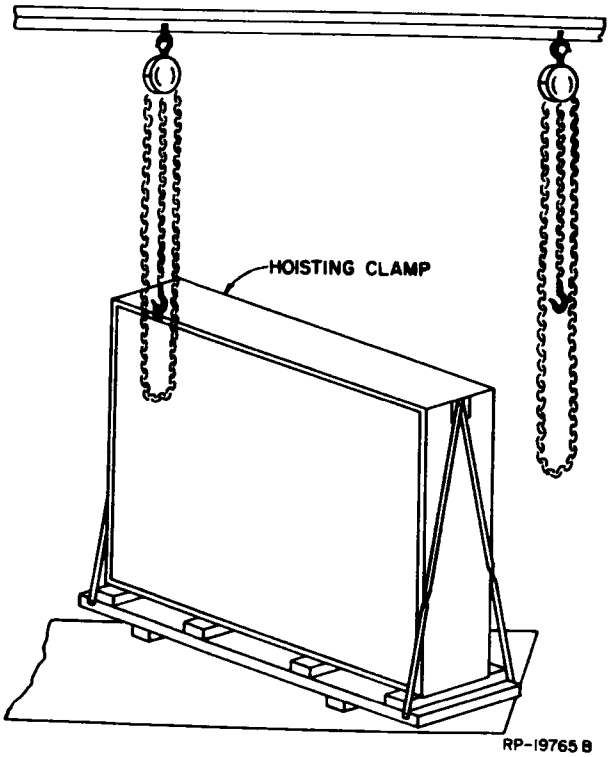
(4) CLUTCH DOES NOT PREVENT SLIPPING OF LOAD.

(5) SAFETY LATCHES NOT PRESENT ON BOTH HOOKS.

(6) REFER TO HANDBOOK 28 FOR ADDITIONAL INSPECTION INSTRUCTIONS.

2.2 Heavy Frames require the use of two 1 ton chain hoists or two 1 ton electric hoists. Do not lift bay from the floor with hoist attached to only one upright.





STEP 1: MOVE FRAME, STILL ATTACHED TO THE SKID INTO POSITION UNDER ONE TON HOIST SO THAT THE BASE IS APPROXIMATELY THE FRAME WIDTH AWAY FROM THE CENTER LINE OF THE ONE TON HOIST SUPPORT. REMOVE BOTH R-3632 TRUCKS FROM BOTH ENDS BEFORE HOISTING THE FRAME.

NOTE: PLACE TWO 4' X 8' PIECES OF MASONITE TAPED TOGETHER ALONG THEIR 8' LENGTH IN THE HOISTING AREA TO PREVENT DAMAGE OF THE LINOLEUM.

STEP 2: ATTACH THE HOOK OF THE 1 TON HOIST TO THE HOISTING CLAMP USED FOR THE PARTICULAR TYPE FRAME HOISTED. IF R-2599 DOLLY TRUCK IS USED RAISE FRAME JUST ENOUGH TO REMOVE TRUCK THEN LOWER UNTIL IT IS 1" FROM THE FLOOR.

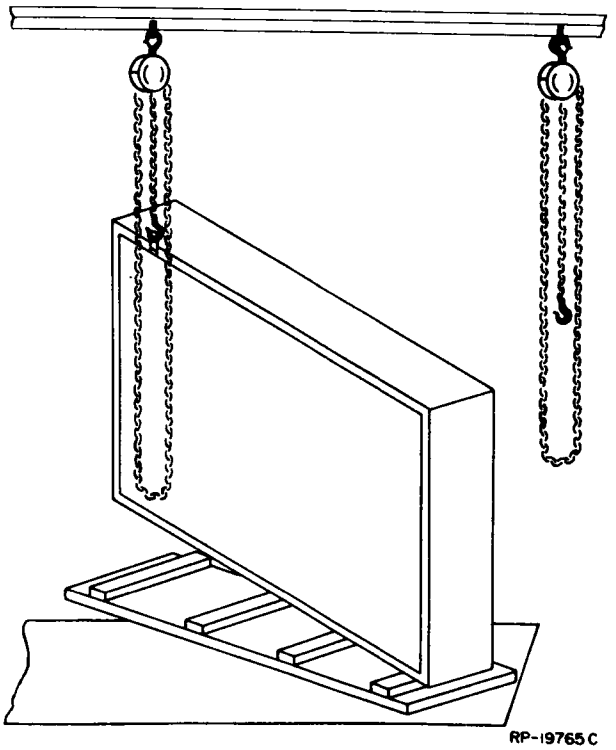
FIG. 1 METHOD OF ERECTING FRAMES BELOW HEIGHT OF AUXILIARY FRAMING (PAR. 3.1)

2.3 Removing the steel strapping and/or cutting the steel bands securing frames to skids as soon as the tops of the frames have been raised by the hoist approximately 1" will reduce the possibility of personal injury when the skids are released from the frames.

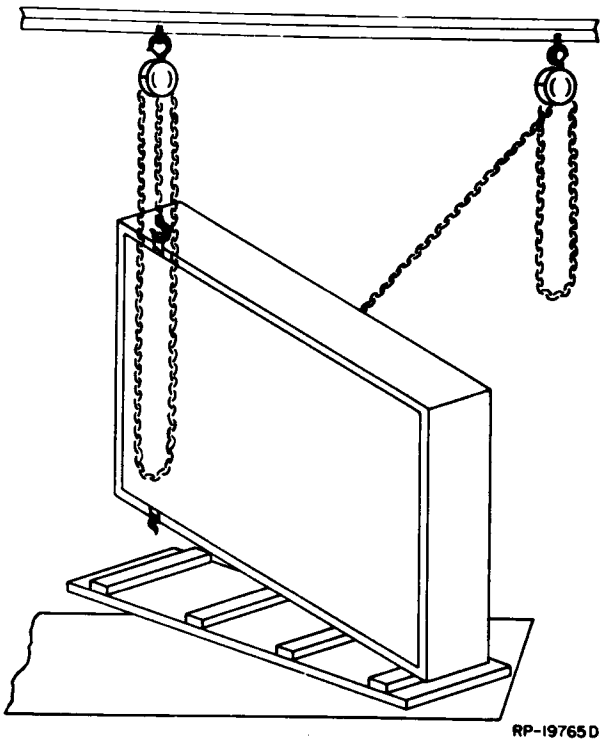
2.31 Use the R-3662 Safety Steel Strap Cutter to cut the steel bands.

2.4 Light frames may be hoisted directly into position by rope hoist, or may be erected manually.

2.5 Every effort shall be made to protect floors in hoisting area with masonite or other suitable material.



STEP 3: REMOVE THIN STEEL BINDING MATERIAL USED TO SECURE THE FRAME TO THE SKID USING THE R-3662 STEEL STRAP CUTTER. THE STEEL STRAPS (1" X 1/8") SHOULD BE PRIED LOOSE WITH AN R-2384 PINCH BAR OR R-2092 RIPPING CHISEL. RAISE THE FRAME APPROXIMATELY 3' OFF THE SKID.



STEP 4: FASTEN THE SECOND HOISTING CLAMP TO THE OTHER UPRIGHT AND ATTACH THE HOOK OF OTHER HOIST.

FIG. 1 METHOD OF ERECTING FRAMES BELOW HEIGHT OF AUXILIARY FRAMING (CONT'D)

3. METHOD OF ERECTING FRAMES

3.1 Below Height of Auxiliary Framing

3.11 This method of erecting frames (see Figure 1, Steps 1 to 8) shall be used when floor space shown in Table 1 is available and will result in the following advantages:

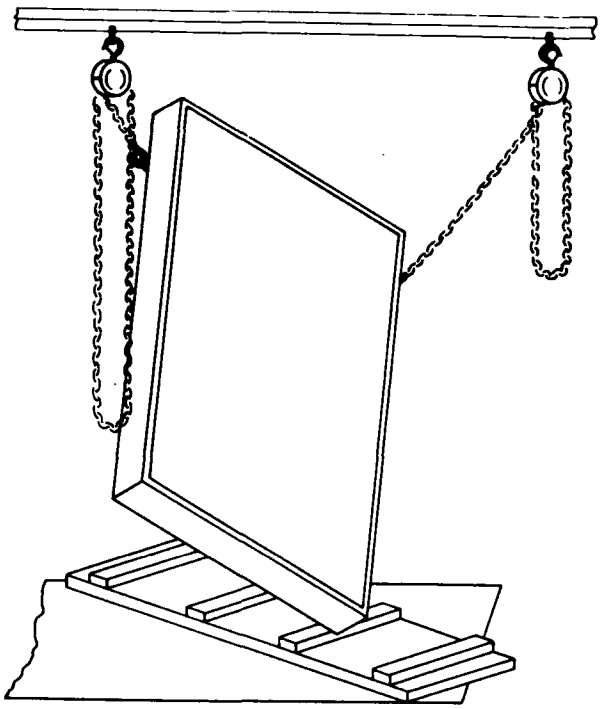
(a) Permits maximum flexibility: since we are hoisting below the regular auxiliary framing height, it will not be necessary to remove cable rack, lighting or auxiliary framing in order to obtain the additional height to clear the frame diagonal.

(b) Requires less time and effort to erect a frame.

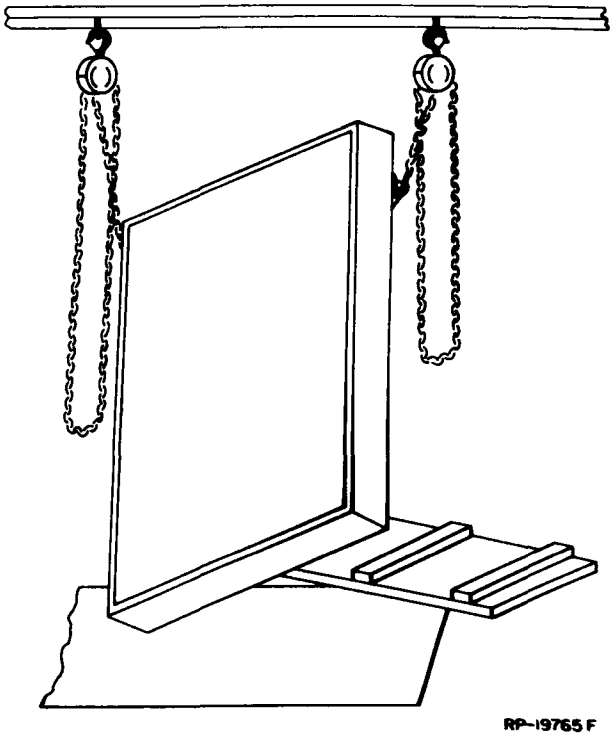
(c) It is a safer method: since the total weight of the frame is never raised off the ground.

3.12 In order to hoist a frame to a vertical position, below the height of regular auxiliary framing, the approximate floor space contained in Table 1 will be required.

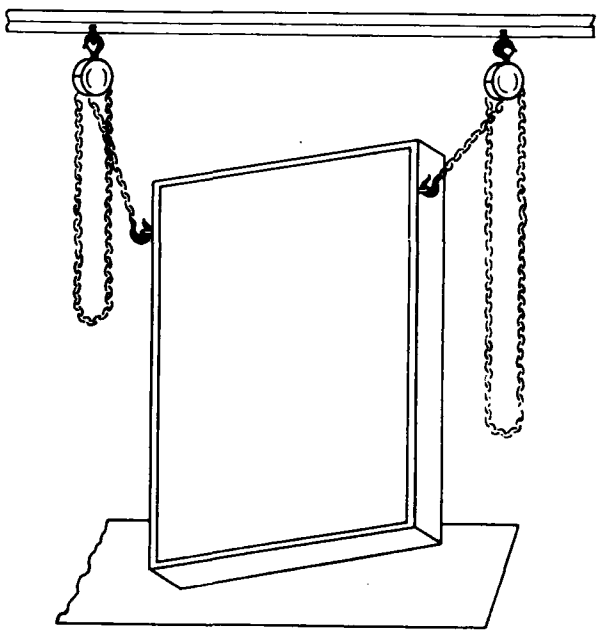
3.13 The floor space for each group is based on the maximum frame width of that group and in some cases may be more than required.



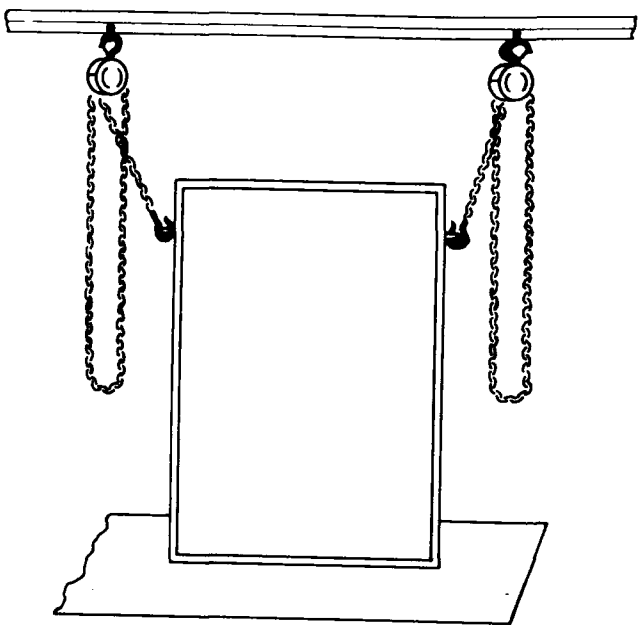
STEP 5: GRADUALLY RAISE LOAD CHAIN OF SECOND HOIST. THIS WILL CAUSE FRAME TO TILT INTO A POSITION AS SHOWN ABOVE, WHILE IT PIVOTS WITH ONE CORNER ON THE SKID.



STEP 6: CONTINUE RAISING LOAD WITH SECOND HOIST UNTIL THE CORNER OF THE FRAME TOUCHES THE MASONITE LAID ON THE FLOOR AND RAISES ITSELF OFF THE SKID.

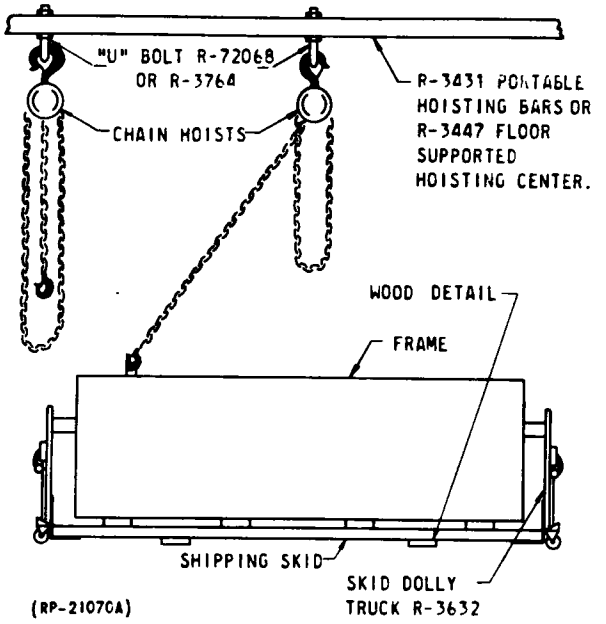


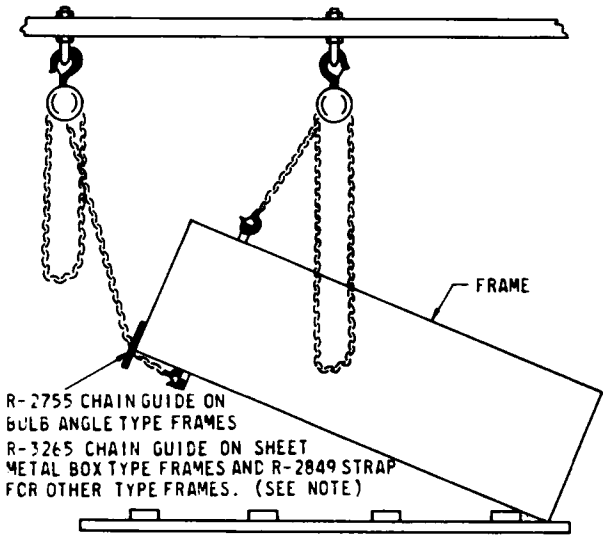
STEP 7: REMOVE SKID AND LOWER SECOND HOIST UNTIL CORNER THAT WAS ON SKID TOUCHES THE GROUND.



STEP 8: WITH BOTTOM OF FRAME ON MASONITE RAISE LOAD CHAIN ON BOTH HOISTS AT THE SAME RATE UNTIL FRAME IS IN VERTICAL POSITION.

FIG. 1 METHOD OF ERECTING FRAMES BELOW HEIGHT OF AUXILIARY FRAMING (CONT'D)





NOTE: THE R-2755 CHAIN GUIDE, R-3265 CHAIN GUIDE AND R-2849 STRAP ARE USED TO PREVENT THE CHAIN FROM SLIPPING OFF THE TOP OF THE FRAME AND DAMAGING THE EQUIPMENT THE R-2849 STRAP SHOULD BE REMOVED WHEN THE CHAIN IS PARALLEL TO THE FRAME.

(RP-21070B)

FIG. 2 METHOD OF ERECTING FRAMES ABOVE HEIGHT OF AUXILIARY FRAMING (PAR. 3.2)

→ Indicates new or changed information.

Reason for Reissue:
1) To revise Paragraph 2.11(a).
2) To add to caution in Paragraph 2.11.

TABLE 1

FLOOR SPACE REQUIRED FOR HOISTING METHOD IN FIGURE 1

Frame Width	Approximate Floor Space Required
Less Than 3'	12' x 5'6"
4'	12' x 6'6"
5'	12'6" x 7'6"
6'4-3/4"	12' x 9'6"

3.2 Above Height of Auxiliary Framing

3.21 When floor space does not permit hoisting frames as outlined in Paragraph 3.1, it may be necessary to hoist frames as shown in Figure 2.

3.22 Use two hoists attached to the auxiliary framing. After the bay has been hoisted clear off the floor, the bottom can be swung in position and the bay lowered into its permanent location. Detach hoisting details and loosely fasten bay to auxiliary framing.

NOTE: When the auxiliary framing is located at a height of 11'-6" it may be necessary to jack up the auxiliary framing sufficiently to permit placing the bays in position.

3.23 Light frames may be hoisted directly into position by means of the R-1497 Rope Hoist or they may be erected manually. Place the bays in their final location and loosely fasten them at the top and bottom.

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