STEP-BY-STEP CENTRAL OFFICE SHELVES AND LINE FINDER UNITS ADDITIONS AND REMOVALS WITH R-4640 HOIST

CONTENTS

1. GENERAL
2. INSTALLING EQUIPMENT
3. R-4640 HOIST DESCRIPTION
4. EQUIPMENT PREPARATION
5. ASSEMBLY AND DISASSEMBLY OF THE R-4640 HOIST
6. REMOVAL OF LINE FINDER, SELECTOR AND CONNECTOR SHELVES
7. ADDING LINE FINDER, SELECTOR AND CONNECTOR SHELVES

1. GENERAL

1.1 Scope

1.11 This section covers the methods for adding and removing shelves and Line Finder units on SXS Reuse jobs where the R-4640 Step-By-Step Shelf Hoist is used.

1.12 The recommended use of the various available hoists, including the R-4640, is covered in Section 200 of Handbook 97.

1.2 Associated Information

1.21 Job Equipment Specifications

1.22 Transporting SX Shelves with the R-4706 Dollies, Section 211 of Handbook 97.

1.23 Packing Information Section 221 of Handbook 97.

1.24 Hoisting and Packaging Centers, Section 202 of Handbook 97.

1.25 Cleaning DTA Terminal Strip Assemblies, Section 301 of Handbook 97.

1.3 Precautions

1.31 General safety precautions against personal injury and equipment damage are to be observed at all times as they apply to the operations being performed. Specific precautions to be taken are covered in this section.

2. INSTALLING EQUIPMENT

2.1 The following tools will be required for operations covered in this section.

R-4640 SxS Shelf Hoist (with accessories)
R-8442 Screwdriver, T Handle
R-2092 Chisel, Ripping
R-1625 Screwdriver, Spiral Ratchet
R-9572 Test Receiver
R-3154 Protective Sheeting

2.2 Depending on the Local Job Conditions and Requirements the following tools may also be required: (See Sections 200 and 202 of Handbook 97)

R-4706 SxS Shelf Dollies
R-2510 Pipe Frame Dolly Truck
R-4574 Chain Hoist, 300LB Capacity
R-3626 One Ton Chain Hoist (or equiv.)

3. R-4640 HOIST DESCRIPTION

3.1 The SxS Shelf Hoist Assembly consists of five main subassemblies: main posts, scissor frame unit, base dolly frame, upper frame with power winch, and outrigger roll unit which are readily pinned together or dismantled.

3.2 The scissor frame is lifted or lowered between two main guide posts by an electric power winch, mounted in a frame at the top of the two posts.

3.3 The scissor frame has two upper and two lower lifting arm hooks which can be extended out and positioned under the angle of the shelf frame, to support

NOTICE - NOT FOR USE OR DISCLOSURE OUTSIDE THE BELL SYSTEM EXCEPT UNDER WRITTEN AGREEMENT

Printed in U.S.A.

the weight of the shelf. In this attitude of support, the shelf can be moved horizontally, either for installation or removal. A separate load bar is used for lifting the shelves out of packing boxes or lowering into them as needed.

3.4 The hoist frame is mounted on wheels at the bottom and bracketed into the ladder track at the top. This permits the hoist to be rolled along the aisle to any desired location.

3.5 The hoist can be rolled to any other aisle location by fitting the special outrigger leg and removing the two guide brackets from the ladder track at the top.

3.6 The scissor frame, the base dolly unit, the upper frame with power winch, the outrigger roll unit with other accessories are packed inside the R-4640 shipping case. (See Fig. 1) The two 93" main posts are shipped loose.

4. EQUIPMENT PREPARATION

4.1 Refer to Sections 203 and 222 of Handbook 97 for Equipment Preparation, Sequence of Operations, Various Precautions and Preliminary Pre-Packing Operations.

5. ASSEMBLY AND DISASSEMBLY OF THE R-4640 HOIST

5.1 Method of Assembly of Hoist

CAUTION SHOULD BE EXERCISED IN REMOVING THE HEAVY & BULKY PARTS FROM THE R-4640 SHIPPING CASE. IT IS RECOMMENDED THAT PARTS SUCH AS THE SCISSORS AND THE WINCH ASSEMBLIES BE PLACED ON AN AVAILABLE CART OR FLAT DOLLY TO TRANSPORT THESE TO THE ASSEMBLY AREA. THIS MAY BE NECESSARY WHERE DIFFICULTIES ARE ENCOUNTERED IN WHEELING THE SHIPPING CASE THRU NARROW DOORWAYS OR OTHER OBSTRUCTED AREAS.

5.11 Nine (9) foot central offices will use only the 93" main posts while 11 foot 6 inch offices will use both sets of main posts. Lay the main posts side by side on the floor. Hammer the two 3/8" dowel pins perpendicular to the floor to lock the main posts together. It may be necessary to line up the holes with the aid of the offset drift pin R-2297 in order to drive in the pins.

5.12 Slide the scissor hoist frame assembly onto the main posts with the scissors facing up. The scissors should be slid to approximate middle of assembly. Make sure that the scissors hooks can face up but not down.

5.13 Slide the Base Dolly Assembly (with wheels) on to the lower end of the posts.

5.14 Slide the Upper Frame Assembly on to the Main Posts with the Motor on the left side (when facing winch) until the main posts are flush with the top of the Upper Frame Assembly.

NOTE: It may be necessary to locate the Upper Frame Assembly either up or down to accomodate the Ladder Track Height variations.

5.141 Install the two 3/8" locking pins in the Upper Frame to lock it to the Main Posts. (See Figure 2.)

5.15 Install the outrigger leg assembly to the main posts and install the locking pin.

5.16 Operate the power winch control switch to unwind the cable hook sufficiently. Thread the winch cable loop (thimble assembly) through one leg of P406843 3/8-16 "V" bolt or similar. Attach the "V" bolt to a cable rack or ladder track.

5.17 Raise the hoist by operating the power winch control switch.

5.18 When the hoist is stabilized in a vertical position disconnect the "V" bolt from the ladder track or cable rack, and from the winch cable loop.

5.19 Operate the power winch control switch to lower the cable hook, and fit it to the lifting bracket in the scissor frame. The SxS hoist is now ready to be wheeled to any desired aisle location on that office floor.

5.2 Method of Disassembly of Hoist

5.21 This will be the reverse of the assembly procedure.

6. REMOVAL OF LINE FINDER SELECTOR AND CONNECTOR SHELVES

6.1 Setting Up Procedure in Aisle

6.11 Wheel the hoist (fitted with outrigger) to the rear aisle of the shelves to be removed with the front of the hoist facing the rear of the shelves. (SEE CAUTION NEXT PAGE)

CAUTION: USE EXTREME CARE AND TAKE ALL THE NECESSARY PRECAUTIONS SO AS NOT TO TOUCH OR DAMAGE THE WORKING EQUIPMENT WHILE WHEELING THE HOIST TO LOCATION.

6.12 Insert the two ladder track fittings to the ladder track and bolt them to the extension brackets of the hoist upper frame.

Hint: It may be helpful to slightly pry the ladder track open for easier fitting insertion.

NOTE: It may be necessary to adjust height of hoist by raising or lowering the upper frame assembly in order to insert the fittings into the ladder track.

6.13 Detach the outrigger from the main posts of the hoist.

NOTE: It is recommended to brace the casters to prevent possible slippage especially in aisles lacking back framework.

6.2 Operation Procedure - Shelf Removal

CAUTION: BEFORE OPERATING THE POWER WINCH MAKE SURE THAT THE POWER CORD DOES NOT GET IN THE WAY OF MOVING SCISSORS OR OTHER PARTS OF HOIST! KEEP IT TO THE SIDE.

6.201 Raise or lower the scissor frame hook arms to the level of top cross angle of shelf to be removed by operating the power winch.

6.202 Position the hoist at approximately the central location of the shelf to be hoisted.

6.203 Extend the scissor frame so that the hook arms catch under the shelf angle. Operate the power winch to just support the weight of the shelf. Lock the shelf angle to hook arms with the safety latches. MAKE SURE THAT THE LATCHES LOCK THE SHELF SECURELY.

CAUTION: STAY AWAY FROM THE SCISSORS X-MEMBERS TO PREVENT PERSONAL INJURY!

6.204 Remove the holding screws from the shelf to free it from the equipment frame.

6.205 Retract the scissor frame fully to the main posts with the shelf supported on the hook arms. In the case of 20 cap. selector shelves the hoist can be moved sideways (or laterally) to withdraw from the DTA Terminal strips or any other obstructions in the adjacent equipment frames. (See Figure 3)

6.206 Operate the Power Winch to lower the scissors frame (with shelf) but only low enough to allow the packing case to fit between the frame and the hoist main frame. LOCK THE SCISSORS ASSEMBLY WITH TWO LOCKING PINS.

NOTE: If SxS Shelf Dollies are used refer to Section 211 of Handbook 97.

Also, if the Hoisting and Packaging Center and/or the auxiliary hoist are utilized refer to Section 201 of Handbook 97.

6.207 Attach the load bar to the same shelf angle and remove the cable loop from the scissor frame. Attach the cable loop to the load bar. Return scissors to fully retracted position.

6.208 Operate the power winch to raise the shelf, sufficiently to allow the cardboard packaging case on the flat dolly to be inserted under the suspended shelf.

6.209 Operate the power winch to lower the shelf fully into the carton.

6.210 Transfer the cable hook to the scissor frame and raise the scissor frame to clear the top of the box.

6.211 The carton can now be wheeled out of the aisle.

6.212 The scissors mechanism should not be used for adding or removing the bottom three selector shelves of a bay. Use the shelf hook for handling these with the scissors in retracted position.

7. ADDING LINE FINDER SELECTOR AND CONNECTOR SHELVES

7.1 Setting Up Procedure in Aisle

7.11 Wheel the hoist (fitted with outrigger) to the rear aisle of the shelves to be hoisted with the front of the hoist facing the rear of the shelves.

7.12 Insert the ladder track fitting to the ladder track and bolt it to the extension bracket of the hoist upper frame.

7.13 Detach the outrigger from the main posts of the hoist.

NOTE: It is recommended to brace the casters to prevent possible slippage especially in aisles lacking back framework.

7.2 Operation Procedure - Shelf Addition

CAUTION: BEFORE OPERATING THE POWER WINCH MAKE SURE THAT THE POWER CORD DOES NOT GET IN THE WAY OF MOVING SCISSORS OR OTHER PARTS OF HOIST. KEEP IT TO THE SIDE!

7.201 Place the packing case on the dolly truck so that the truck and case will enter the wiring aisle with the can cover side next to the uprights on which the equipment is being mounted.

CAUTION: PLACE THE PACKING CASE ON THE R-2510 DOLLY TRUCK WITH ITS GREATER LENGTH PARALLEL TO THE LONG SIDE OF THE TRUCK. BALANCE THE CASE LENGTHWISE SO THAT THE ENDS OF THE CASE WILL NOT TILT UP OR DOWN WHEN MOVING THE DOLLY TRUCK. CENTER THE WIDTH OF THE DOLLY TRUCK EXTENDS OUT FROM UNDER THE CASE AN EQUAL AMOUNT ON EITHER SIDE. TAKE CARE TO KEEP FEET OUT FROM UNDER THE CASE AT ALL TIMES.

7.202 Position the hoist at approximately the central location of the shelf to be hoisted.

7.203 Operate the power winch to lower the scissor frame to a height just above the packing case. Lock the scissors assembly with two locking pins.

7.204 Install the load bar to the shelf angle and attach the cable hook to the load bar. To keep the hoisting hook from disengaging, turn the latches over the top of the shelf angle and secure the latches in position by tightening the latch screws with a screwdriver.

7.205 When starting to lift a shelf or unit, note that the cable is arranged evenly on the drum of the winch and each turn of the rope is in contact with the adjacent turn. If this is done, the rope should automatically guide itself correctly when under load.

7.206 Take up slack in hoisting cable, remove packing details inside of case and then raise the unit slowly out of the packing case. If the shelf is slightly out of balance, it should be guided into place to prevent damage to equipment. Note that all switches and can covers are securely in place.

NOTE: On J32007 Line Finder Units, the P328425 Cable Bracket should be installed on the unit before the unit is mounted on the frame.

7.207 Shop assembled and equipped toll transmission shelves and 20 switch capacity double selector shelves are shipped to the field equipped with special shipping details to reinforce the shelf framework. Do not remove the details until after the shelves are permanently mounted on the frame uprights.

7.208 Operate the power winch to raise the shelf. Roll the packing case out of the aisle in preparation for the next shelf.

7.209 Extend the scissor frame so that the hook arms catch under the shelf angle. Lock the shelf angle to the hook arms with the safety latches.

CAUTION: STAY AWAY FROM THE SCISSORS X-MEMBERS TO PREVENT PERSONAL INJURY.

Transfer the cable hook from the load bar to the scissor frame.

7.210 Remove the load bar from the shelf angle.

7.211 Operate the power winch to raise the shelf to the proper level for mounting.

7.212 Extend the scissor frame toward the switch frame until the shelf is in the proper position for fastening. Attach the shelf straightening hooks and push the shelf into place. Use extreme caution when attaching the straightening hooks to prevent damage to unit equipment and wiring.

NOTE: When mounted on a universal type frame, the bottom shelf shall be located so that the lower ends of the switch bank rods are approximately 3" above the top of the sheet metal base of the guard rail angle. This counting position is one mounting space (2-1/2") above the position formerly specified for this shelf, and will provide the necessary space for bank wiring.

7.213 Line up the mounting holes with the aid of the offset drift pins, R-2297, run in the mounting bolts and tighten them with the 9/16" wrench socket combination consisting of:

1 - R-2819, Det. 3, 9/16" socket
1 - R-2459, Extension, 5"
1 - R-2806, Reversible Ratchet Handle

No changes indicated due to extensive revision.

ATTACHMENTS
Figures 1, 2 and 3 on Pages 6, 7 and 8.

Manager, Product Engineering
Control Center

Reason for Reissue:
Extensive Revisions.

FIGURE 1 - R-4640 HOIST IN ITS CHIPPING CASE

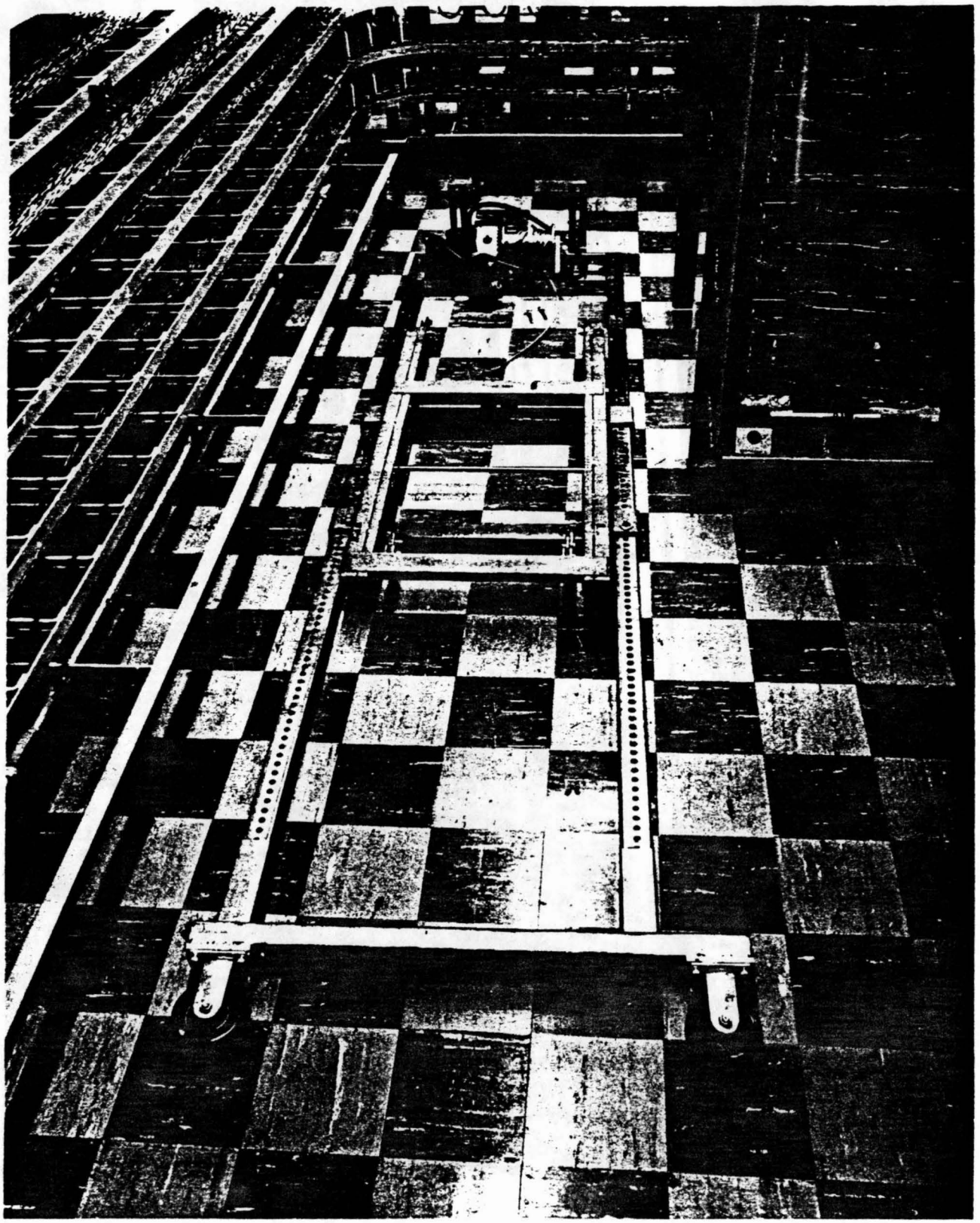

FIGURE 2 - ASSEMBLED R-4640 HOIST

FIGURE 3 - LINE FINDER SUSPENDED FROM LOWER SCISSOR HOOKS