NAVSHIPS 94537

TECHNICAL MANUAL

for

RECEIVER TRANSFER SWITCHBOARD

SB-973/SRR

TABET MANUFACTURING CO., INC.
NORFOLK, VIRGINIA

BUREAU OF SHIPS—NAVY DEPARTMENT
WASHINGTON, D.C.

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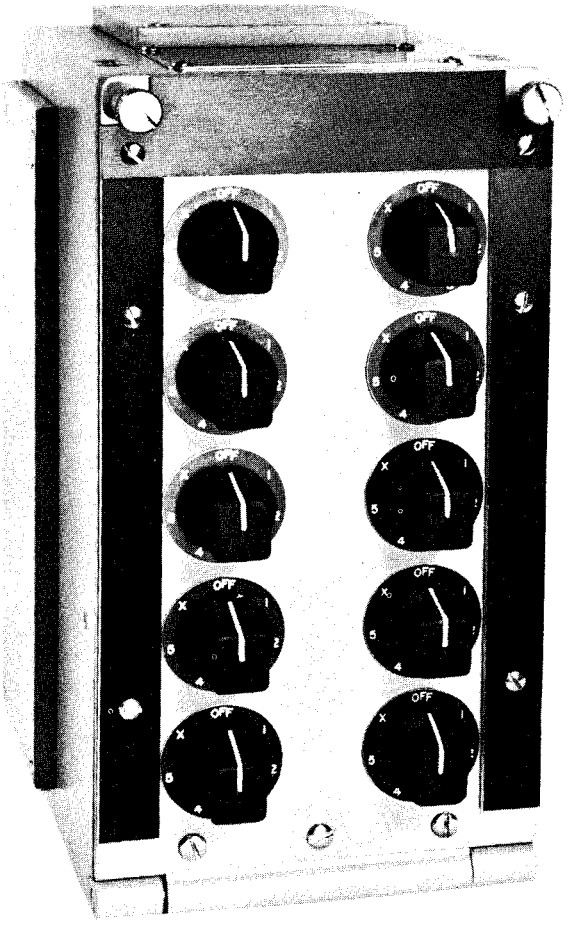

Figure 1.1
Receiver Transfer Switchboard
SB-973/SRR

SECTION 1
GENERAL INFORMATION

1-1. TECHNICAL MANUAL COVERAGE

This technical manual covers Receiver Transfer Switchboard SB-973/SRR as shown in Figure 1.1.

1-2. DESCRIPTION.

Receiver Transfer Switchboard, SB-973/SRR, is designed to transfer the audio output of radio communications receivers to remote control station audio circuits. The switchboard contains ten, two circuit, seven position rotary switches connected to a terminal board which has stud type terminals for connecting external incoming and outgoing cables. The complete assembly is housed in an aluminum cabinet, 9½ inches high, 5⅛ inches wide, 7 inches deep, overall dimensions. The assembly weighs 8½ lbs. See Figure 3.1.

The rotary selector switches in Receiver Transfer Switchboard, SB-973/SRR, are specially designed for instant removal of a damaged or faulty wafer section. Each switch incorporates one printed circuit switch wafer, consisting of seven radial contact positions on each side, a contact switching rotary mechanism and printed wiring lead-out terminations to engage mating connections in a plug-in receptacle. The wafer assembly is so designed that, by placing the switch operating knob to the "off" position, slots in the wafer and its rotary mechanism are brought into alignment with the operating shaft, per-

mitting the wafer to be withdrawn from its receptacle and replaced without dismantling the switch or removing any connecting wires.

Receiver Transfer Switchboard, SB-973/SRR, has the purpose of transferring any one of five radio receivers to any one or all of ten remote control stations. Provision is made for connections to additional Receiver Transfer Switchboards, to transfer any number of radio receivers to any number of remote control stations. One additional switchboard is required for each five additional receivers or for each ten additional remote control stations.

Receiver Transfer Switchboard, SB-973/SRR, provides greatly simplified operation when compared with switching systems previously used and reduces the chances of error in circuit selection to a minimum. See Figure 2.2 for schematic diagram.

SECTION 2
OPERATION

2-1. THEORY OF OPERATION.

Each switch, or operating knob, in Receiver Transfer Switchboard, SB-973/SRR, relates to a remote control station. Switch, or operating knob, positions, one through five each relate to a receiver. See Figure 2.1. Position X on each switch, or operating knob, is used when additional receivers are connected to an adjacent Receiver Transfer Switchboard. Position X serves to transfer the

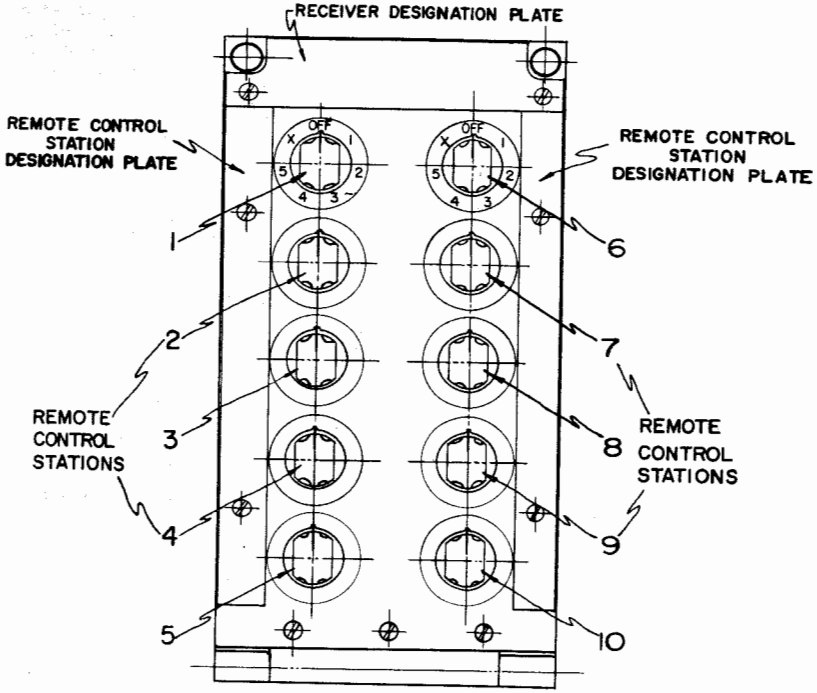

Figure 2-1. Front View of Panel

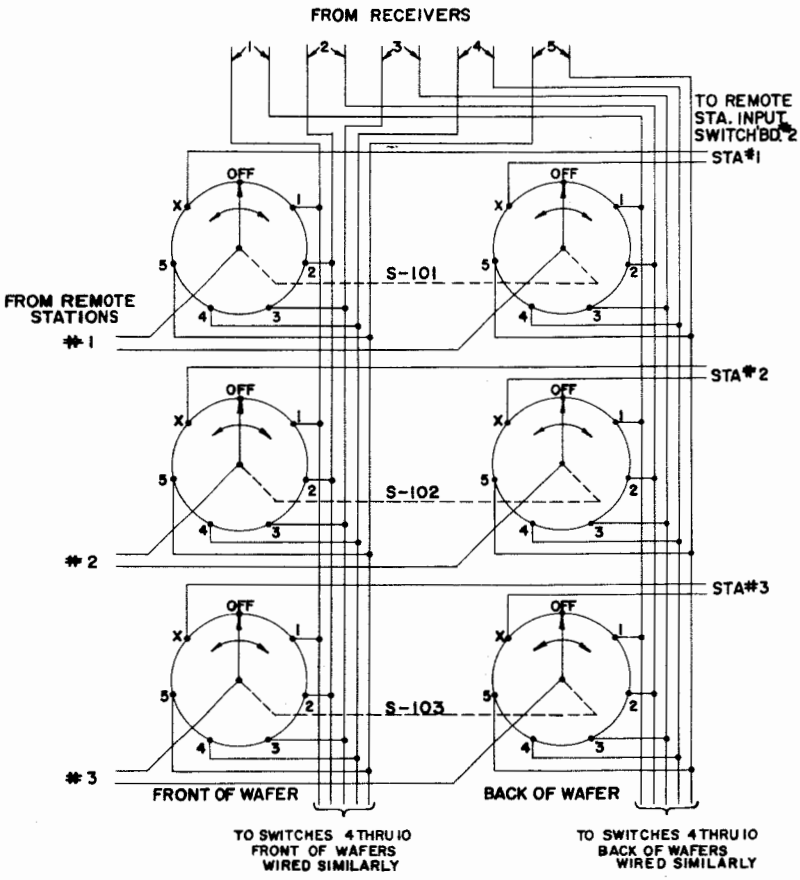

Figure 2.2. Schematic Diagram

remote control stations connected to the original switchboard to the corresponding switches in the additional switchboard, permitting transfer to five additional receivers. In this manner, as many receivers as required can be transferred to the ten remote control stations. All additional Receiver Transfer Switchboards for use with each five additional radio receivers are mounted in horizontal sequence. See Figures 3.2 and 3.4.

When more than ten remote control stations are required, additional switchboards are mounted in vertical sequences. See Figures 3.3 and 3.5.

2-3. EXAMPLES OF OPERATING PROCEDURE:

1. Receiver number 1 is to be connected to remote control station number 4. Rotate operating knob number 4 on switchboard number 1 to position number 1.

2. Receiver number 5 is to be connected to remote control station number 8. Rotate operating knob number 8 on switchboard 1 to position number 5.

3. Receiver number 7 is to be connected to remote control station number 4. Rotate operating knob number 4 on switchboard number 1 to position X; rotate operating knob number 4 on horizontal switchboard number 2 to position number 2 (radio receiver number 7).

4. Receiver number 13 is to be connected to remote control station number 10. Rotate operating knobs number 10 on both horizontal switchboards numbers 1 and 2 to position X; rotate operating knob number 10 on switchboard number 3 to position number 3 (receiver number 13).

5. Receiver number 1 is to be connected to remote control station 12: Rotate operating knob number 2 on vertical switchboard number 2, to position 1.

6. Receiver number 5 is to be connected to remote control station number 16: Rotate operating knob number 6, on vertical switchboard number 2, to position number 5.

SECTION 3
INSTALLATION

3-1. APPLICATION.

Receiver Transfer Switchboard, SB-973/SRR, is a two wire system, to transfer the two wire audio output circuits of receivers to the two wire audio input circuits of remote control stations.

3-2. PREPARATION FOR MOUNTING.

The switchboards are primarily designed for bulkhead mounting through the four 9/32 inch diameter holes in the back of the cabinet. See Figure 3.1.

Choose a suitable location for the installation, allowing ample space for cable runs, input and output cable clamps and for additional vertically and/or horizontally mounted adjacent switchboards.

Unscrew the two knurled head securing screws at the top of front panel and lower panel to a horizontal position.

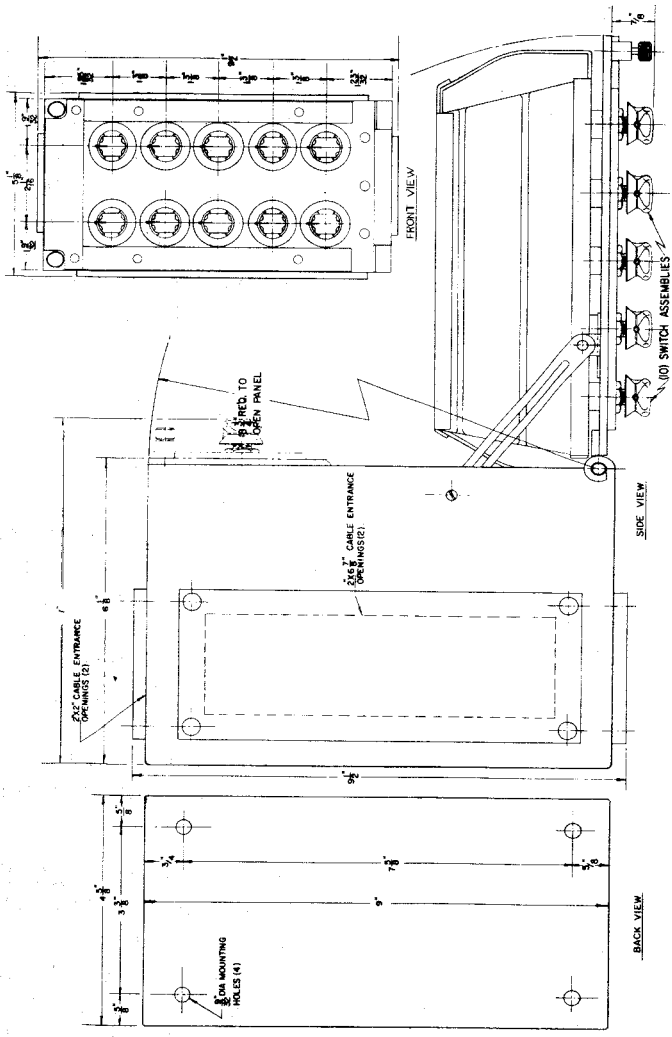

Figure 3.1. Outline Drawing

Unhook upper end of the panel stop bracket from the bracket retaining stud. Grasp the aluminum covered plug inserted in the center of the terminal board mounted on the back of cabinet and pull straight out. Hold panel closed and remove three round head screws at the bottom of the panel and lift panel out of hinge structure. This will permit removing the entire panel and switch assembly which should be stored in a safe place until subsequent mounting and cable connections are completed.

3-3. EXTERNAL CONNECTIONS.

Mount cabinet in the selected location. Remove top, side or bottom cable plates as required, and drill for necessary number of cable clamps. Cables from remote control stations are to enter the cabinet on the left hand side. Cables from receivers are to enter the cabinet from the top. Cables from remote control station locations are passed through the cable clamps that have been mounted in the side cable entrance plate and are connected in paired sequence vertically to the twenty stud type solder terminals on the left hand side of the terminal board starting with the top pair of terminals for remote control station number 1. See Figure 3.2.

Cables from receiver locations are passed through the cable clamps that have been mounted in the top cable entrance plate and are connected in paired sequence horizontally to the ten stud type solder terminals on the top side of the terminal board, starting with the left hand pair of terminals for receiver number 1. See Figure 3.2.

3-4. ADDITIONAL SWITCHBOARDS.

When additional Receiver Transfer Switchboards, SB-973/SRR, are to be installed in horizontal sequence, adjacent side cable entrance plates are removed and the cabinets bolted together through the plate mounting holes.

When additional Receiver Transfer Switchboards, SB-973/SRR, are to be installed in vertical sequences, adjacent top and bottom cable entrance plates are removed and the cabinets bolted together through the plate mounting holes.

Additional switchboards installed in horizontal order are all interconnected and receivers connected, as follows:

Using interconnecting cable B-B, connect the twenty wires, in order, to the twenty right hand stud type solder terminals on the terminal board in the left hand switchboard. Pass the interconnecting cable through the side cabinet openings and connect the other ends of the twenty wires in order, to the twenty left hand terminals on the terminal board in the right hand switchboard. Connect cables from the five additional receiver locations as instructed in paragraph 3-3. See Figure 3.2.

Additional switchboards installed in vertical order are all interconnected and the remote control stations connected as follows: Using interconnecting cable A-A, connect the ten wires, in order, to the ten top terminals on the terminal board in the upper switchboard. Pass the interconnecting cable through the cabinet openings and connect the other ends of the ten wires, in order, to the top ten terminals on the terminal board in the next lower

switchboard. Connect cables from the ten additional remote control stations as instructed in paragraph 3-3. See Figure 3.3.

When it is desired to extend the number of remote stations in an existing installation which consists of the SB-82/SRR units, the SB-973/SRR is mounted above the SB-82/SRR units. Cable assembly C-C is used to interconnect the two units. See Figure 3.5 for the proper connections.

When it is desired to extend the number of receiver stations in an existing installation which consists of the SB-82/SRR units, the SB-973/SRR is mounted to the left of the SB-82/SRR units. Cable assembly D-D is used to interconnect the two units. See Figure 3.4, for the proper connections.

Figure 3.2. Interconnecting Diagram Horizontal Cable B-B SB-973/SRR to SB-973/SRR

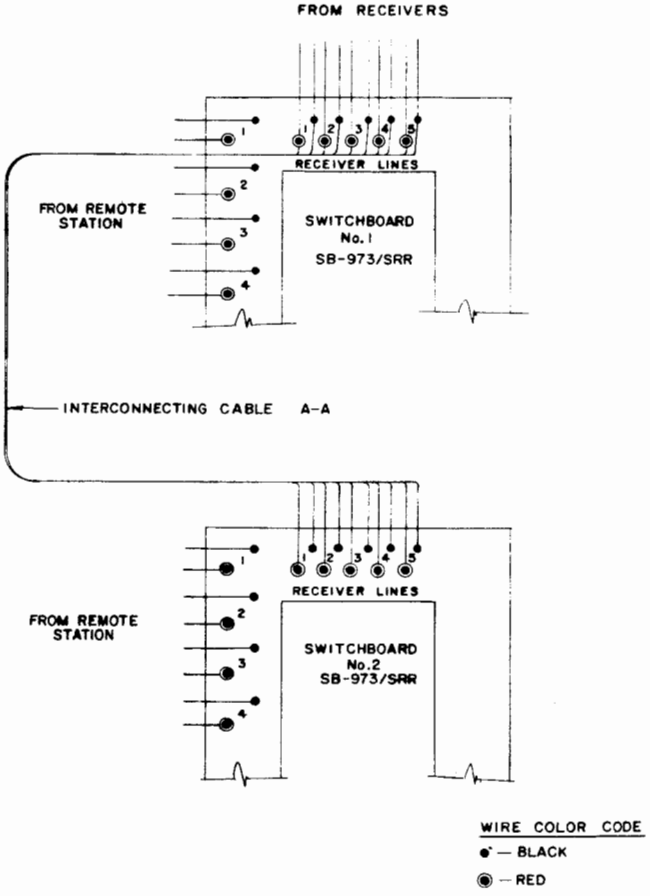

Figure 3.3. Interconnection Diagram Vertical Cable A-A SB-973/SRR to SB-973/SRR

Figure 3-4. Interconnection Diagram Horizontal Cable D-D SB-973/SRR to SB-82/SRR

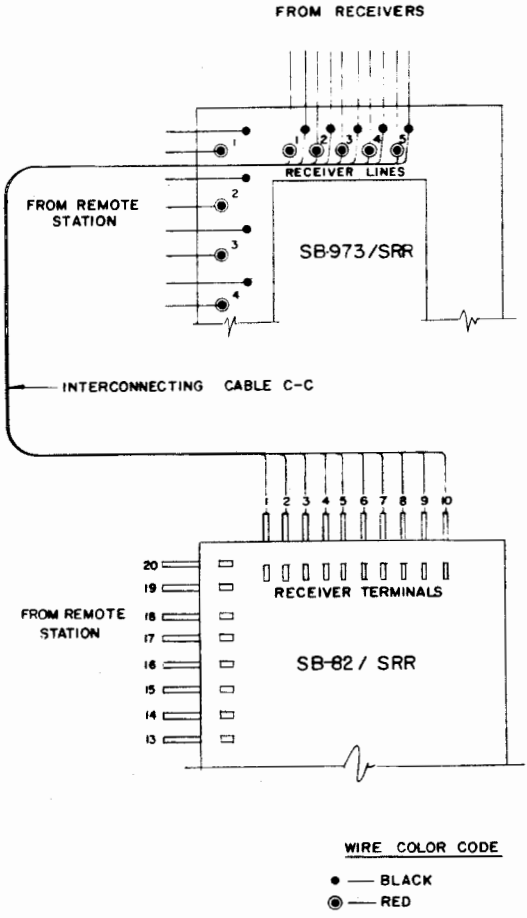

Figure 3.5. Interconnection Diagram Vertical Cable C-C SB-973/SRR to SB-82/SRR

SECTION 4
MAINTENANCE

4-1. MECHANICAL.

Receiver Transfer Switchboard, SB-973/SRR, should be inspected periodically to insure that all connections, cable clamps, knobs and other parts are firmly secured.

4-2. ELECTRICAL.

Switches S-101 through S-110 are seven position, single section, two circuit, rotary selector switches. Each section is a printed wiring wafer plugged into and engaging a receptacle and secured by means of a sliding cover with grooves which act as retainers preventing movement of the wafer.

4-3. WAFER REPLACEMENT.

Any of the printed wiring wafers may be removed for cleaning or replacement by placing the switch knob in the "OFF" position and removing the sliding cover plate. With the switch in this position, a slot in the rotary mechanism is aligned with a slot in the wafer so that any wafer can be withdrawn without otherwise disconnecting or dismantling the switch assembly.

Replacing and securing the sliding cover plate aligns and locks the wafers in position. See Figure 2.2 for schematic diagram.

SECTION 5
PARTS LIST

TABLE 5-1. MAINTENANCE PARTS LIST

REFERENCE DESIGNATION	NAME AND DESCRIPTION	FEDERAL STOCK NUMBER
E-101	Wafer, Switch: Printed circuit with integral rotor mechanism; 7 position, 2 circuit. Manufacturer: Tabet Mfg. Co., Inc. Part No. 130-50.	
J-101	Receptacle: Switch wafer connector; molded phenolic, 16 terminals. Manufacturer: Tabet Mfg. Co., Inc. Part No. 130-51.	
MP-101	Knob: Dull black phenolic with skirt; brass insert; two set screws. For ¼" diameter shaft. Manufacturer: Tabet Mfg. Co., Inc. Part No. 130-73.	
TB-101	Board, Terminal: 50 terminals solder type turret. Manufacturer: Tabet Mfg. Co., Inc. Part No. 130-27.	
W-101 *	Cable Assembly: Consists of one cable harness A-A. Manufacturer: Tabet Mfg. Co., Inc. Part No. 130-54.	
W-102 *	Cable Assembly: Consists of one cable harness B-B. Manufacturer: Tabet Mfg. Co., Inc. Part No. 130-55.	
W-103 *	Cable Assembly: Consists of one cable harness C-C. Manufacturer: Tabet Mfg. Co., Inc. Part No. 130-56.	
W-104 *	Cable Assembly: Consists of one cable harness D-D. Manufacturer: Tabet Mfg. Co., Inc. Part No. 130-57.	

* See BuShips Plan Number STD 404-2081249 for MIL Cable Type (LIB)

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