SECTION 8 - MISCELLANEOUS

8.1 TSEC/KY-8 SPEECH SECURITY SYSTEM - GENERAL DESCRIPTION

The TSEC/KY-8 interim broadband speech security system is a half duplex broadband UHF/VHF speech security system. It provides a secure communication capability to accompany and parallel existing uncovered voice communication.

8.2 REFERENCE DATA

a. Table of Technical Publications - Table 8-1
b. Primary Power Requirements - Table 8-2
c. Heat Dissipation - Table 8-3
d. Unit Weight - Table 8-3

8.3 INSTALLATION REQUIREMENTS

a. Arrangement

   (1) KYB-6/TSEC and HYP-2/TSEC may be installed on a radio operating desk (Lop Table) or similar flat surface of adequate strength. See Figure 8-1 for typical foundation details.
   (2) The J-2698/UR (Black interconnecting box) and J-2697/UR (Red interconnecting box) maybe installed on the bulkhead by welding bolts or studs to the bulkhead to secure units or maybe mounted on same foundation with KYB-6/TSEC and HYP-2/TSEC. The J-2698/UR (Black) and J-2697/UR (Red) must be mounted as close as possible to KYB-6/TSEC and HYP-2/TSEC units. See Figure 8-1 for furnished cable data.
   (3) The C-1138/UR maybe installed on a bulkhead by welding bolts or studs to the bulkhead. This unit may also be mounted on a shelf or placed on a fiddle board. See Figure 8-2 for typical foundation details.
   (4) The LS-474/U speaker and AM-3729/SR amplifier should be installed in the same general area as the C-1138/UR on the bulkhead, overhead, shelf foundation or fiddle board. See Figure 8-2 for typical foundation details.
   (5) The SA-1499/UR transceiver switching unit should be mounted as close as possible to the transceiver. See Figure 8-1 for furnished cable data.
SECTION 8 - MISCELLANEOUS (Continued)

8.3 INSTALLATION REQUIREMENTS

b. Outline and Mounting Dimension:

(1) TSEC/KY-8 Figure 8-3
(2) J-2698/UR Figure 8-4
(3) J-2697/UR Figure 8-5
(4) SA-1499/UR Figure 8-6
(5) AM-3729/SR Figure 8-7
(6) C-1138/UR Figure 8-8
(7) LS-474/U Figure 8-9
(8) AN/VRC-46 See Section 2
(9) AN/SRC-20/21 See Section 2

c. Grounding Specifications - All bonding and grounding to be in accordance with Table 8-1 Item No. 5.

8.4 CABLE DIAGRAM AND CONNECTION DETAILS

a. Elementary Connections - Figure 8-10
b. Electronics Installation and Maintenance Standards - To be in accordance with Table 8-1 Item No. 8.
c. Security Requirements - Consult Type Commander.

8.5 FIELD CHANGE REQUIREMENTS - See Table 8-1 Item No. 8.
<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>NAVSHIPS NO. DRAWING NO.</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NAVSHIPS 0967-190-3020</td>
<td>Interim Systems Manual for TSEC/KY-8</td>
</tr>
<tr>
<td>2</td>
<td>NAVSHIPS 0967-105-8010</td>
<td>Technical Manual for Audio Frequency Amplifier AM-3729/SR</td>
</tr>
<tr>
<td>3</td>
<td>0967-191-5010</td>
<td>Technical Manual for Radio Set Control C-1138A/UR</td>
</tr>
<tr>
<td>4</td>
<td>0280-538-2000</td>
<td>Instruction Sheet For NT-51007A</td>
</tr>
<tr>
<td>5</td>
<td>Mil. Std. 1310A (NAVY)</td>
<td>Shipboard Bonding and Grounding Methods for Electromagnetic Compatibility</td>
</tr>
<tr>
<td>6</td>
<td>*FSC 02227-10D-1421</td>
<td>Interim KY-8 Installation Plan (NSEF)</td>
</tr>
<tr>
<td>7</td>
<td>0981-052-8090</td>
<td>Data Pertaining to Electrical Shipboard Cable</td>
</tr>
<tr>
<td>8</td>
<td>0967-000-0000</td>
<td>Electronics Installation and Maintenance Books.</td>
</tr>
</tbody>
</table>

*These plans are not essential for installation but if available use as reference.

**TABLE 8-1**

**TABLE OF TECHNICAL PUBLICATIONS**
### TABLE OF PRIMARY POWER REQUIREMENTS

**TABLE 8-2**

<table>
<thead>
<tr>
<th>EQUIPMENT</th>
<th>VOLTAGE</th>
<th>CURRENT</th>
<th>POWER</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYP-2/TSEC</td>
<td>115 VAC (RED)</td>
<td>1.11 AMPS</td>
<td>130 Watts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>60 Hz, Single Phase</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AM-3729/SR</td>
<td>115 VAC (RED)</td>
<td></td>
<td>30 Watts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>60 Hz, Single Phase</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### TABLE OF MISCELLANEOUS DATA

**TABLE 8-3**

<table>
<thead>
<tr>
<th>EQUIPMENT</th>
<th>HEAT DISSIPATION</th>
<th>UNIT WEIGHT</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>KYB-6/TSEC</td>
<td>80.8 Watts</td>
<td>36 Lbs.</td>
<td></td>
</tr>
<tr>
<td>HYP-2/TSEC</td>
<td>130 Watts</td>
<td>24.75 Lbs.</td>
<td></td>
</tr>
<tr>
<td>KYB-13/TSEC</td>
<td>18 Lbs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AM-3729/SR Audio Amplifier</td>
<td>30 Watts</td>
<td>11½ Lbs.</td>
<td></td>
</tr>
<tr>
<td>C-1138/UR Radio Set Control</td>
<td></td>
<td>13 Lbs.</td>
<td></td>
</tr>
<tr>
<td>LS-474/U Speaker</td>
<td></td>
<td>Approx. 5 Lbs.</td>
<td></td>
</tr>
<tr>
<td>J-2698/UR Interconnecting Box (Black)</td>
<td></td>
<td>Approx. 2 Lbs.</td>
<td></td>
</tr>
<tr>
<td>J-2697/UR Interconnecting Box (Red)</td>
<td></td>
<td>Approx. 2 Lbs.</td>
<td></td>
</tr>
<tr>
<td>SA-1499/UR Transceiver Switching Unit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NT-51007A Handset</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**NOTES:**

1. Thickness (Dim. "T") of material to be furnished on location.
2. All variable dimensions and type of foundation to be specified on location.
3. Foundation for KYB-6/TSEC and HYP-2/TSEC to be as follows:
   - a. Plating (7.65 #Plt. steel), ¼" thick aluminum
   - b. Type "B" shelf foundation
      - o. For installation with stiffener in way of unit: Dimension "A" = 20" + depth of stiffener; dimension "B" = 26", dimension "C" = 9", dimension "D" = 21.11•
   - d. For installation with no stiffener interference: dimension "A" = 20", dimension "B" = 26", dimension "C" = 9", dimension "D" = 21.11•
4. Size and location of mounting bolts to be taken from equipment.

**LIST OF MATERIAL QUANTITIES FOR ONE FDN**

<table>
<thead>
<tr>
<th>PC NO.</th>
<th>NAME</th>
<th>NO.</th>
<th>MATERIAL</th>
<th>MTL SPEC.</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PLT (SEE NOTE #2)</td>
<td>1</td>
<td>MED. STL</td>
<td>MIL-S-16113</td>
<td>TYPE &quot;A&quot;</td>
</tr>
<tr>
<td>1</td>
<td>PLT (SEE NOTE #2)</td>
<td>1</td>
<td>MED. STL</td>
<td>MIL-S-16113</td>
<td>TYPE &quot;B&quot;</td>
</tr>
<tr>
<td>1</td>
<td>PLT (SEE NOTE #2)</td>
<td>1</td>
<td>AL-615-T6</td>
<td>QQ-A-327</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>PLT (SEE NOTE #2)</td>
<td>1</td>
<td>MED. STL</td>
<td>MIL-S-16113</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>¼&quot; HEX H.D. BOLT</td>
<td>1</td>
<td>AS REO'D</td>
<td>CR.S.</td>
<td>MIL-B-857</td>
</tr>
<tr>
<td>4</td>
<td>¼&quot; HEX NUT</td>
<td>1</td>
<td></td>
<td></td>
<td>MIL-B-857</td>
</tr>
<tr>
<td>5</td>
<td>½&quot; DIA-FLAT WASHER</td>
<td>1</td>
<td></td>
<td></td>
<td>MIL-S-854</td>
</tr>
</tbody>
</table>
C-1138/UR, LS-474/U AND AM-3729/SR
TYPICAL FOUNDATION DETAILS

FIGURE 8-2

LIST OF MATERIAL - QUANTIFIED FOR ONE FOUNDATION

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7.65 #Fit.</td>
<td>1</td>
<td>M. Stl.</td>
<td>9515-237-5333</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTES:
1. Template all work from ship as required.
2. Material may be substituted to suit installation.
3. Size and location of mounting bolts to be taken from equipment.
SA-1499/UR TRANSCEIVER
SWITCHING UNIT
OUTLINE AND MOUNTING
DIMENSIONS
FIGURE 8-6

J-2697/UR
INTERCONNECTING
BOX (RED)
OUTLINE AND MOUNTING
DIMENSIONS
FIGURE 8-5

J-2698/UR
INTERCONNECTING
BOX (BLACK)
OUTLINE AND MOUNTING
DIMENSIONS
FIGURE 8-4
AM-3729/SR

OUTLINE AND MOUNTING DIMENSIONS

FIGURE 8-7
C-1138/UR
OUTLINE AND MOUNTING DIMENSIONS
FIGURE 8-8
LS-474/U SPEAKER
OUTLINE AND MOUNTING DIMENSIONS
FIGURE 8-9
CAUTION NOTE:
Particular attention must be directed to audio lines with one side at ground. Make sure the ground side follows through and is not connected as a short circuit line.

NOTES:
1. MCW Lines disconnected with respect to transceiver equipment being used with KY-8.
2. Spare switchboard may be added to expand service capability or if no spare switch is available.
3. All wires not indicated are taped back stored.
4. Cable W-25, W-26, W-27, and W-28 are terminated with terminal lugs.
6. Place broadband switch S-1401 in broadband position.
7. Cable W-25 is terminated in connector.
8. Cable W-26 is terminated with terminal lugs.
9. Includes transceiver mounting rack MT-1029/VRC (includes junction box).
11. Normally these cables are furnished, but if not, installing activity will furnish and fabricate cables and connectors as shown in Figure 8-11.

NOTES AND CONNECTOR DATA FOR FIGURE 8-10

<table>
<thead>
<tr>
<th>ASSY. NO.</th>
<th>RECEPTACLE</th>
<th>PLUG</th>
<th>CLAMP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MS3102A-20-7S</td>
<td>MS3106A-20-7P</td>
<td>AN-3057-12A</td>
</tr>
<tr>
<td>2</td>
<td>MS3102A-18-1S</td>
<td>MS3106A-18-1P</td>
<td>AN-3057-10A</td>
</tr>
<tr>
<td>3</td>
<td>MS102R-14S-5S</td>
<td>MS3106R-14S-5P</td>
<td>AN-3057-6A</td>
</tr>
<tr>
<td>4</td>
<td>MS3102A-14S-6S</td>
<td>MS3106A-14S-6P</td>
<td>AN-3057-6A</td>
</tr>
<tr>
<td>5</td>
<td>MS3102R-14S-7S</td>
<td>MS3106R-14S-7P</td>
<td>AN-3057-6A</td>
</tr>
<tr>
<td>6</td>
<td>MS3102R-14S-7SC</td>
<td>MS3106R-14S-7PC</td>
<td>AN-3057-6A</td>
</tr>
<tr>
<td>7</td>
<td>164-101-1P(AMPH) (CS-2020-(1)(P)</td>
<td>164-201-1S(13)(AMPH) (CS-1320-(1)(S)</td>
<td>AN-3057-6A</td>
</tr>
<tr>
<td>8</td>
<td>164-7J(U-79/U)(AMPH)</td>
<td>164-28(U-77/U)(AMPH)</td>
<td>AN-3057-12A</td>
</tr>
<tr>
<td>9</td>
<td>MS-3102R-20-29S</td>
<td>MS-3106R-20-29P</td>
<td>AN-3057-12A</td>
</tr>
<tr>
<td>10</td>
<td>MS-3112F-14-19S</td>
<td>MS-3116E-14-19P (PT06A-14-19P)</td>
<td>BENDIX</td>
</tr>
<tr>
<td>11</td>
<td>MS3112E-12-10S</td>
<td>MS3116E(SR)-12-10P</td>
<td>AN-3057-16A</td>
</tr>
<tr>
<td>12</td>
<td>MS3102R-24-7SY(C)</td>
<td>MS3108E-24-7PY</td>
<td>AN-3057-16A</td>
</tr>
</tbody>
</table>
TSEC/KY-8 INTERIM VOICE SYSTEM CABLE DIAGRAM

FIGURE 8-10 CONTINUED
TSEC/KY-B INTERIM VOICE SYSTEM
CABLE DIAGRAM
FIGURE 8-10
(CONTINUED)
FIGURE 8-10

TSEC/KY-8 INTERIM VOICE SYSTEM
CABLE DIAGRAM

(Continued)
TCOP-3

LENGTH AS REQUIRED

115V AC

115V AC

GROUND

BLACK

WHITE

GREEN

CABLE W-7

TSEC/KY-8

W-7

CABLE FABRICATION DETAILS

FIGURE 8-11

(CONTINUED)
REMOVE INSULATION 1/4 AND TIN

MS3106A-14S-6P

AN3057-6A

TUBE CABLE WRAP

4 FT

ALPHA 1252 (OR EQUAL)
4 CON. 20GA
BLK  WHT  RED  GRN

TSEC/KY-8
W-10
CABLE FABRICATION DETAILS
FIGURE 8-11
(CONTINUED)
FIGURE 8-11 NAVSHIPS 0967-306-1010 MISCELLANEOUS

CABLE FABRICATION DETAILS
FIGURE 8-11 (CONTINUED)

TSEC/KY-8
W-12

ALPHA 1252 20GA (OR EQUAL)
BLK
WHT
RED
GRN

CABLE W-12

TUBE CABLE WRAP

REMOVE INSULATION 1/4 AND TIN

4 FT

MS3106A-20-7P
AN3057-12A

WHT
GRN
RED
BLK
REMOVE INSULATION 1/4 AND TIN

4 FT

TUBE CABLE WRAP

MS3106A-20-7P
AN3057-12A

CABLE WRAP 4FT

ALPHA NO. 1471 (5 WIRES) (OR EQUAL)

ALPHA NO. 1504 (OR EQUAL)

WHT

TSEC/KY-8
W-25
CABLE FABRICATION DETAILS
FIGURE 8-11
(CONTINUED)
FIGURE 8-11

NAVSHIPS 0967-306-1010

MISCELLANEOUS

MS3106R-20-29P
AN3057-12A

TUBE
CABLE WRAP

REMOVE INSULATION
1/4 AND TIN

TYPICAL, 13 CONDUCTORS

4 FT

WHT
WHT
WHT
RED
WHT GRN
BLK
GRN
YEL
BLU
BRN
ORN
GRY
VIO

ALPHA NO. 1471 (2 WIRES) OR EQUAL

ALPHA 1504 (11 WIRES) OR EQUAL

CABLE W-26

TSEC/KY-8
W-26
CABLE FABRICATION DETAILS
FIGURE 8-11
(CONTINUED)
TSEC/KY-8
W-27
CABLE FABRICATION DETAILS
FIGURE 8-11
(CONTINUED)
FIGURE 8-11

CABLE FABRICATION DETAILS

TSEC/KY-8
W-28

3 LEADS
ALPHA-2-SHIELDED 1471 WHT
ALPHA-1-BLK 1504 (OR EQUAL)

CABLE W-28

TUBE CABLE WRAP

REMOVE INSULATION 1/4 AND TIN

MS3106A 20-7P
MS3057-12A

6 FT

WHT
WHT
BLK

CABLE FABRICATION DETAILS
FIGURE 8-11
(CONTINUED)
FIGURE 8-11

REMOVE INSULATION 1/4 AND TIN

CABLE FABRICATION DETAILS

MS3106R-14S-7PC
AN3057-6A

BLACK
GREEN
WHITE

Belden Cable 8453
18 AWG
(or equal)

TSEC/KY-8
W-31

CABLE W-31

ORIGINAL

CONTINUED
FIGURE 8-11
NAVSHIPS 0967-306-1010
MISCELLANEOUS

TSEC/KY-8
W-32
CABLE FABRICATION DETAILS
FIGURE 8-11

BELDEN CABLE 8453
18 AWG
(OR EQUAL)

CABLE W-32

MS3106R-14S-7S
AN3057-6A

4 FT

WHITE
BLACK
GREEN

CABLE W-32