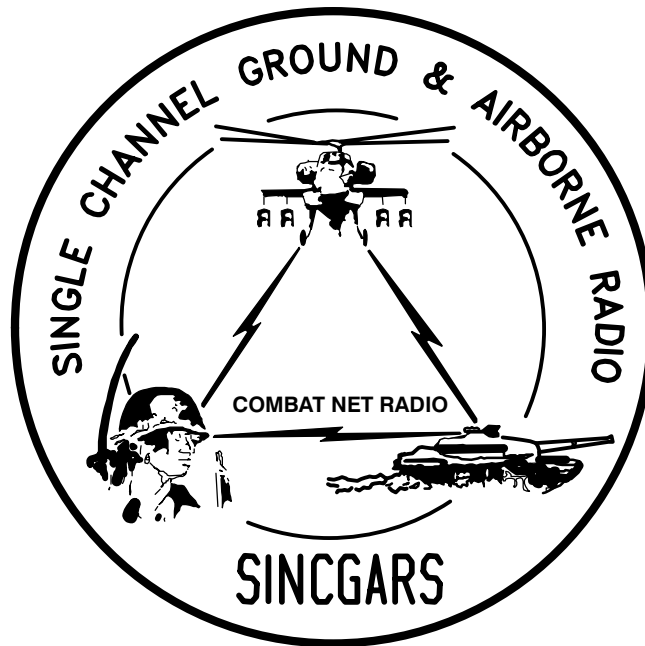


TECHNICAL BULLETIN



**INSTALLATION INSTRUCTIONS FOR
INSTALLATION KIT, ELECTRONIC EQUIPMENT,
MK-2388/VRC (NSN 5895-01-309-4604) (EIC: N/A)
TO PERMIT INSTALLATION OF
RADIO SET AN/VRC-90 (DUAL) SERIES
IN AN
OPERATIONS CONTROL GROUP OK-398/TPQ
USED WITH
AN/TPQ-36 AND AN/TPQ-37 RADAR SETS**

Approved for public release; distribution is unlimited.

HEADQUARTERS, DEPARTMENT OF THE ARMY

1 SEPTEMBER 1999

**INSTALLATION INSTRUCTIONS FOR
 INSTALLATION KIT, ELECTRONIC EQUIPMENT,
 MK-2388/VRC (NSN 5895-01-309-4604) (EIC: N/A)
 TO PERMIT INSTALLATION OF RADIO SET AN/VRC-90 (DUAL) SERIES
 IN A
 OPERATIONS CONTROL GROUP OK-398/TPQ
 USED WITH
 AN/TPQ-36 AND AN/TPQ-37 RADAR SETS**

REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes, or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms) or DA 2028-2 located in back of this manual direct to: Commander, US Army Communications-Electronics Command Fort Monmouth, ATTN: AMSEL-LC-LEO-D-CS-CFO, Fort Monmouth, New Jersey 07703-5000. The Fax number is 732-532-1413, DSN 992-1413. You may also e-mail your recommendation to AMSEL-LC-LEO-PUBS-CHG@cecom3.monmouth.army.mil.

In either case a reply will be furnished direct to you.

TABLE OF CONTENTS

Subject	Section	Page
Scope	0.1	1
General Information	0.2	1
Maintenance Forms, Records and Reports	0.3	1
Reports of Maintenance and Unsatisfactory Equipment	0.3.1	1
Report of Packing and Handling Deficiencies	0.3.2	1
Discrepancy in Transportation Deficiency Report (TDR) (SF 361)	0.3.3	1
Consolidated Index of Army Publications	0.4	1
Purpose of Installation	1.	2
End Item or System to be Modified	2.	2
Application Times	3.	2
Time for Completion of Installation	3.1	2
Time for Installation of One Assembly or Component	3.2	2
Preparation for Installation	4.	2
Preparation of Vehicle	4.1	2
Preparation of MK	4.2	2
MK, Distribution, and Consumables	4.3	3
Tools and Test, Measurement and Diagnostic Equipment (TMDE) Required	4.4	8
Installation Procedures	5.	9
Installation of Antenna AS-3900/VRC (antenna)	5.1	11
Installation of Antenna Base	5.1.1	11
Installation of Top Antenna Assembly	5.1.2	12
Installation of Mounting Base, Electrical Equipment MT-6352/VRC (mounting base)	5.2	13
Installation of Cables	5.3	15
Installation of Loudspeaker, Permanent Magnet LS-454/U	5.4	20
Installation of Loudspeaker, Control-Unit LS-671/VRC	5.5	21
Post-Installation and Checkout	5.6	22
Appendix A. References		A1

*This manual supersedes TB 11-5820-890-20-65 dated 1 September 1993.

LIST OF ILLUSTRATIONS

Figure	Title	Page
4-1	MK Illustrated Parts List	6
4-2	Illustrated Parts List for Table 4-2	7
5-1(1)	MK and Radio Installation: MK Equipment Locations	9
5-1(2)	MK and Radio Installation: Radio Equipment Locations	10
5-2	Antenna Base Installation: Rear Shelter Wall	11
5-3	Top Antenna Assembly Installation	12
5-4	Mounting Base Installation: Upper Curbside Shelf	13
5-5(1)	Cable Installation: Exterior Cabling	15
5-5(2)	Cable Installation: Interior Cabling	17
5-5(3)	Cable Installation: After Modifications	19
5-6(1)	Speaker Installation-A	20
5-6(2)	Speaker Installation-B	20
5-7	Installation of Loudspeaker Control-Unit LS-671/VRC	21
5-8(1)	Cable Diagram: For AN/VRC-90 Series (Right)	23
5-8(2)	Cable Diagram: For AN/VRC-90 Series (Left)	25

LIST OF TABLES

Number	Title	Page
4-1	Parts List for Installation of Radio Set AN/VRC-90 (Dual) Series	4
4-2	Additional Items Required for Installation of "D/F" Radio Sets	7

0.1 SCOPE.

This technical bulletin provides Installation Instructions for Installation Kit, Electronic Equipment, MK-2388/VRC, commonly referred to as the Mounting Kit (MK). The MK shall be installed into the following type of shelter(s):

- Operations Control Group OK-398/TPQ used with AN/TPQ-36 and AN/TPQ-37 Radar Sets

The MK is used for installation of radio set components at field locations. The information contained in this technical bulletin is the official authorization to perform the installation at the unit maintenance level.

NOTES

- This technical bulletin is not an authorization for requisition or turn-in of shelters.
- This technical bulletin does not establish quantity or types of shelters assigned to using units.

This technical bulletin does not contain information on the maintenance or replacement of the MKs. This information is contained in the MAC of TM 11-5820-890-20-2 and RPSTL of TM 11-5820-890-20P.

0.2 GENERAL INFORMATION.

The MK becomes operable when all the radio set components are installed in the shelter and correct power is supplied. Refer to TM 11-5820-890-20-1 or TM 11-5820-890-20-2 for installation, Operational (OP) Check instructions, and required maintenance procedures. Refer to TM 11-5820-890-20P for repair parts.

Included in the Radio Set AN/VRC-90 (Dual) Series is:

- Radio Set AN/VRC-90 Series (for RT-1523(C)/U)

0.3 MAINTENANCE FORMS, RECORDS AND REPORTS.

0.3.1 Reports of Maintenance and Unsatisfactory Equipment. See section 4.2.2.3 for information.

0.3.2 Report of Packaging and Handling Deficiencies. See section 4.2.2.1 for information.

0.3.3 Discrepancy in Transportation Deficiency Report (TDR) (SF361). See section 4.2.2.2 for information.

0.4 CONSOLIDATED INDEX OF ARMY PUBLICATIONS.

Refer to the latest issue of DA Pam 25-30 to determine whether there are new changes, or additional publications pertaining to the equipment.

1. PURPOSE OF INSTALLATION.

The Installation Kit, Electronic Equipment, MK-2388/VRC (MK) contains the items needed to mount two AN/VRC-90 Seies radio sets in a Operations Control Group OK-398/TPQ (shelter) used with AN/TPQ-36 and AN/TPQ-37 Radar Sets.

2. END ITEM OR SYSTEM TO BE MODIFIED.

Not applicable.

3. APPLICATION TIMES.

3.1 Time for Completion of Installation. Using two people, a total of 3.0 work hours is required. Typical shelter downtime is 3.5 hours.

3.2 Time for Installation of One Assembly or Component. The following table lists the time required to install one component. All times have been rounded off to the nearest half hour. The sum of these times will not reflect the typical shelter downtime.

ITEM	SECTION	TIME
Antenna AS-3900/VRC	5.1	0.5
Mounting Base, Electrical Equipment MT-6352/VRC	5.2	1.5
Cables	5.3	1.0

4. PREPARATION FOR INSTALLATION.

This section explains how to prepare the shelter and MK for installation.

4.1 Preparation of Shelter. To prepare the shelter for installation, insure that the site includes adequate lighting and a power source when drilling is required. Inspect the shelter for damage that could affect installation. Have any such damage repaired before installing MK.

4.1.1 Items to be Removed. Remove existing AN/VRC-12 radio family installation kit/harness. See TM 11-5820-401-20-2 for removing items used with intercom systems, or TM 11-5820-401-20-1 (used without intercom systems), and TM 11-5840-364-20.

4.1.2 List of Items to be Retained. Not applicable.

4.2 Preparation of MK. To prepare MK, unpack, inspect and check inventory.

4.2.1 Precautions During Handling. Observe these steps to prevent equipment damage.

- a. Keep dust covers in place on connectors.
- b. Do not disassemble or modify parts in MK unless authorized to do so.
- c. Keep mounting hardware covered and protected until needed.
- d. When exposed to moisture, rain or salt water, keep all parts dry to prevent corrosion.

4.2.2 Unpack and Inspect Equipment.

4.2.2.1 Inspect Packaging for Evidence of Damage. Any shipping damage should be reported on SF364 Report of Discrepancy (ROD) as prescribed in AR 735-11-2/DLAR 4140.55/NAVMATINST 4355.73A/AFR 400-64/MCO 4430.3F.

4.2.2.2 Unpack and Inventory MK. If any item is missing, fill out and forward Transportation Deficiency Report (TDR) (SF361) as described in AR 55-38/NAVSUPINST 4610.33C/AFR 75-18/MCO P4610.19D/DLAR 450015.

4.2.2.3 Examine Each Item for Damage. If any item is damaged, fill out and forward SF364 Report of Discrepancy (ROD) as prescribed in AR 735-11-2/DLAR 4140.55/NAVMATINST 4355.73A/AFR 400-64/MCO 4430.3F. All damages should be reported as prescribed by DA Pam 738-750, as contained in Maintenance Management Update.

4.3 MK, Distribution, and Consumables.

4.3.1 Items Supplied in MK and/or Required for Installation. Use Table 4-1 and figure 4-1 to identify and inventory MK parts supplied to install Radio Set AN/VRC-90 (Dual) Series. Refer to Table 4-2 and figure 4-2 to identify additional items required to install for "D/F" series Radio Sets.

4.3.2 Distribution and Issue Instructions.

- a. US Forces: Do not requisition MK. They will be shipped automatically.
- b. US Army Depots: Requisition MK through supply channels.
- c. Multiservice: Instructions shall be included for multiservice modifications.
- d. MAP/MAS Countries: Instructions shall be provided for MAP/MAS countries.

Table 4-1. Parts List for Installation of Radio Set AN/VRC-90 (Dual) Series

NSN	ITEM DESCRIPTION AND PART NUMBER	QUANTITY IN MK	SMR CODE	FIGURE, ITEM NO.
5985-01-297-2971	Antenna AS-3900/VRC (A3017899-1)	2	PAOOF A	4-1, 2
5305-00-847-1159	Screw, Cap, Hexagon (3/8-16 x 1 3/4 in) MS35307-365	8	PAOZZA	
5310-00-913-8881	Nut, Hexagon (3/8-16 in) MS51971-3	8	PAOZZA	
5310-00-061-1258	Washer, Lock, Internal/External-Toothed (3/8 in) MS45904-76	16	PAOZZA	
5310-00-889-2527	Washer, Lock, Internal/External-Toothed (5/16 in) MS45904-72 (Not Used)	4	PAOZZA	
5306-00-225-9086	Bolt, Machine (5/16-24 x 5/8 in) MS90726-31 (Not Used)	2	PAOZZA	
5330-01-205-2864	Gasket (A3013655-1)	2	PAOZZA	
5965-00-876-2375	Loudspeaker, Permanent Magnet LS-454/U	2	PAOZZA	4-1, 4
5975-01-188-8873	Mounting Base, Electrical Equipment MT-6352/VRC (A3013367-1)	2	PAOOF A	4-1, 1
5306-00-225-9089	Bolt, Machine (5/16-24 x 1 in) MS90726-34 (Not Used)	10	PAOZZA	
5310-00-889-2527	Washer, Lock, Internal/External-Toothed (5/16 in) MS45904-72 (Not Used)	20	PAOZZA	
5310-00-880-7746	Nut, Hexagon (5/16-24 in) MS51968-5 (Not Used)	10	PAOZZA	
5995-01-225-1656	Cable Assembly, Power, Electrical CX-13302/VRC (3 FT, 0 IN) (A3014039-3)	1	PAOZZA	4-1, 9
5995-01-300-9321	Cable Assembly, Power, Electrical CX-13303/VRC (12 FT, 0 IN) (A3014040-3)	2	PAOZZA	4-1, 8
5995-01-219-7030	Cable Assembly, Radio Frequency CG-3855/VRC (7 FT, 0 IN) (A3014031-3)	1	PAOZZA	4-1,10
5995-01-219-9528	Cable Assembly, Radio Frequency CG-3855/VRC (3 FT, 0 IN) (A3014031-1)	1	PAOZZA	4-1,10
5995-01-219-7031	Cable Assembly, Radio Frequency CG-3855/VRC (9 FT, 0 IN) (A3014031-4)	2	PAOZZA	4-1,10
5995-01-225-0507	Cable Assembly, Special Purpose, Electrical CX-13300/VRC (16 FT, 0 IN) (A3014044-7)	1	PAOZZA	4-1,11
5935-00-823-0308	Adapter, Connector M55339/13-00492	2	PAOZZA	4-1, 6
5340-00-079-7837	Clamp, Loop (1/4-13/64 in) MS21333-67	3	PAOZZA	
	Connector, Receptacle, Electrical M55181/2-01	1	XBOZZA	
4020-01-341-8795	Fiber Rope Assembly, Single Leg (A3167672-1)	2	PAOZZA	4-1, 7
5325-00-074-3301	Grommet, Nonmetallic MS21266-2N	1	PAOZZA	
5965-00-043-3463	Handset H-250/U	2	PAOZZA	4-1, 3

Table 4-1. Parts List for Installation of Radio Set AN/VRC-90 (Dual) Series Continued

NSN	ITEM DESCRIPTION AND PART NUMBER	QUANTITY IN MK	SMR CODE	FIGURE, ITEM NO.
	Plate, Mounting - Connector (A3018962-1)	1	XBOZZA	4-1, 5
5305-01-006-2052	Screw, Machine, Hex-Head (No.10-32 x 5/8 in) MS51849-65	8	PAOZZA	
5305-00-179-8946	Screw, Machine, Hex-Head (No.10-32 x 3/4 in) MS51849-66	2	PAOZZA	
5305-00-984-6193	Screw, Machine, Pan-Head (No. 8-32 x 1/2 in) MS35206-245	3	PAOZZA	
5305-00-984-4992	Screw, Machine, Pan-Head (No. 6-32 x 3/4 in) MS35206-232	4	PAOZZA	
5305-00-068-0501	Screw, Cap, Hexagon (1/4-20 x 5/8 in) MS90725-5	2	PAOZZA	
5975-00-111-3208	Strap, Tiedown, Electrical Components MS3367-5-9	30	PAOZZA	
5310-00-080-9786	Washer, Lock, Internal/External-Toothed (No.10) MS45904-60	10	PAOZZA	
5310-00-889-2528	Washer, Lock, Internal/External-Toothed (1/4 in) MS45904-68	6	PAOZZA	
5310-00-809-4058	Washer, Flat (1/4 in) MS27183-10	10	PAOZZA	
5310-00-082-1404	Washer, Flat (No. 6 in) MS27183-6	4	PAOZZA	
5310-00-929-6395	Washer, Lock (No. 6 in) MS35338-136	4	PAOZZA	
5310-00-933-8119	Washer, Lock (No. 8 in) MS35338-137	3	PAOZZA	

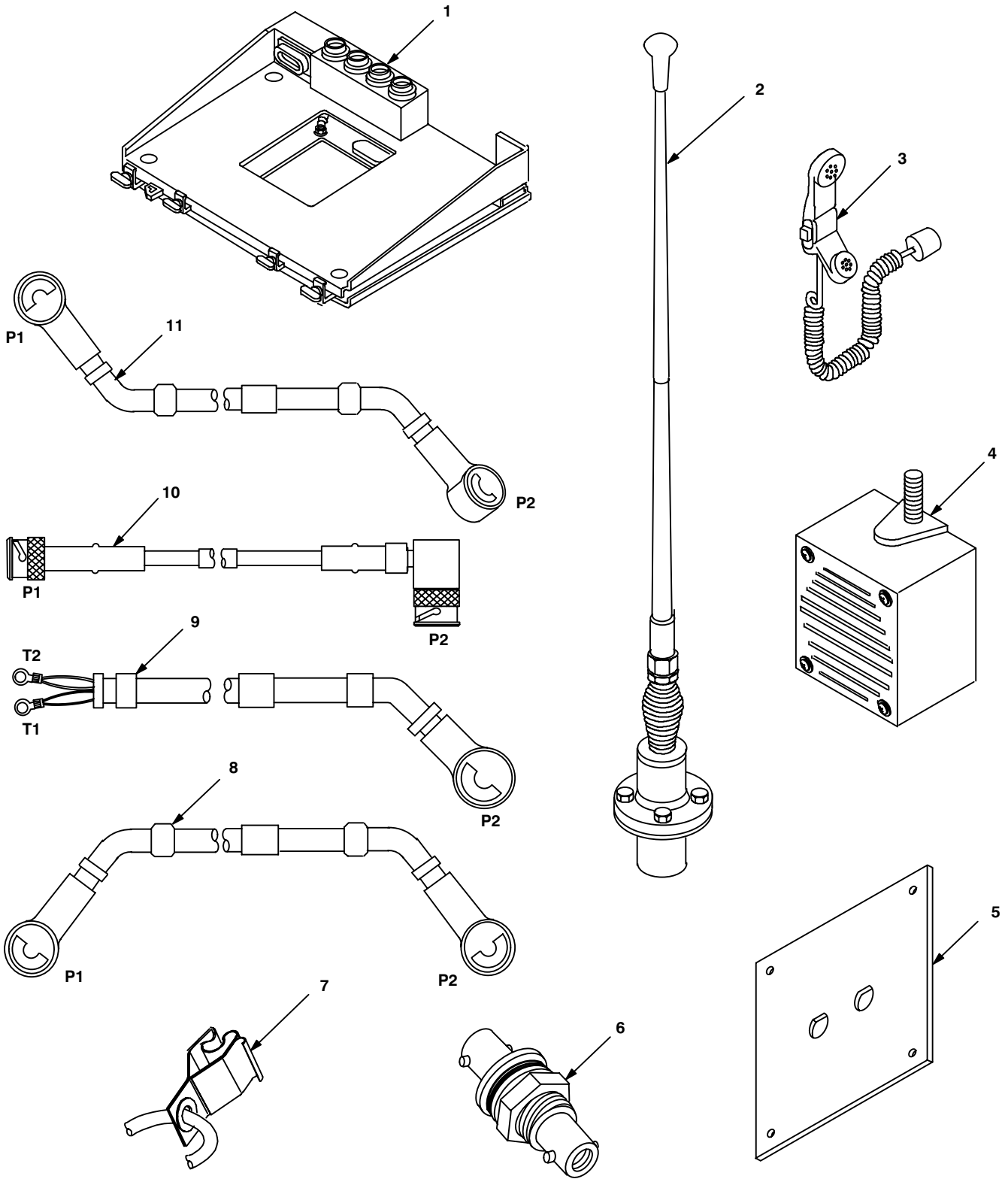


Figure 4-1. MK Illustrated Parts List

Table 4-2. Additional Items Required for Installation of "D/F" Radio Sets

NSN	ITEM DESCRIPTION AND PART NUMBER	QUANTITY	SMR CODE	FIGURE, ITEM NO.
5965-01-222-1420	Loudspeaker, Control-Unit LS-671/VRC (A3014065-1)	1	PAOFFA	4-2, 1
5995-01-259-9283	Cable Assembly, Special Purpose, Electrical CX-13292/VRC (8 FT, 0 IN) (A3014038-12)	1	PAOZZA	4-2, 2
	Plate, Mounting (A3014550-1)	1	XBOZZA	4-2,3

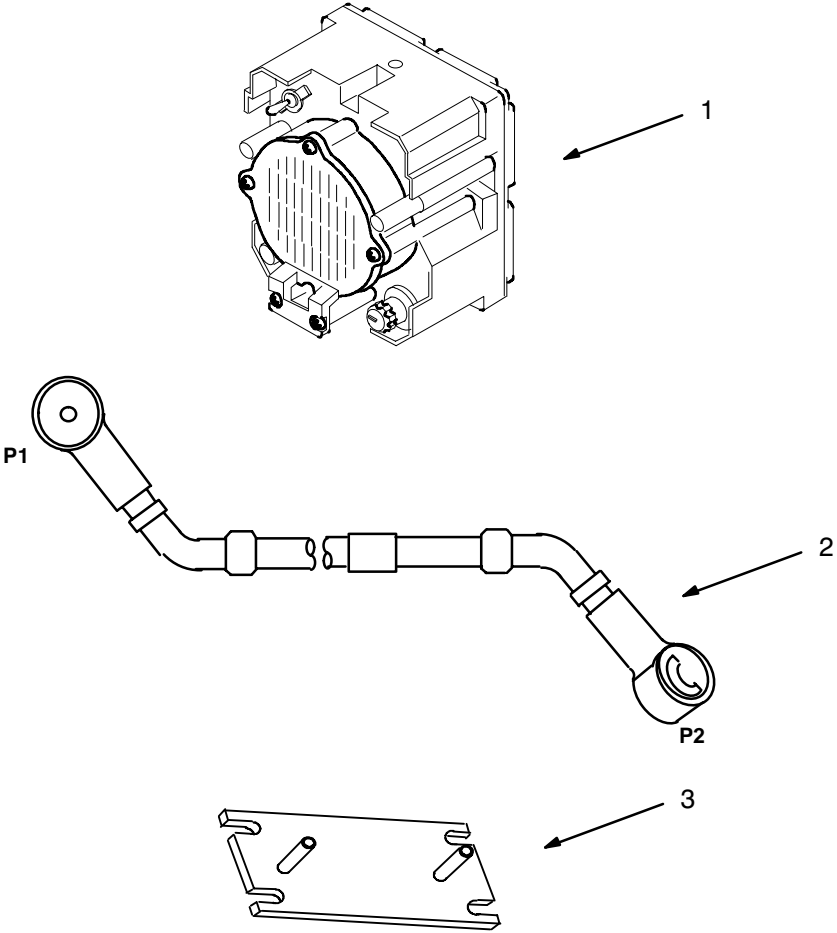


Figure 4-2. Illustrated Parts List for Table 4-2

4.3.3 Consumable Materials. The table below lists materials required for installation but not supplied with MK.

NSN	NOMENCLATURE
8040-00-117-8510	Adhesive-Sealant, Clear, RTV
6850-00-880-7616	Silicone Compound, MIL-S-8660
8030-00-292-1102	Conductive Anti-seize Compound

4.4 Tools and Test, Measurement and Diagnostic Equipment (TMDE) Required. The following tools and TMDE are needed for installation.

NOMENCLATURE	NSN	QUANTITY
Radio Set*		1
Electric Grinder or Equivalent		1
Pocket Knife, Electrician's	5110-00-240-5943	1
Screwdriver, No. 2 Point Phillips, 4 in	5120-00-234-8913	1
Screwdriver, 1/4 in Flatblade, 4 in	5120-00-222-8852	1
Pliers, Round Nose	5120-00-240-6172	1
Pliers, Diagonal Cutting	5110-00-965-0974	1
Wrench, Open/Box: 7/16 in	5120-00-228-9505	1
5/16 in	5120-00-228-9503	1
9/16 in	5120-00-228-9507	1
5/8 in	5120-00-228-9508	1
Handle, Socket Wrench	5120-00-240-5364	1
Socket: 7/16 in	5120-00-227-6703	1
1/2 in	5120-00-235-5878	1
9/16 in	5120-00-227-6704	1
Electric Drill	5130-00-889-8994	1
Drill Bits: 13/32 in	5133-00-227-9668	1
5/16 in	5133-00-227-9662	1
		1
		1

* Use radio issued with your vehicle if available.

5. INSTALLATION PROCEDURES.

This section describes where and how to install MK items in the shelter. See figure 5-1 for an overall view of where the MK equipment, as well as radio components, typically will be installed. When installing MK equipment, be sure to read and follow instructions and illustrations carefully.

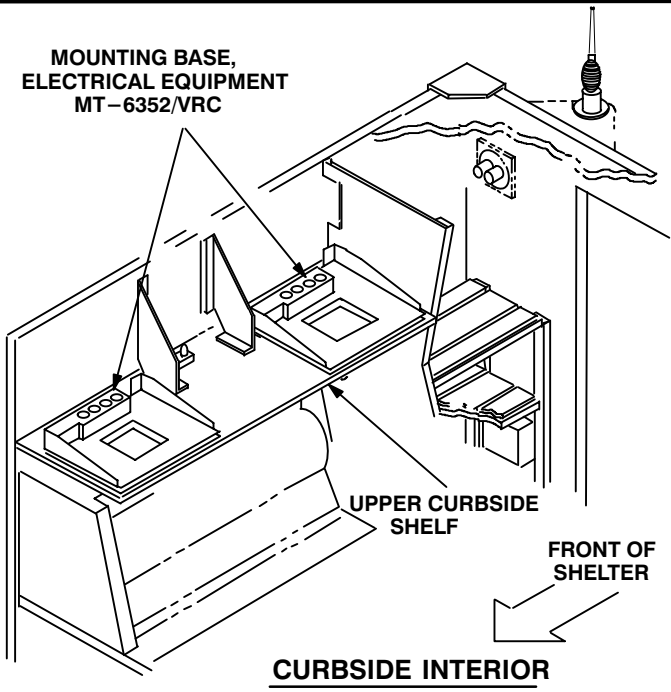
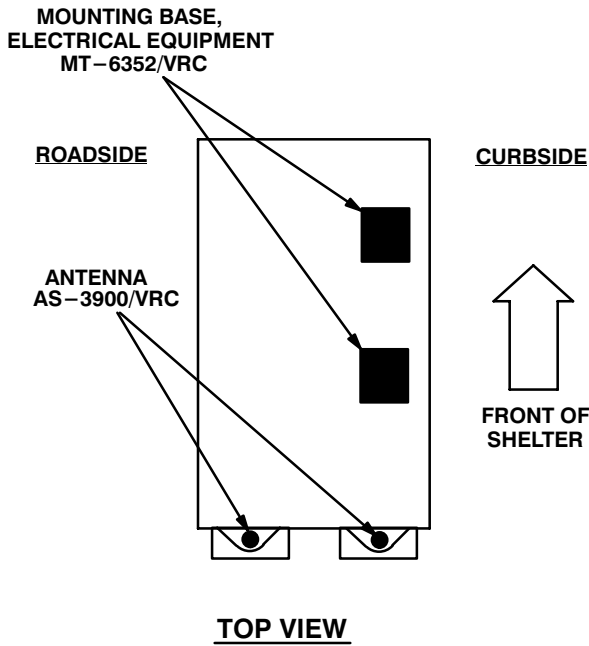
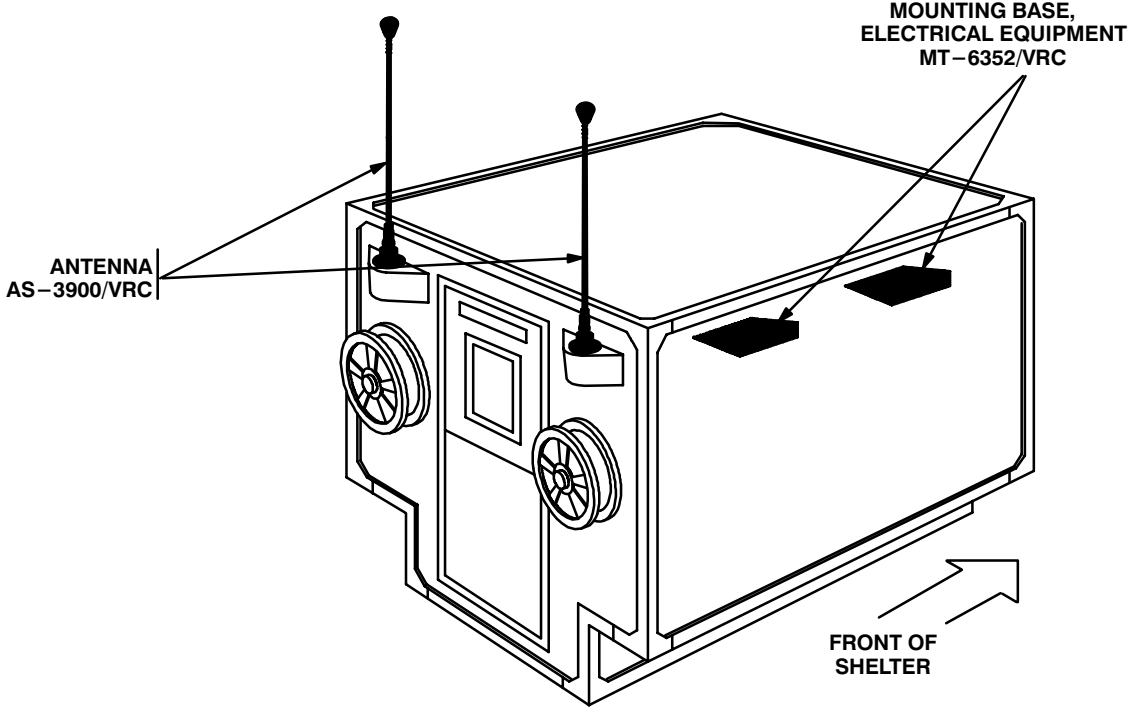


Figure 5-1 (1). MK and Radio Installation: MK Equipment Locations

5. INSTALLATION PROCEDURES. Continued

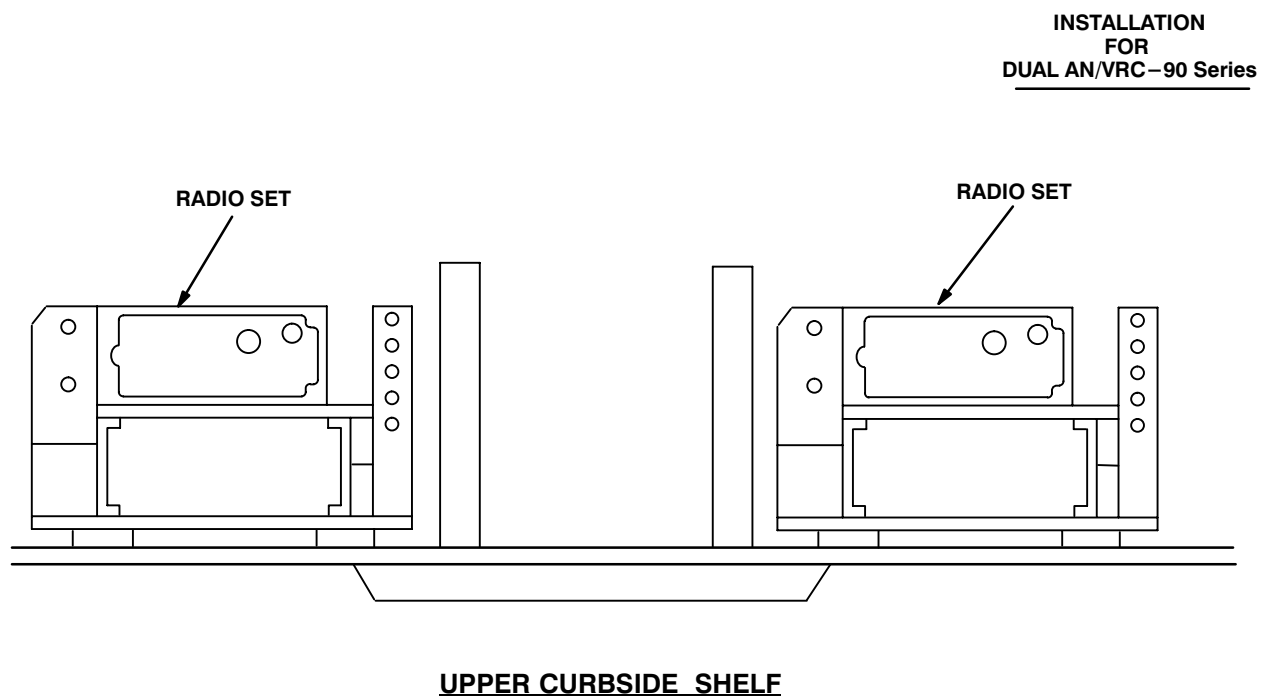


Figure 5-1 (2). MK and Radio Installation: Radio Equipment Locations

5.1 Installation of Antenna AS-3900/VRC (antenna). Perform the following procedures to install two rear antennas. See figure 5-1 (1) for locations.

5.1.1 Installation of Antenna Base.

ITEM	ACTION	REMARKS
------	--------	---------

NOTE

Apply a thin coat of adhesive-sealant to both sides of each internal/external-toothed (IET) washer during installation, and to the area of contact where IET washer is to be placed.

- | | | | |
|----|---|--|--|
| a. | Gasket (4). | Place on existing antenna bracket and align mounting holes. See figure 5-2. | |
| b. | Antenna base (1). | Place on top of gasket (4) and antenna bracket; then align mounting holes. | |
| c. | Four cap screws (2), eight IET washers (3) and four nuts (5). | Install and secure to antenna base (1) and antenna bracket. | Tools: 9/16 in socket and 9/16 in open/box wrench. |
| d. | Ground strap (8), cap screw (6) and two IET washers (7). | Install and secure to existing mounting hole in antenna bracket and rear wall. | Tools: 7/16 in socket. |

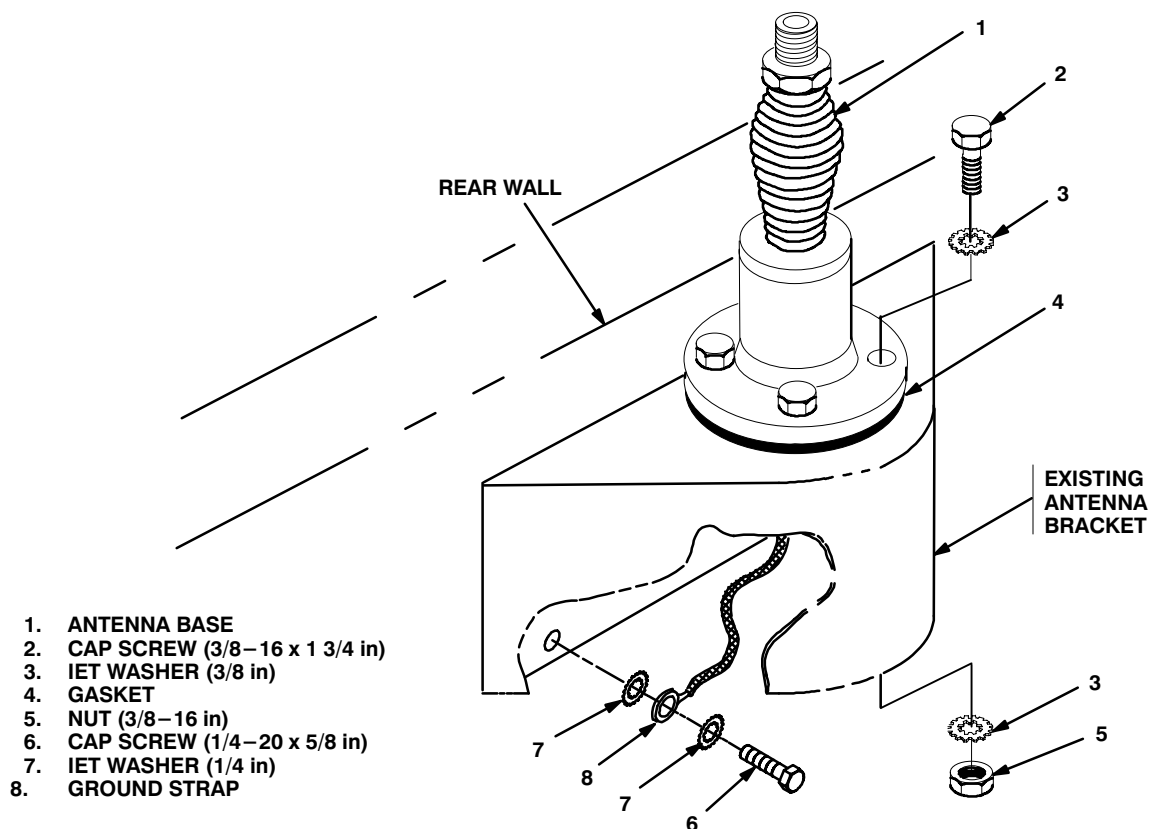
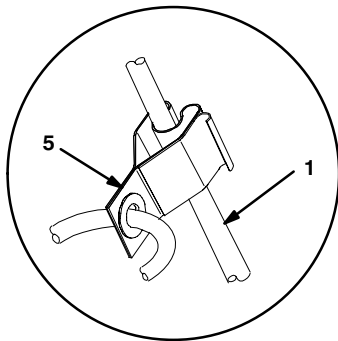


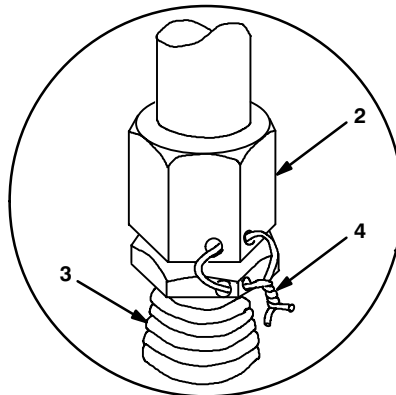
Figure 5-2. Antenna Base Installation: Rear Shelter Wall

5.1.2 Installation of Top Antenna Assembly. The top portion of the antenna includes a lower element and an upper element (with installed cap). Use the following procedure to assemble, install and tie down all antennas.

ITEM	ACTION	REMARKS
a. Antenna elements (1, 2).	Apply silicone compound to element threads and assemble. See figure 5-3.	
b. Antenna element (2).	Install and hand-tighten to antenna base (3).	
c. Lock wire (4).	Install to antenna element (2) and antenna base (3). See figure 5-3, detail A.	
	Cut and remove excess wire with diagonal cutting pliers.	
d. Fiber rope assembly (5).	Attach clip to antenna element (1). Tie rope to vehicle to position antenna in desired location. See figure 5-3, detail B.	



DETAIL B

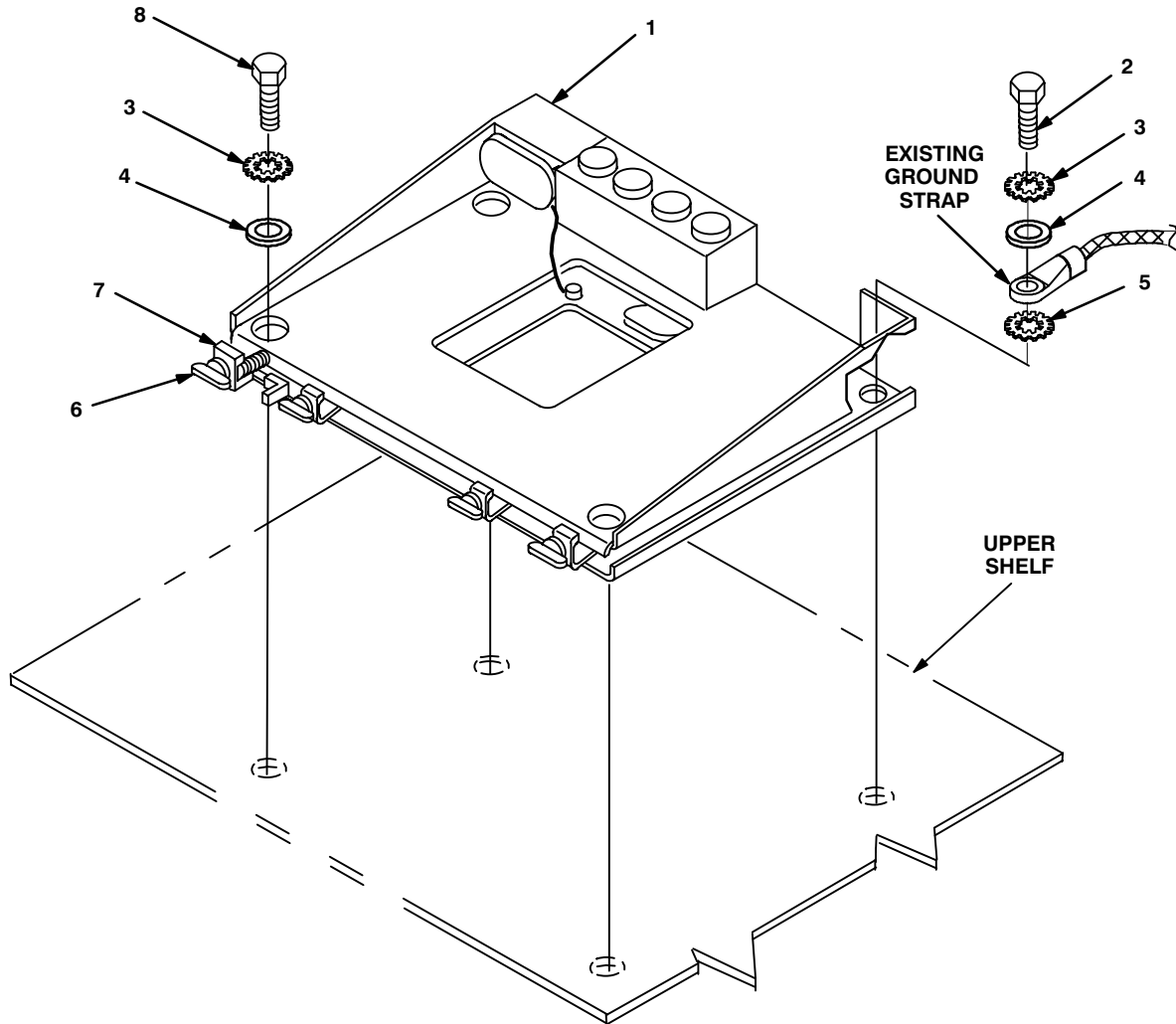


DETAIL A

- 1. ANTENNA ELEMENT (UPPER)
- 2. ANTENNA ELEMENT (LOWER)
- 3. ANTENNA BASE
- 4. LOCK WIRE
- 5. FIBER ROPE ASSEMBLY

Figure 5-3. Top Antenna Assembly Installation

5.2 Installation of Mounting Base, Electrical Equipment MT-6352/VRC (mounting base). Remove and retain attaching bag of 5/16 in mounting hardware for installation. To insure good electrical grounding, any rust, corrosion or paint around mounting holes in radio shelf should be removed before installing mounting bases. See figure 5-4 and perform the following steps to install both mounting bases. See figure 5-1 (1) for locations.



1. MOUNTING BASE
2. MACHINE SCREW (NO. 10-32 x 3/4 in)
3. IET WASHER (NO. 10)
4. FLAT WASHER (1/4 in)
5. IET WASHER (1/4 in)
6. THUMBSCREW
7. RIM CLENCHING CLAMP
8. MACHINE SCREW (NO. 10-32 x 5/8 in)

Figure 5-4. Mounting Base Installation: Upper Curbside Shelf

5.2 Installation of Mounting Base, Electrical Equipment MT–6352/VRC (mounting base). Continued

ITEM	ACTION	REMARKS
NOTE		
Apply a thin coat of adhesive–sealant to both sides of each internal/external–toothed (IET) washer during installation, and to the area of contact where IET washer is to be placed.		
a. Mounting base (1) and existing radio shelf.	Remove a 2” square area of paint on the underside of the mounting base (1) around left front and rear mounting holes. Remove a 2” square area of paint on the existing upper curbside radio shelf around the existing mounting holes that mate with left front and rear mounting holes of mounting base (1). Clean the paint removed areas and apply a thin coat of conductive anti–seize compound.	Tools: Electric grinder or equivalent.
b. Two outer thumbscrews (6).	Turn ccw until both sets of threads have cleared center of holes. See Figure 5–4.	
c. Mounting base (1).	Align holes with matching hole pattern in radio shelf.	
d. Existing ground strap, machine screw (2), IET washer (3), IET washer (5) and flat washer (4).	Install and secure to hole in rear corner of mounting base (1) and shelf.	Tools: 5/16 in socket.
e. Three machine bolts (8), three IET washers (3) and three flat washers (4).	Install and secure to remaining holes in mounting base (1) and shelf.	Tools: 5/16 in socket and 5/16 in open/box wrench.
f. Two outer thumbscrews (6).	Tighten and secure to rim clenching clamps (7) and mounting base (1).	

5.3 Installation of Cables. To accomplish the installation, leave loop clamps and tiedown straps loose enough to adjust cable slack and allow easy adjustment of equipment. When installation is complete, tighten and secure clamps and tiedown straps.

WARNING

Make sure shelter power source is positioned OFF or disconnected before installing cables.

ITEM	ACTION	REMARKS
a. Two O-rings (14).	Apply a thin coat of silicone compound to both sides; then place on two connector adapters (13). See figure 5-5 (1).	

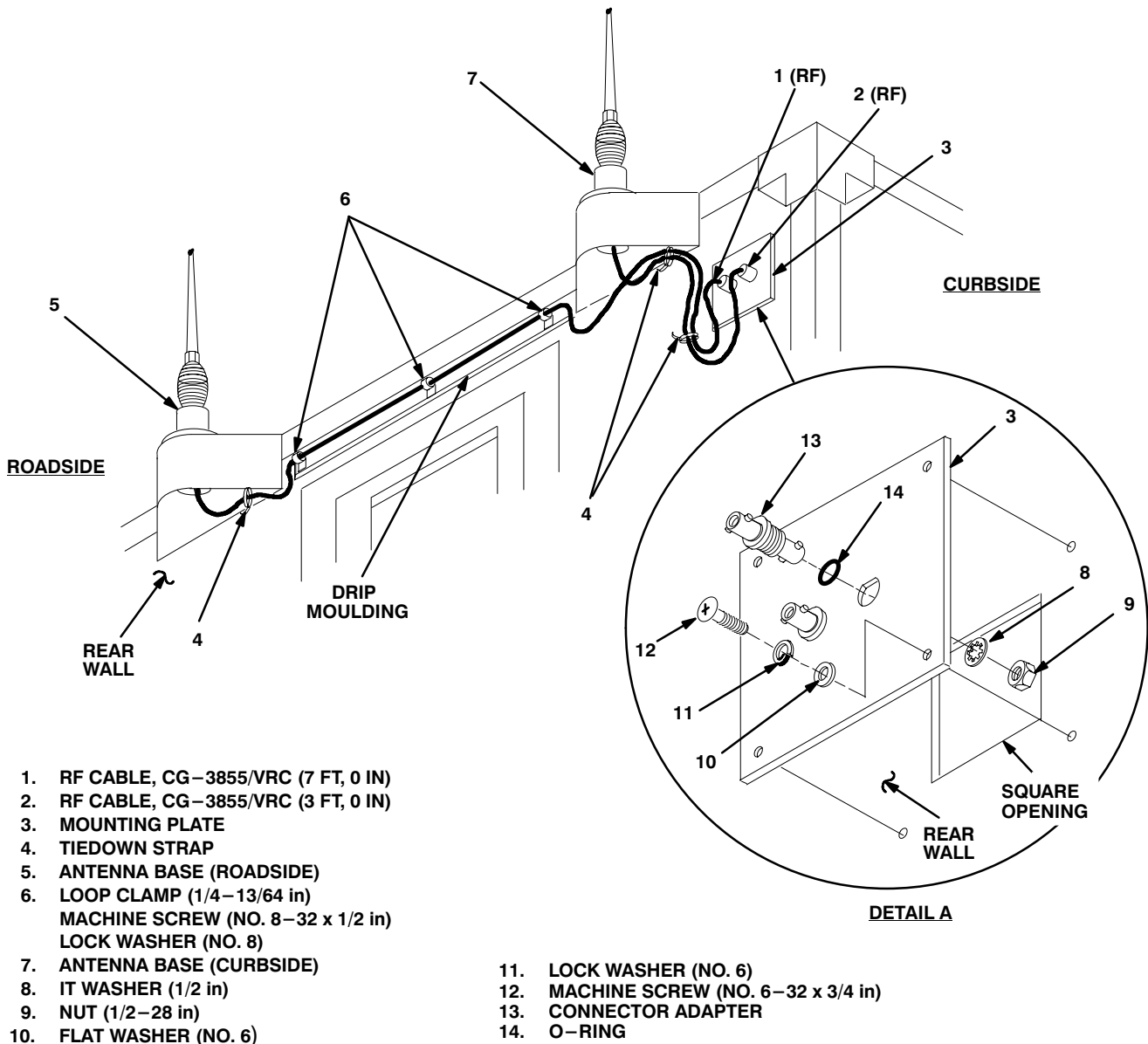
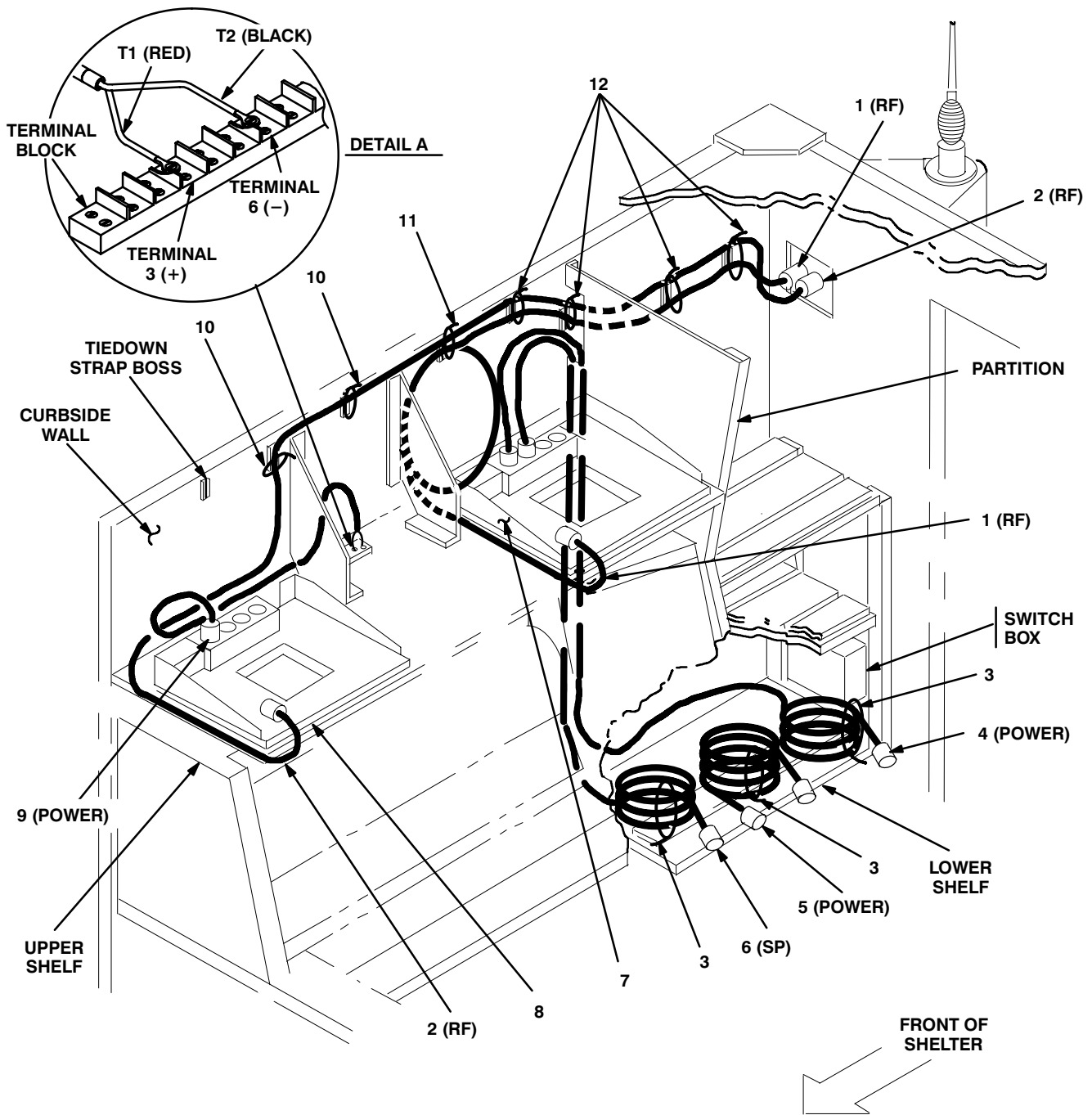


Figure 5-5 (1). Cable Installation: Exterior Cabling

5.3 Installation of Cables. Continued

ITEM	ACTION	REMARKS
b. Two connector adapters (13).	Insert in mounting plate (3) holes. See figure 5–5 (1), detail A.	
c. Two internal-toothed (IT) washers (8) and two nuts (9).	Install and secure to two connector adapters (13).	Tools: 5/8 in open/box wrench.
d. Adhesive-sealant.	Apply a thin coat around square opening in rear wall and to mounting plate (3) surface that will contact wall.	
e. Mounting plate (3).	Position against rear wall and aline mounting plate and aline mounting holes.	
f. Four pan-head machine screws (12), four lock washers (11) and four flat washers (10).	Install and secure to mounting plate (3) and rear wall.	Tools: Phillips screwdriver.
g. RF cable (1) connector P1.	Connect and secure to antenna base (5) connector J1. See figure 5–5 (1).	
h. RF cable (1).	Route across drip moulding on rear wall to mounting plate; then connect and secure P2 connector to left connector adapter (3), connector J3.	
i. Tiedown strap (4).	Wrap around RF cable (1) and secure loosely to existing boss below roadside antenna bracket. See figure 5–5 (1) for location(s).	
j. Three loop clamps (6), three pan-head machine screws (no. 8–32 x 1/2 in) and three lock washers (no. 8).	Wrap clamps around RF cable (1); then install to drip molding on rear wall.	Tools: Phillips screwdriver.
k. RF cable (2) connector P1.	Connect and secure to antenna base (7) connector J1. See figure 5–5 (1).	
l. RF cable (2) connector P2.	Connect and secure to right connector adapter (3), connector J4.	
m. Tiedown strap (4).	Wrap around RF cables (1, 2) and secure loosely to existing boss below curbside antenna bracket. See figure 5–5 (1) for location(s).	
n. Tiedown strap (4).	Wrap around RF cables (1, 2) and secure.	
o. RF cable (1) connector P1.	Connect and secure to left connector adapter J4. See figure 5–5 (2).	
p. RF cable (2) connector P1.	Connect and secure to right connector adapter, connector J3.	

5.3 Installation of Cables. Continued.



- | | |
|--|---|
| 1. RF CABLE, CG-3855/VRC (9 FT, 0 IN) | 7. MOUNTING BASE (RIGHT) |
| 2. RF CABLE, CG-3855/VRC (9 FT, 0 IN) | 8. MOUNTING BASE (LEFT) |
| 3. TIEDOWN STRAP | 9. POWER CABLE, CX-13302/VRC (3 FT, 0 IN) |
| 4. POWER CABLE, CX-13303/VRC (12 FT, 0 IN) | 10. TIEDOWN STRAP |
| 5. POWER CABLE, CX-13303/VRC (12 FT, 0 IN) | 11. TIEDOWN STRAP |
| 6. SP CABLE, CX-13300/VRC (16 FT, 0 IN) | 12. TIEDOWN STRAP |

Figure 5-5 (2). Cable Installation: Interior Cabling

5.3 Installation of Cables. Continued

ITEM	ACTION	REMARKS
q. RF cables (1, 2).	Route through opening in partition to mounting base (7). See figure 5–5 (2).	
r. Four tiedown straps (12).	Wrap around RF cables (1, 2) and secure loosely to existing tiedown strap bosses on curbside wall. See figure 5–5 (2) for location(s).	
s. Tiedown strap (11).	Coil excess RF cable (1); then wrap around RF cables (1, 2) and install loosely to existing tiedown strap boss.	
t. RF cable (1) connector P2.	Position on top of mounting base (7). See figure 5–5 (2).	
u. RF cable (2).	Route forward along curbside wall to rear of mounting base (8).	
v. Two tiedown straps (10).	Wrap around RF cable (2) and secure loosely to existing tiedown strap bosses on curbside wall. See figure 5–5 (2) for location(s).	
w. RF cable (2) connector P2.	Position on top of mounting base (8). See figure 5–5 (2).	
x. Power cable (9) connector P2.	Position on top of mounting base (8).	
y. Power cable (9).	Route along rear edge of upper shelf to terminal block. See figure 5–5 (2) and figure 5–5 (2), detail A.	
z. Power cable (9) terminal leads: T1 (red) and T2 (black).	Connect and secure to proper terminal lugs on terminal block. See figure 5–5, detail A.	Red (+) secures to terminal lug 3. Black (–) secures to terminal lug 6.
aa. Power cable (4) connector P2.	Position on top of mounting base (7). See figure 5–5 (2).	
ab. SP cable (6) connector P2.	Connect and secure to mounting base (7) connector J3.	
ac. Power cable (4) and SP cable (6).	Route through opening in partition and down to lower shelf. Coil excess on lower shelf.	
ad. Power cable (5).	Coil; then place on lower shelf.	
ae. Three tiedown straps (5).	Install loosely around power cables (4, 5) and SP cable (6). See figure 5–5 (2) for location(s).	

5.3 Installation of Cables. Continued

ITEM	ACTION	REMARKS
af. Power cables (4, 5), SP cable (6) receptacle connector (3), grommet (1) and ten tiedown straps (2), figure 5-5 (3).	Complete installation in accordance with Fort Sill, Field Artillery School, Modification To Control Group OK-398/TPQ Used With Radar Sets AN/TPQ-36 and AN/TPQ-37.	
ag. Power cable (4) connector P2.	Connect and secure to mounting base (7) connector J1. See figure 5-5 (2).	
ah. Power cables (4, 5).	Refer to figure 5-5 (3) for remaining connections and routing.	

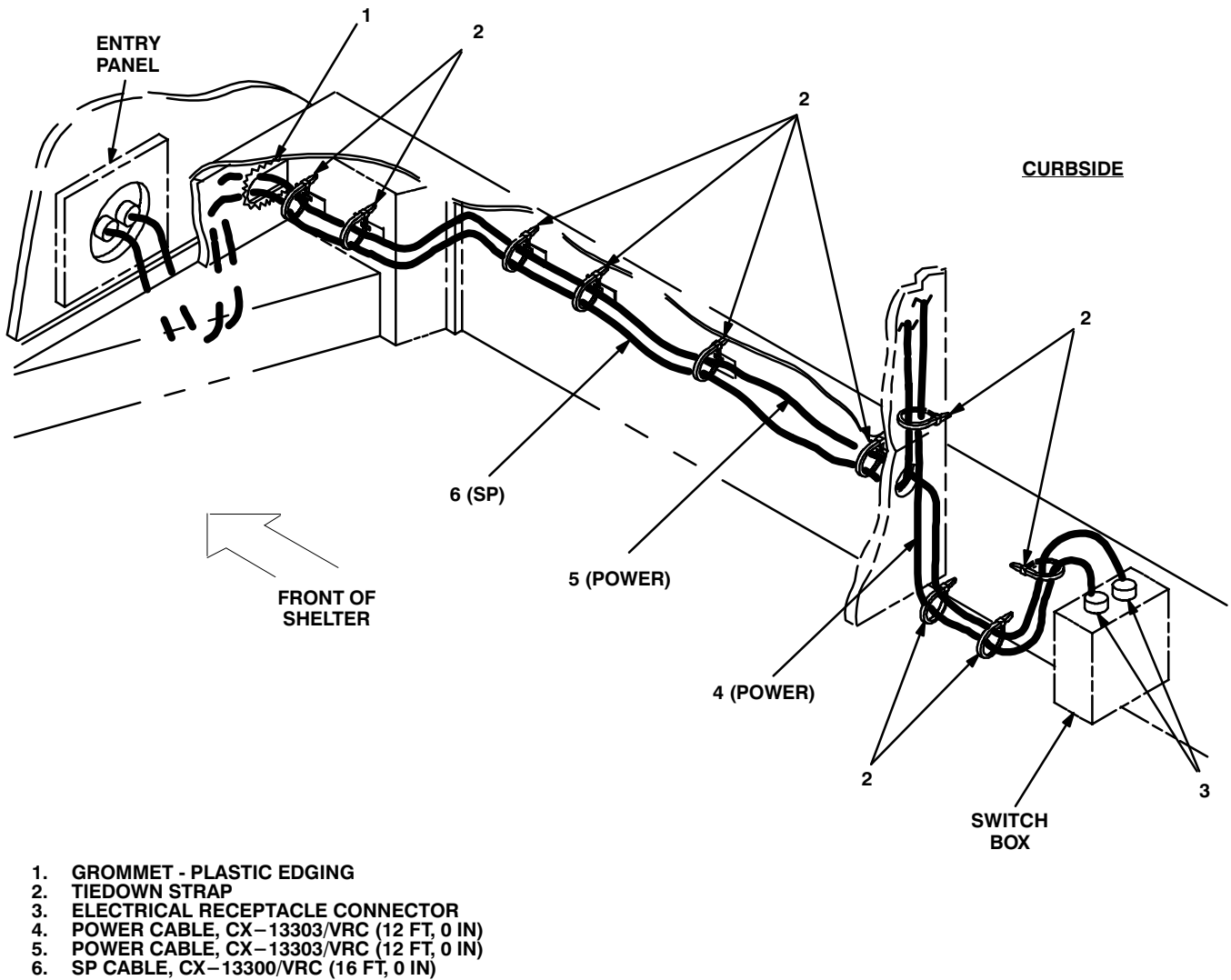
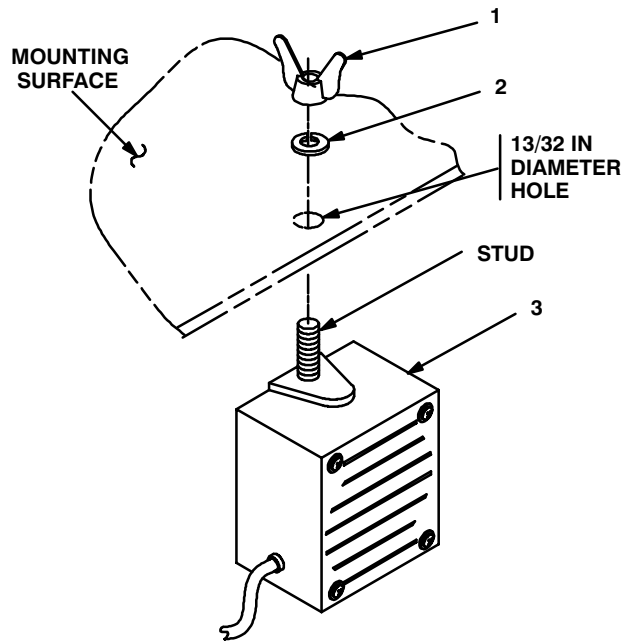


Figure 5-5 (3). Cable Installation: After Modifications

5.4 Installation of Loudspeaker LS-454/U (speaker). Mounting location for speaker may be determined by the shelter commander. Typical methods used for mounting the speaker are as follows:

Method A. See figure 5-6 (1).

- a. Determine speaker (3) location.
- b. Drill 13/32 in diameter hole through mounting surface.
- c. Insert stud on speaker (3) through drilled hole; then secure with lock washer (2) and wing nut (1).



1. WING NUT (3/8-24 in)
2. LOCK WASHER (3/8 in)
3. SPEAKER
4. CAP SCREW (1/4-20 x 1 in)
5. SPEAKER BRACKET
6. LOCK WASHER (1/4 in)
7. NUT (1/4-20 in)

Figure 5-6 (1). Speaker Installation - A

Method B. See figure 5-6 (2).

NOTE

Items (4), (6) and (7) are not supplied in kit.

- a. Determine speaker (3) location.
- b. Drill two 5/16 in diameter holes through mounting surface.
- c. Install and secure two cap screws (4), two lock washers (6) and two nuts (7) to speaker bracket (5) and mounting surface.
- d. Insert speaker (3) stud through speaker bracket (5) hole; then secure with lock washer (2) and wing nut (1).

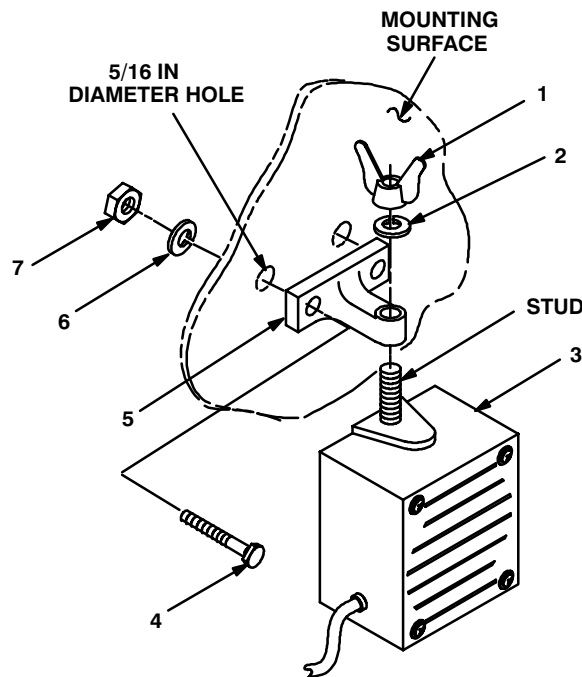
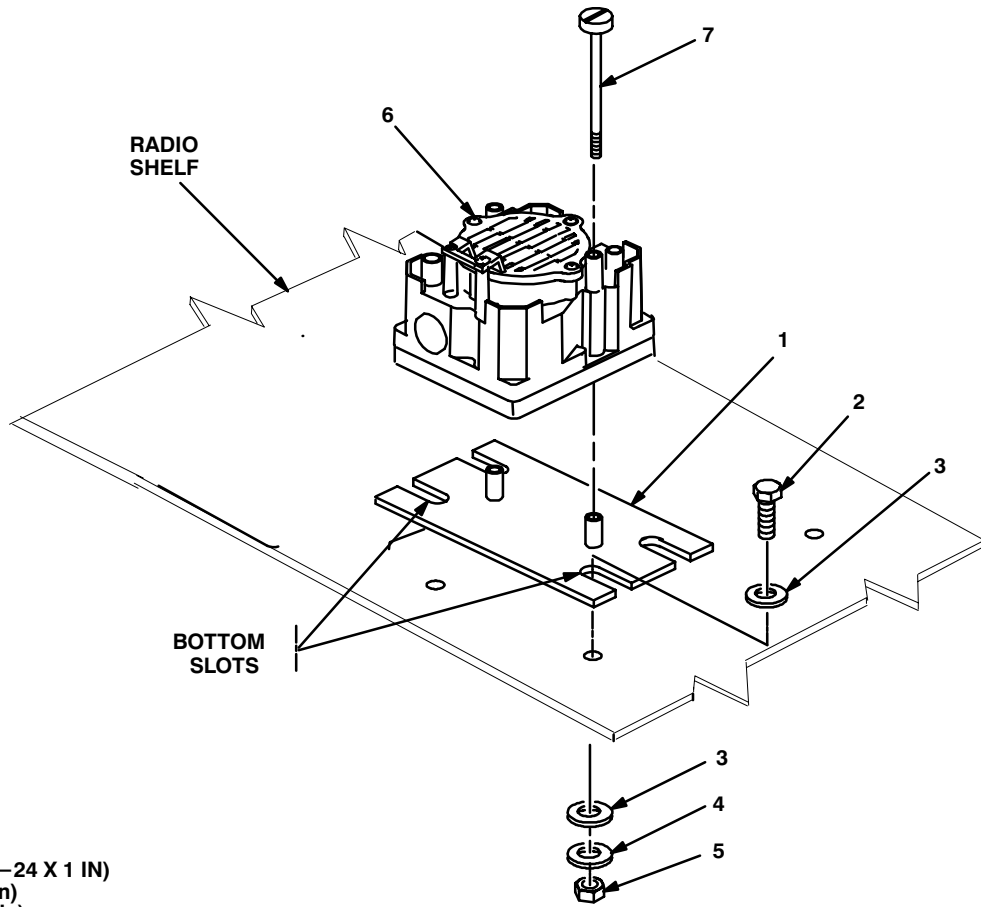


Figure 5-6 (2). Speaker Installation - B

5.5 Installation of Loudspeaker, Control–Unit, LS–671/VRC (speaker). Use the following procedures to install both speakers for “D” and “F” series radio sets. Mounting location on radio shelf may be determined by the shelter commander.

ITEM	ACTION	REMARKS
a. Mounting holes for plate, mounting (1).	Using plate, mounting (1) as template, , drill two 11/32 in diameter holes in radio shelf. See Figure 5–7.	
b. Plate mounting (1).	Align bottom slots over holes drilled in step a.	
c. Two machine bolts (2), four flat washers (3), two lock washers (4) and two nuts (2).	Install and secure to plate, mounting (1) and radio shelf. Figure 5–7.	
d. Speaker (6).	Place on plate, mounting (1).	
e. Two externally–relieved body screws (7).	Thread through and secure to speaker (6) and plate, mounting (1).	
f. Handset.	Connect and secure to speaker (6) connectorJ2.	



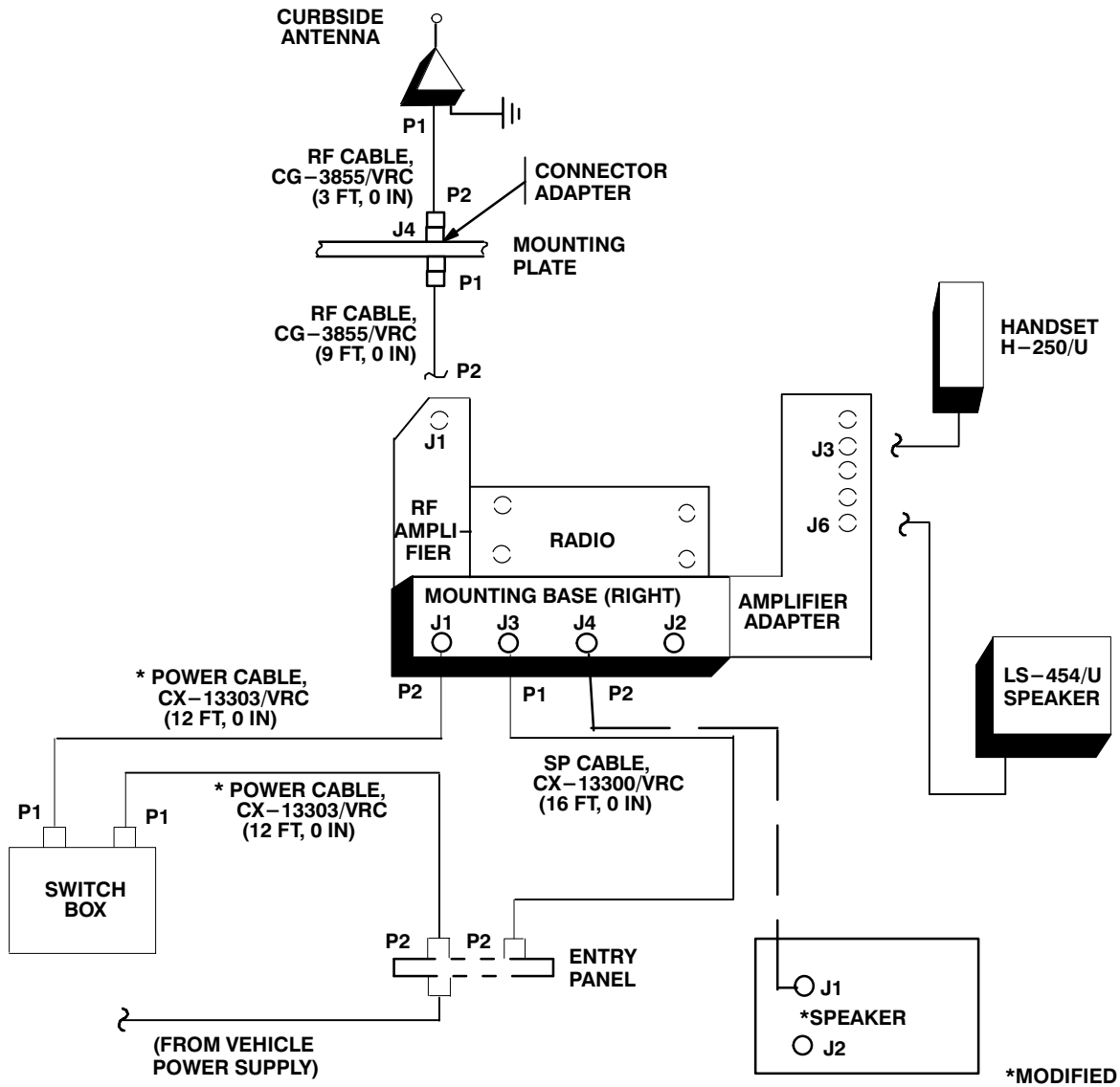
- 1. PLATE MOUNTING
- 2. MACHINE BOLT (5/16–24 X 1 IN)
- 3. FLAT WASHER (5/16 in)
- 5. LOCK WASHER (5/16 in)
- 4. NUT (5/16 – 24 in)
- 7. SPEAKER

Figure 5–7. Speaker Installation

5.6 Post–Installation and Checkout. After equipment is installed and cables are connected, perform the following steps.

ITEM	ACTION	REMARKS
a. Equipment.	Check for secure mounting. Check for loose parts, connectors and mounting hardware.	
b. Cables.	Check for proper installation and connection of cables. See figure 5–8 for cable connections. Unused cables should be stowed in appropriate place inside the shelter.	
c. Loop clamps.	Check that all have been properly installed and tightened.	
d. Protective covers.	Insure that all installed cables are covered when not in use or connected.	
e. Radio issued with shelter.	Install and connect cables. See TM 11–5820–890–20–1 or TM 11–5820–890–20–2 for installation and Operational (OP) Check instructions.	
f. MK line replaceable units.	See TM 11–5820–890–20P for Repair Parts and Special Tools List (RPSTL) information.	

5.6 Post-Installation and Checkout. Continued



* NOT SUPPLIED IN THIS MK

CABLE ASSEMBLY	FROM			TO		
	CABLE CONN.	UNIT	UNIT CONN.	CABLE CONN.	UNIT	UNIT CONN.
CG-3855/VRC (3 FT, 0 IN)	P1	Antenna base	J1	P2	Connector adapter	J4
CG-3855/VRC (9 FT, 0 IN)	P1	Connector adapter	J4	P2	RF amplifier	J1
CX-13303/VRC (12 FT, 0 IN)	P2	Entry panel		P1	Switch box	

Figure 5-8(1). Cable Diagram: For AN/VRC-90 Series (Right)

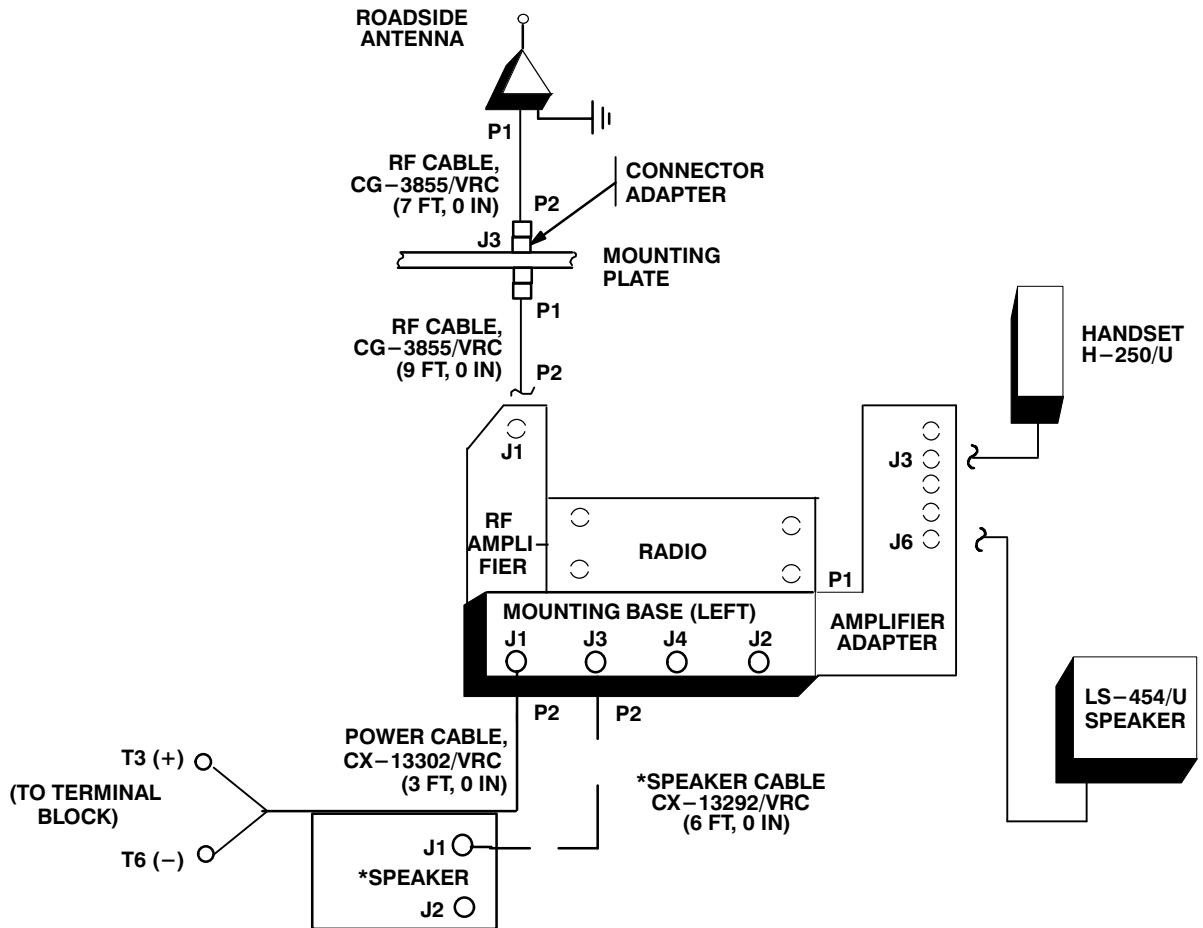
5.6 Post-Installation and Checkout. Continued

CABLE ASSEMBLY	FROM			TO		
	CABLE CONN.	UNIT	UNIT CONN.	CABLE CONN.	UNIT	UNIT CONN.
* CX-13303/VRC (12 FT, 0 IN)	P1	Switch box		P2	Mounting base	J1
CX-13300/VRC (16 FT, 0 IN)	P2	Entry panel		P1	Mounting base	J3
CX-13292/VRC (6 FT, 0 IN)	P2	Mounting Base	J4	P1	*Speaker	J1

* Modified

Figure 5-8 (1). Cable Diagram: For AN/VRC-90 Series (Right) Continued

5.6 Post-Installation and Checkout. Continued



CABLE ASSEMBLY	FROM			TO		
	CABLE CONN.	UNIT	UNIT CONN.	CABLE CONN.	UNIT	UNIT CONN.
CX-13302/VRC (3 FT, 0 IN)	P2	Mounting base	J1	T1 (Red) T2 (Black)	Terminal block	T3 (+) T6 (-)
CG-3855/VRC (7 FT, 0 IN)	P1	Antenna base	J1	P2	Connector adapter	J3
CG-3855/VRC (9 FT, 0 IN)	P1	Connector adapter	J3	P2	RF amplifier	J1
CX-13292/VRC (6 FT, 0 IN)	P2	Mounting Base	J3	P1	*Speaker	J1

Figure 5-8 (2). Cable Diagram: For AN/VRC-90 Series (Left)

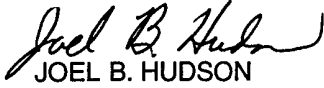
APPENDIX A

REFERENCES

AMDF	Army Master Data File (Microfiche)
AR 710-2	Supply Policy Below the Wholesale Level as Contained in Unit Supply UPDATE
AR 725-50	Requisitioning, Receipt and Issuing System in UPDATE
DA Pam 25-30	Consolidated Index of Army Publications (Microfiche)
DA Pam 710-2-1	Using Unit Supply System Manual Procedures as Contained in Unit Supply UPDATE
SB 11-131-2	Vehicular Radio Sets and Authorized Installations (SINCGARS)
TM 11-5820-890-10-1	Operator's Manual (ICOM Radio Sets)
TM 11-5820-890-10-3	Operator's Manual (Non-ICOM Radio Sets)
TM 11-5820-890-20-1	Unit Maintenance Manual (ICOM Radio Sets)
TM 11-5820-890-20-2	Unit Maintenance Manual (Non-ICOM Radio Sets)
TM 11-5820-890-20P	Repair Parts and Special Tools List

By Order of the Secretary of the Army:

Official:



JOEL B. HUDSON
*Administrative Assistant to the
Secretary of the Army*

9916702

ERIC K. SHINSEKI
General, United States Army
Chief of Staff

DISTRIBUTION:

To be distributed in accordance with the initial distribution number (IDN) 369534 requirements for TB 11-5820-890-20-7.

SOMETHING WRONG WITH THIS PUBLICATION



THEN ... JOT DOWN THE INFO ABOUT IT ON THIS FORM. CAREFULLY TEAR IT OUT. FOLD IT AND DROP IT IN THE MAIL.

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

Commander
Stateside Army Depot
ATTN: AMSTA-US
Stateside, NJ 07703-5007

DATE SENT

10 July 1995

PUBLICATION NUMBER

TM 11-5840-340-12

PUBLICATION DATE

23 Jan 74

PUBLICATION TITLE

Radar Set AN/PRC-76

BE EXACT PIN-POINT WHERE IT IS

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO
2-25	2-28		
3-10	3-3		3-1
5-6	5-8		
		FO-3	

Recommend that the installation antenna alignment procedure be changed throughout to specify a 20 IFF antenna lag rather than 10

REASON: Experience has shown that with only a 10 lag, the antenna servo system is too sensitive to gusting in excess of 25 knots, and has a tendency to rapidly accelerate and decelerate as it hunts, causing strain to the drive train. Hunting is minimized by adjusting the lag to 20 without degradation of operation.

Item 5, Functional column. Change 2 dB" to 3 dB".

REASON: The adjustment procedure for the TRANS POWER FAULT indicator call for a 3 dB (500 watts) adjustment to light the TRANS POWER FAULT indicator.

Add new step f.1 to read, Replace cover plate removed in step d above."

REASON: To replace the cover plate.

ZONE C 3. On J1-2, change +24 VDC" to +5 VDC".

REASON: This is the output line of the 5 VDC power supply. +24 VDC is the input voltage.

PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER

SSG I. M. DeSpirito 999-1779

SIGN HERE

TEAR ALONG DOTTED LINE

SOMETHING WRONG WITH THIS PUBLICATION



THEN ... JOT DOWN THE INFO ABOUT IT ON THIS FORM. CAREFULLY TEAR IT OUT. FOLD IT AND DROP IT IN THE MAIL.

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER

PUBLICATION DATE

PUBLICATION TITLE

BE EXACT PIN-POINT WHERE IT IS

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

PAGE NO

PARA-GRAPH

FIGURE NO

TABLE NO

TEAR ALONG DOTTED LINE

PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER

SIGN HERE

FILL IN YOUR
UNIT'S ADDRESS

FOLD BACK

DEPARTMENT OF THE ARMY



OFFICIAL BUSINESS

PLEASE
AFFIX
STAMP
POSTAGE
REQUIRED

TEAR ALONG DOTTED LINE

Commander
U.S. Army Communications-Electronics Command
and Fort Monmouth
ATTN: AMSEL-LC-LEO-D-CS-CFO
Fort Monmouth, New Jersey 07703-5000



FOLD BACK

