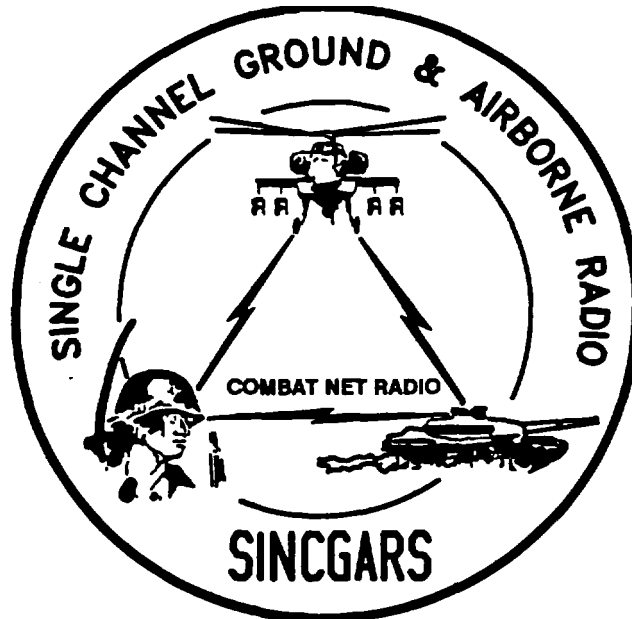**TECHNICAL BULLETIN**

**INSTALLATION INSTRUCTIONS FOR
INSTALLATION KIT, ELECI'RONIC EQUIPMENT,
MK-2190/VRC (NSN 5895-01-285-2349) (EIC: N/A)
TO PERMIT INSTALLATION OF
RADIO SET AN/VRC-92 SERIES
IN A
RADAR SET, AN/TPQ-32 (NORMALLY P/O MPQ-49)**

Approved for public release; distribution is unlimited.

HEADQUARTERS, DEPARTMENT OF THE ARMY

1 SEPTEMBER 1993

TECHNICAL BULLETIN

NO. 11-5820-890-20-6

INSTALLATION INSTRUCTIONS FOR
INSTALLATION KIT, ELECTRONIC EQUIPMENT
MK-2190/VRC (NSN 5895-01-285-2349) (EIC: N/A)
TO PERMIT INSTALLATION OF
RADIO SET AN/VRC-92 SERIES
IN A
RADAR SET, ANITPQ-32 (NORMALLY P/O MPQ-49)

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 Form 2028-2 located in the back of this manual direct to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-LC-LM-LT, Fort Monmouth, New Jersey 07703-5007.

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

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0.1 SCOPE

This technical bulletin provides Installation Instructions for Installation Kit, Electronic Equipment MK-2190/VRC, commonly referred to as the Mounting Kit (MK). The MK shall be installed into the following type of shelter(s):

- Radio Set, AN/TPQ-32 (normally p/o MPQ-49)

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 11-5820-890-2)-2, TM 11-5820-890 -204 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 11-5820-890-2g4 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-92 Series are:
- Radio Set AN/VRC-92 (for RT-1439/VRC)
- Radio Set AN/VRC-92A (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 Pain 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-2190/VRC (MK) contains the items needed to mount Radio Set AN/ VRC-92A in a Radar Set, ANrPQ-32 (shelter). If Radio Set AN/VRC-92 is to be installed, communications security equipment (TSEC/KY-57) will need to be installed also; see section 5.4 for information. To install MT-6353/VRC mounting base, see section 5.5 for instructions.

2. END ITEM OR SYSTEM TO BE MODIFIED.

Not applicable.

3. APPLICATION TIMES.

3.1 Time for Completion of Installation. Using one person, a total of 3.5 work hours is required. Typical shelter down-time 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 MT6352VNRC	5.2	0.5
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 9-1430588-20.

4.12 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 4355.73AIAFR 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 4610.33CIAFR 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 4355.73AIAFR 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 ANIVRC-92 Series. Refer to Table 4-2 and figure 4-2 to identify additional items required to install Radio Set AN/VRC-92 Series. Refer to Table 4-3 and figure 4-3 to identify additional items required to install when using RT-1439/VRC.

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 MAPIMAS countries.

Table 4-1. MK Parts List for Installation of Radio Set ANIVRC-92 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	PAOOFA	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	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	
5975-01-188-8873	Mounting Base, Electrical Equipment MT-6352/VRC (A3013367-1)	1	PAOOFA	4-1, 1
5306-00-225-9089	Bolt, Machine (5/16-24 x 1 in) MS90726-34 (Not Used)	5	PAOZZA	
5310-00-889-2527	Washer, Lock, Internal/External-Toothed (5/16 in) MS45904-72 (1 Not Used)	10	PAOZZA	
5310-00-880-7746	Nut, Hexagon (5/16-24 in) MS51968-5 (Not Used)	5	PAOZZA	
5995-01-219-1843	Cable Assembly, Power, Electrical CX-13302/VRC (13 FT. 0 IN) (A3014039-2)	1	PAOZZA	4-1, 8
5995-01-219-9528	Cable Assembly, Radio Frequency CG-3855/VRC (3 FT, 0 IN) (A3014031-1)	2	PAOZZA	4-1, 7
5995-01-219-7028	Cable Assembly, Radio Frequency CG-3856/VRC (17 FT, 0 IN) (A3014032-6)	2	PAOZZA	4-1,11
5995-01-303-4951	Cable Assembly, Special Purpose, Electrical CX-13313/VRC (2 FT, 7 IN) (A3018360-1)	1	PAOZZA	4-1, 9
5995-01-219-4932	Cable Assembly, Special Purpose, Electrical CX-13300/VRC (5 FT, 0 IN) (A3014044-3)	2	PAOZZA	4-1,10
5935-00-823-0308	Adapter, Connector M55339/13-00492	2	PAOZZA	4-1, 3
5306-00-225-8497	Bolt, Machine (5/16-18 x 3/4 in) MS90725-32	9	PAOZZA	
5340-00-057-2904	Clamp, Loop (1/2 - 13/64 in) MS21333-71	2	PAOZZA	
5340-00-079-7837	Clamp, Loop (1/4 - 13/64 in) MS21333-67	5	PAOZZA	
4020-01-341-8795	Fiber Rope Assembly, Single Leg (A3167672-1)	2	PAOZZA	4-1, 6
	Lead, Electrical - Ground Strap (A3013552-5)	1	XBOZZA	4-1, 4

Table 4-1. MK Parts List for Installation of Radio Set AN/VRC-92 Series Continued

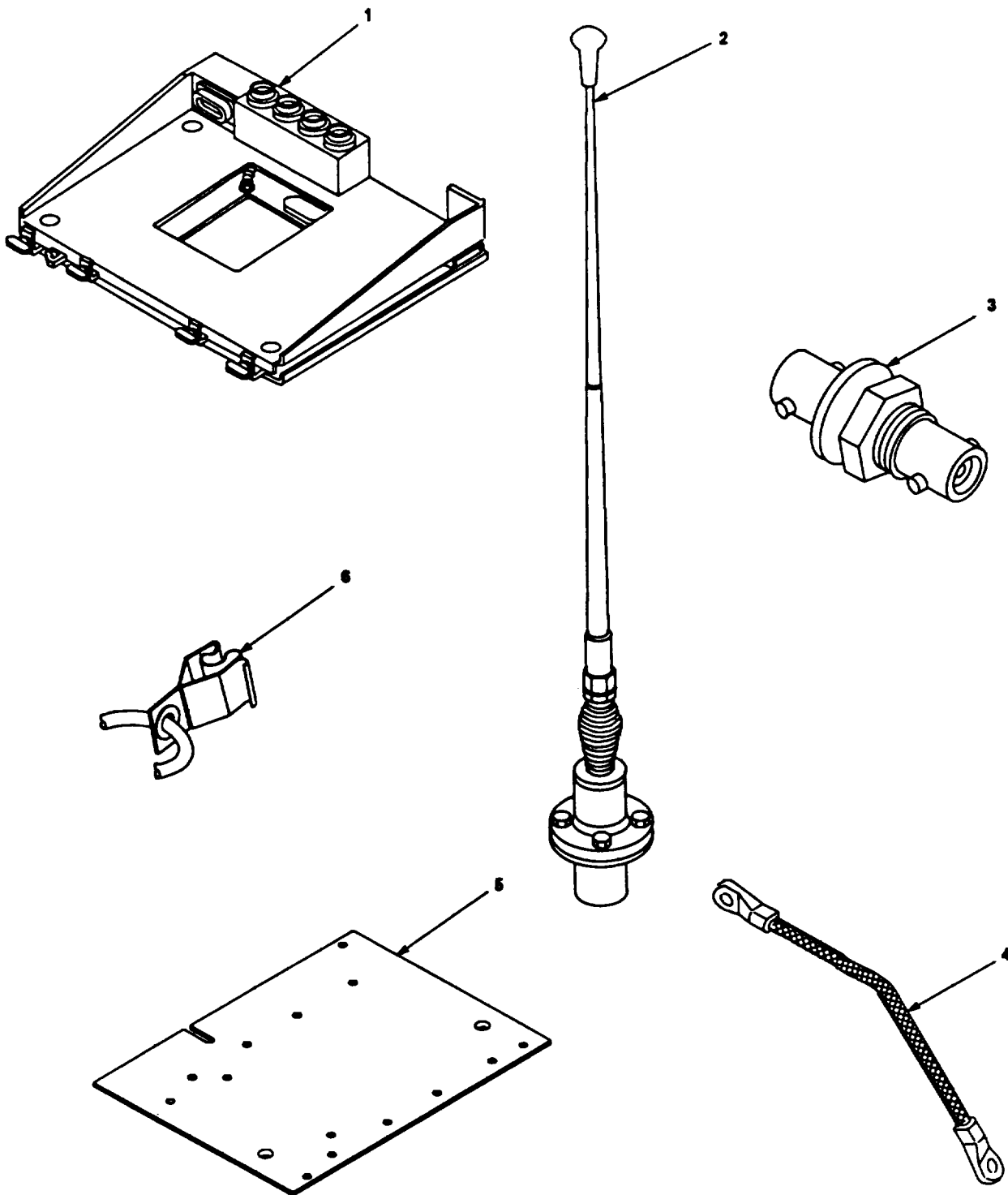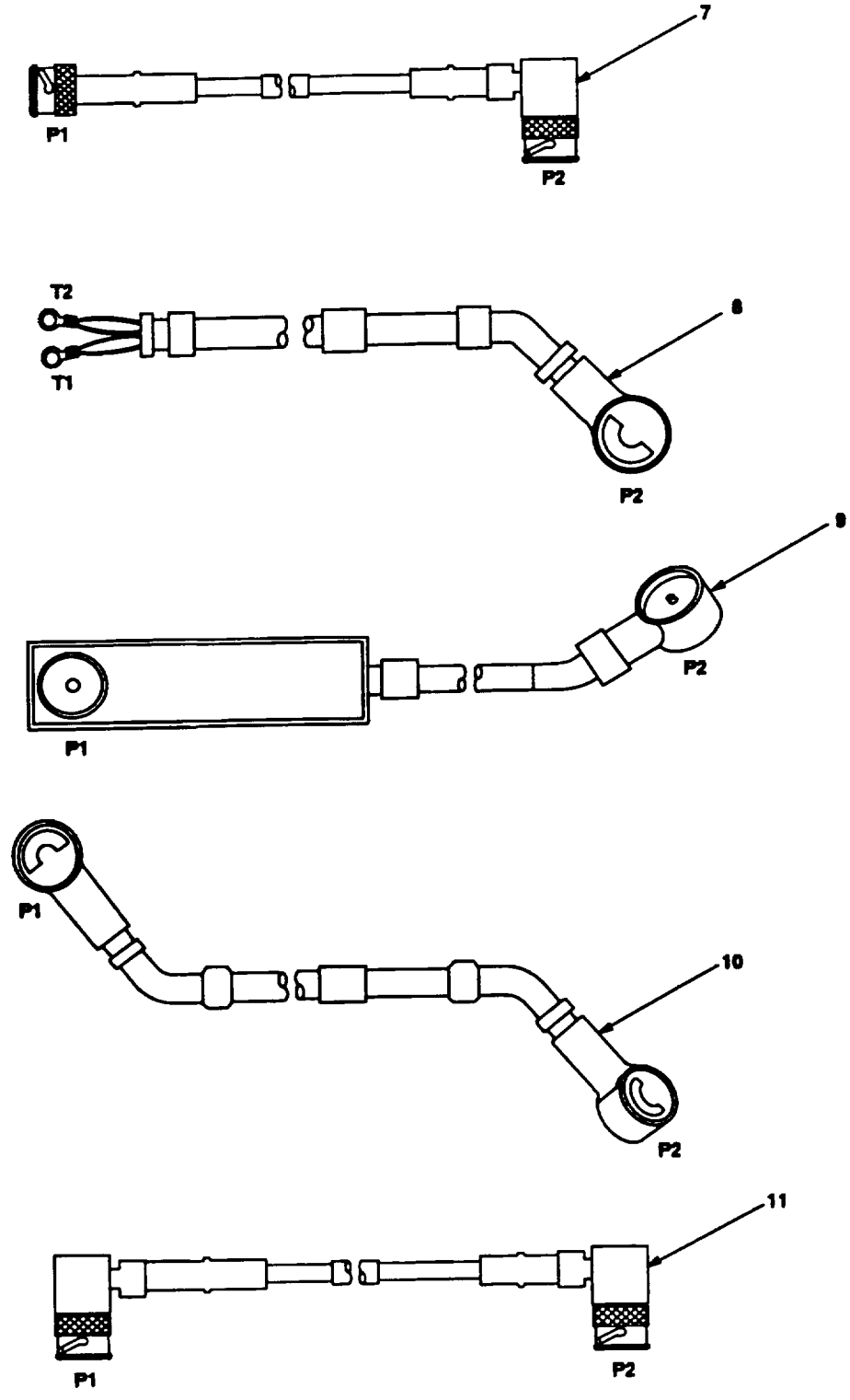| NSN	ITEM DESCRIPTION AND PART NUMBER	QUANTITY IN MK	SMR CODE	FIGURE ITEM NO.
	Plate, Mounting (A3014089-1)	1	XBOZZA	4-1, 5
5305-00-984-7353	Screw, Machine, Flat-Head (5/16-24 x 3/4 in) MS35191-306	4	PAOZZA	
5305-00-146-2524	Screw, Tapping, Hex-Head (1/4-14 x 3/4 in) MS51850-86	1	PAOZZA	
5305-00-054-6670	Screw, Machine, Pan-Head (No. 8-32 x 1/2 in) MS51957-45	7	PAOZZA	
5305-00-207-8253	Screw, Cap, Hexagon (114-20 x 1 in) MS35307-308	2	PAOZZA	
5975-00-111-3208	Strap, Tiedown, Electrical Components MS3367-5-9	30	PAOZZA	
531 0-00889-2528	Washer, Lock, Internal/External-Toothed (1/4 in) MS45904-68	2	PAOZZA	
5310-00-933-8119	Washer, Lock (No. 8) MS35338-137	7	PAOZZA	

Figure 4-1 (1). MK Illustrated Parts List

Figure 4-1 (2). MK Illustrated Ports List

Table 4-2. Additional Items Required for Installation of Radio Set ANIVRC-92 Series

NSN	ITEM DESCRIPTION AND PART NUMBER	QUANTITY IN MK	SMR CODE	FIGURE ITEM NO.
5975-01-235-1962	Mounting Base, Electrical Equipment MT-6353/VRC (A3014053-1)	1	PAOOHA	4-2, 1
5306-00-225-9089	Bolt, Machine (5/16-24 x 1 in) MS90726-34 (Not Used)	4	PAOZZA	
5310-00-880-7746	Nut, Hexagon (5/16-24 in) MS51968-5	2	PAOZZA	
5310-00-889-2527	Washer, Lock, Internal/External-Toothed (5/16 in) MS45904-72 (3 Not Used)	6	PAOZZA	
5310-00-081-4219	Washer, Flat (5/16 in) MS27183-12 (Not Used)	2	PAOZZA	
	Nut Strip (A3014064-1)	1	XBOZZA	4-2. 5
5975-00-111-3208	Strap, Tiedown, Electrical Components, MS3367-5-9	4	PAOZZA	
5995-01-300-9324	Cable Assembly. Power, Electrical CX-13303/VRC (4 FT, 6 IN) (A3014040-9)	1	PAOZZA	4-2, 4
5995-01-222-4209	Cable Assembly, Special Purpose, Electrical CX-13291/VRC (3 FT, 0 IN) (A3014037-1)	1	PAOZZA	4-2, 2
5995-01-219-7025	Cable Assembly, Radio Frequency CG-3856/VRC (5 FT, 0 IN) (A3014032-3)	1	PAOZZA	4-2, 3
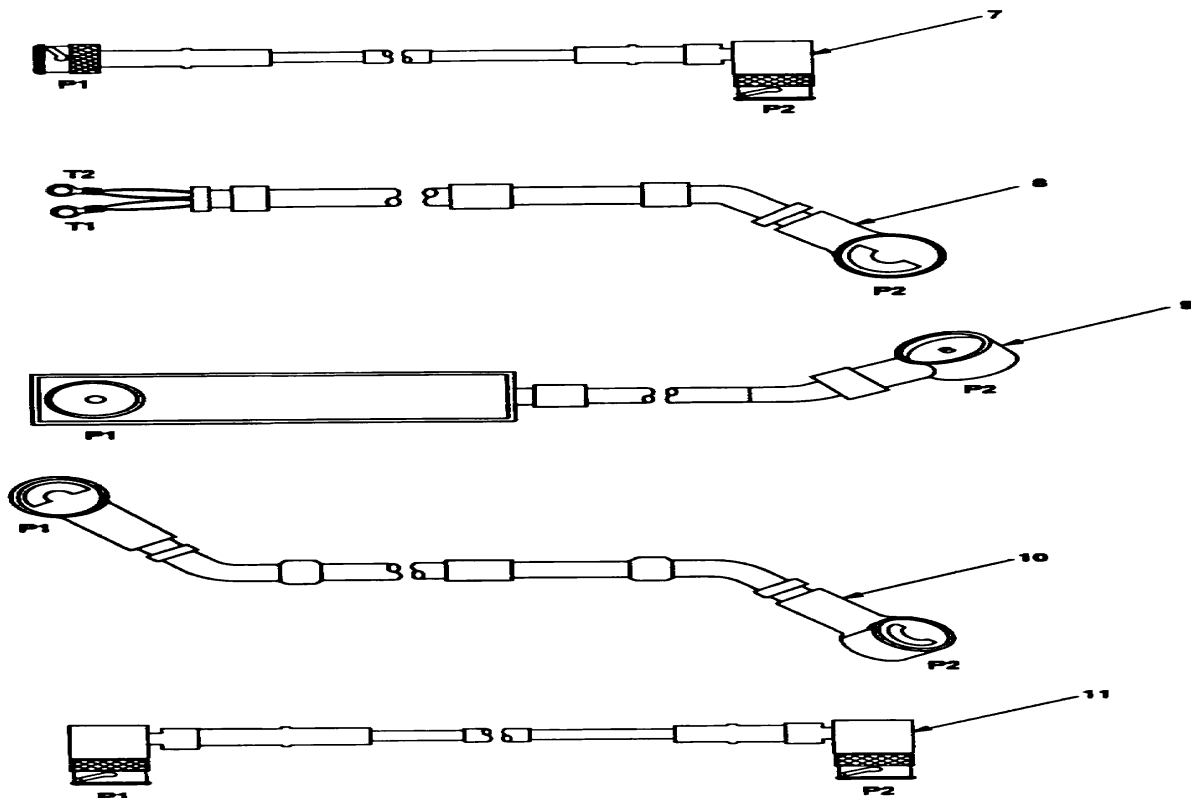
Figure 4-2. Illustrated Parts List for Table 4-2

Table 4-3. Additional Items Required for Installation When Using RT-1439/VRC

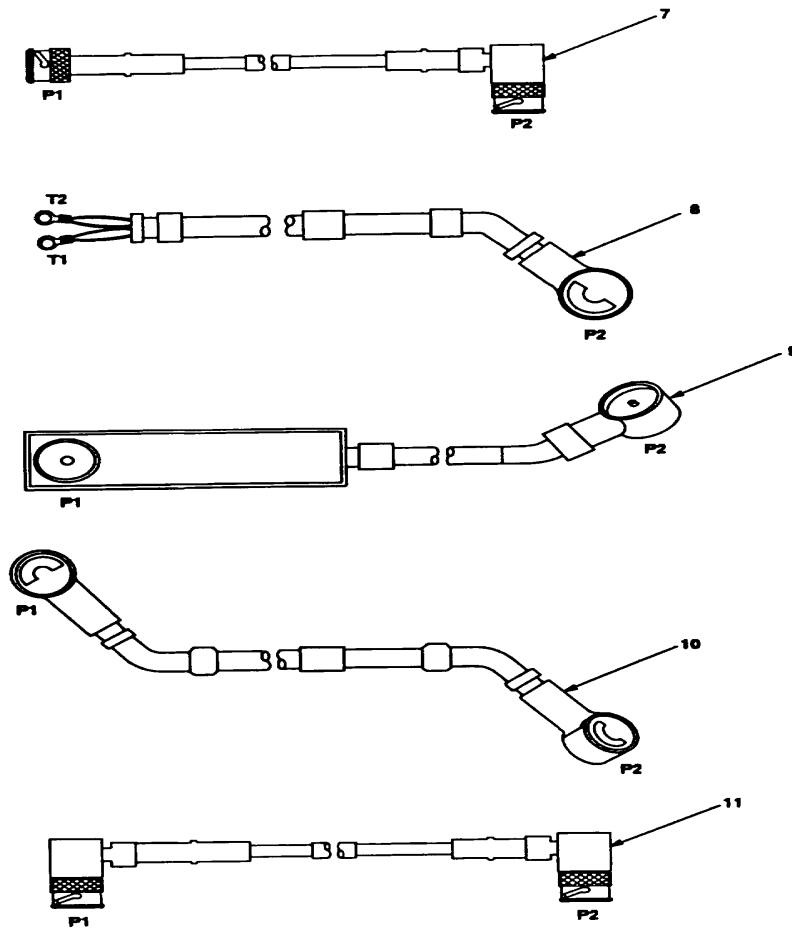| NSN	ITEM DESCRIPTION AND PART NUMBER	QUANTITY IN MK	SMR CODE	FIGURE ITEM NO.
5995-01-222-4210	Cable Assembly, Special Purpose, Electrical CX-13293/VRC (4 FT, 0 IN) (A3014034-1)	1	PAOZZA	4-3, 1
5995-01-226-5482	Cable Assembly, Power, Electrical CX-13303/VRC (2 FT, 6 IN) (A3014040-5)	1	PAOZZA	4-3, 2
5305-00-984-7353	Screw, Machine, Flat-Head (5/16-24 x 3/4 in) MS35191-306	4	PAOZZA	

Figure 4-3. TSECIKY-57 Illustrated Cables List

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

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
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
Frame, Hand Hacksaw	5110-00-289-9657	1
Blade	5110-00-277-4589	1
Wrench, Open/Box: 7/16 in	5120-00-228-9505	1
1/2 in	5120-00-228-9506	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	5120-00-237-0977	1
9/16 in	5120-00-227-6704	1
Electric Drill	5130-00-889-8994	1
Size 1 (.228 in)	5133-00-189-9246	1

* Use radio issued with your shelter if available.

5. INSTALLATION PROCEDURES.

This section describes where and how to install all MK items in the shelter. See figure 5-1 for an overall view of where the MK equipment, as well as radio components, will be installed. When installing MK equipment, be sure to read and follow instructions and illustrations carefully. Retain unused mounting hardware until all equipment is installed. If Radio Set AN/VRC-92 is to be installed, communications security equipment (TSEC/KY-57) will also need to be installed; see section 5.4 for information. To install MT-6353/VRC mounting base, see section 5.5 for instructions.
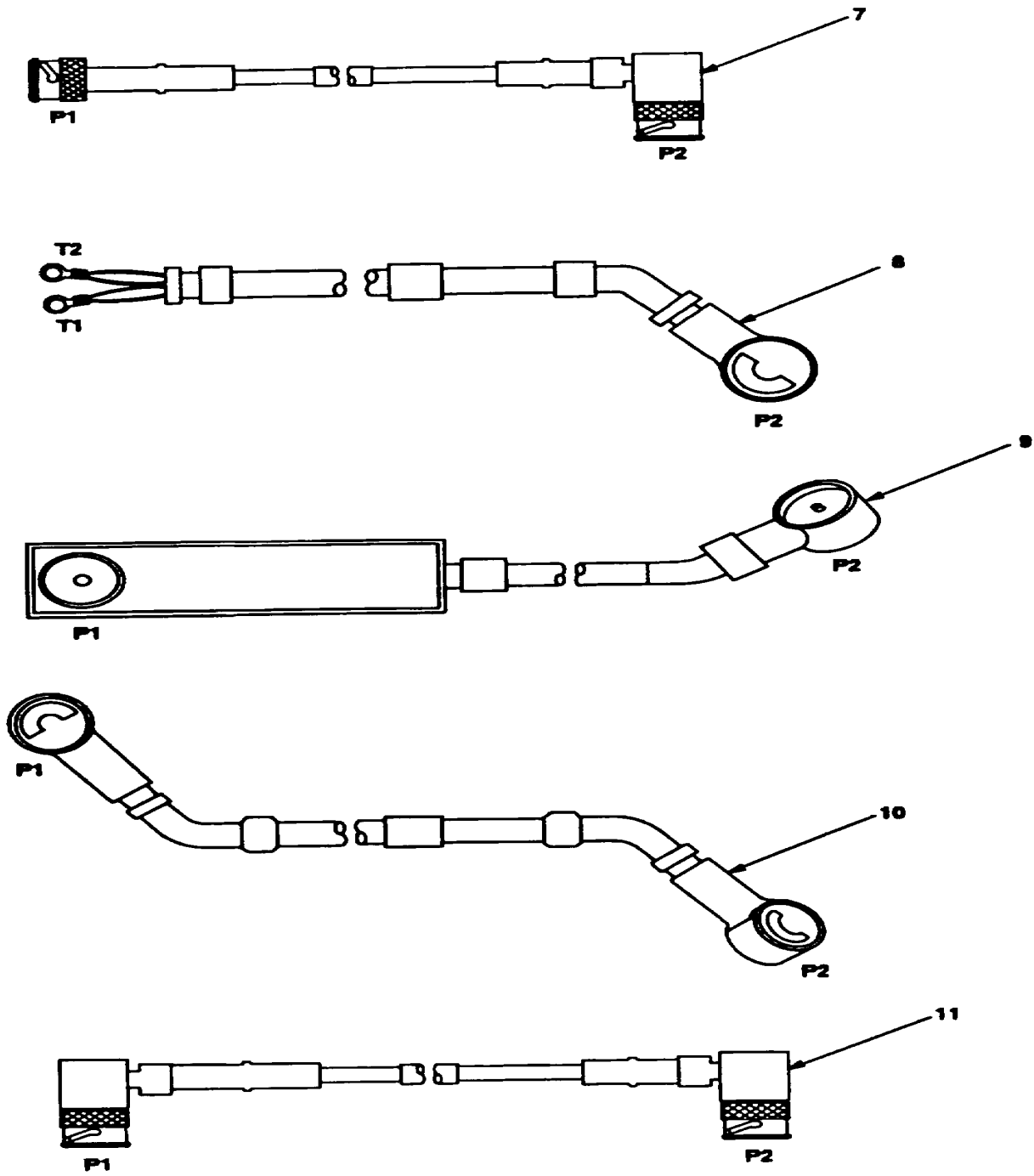
Figure 5-1 (1). MK and Radio Installation: MK Equipment Locations

11

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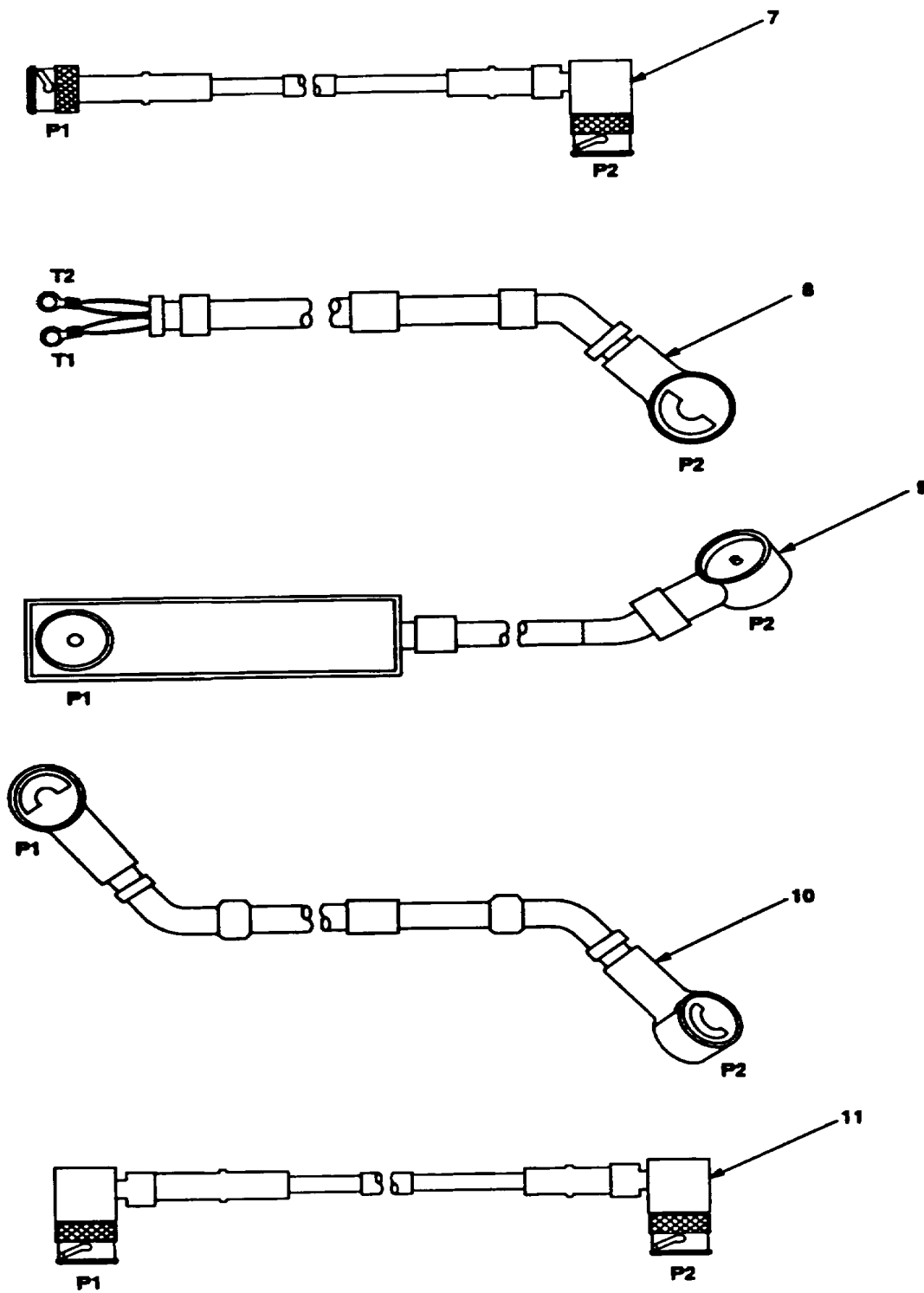
Figure 5-1 (2). MK and Radio Installation: Radio Equipment Locations

5.1 Installation of Antenna AS-3900/VRC (antenna). Use the following procedure to install both antennas. See figures 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 support and
                                 aline mounting holes. See figure 5-2.
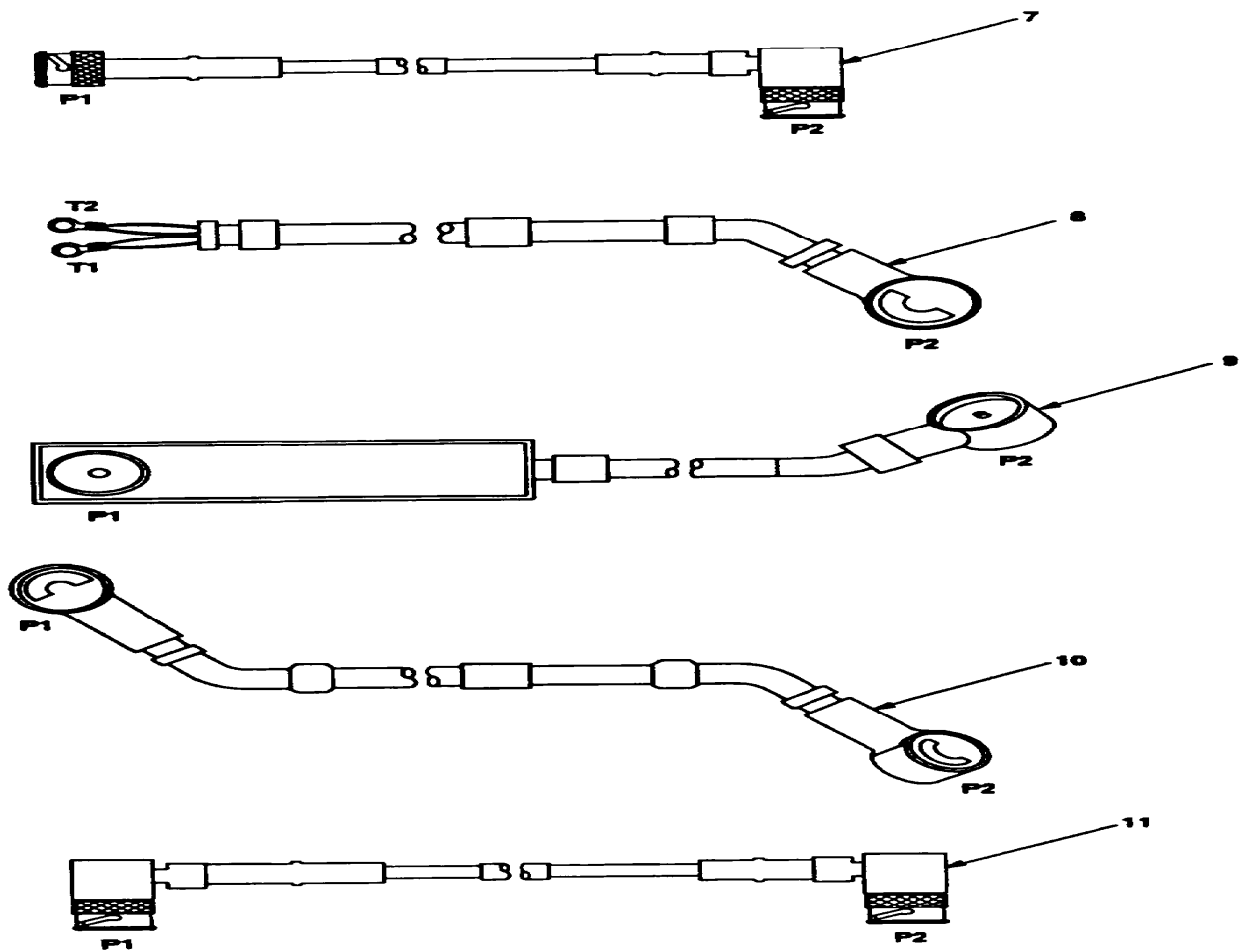
Figure 5-2. Antenna Base Installation: Installing Antenna Base

5.1.1 Installation of Antenna Base. Continued

ITEM	ACTION	REMARKS
b. Antenna base (3).	Place on top of gasket (4) and antenna support; then aline mounting holes. See figure 5-2.	
c. Four cap screws (1), eight IET washers (2) and four nuts (5).	Install and secure to antenna base (3) and antenna support.	Tools: 9/16 in socket and 9/16 in open/box wrench.
d. Ground strap (8), cap screw (6), two IET washers (7) and existing shelter ground strap.	Install and secure to lower hole in antenna support.	Tools: 7/16 in socket.

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.	
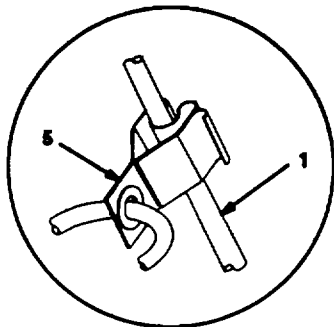
DETAIL B
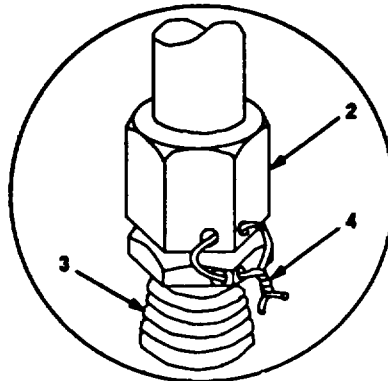
DETAIL A

1. ANTENNA ELEMENT (UPPER)
2. ANTENNA ELEMENT (LOWER)
3. ANTENNA BASE
4. LOCK WIRE
5. FIBER ROPE ASSEMBLY
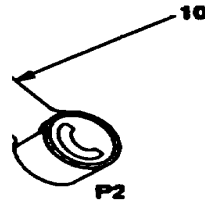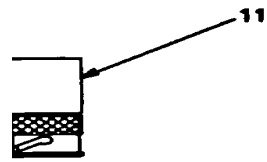
Figure 5-3. Top Antenna Assembly Installation

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 the mounting base. See figure 5-4 and perform the following steps.

1. MOUNTING BASE
2. THUMBSCREW
3. RIM CLENCHING CLAMP
4. IET WASHER (5/16 In)
5. MACHINE BOLT (5/16 - 18 x 3/4 In)
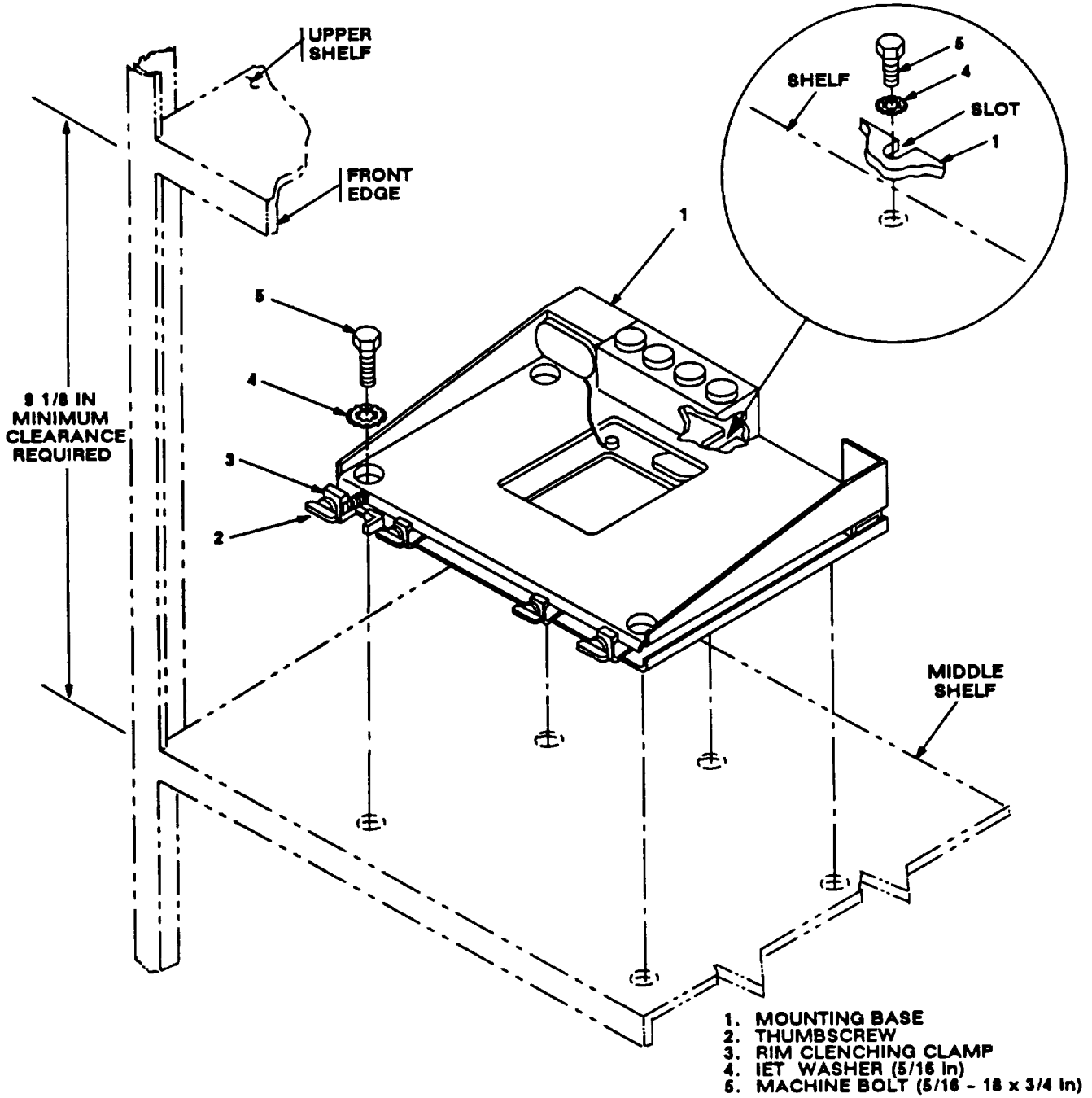
Figure 5-4. Mounting Base Installation: Equipment Rack

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. Upper shelf of equipment rack.	If required, use dimensions shown to modify front edge of rack. See figure 5-2.	Radio equipment requires a minimum height of 9 1/8 in and a minimum width of 16 1/2 in when installed.
b. Mounting base (1).	Place on middle shelf over existing holes.	
c. Two outer thumbscrews (2).	Turn ccw until both sets of threads have cleared center of holes.	
d. Mounting base (1).	Aline four holes and rear slot with matching hole pattern in existing mounting bracket.	
e. Five machine bolts (5) and five IET washers (4).	Install and secure to mounting base (1) and shelf.	Tools: 1/2 in socket and 1/2 in open/box wrench.
f. Two outer thumbscrews (2).	Tighten and secure to rim clenching clamps (3) 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 vehicle power source is positioned OFF or disconnected before Installing cables.

ITEM	ACTION	REMARKS
a. Two O-rings (10).	Apply a thin coat of silicone compound to both sides; then place one on each connector adapter (9). See figure 5-5 (1), detail A.	

1. ANTENNA BASE (CURBSIDE)
2. ANTENNA BASE (ROADSIDE)
3. RF CABLE, CG-3855/VRC (3 FT, 0 IN)
4. LOOP CLAMP (1/2-13/64 In)
    MACHINE SCREW (NO. 8-32 x 1/2 In)
    LOCK WASHER (NO. 8)
5. LOOP CLAMP (1/4-13/64 In)
    MACHINE SCREW (NO. 8-32 x 1/2 In)
    LOCK WASHER (NO. 8)
6. RF CABLE, CG-3855/VRC (3 FT, 0 IN)
7. NUT
8. IET WASHER
9. CONNECTOR ADAPTER
10. O-RING
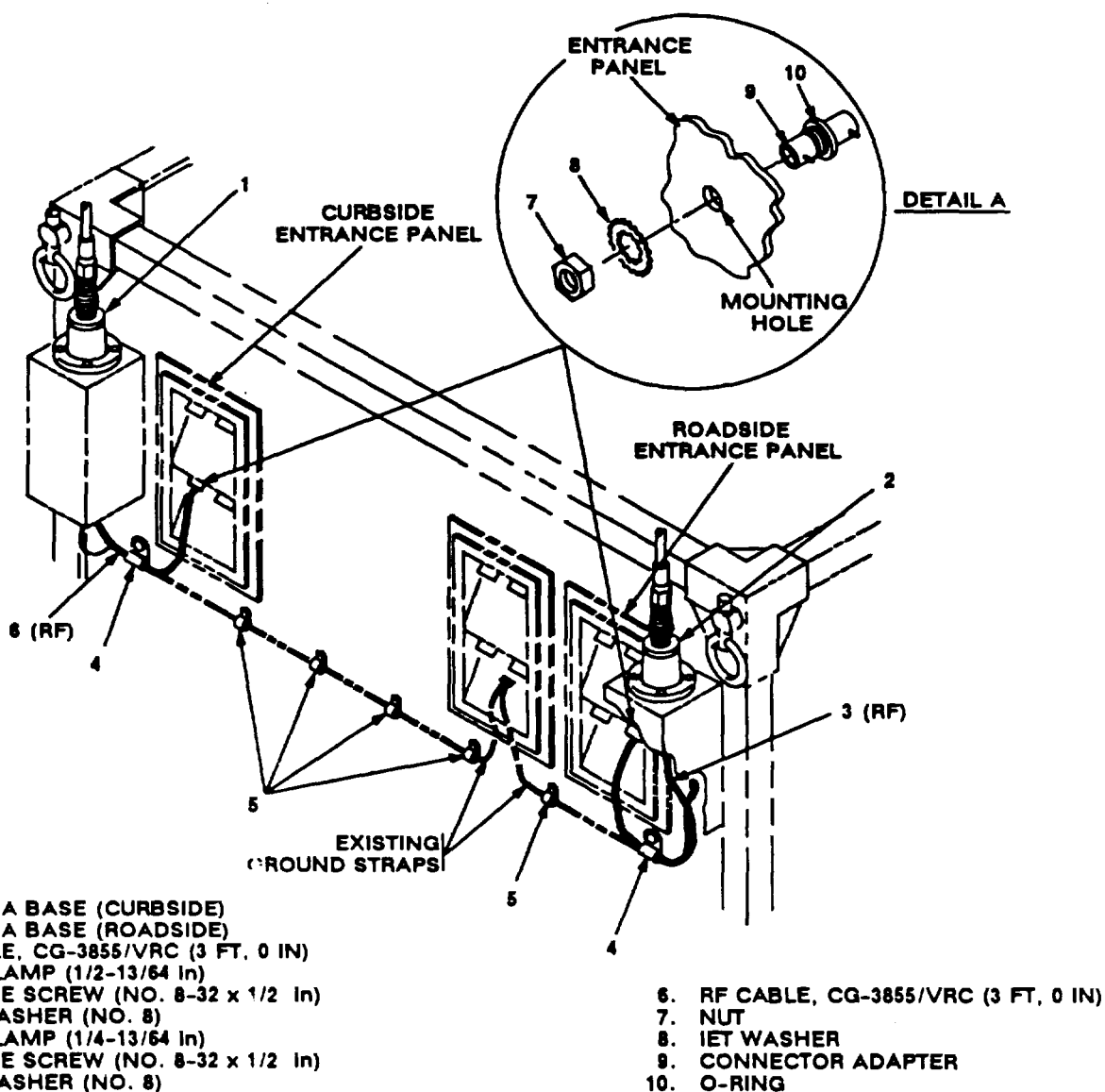
Figure 5-5 (1). Cable Installation: Exterior Cabling

5.3   Installation of Cables. Continued

ITEM		ACTION	REMARKS
b.	Two connector adapters (9).	From interior of shelter, insert in mounting holes of curbside and roadside entrance panels.	
c.	IET washer (8) and nut (7).	From exterior of shelter, install and secure to each connector adapter (9).	Tools: 5/8 in wrench.
d.	RF cable (3) connector P1.	Connect and secure to roadside antenna base (2) connector J1. See figure 5-5 (1).	
e.	RF cable (3) connector P2.	Connect and secure to connector adapter (10) in roadside entrance panel.	
f.	RF cable (6) connector P1.	Connect and secure to curbside antenna base (1) connector J1. See figure 5-5 (1).	
g.	RF cable (6) connector P2.	Connect and secure to connector adapter (10) in curbside entrance panel.	
h.	Loop clamp (4), pan-head machine screw (no. 8-32 x 112 in) and lock washer (no. 8).	Wrap clamp around RF cable (3) and existing ground strap; then install to mounting hole in front wall. See figure 5-5 (1) for location(s).	Tools: Phillips screwdriver.
i.	Loop clamp (4), pan-head machine screw (no. 8-32 x 1/2 in) and lock washer (no. 8).	Wrap clamp around RF cable (6) and existing ground strap; then install to mounting hole In front wall.	Tools: Phillips screwdriver.
J.	Five loop clamps (5). five pan-head machine screws (no. 8-32 x 112 in) and five lock washers (no. 8).	Wrap clamps around existing ground straps; then Install to mounting holes across front wall.	Tools: Phillips screwdriver.
k.	Two cable trough covers.	Temporarily remove from front and road-side interior walls near ceiling. See figure 5-5 (2).	
I.	RF cable (4) connector P1.	Connect and secure to connector adapter in curbside entrance panel.	
m.	RF cable (4).	Route up to cable trough on front wall; then route along existing cable harness to left side of stowage rack.	
n.	Four tiedown straps (2).	Wrap around RF cable (4) and install loosely to existing cable harness. See figure 5-5 (2) for location(s).	
o.	RF cable (5) connector P1.	Connect and secure to connector adapter in roadside entrance panel. See figure 5-5 (2).	

5.3   Installation of Cables. Continued

DETAIL A

DETAIL B

1. ANTENNA BASE (ROADSIDE)
2. TIEDOWN STRAP
3. ANTENNA BASE (CURBSIDE)
4. RF CABLE, CG-3855/VRC (17 FT, 0 IN)
5. RF CABLE, CG-3855/VRC (17 FT, 0 IN)

6. POWER CABLE, CX-13302/VRC (13 FT, 0 IN)
7. SP CABLE, CX-13300/VRC (5 FT, 0 IN)
8. SP CABLE, CX-13300/VRC (5 FT, 0 IN)
9. SP CABLE, CX-13313/VRC (2 FT, 7 IN)
10. MOUNTING BASE
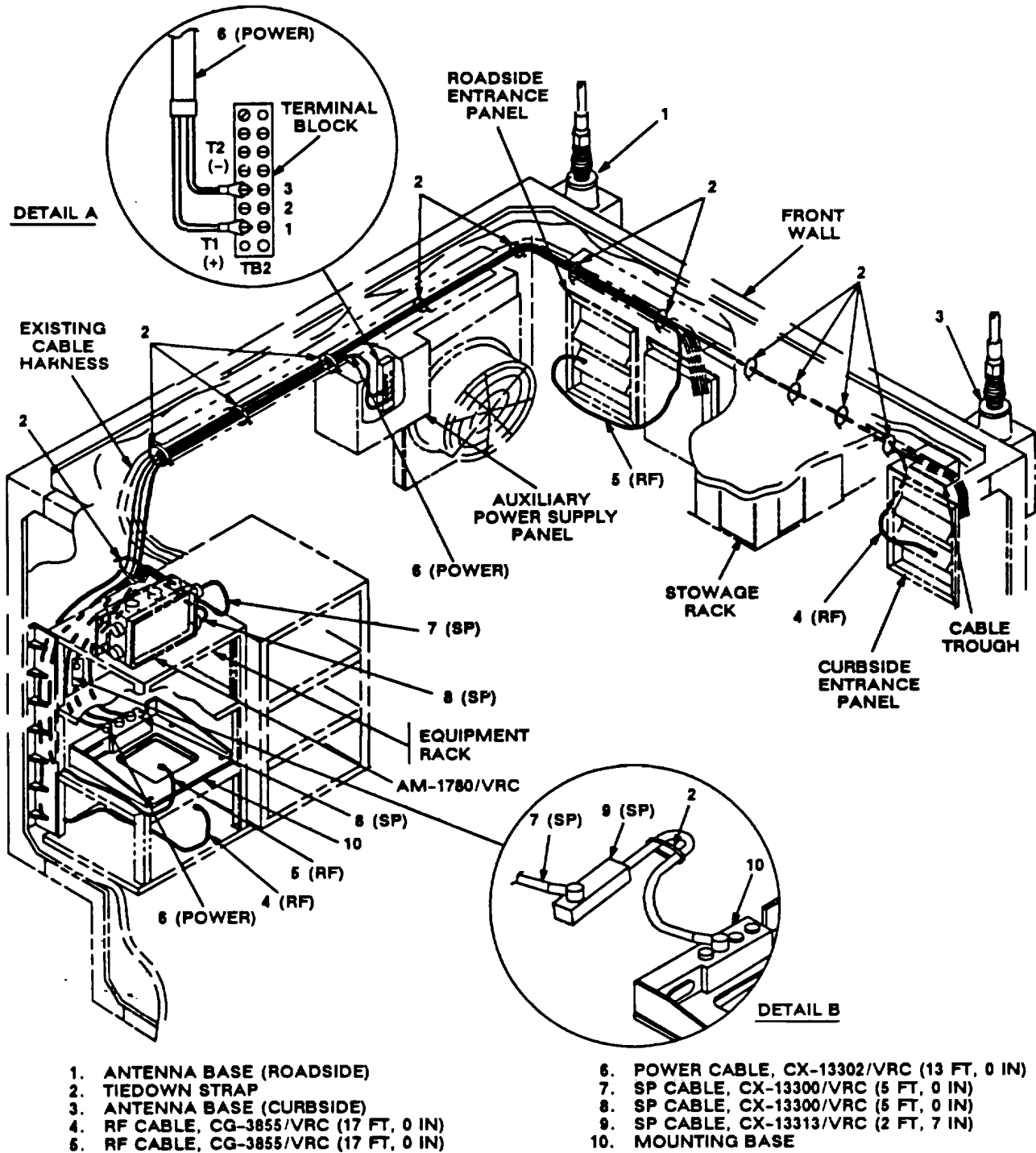
Figure 5-5 (2). Cable Installation: Interior Cabling

5.3   Installation of Cables. Continued

ITEM	ACTION	REMARKS
p.	RF cables (4, 5).	Route through cable trough (along existing cable harness) to forward roadside corner of shelter. See figure 5-5 (2).	
q.	Two tiedown straps (2).	Wrap around RF cables (4, 5) and install loosely to existing cable harness. See figure 5-5 (2) for location(s).	
r.	RF cables (4, 5).	From forward roadside comer, route through cable trough (along existing cable harness) to rear of equipment rack. See figure 5-5 (2).	
s.	Auxiliary power panel cover.	Temporarily remove.	
t.	Power cable (6) terminal leads: T1 (red) and T2 (black).	Connect and secure to proper posts on terminal block TB2 inside auxiliary power supply panel. See figure 5-5 (2), detail A.	Red (+) secures to post 1 and black (-) secures to post 3.
u.	Auxiliary power panel cover (removed in step s).	Reinstall to auxiliary power supply panel.	
v.	Power cable (6).	From left side of auxiliary power supply panel, route through cable trough (along RF cables 4 and 5) to rear of equipment rack. See figure 5-5 (2).	
w.	Three tiedown straps (2).	Wrap around RF cables (4, 5) and power cable (6), then install loosely to existing cable harness. See figure 5-5 (2) for location (s).	
x.	P2 connectors of power cable (6) and RF cable (5).	Position on top of mounting base (10). See figure 5-5 (2).	
y.	RF cable (4) connector P2.	Position on bottom shelf of equipment rack.	
z.	SP cable (8) connector P1.	Connect and secure to AM-1780/VRC connector J503.	
aa.	SP cable (7) connector P1.	Connect and secure to AM-1780/VRC connector J501.	
ab.	SP cables (7, 8).	Route down behind equipment rack to mounting base (10).	
ac.	SP cable (8) connector P2.	Connect and secure to mounting base (10) connector J4.	
ad.	SP cable (7) connector P2.	Connect and secure to SP cable (9) connector P1. See figure 5-5, detail B.	

5.3   Installation of Cables. Continued

ITEM	ACTION	REMARKS
ae. SP cable (9) connector P2.	Connect and secure to mounting base (10) connector J3. See figure 5-5 (2), detail B.	
af. Tiedown strap (2).	Wrap around SP cable (9) and secure.	
ag. Tiedown strap (2).	Wrap around RF cables (4, 5), power cable (6) and SP cables (7, 8), then install loosely to existing cable harness behind equipment rack.	
ah. All previously installed tiedown straps (2).	Tightly secure after cable slack has been adjusted.	
ai. Cable trough covers (removed in step k).	Reinstall to cable trough. See figure 5-5 (2).	
aj. Power cable (6) connector P2.	Connect and secure to mounting base (10) connector J1.	

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5.4   Installation of MK-24991VRC. For Radio Set AN/VRC-92, Install MK-2499/VRC (TSEC/KY-57 security equipment) in the location shown in figure 5-1 (2). Refer to section 5.6 for connection of cables cables.

5.5   Installation of Mounting Base, Electrical Equipment MT-63531VRC . Use the following procedure to install MT-63531VRC mounting base in the location shown In figure 5-1 (2). Refer to section 5.6 for connection of cables.

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.   MT-6353/VRC mounting base (1).   Place on mounting plate (9) over existing holes. See figure 5-6.

1.   MT-6353/VRC MOUNTING BASE
2.   NUT (5/16-24 In)
3.   IET WASHER (5/16 In)
4.   GROUND STRAP
5.   IET WASHER (1/4 In)
6.   TAPPING SCREW (1/4-14 x 3/4 In)
7.   MACHINE SCREW (5/16-24 x 3/4 In)
8.   MACHINE BOLT (5/16-18 x 3/4 In)
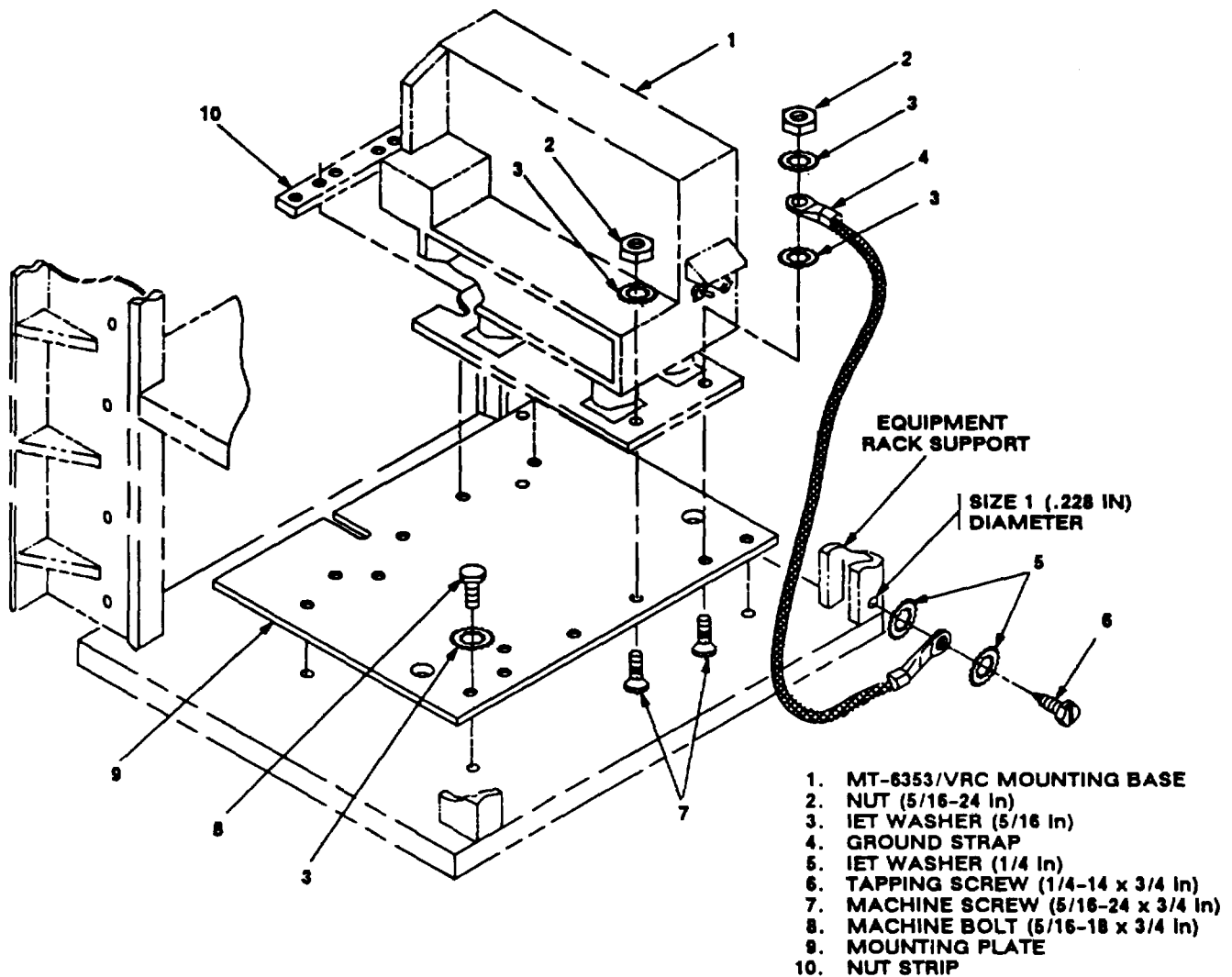9.   MOUNTING PLATE
10.   NUT STRIP

Figure 5-6. MT-63531VRC Mounting Base Installation

5.5   Installation of Mounting Base, Electrical Equipment MT-63531VRC. Continued

ITEM	ACTION	REMARKS

NOTE

Before proceeding, connect and secure CX-13291/VRC control cable and CX-13303/VRC power cable to MT-6353/VRC mounting base. (Refer to section 5.6, step b.)

ITEM	ACTION	REMARKS
b. MT-6353/VRC mounting base (1).	Aline front holes and rear slots with matching hole pattern in mounting plate (9). See figure 5-6.	
c. Two flat-head machine screws (7) and nut strip (10).	Install and secure to rear slots in MT-6353/VRC mounting base (1) and mounting plate (9).	Tools: Phillips screwdriver.
d. Ground strap (4), two flat-head machine screws (7), three IET washers (3) and two nuts (2).	Install and secure to front holes in MT-6353/VRC mounting base (1) and mounting plate (9).	Tools: Phillips screwdriver and 1/2 in wrench.
e. Mounting plate (9).	Place on bottom shelf; then aline mounting holes with matching hole pattern in shelf.	
f. Four machine bolts (8) and four IET washers (3).	Install and secure to mounting plate (9) and shelf.	Tools: 1/2 in socket.
g. Mounting hole for ground strap (4).	Drill a Size 1 (.228 in) diameter hole In equipment rack support. See figure 5-6 for approximate location.	Tools: Electric drill and Size 1 drill bit.
h. Ground strap (4). hex-head tapping screw (6) and two IET washers (5).	Install and secure to hole drilled in step g.	Tools: 7/16 in socket.

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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 5-7 for cable connections. Unused cables should be stowed in appropriate place inside the vehicle.	
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 vehicle.	Install and connect cables. See TM 11-5820-890-20-1 or TM 11-5820890204 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

CABLE ASSEMBLY	FROM			TO		
	CABLE CONN.	UNIT	UNIT CONN.	CABLE CONN.	UNIT	UNIT
CX-13302/VRC (13 FT, 0 IN)	P2	Mounting base	J1	TI: Red (+) T2: Black (-)	Terminal block TB2	1 3
CG-3855/VRC (3 FT, 0 IN)	P1	Roadside antenna base	J1	P2	Roadside connector adapter	
CG-3855/VRC (3 FT, 0 1N)	P1	Curbside antenna base	J1	P2	Curbside connector adapter	
CG-3856/VRC (17 FT, 0 IN)	P1	Roadside connector adapter		P2	RF amplifier (mounting base)	J1
CG-3856/VRC (17 FT, 0 IN)	P1	Curbside connector adapter		P2	RF amplifier (MT-6353/VRC)	J1

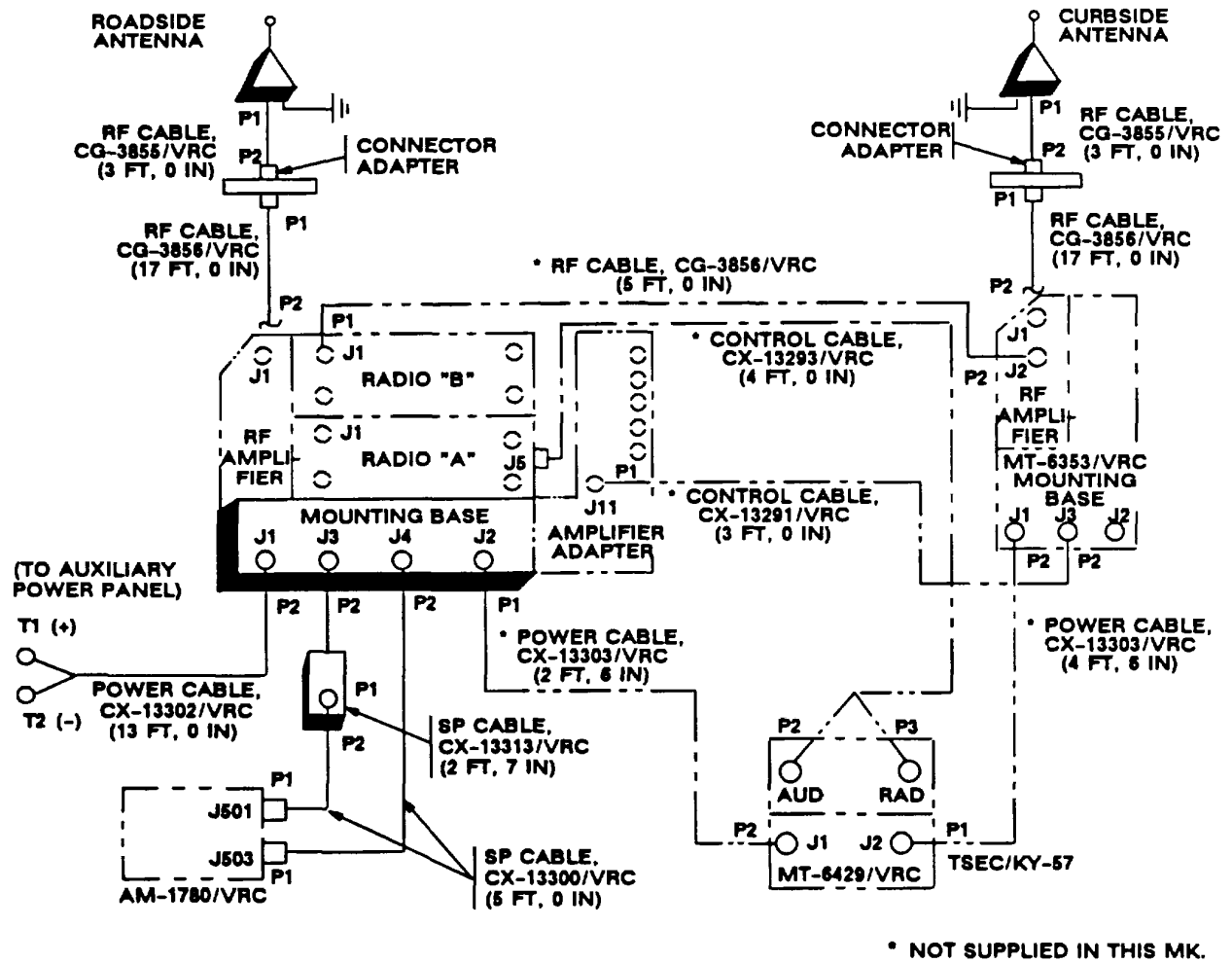**Figure 5-7 (1). Cable Diagram: For ANIVRC-92A**

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CABLE ASSEMBLY CONN.	FROM			TO		
	CABLE CONN.	UNIT	UNIT CONN.	CABLE CONN.	UNIT	UNIT
CX-13313/VRC (2 FT, 7 IN)	P2	Mounting base	J3	P1	CX-13300/VRC (5 FT, 0 IN)	P2
CX-13300/VRC (5 FT, 0 IN)	P2	CX-13313/VRC (2 FT, 7 IN)	P1	P2	AM-17801VRC	J501
CX-13300/VRC (5 FT, 0 IN)	P2	Mounting base	J4	P1	AM-1780/VRC	J503
•CX-13291/VRC (3 FT, 0 IN)	P1	Amplifier-adapter	J11	P2	MT-6353/VRC mounting base	J3
•CG-3856/VRC (5 FT, 0 IN)	P1	Radio 'B"	J1	P2	RF amplifier (MT-6353/VRC)	J2
•CX-13303/VRC (4 FT, 6 IN)	P1	Mounting base	J2	P2	MT-6353/VRC mounting base	J1

•   Not supplied in this MK.

Figure 5-7 (2). Cable Diagram: For ANIVRC-92A Continued

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5.6   Post-installation and Checkout. Continued

* NOT SUPPLIED IN THIS MK.

CABLE ASSEMBLY CONN.	FROM			TO		
	CABLE CONN.	UNIT	UNIT CONN.	CABLE CONN.	UNIT	UNIT
CX-13302/VRC (13 FT, 0 IN)	P2	Mounting base	J1	T1: Red (+) T2: Black (-)	Terminal block TB2	1 3
CG-3855/VRC (3 FT, 0 IN)	P1	Roadside antenna base	J1	P2	Roadside connector adapter	
CG-3855/VRC (3 FT, 0 IN)	P1	Curbside antenna base	J1	P2	Curbside connector adapter	
CG-3856/VRC (17 FT, 0 IN)	P1	Roadside connector adapter	P2		RF amplifier (MT-6352/VRC)	J1

Figure 5-7 (2). Cable Diagram: For ANIVRC-92

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5.6   Post-Installation and Checkout. Continued

CABLE ASSEMBLY CONN.	FROM			TO		
	CABLE CONN.	UNIT	UNIT CONN.	CABLE CONN.	UNIT	UNIT
CG-3856/VRC (17 FT, 0 IN)	P1	Curbside connector adapter	P2		RF amplifier (MT-6353/VRC)	J1
CX-13313/VRC (2 FT, 7 IN)	P2	Mounting base	J3	P1	CX-13300/VRC (5 FT, 0 IN)	P2
CX-13300/VRC (5 FT, 0 IN)	P2	CX-13313/VRC (2 FT, 7 IN)	P1	P2	AM-1780/VRC	J501
CX-13300/VRC (5 FT, 0 IN)	P2	Mounting base	J4	P1	AM-1780/VRC	J503
•CX-13291/VRC (3 FT, 0 IN)	P1	Amplifier-adapter	J11	P2	MT-6353/VRC mounting base	J3
•CG-3856/VRC (5 FT, 0 IN)	P1	Radio "B'	J1	P2	RF amplifier (MT-6353/VRC)	J2
•CX-13303/VRC (4 FT, 6 IN)	P2	MT-6353/VRC mounting base	J1	P1	MT-6429/VRC	J2
•CX-13303/VRC (2 FT, 6 IN)	P1	Mounting base	J2	P2	MT-6429/VRC	J1
CX-132931VRC (4 FT, 0 IN)	P1	Radio 'A'	J5	P2 P3	TSEC/KY-57	AUD RAD
•CG-3856tVRC (5 FT, 0 IN)	P1	Radio 'B'	J1	P2	RF amplifier (MT-6353/VRC)	J2

* Not supplied In this MK.

Figure 5-7 (2). Cable Diagram: For ANIVRC-92 Continued

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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 2530	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	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, Vol. 1)
TM 11-5820-890-20-2	Unit Maintenance Manual (ICOM Radio Sets, Vol. 2)
TM 11-5820-89-20-3	Unit Maintenance Manual, Handbook (ICOM Radio Sets)
TM 11-5820-89020-4	Unit Maintenance Manual (Non-ICOM Radio Sets)
TM 11-5820-89020P	Repair Parts and Special Tools List

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