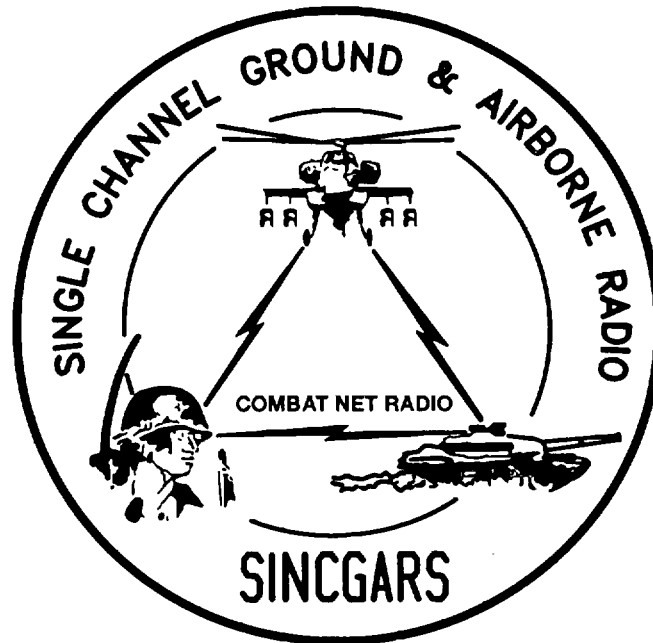**TECHNICAL BULLETIN**

**INSTALLATION INSTRUCTIONS FOR
INSTALLATION KIT,
ELECTRONIC EQUIPMENT, MK-2334/VRC
(NSN 5895-01-285-2348) (EIC: N/A)
TO PERMIT INSTALLATION OF RADIO SET
AN/VRC-92 SERIES
INTO
TRUCK, VAN, EXPANSIBLE, 5 TON, 6x6:
M 820/M934 VFMED**

Approved for public release; distribution is unlimited.

**HEADQUARTERS, DEPARTMENT OF THE ARMY
1 SEPTEMBER 1993**

TECHNICAL BULLETIN

NO. 11-820-890-20-34

**INSTALLATION INSTRUCTIONS FOR
INSTALLATION KIT,
ELECTRONIC EQUIPMENT MK-2330NRC
(NSN 5895-01-285-2348) (EIC: N/A)
TO PERMIT INSTALLATION OF RADIO SET
AN/VRC-92 SERIES
INTO
TRUCK, VAN, EXPANSIBLE, 5 TON, 6x6:
M820/M934 VFMED**

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**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-2334NRC, commonly referred to as the Mounting Kit (MK).  The MK shall be installed into the following type of vehicle(s):

- Truck, Van, Expansible, 5 Ton, 6x6, M820 VFMED
- Truck, Van, Expansible, 5 Ton, 6x6, M934 VFMED

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 vehicles.**

- **This technical bulletin does not establish quantity or types of vehicles 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, TM 11-5820-890-20-4 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 vehicle and correct power is supplied.  Refer to TM 11 -5820-890-20-1 or TM 11 -5820-890-204 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 ANNRC-92 Series are:

- Radio Set ANNRC-92 (for RT-1439NRC)
- Radio Set ANNRC-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 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-2334NRC (MK) contains the items needed to mount Radio Set ANNRC-92A in a Truck, Van, Expansible, 5 Ton, 6x6: M820/M934 VFMED (vehicle). If Radio Set ANNRC-92 is to be installed, communications security equipment (TSEC/KY-57) will need to be installed also; see section 5.5 for information. To install MT-6353NRC mounting base, see section 5.6 for instructions.

**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 3.5 work hours is required. Typical vehicle 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 vehicle downtime.

| ITEM | SECTION | TIME |
|------|---------|------|
| Antenna AS-3900NRC | 5.1 | 1.0 |
| Mounting Base, Electrical Equipment MT-6352NRC | 5.2 | 0.5 |
| Cables | 5.4 | 1.0 |

**4. PREPARATION FOR INSTALLATION.**
This section explains how to prepare the vehicle and MK for installation.

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

**4.1.1 Items to be Removed**. Remove existing ANNRC-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 9-2320-209-20.

**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 4500.15.

**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-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 MAP/MAS 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 | |
| 5965-01-222-1420 | Loudspeaker - Control Unit LS-671/VRC (A3014065-1) | 2 | PAOFFA | 4-1, 6 |
| 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 (1 Not Used) | 5 | PAOZZA | |
| 5995-01-219-7009 | Cable Assembly, Power, Electrical CX-13302/VRC (7 FT, 0 IN) (A3014039-1) | 1 | PAOZZA | 4-1, 12 |
| 5995-01-219-7035 | Cable Assembly, Radio Frequency CG-3855/VRC (18 FT, 0 IN) (A3014031-8) | 2 | PAOZZA | 4-1, 14 |
| 5995-01-225-1657 | Cable Assembly, Special Purpose, Electrical CX-13292/VRC (11 FT, 0 IN) (A3014038-8) | 2 | PAOZZA | 4-1, 13 |
| | Adapter, Antenna - OE-254 (A3018320-1) | 2 | XBOZZA | 4-1, 7 |
| 5306-00-225-9093 | Bolt, Machine (5/16-24 x 1 1/2 in) MS90726-38 | 4 | PAOZZA | |
| | Bracket, Mounting - Antenna (A3050655-1) | 2 | XBOZZA | 4-1, 10 |
| | Bracket, Mounting - Reinforcement (A3014121-1) | 2 | XBOZZA | 4-1, 5 |
| 5340-00-809-1490 | Clamp, Loop (1/4-1/4 in) MS21333-98 | 14 | PAOZZA | |
| 4020-01-341-8795 | Fiber Rope Assembly, Single Leg (A3167672-1) | 2 | PAOZZA | 4-1, 4 |
| 5325-00-682-1854 | Grommet, Nonmetallic (1/4 in) MS35489-65 | 2 | PAOZZA | |
| 5325-00-174-5315 | Grommet, Nonmetallic (1/4 in) MS35489-7 | 2 | PAOZZA | |
| 5965-00-043-3463 | Handset H-250/U | 2 | PAOZZA | 4-1, 3 |

*Table 4-1.  MK Parts List for Installation of Radio Set ANIVRC-92 Series Continued*

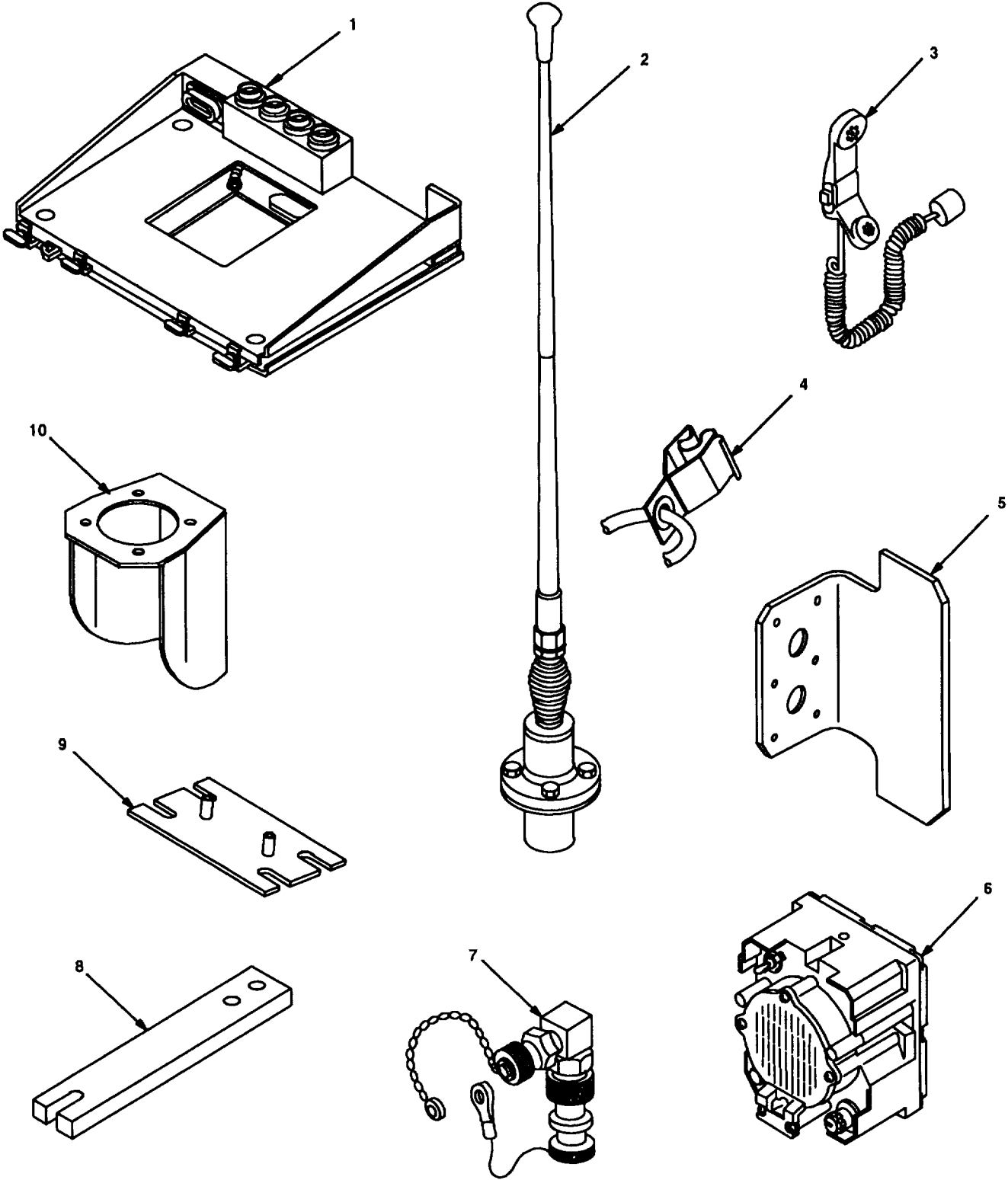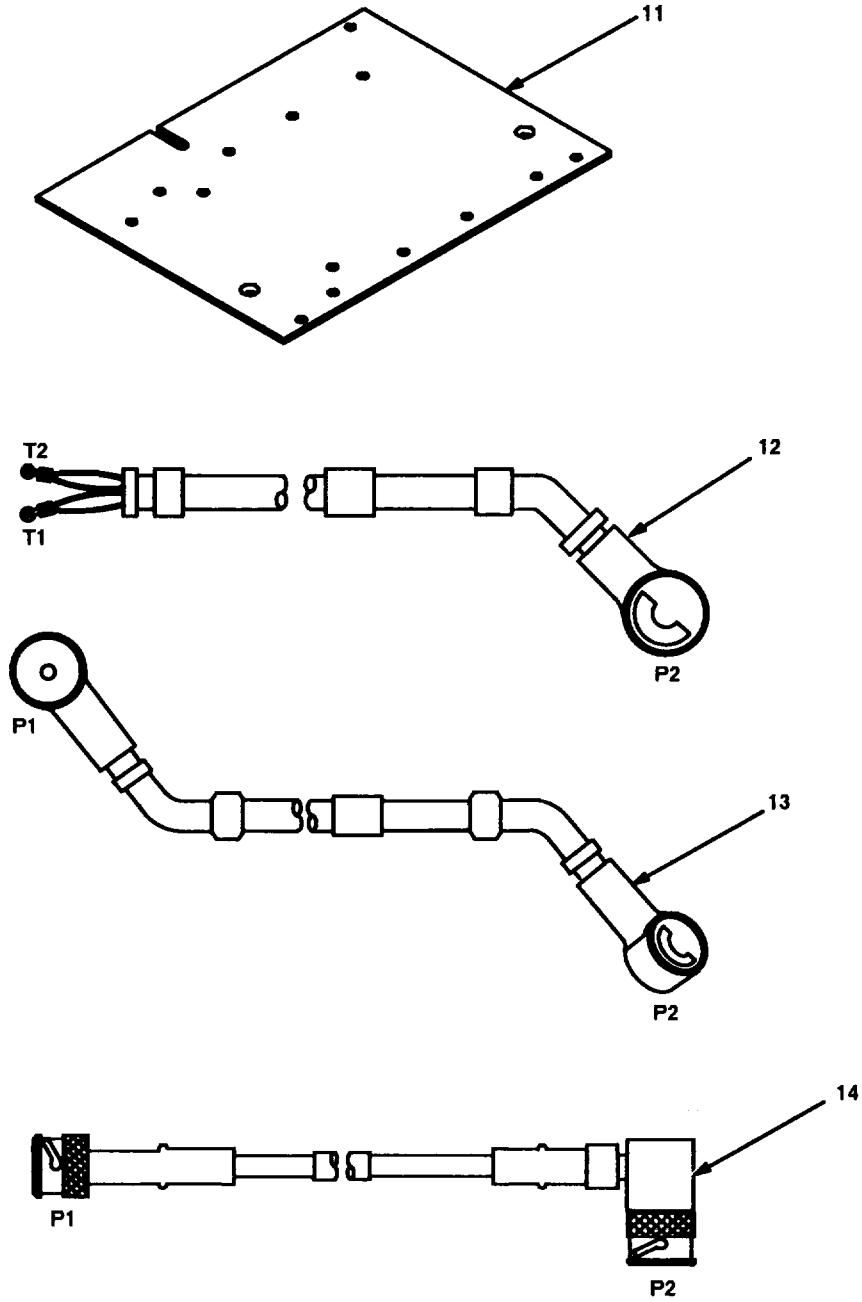| NSN | ITEM DESCRIPTION AND PART NUMBER | QUANTITY IN MK | SMR CODE | FIGURE ITEM NO. |
|---|---|---|---|---|
| 5310-00-880-7746 | Nut, Hexagon (5/16-24 in) MS51968-5 | 9 | PAOZZA | |
| | Plate, Mounting  (A3014089-1) | 1 | XBOZZA | 4-1, 11 |
| | Plate, Mounting - Speaker  (A3014550-1) | 2 | XBOZZA | 4-1, 9 |
| | Screw, Externally-Relieved Body (A3018701-2) | 4 | | |
| 5305-00-984-7353 | Screw, Machine, Flat-Head (5/16-24 x 3/4 in) MS35191-306 | 4 | PAOZZA | |
| 5305-00-432-4253 | Screw, Tapping, Thread Forming, Pan-Head (1/4-14 x 3/4 in) MS51861-67 | 14 | PAOZZA | |
| 5305-01-313-3976 | Screw, Tapping, Thread Forming, Hex-Head (5/16-12 x 1 in) MS51850-108 | 12 | PAOZZA | |
| | Spacer, Plate (A3014054-1) | 2 | XBOZZA | 4-1, 8 |
| 5975-00-111-3208 | Strap, Tiedown, Electrical Components MS3367-5-9 | 10 | PAOZZA | |
| 5310-00-081-4219 | Washer, Flat (5/16 in) MS27183-12 | 8 | PAOZZA | |
| 5310-00-582-5965 | Washer, Lock (1/4 in) MS35338-44 | 14 | PAOZZA | |
| 5310-00-407-9566 | Washer, Lock (5/16 in) MS35338-45 | 4 | PAOZZA | |
| 5310-00-889-2527 | Washer, Lock, Internal/External-Toothed (5/16 in) MS45904-72 | 10 | PAOZZA | |

**5**

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

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

Table 4-2.  Additional Items Required for Installation of Radio Set AN/VRC-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 (2 Not Used) | 6 | PAOZZA | |
| 5310-00-081-4219 | Washer, Flat (5/16 in) MS27183-12 | 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 |
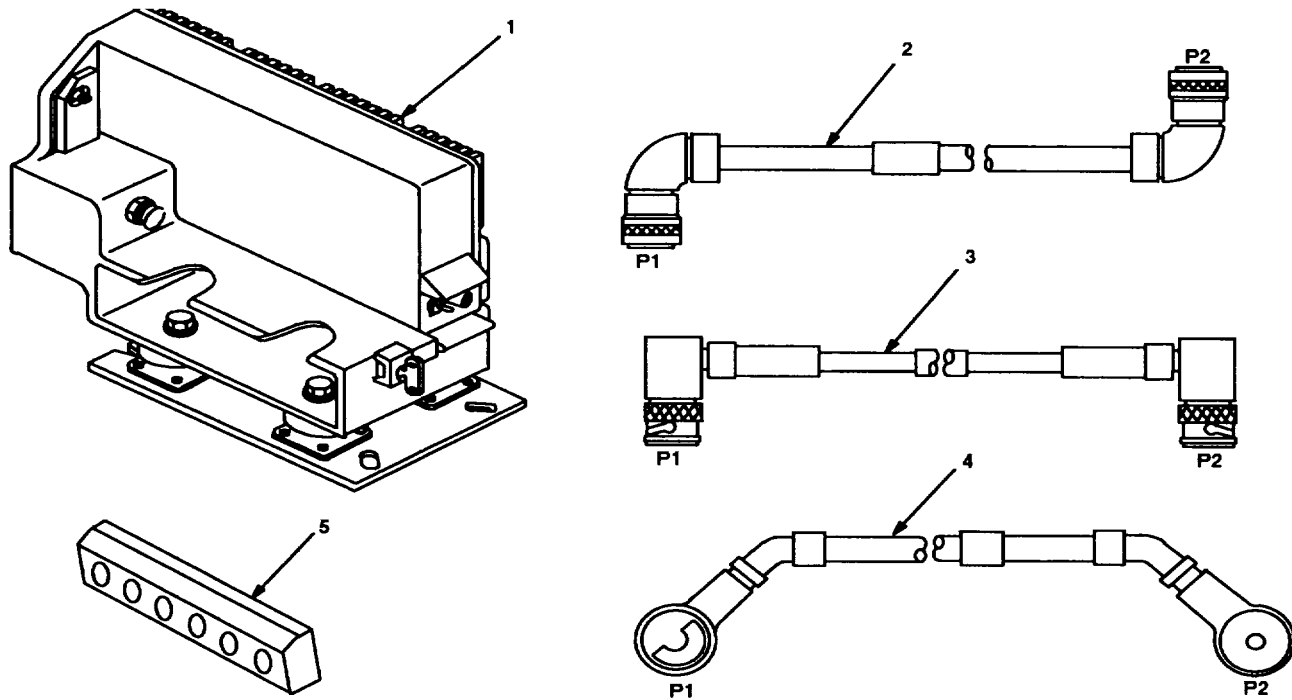


Figure 4-2.  Illustrated Parts List for Table 4-2

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) | 2 | PAOZZA | 4-3, 1 |
| 5995-01-225-1655 | Cable Assembly, Power, Electrical CX-13303/VRC (1 FT, 6 IN) (A3014040-6) | 1 | PAOZZA | 4-3, 3 |
| 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.  TSEC/KY-57 Illustrated Parts 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<br>6850-00-880-7616 | Adhesive-Sealant, Clear, RTV<br>Silicone Compound, MIL-S-8660 |

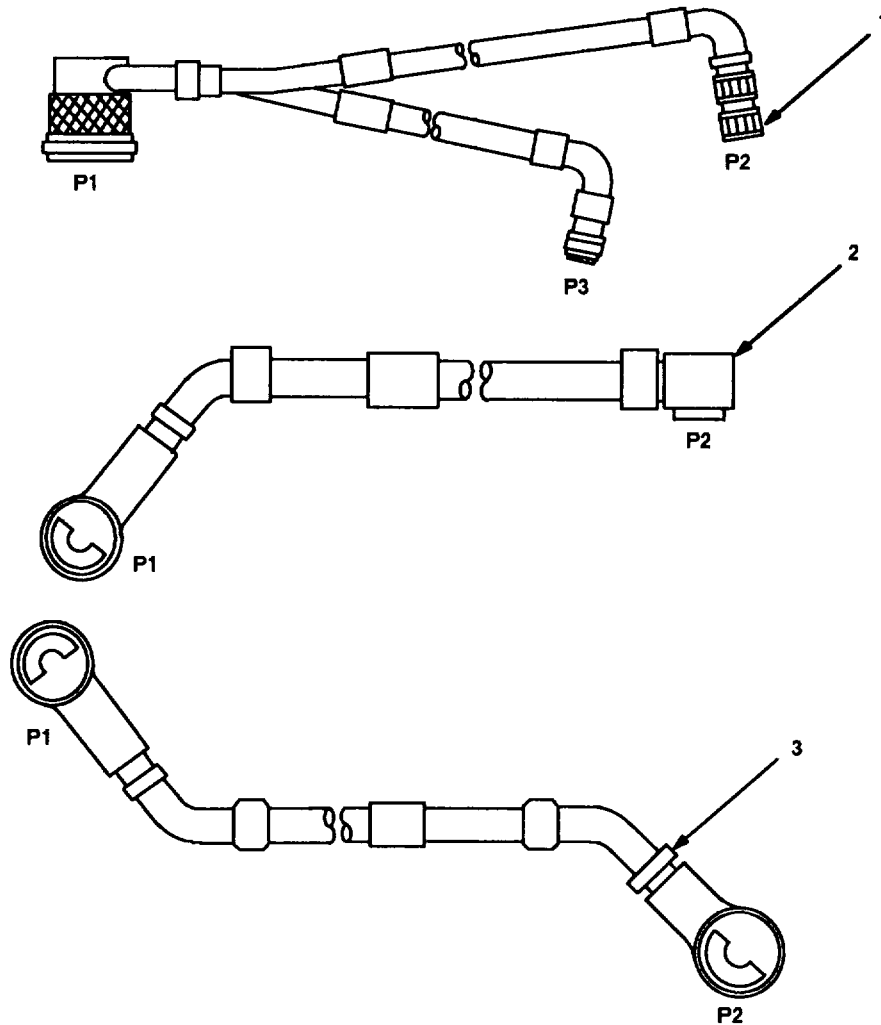**4.4 Tools and Test, Measurement, and Diagnostic Equipment (TMDE) Required**.  The following tools and TMDE are needed for installation.

| NOMENCLATURE | NSN | QUANTITY |
|---|---|---|
| Radio Set* | | 1 |
| 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:     5/16 in | 5120-00-228-9503 | 1 |
|      1/2 in | 5120-00-228-9506 | 1 |
|      9/16 in | 5120-00-228-9507 | 1 |
|      3/4 in | 5120-00-228-9510 | 1 |
| Handle, Socket Wrench | 5120-00-240-5364 | 1 |
|     Socket:   1/2 in | 5120-00-237-0977 | 1 |
|      9/16 in | 5120-00-227-6704 | 1 |
| Electric Drill | 5130-00-889-8994 | 1 |
|   Drill Bits:  3/4 in | | 1 |
|     3/16 in | 5133-00-227-9654 | 1 |
|     11/32 in | 5133-00-227-9664 | 1 |
|     1/4 in | 5133-00-227-9658 | 1 |
|     No.  27 (.144 in) | 5133-00-189-9272 | 1 |
|     21/32 in | | 1 |

* Use radio issued with your vehicle if available.

## 5. INSTALLATION PROCEDURES.

This section describes where and how to install MK items in the vehicle. See figure 5-1 for an overall view of where the MK equipment, as well as radio components, will typically be installed. When installing MK equipment, be sure to read and follow instructions and illustrations carefully. If Radio Set AN/VRC-92 is to be installed, communications security equipment (TSEC/KY-57) will need to be installed also; see section 5.5 for information. To install MT-6353/VRC mounting base, see section 5.6 for instructions.



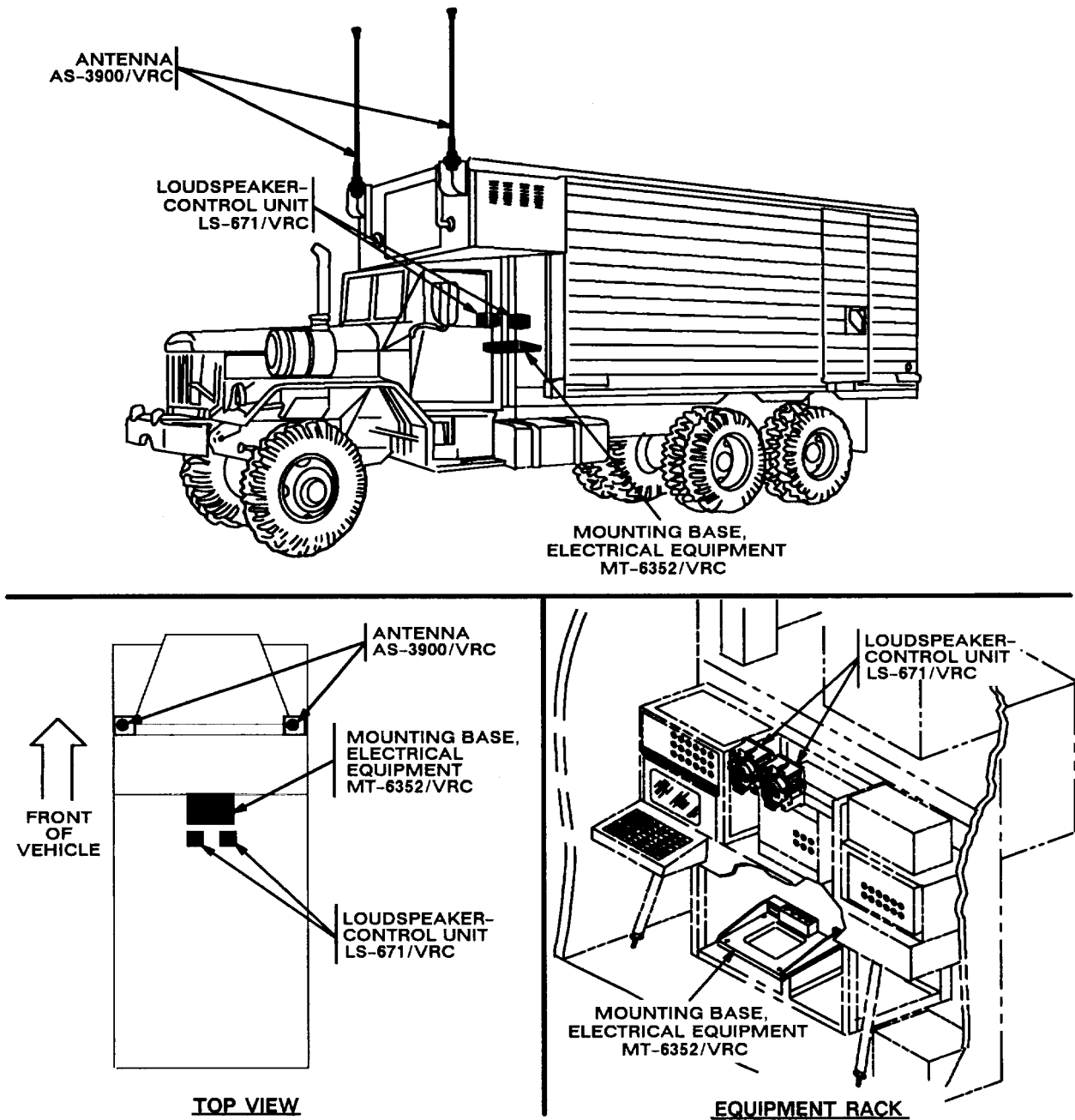*Figure 5-1 (1). MK and Radio Installation: MK Equipment Locations*

**5. INSTALLATION PROCEDURES.** Continued.

INSTALLATION
FOR
AN/VRC-92A

RADIO SET

MT-6353/VRC

MOUNTING
PLATE

SPACER

BOTTOM EQUIPMENT SHELF

INSTALLATION
FOR
AN/VRC-92

RADIO SET

TSEC/KY-57

MT-6353/VRC

MOUNTING
PLATE

SPACER
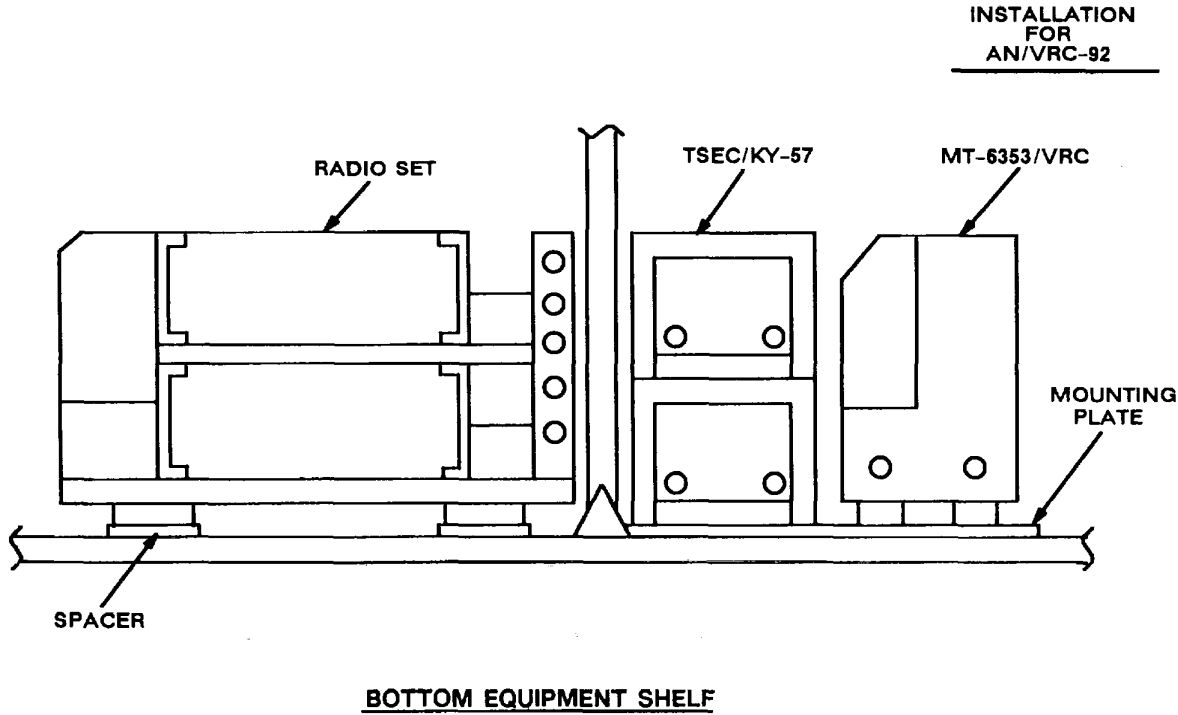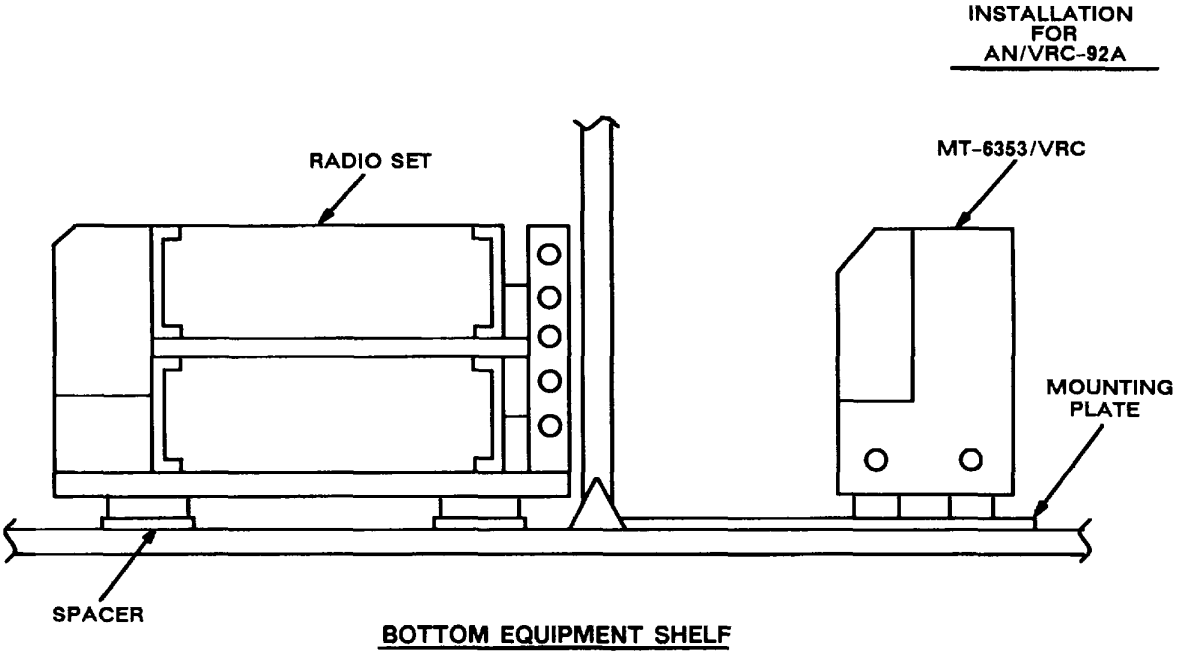
BOTTOM EQUIPMENT SHELF

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

**5.1  Installation of Antenna AS-3900/VRC (antenna).TB  11-5820-890-20-34**

**5.1.1 Installation of Antenna Base**.  Use the following procedure to install both antenna bases.  See figure 5-1 (1) for locations.

| 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.**

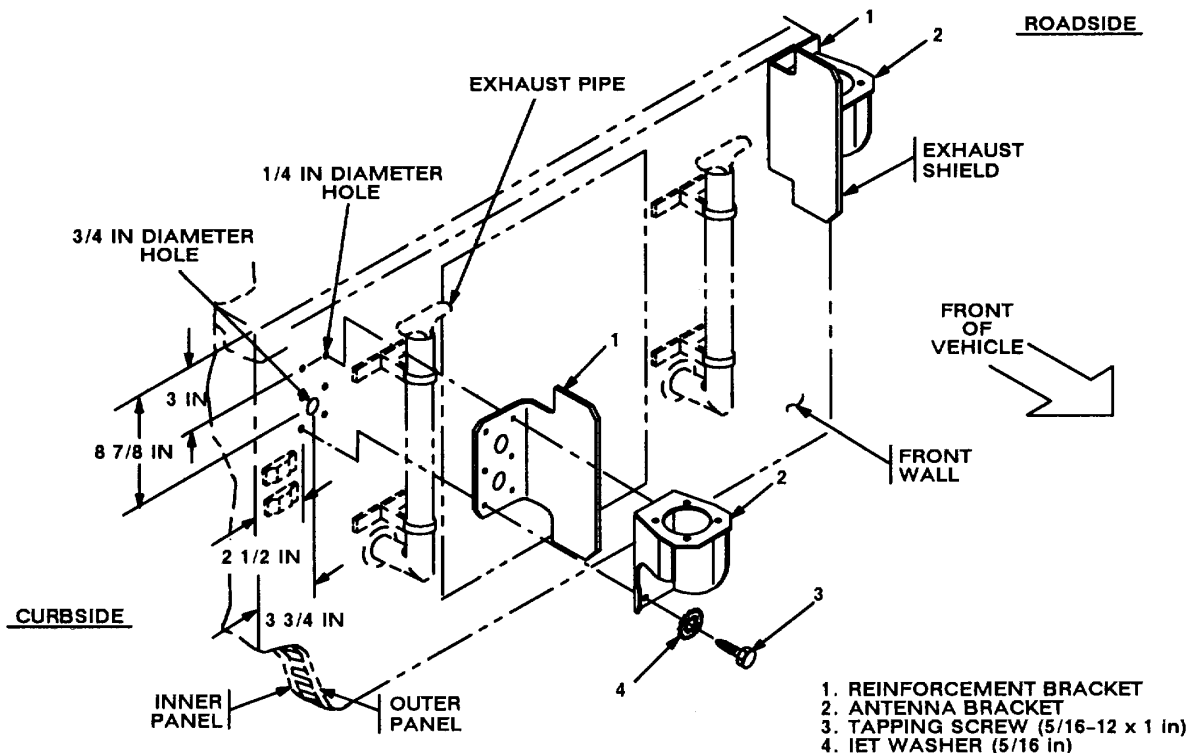| ITEM | ACTION | REMARKS |
|------|--------|---------|
| a. Holes for reinforcement bracket (1) and antenna bracket (2). | Using dimensions shown and antenna bracket as a template, drill six *1/4* in diameter holes (through outer panel) and a 3/4 in diameter hole (through outer and inner panels).  See figure 5-2 (1). | Tools: Electric drill, 1/4 in drill bit and 3/4 in drill bit. |
| b. Antenna bracket (2). | Enlarge six existing mounting holes to 11/32 in diameter. | Tools: Electric drill and 11/32 in drill bit. |
| c. Reinforcement bracket (1), antenna bracket (2), five hex-head tapping screws (3) and five internal/external-toothed (IET) washers (4). | With exhaust shield of reinforcement bracket facing exhaust pipe, install and secure to holes drilled in step a (except bottom right hole). | Tools: 1/2 in socket. |



*Figure 5-2 (1).  Antenna Base Installation: Installing Antenna Bracket*

**5.1.1 Installation of Antenna Base**.  Continued

| ITEM | ACTION | REMARKS |
|------|--------|---------|
| d. Gasket (4). | Place on antenna bracket (5) and aline with mounting holes.  See figure 5-2 (2). | |
| e. Antenna base (1). | Place on top of gasket (4) and antenna bracket (5).  Aline mounting holes. | |
| f. Four cap screws (2), eight IET washers (3) and four nuts (7). | Install and secure to antenna base (1) and antenna bracket (5). | Tools: 9/16 in socket and 9/16 in wrench. |
| g. Ground strap (10), two IET washers (8) and hex-head tapping screw (9). | Install and secure to right bottom hole in antenna bracket (5), reinforcement bracket (6) and front wall. | Tools: 1/2 in socket. |
| h. OE-254 antenna adapter (14), nut (13), two electrical covers (12), pan-head machine screw (11), lock washer (15) and nut (16). | Install and secure to mounting holes in antenna bracket (5).  See figure 5-2 (2), detail A. | Tools: 3/4 in wrench, 5/16 in wrench and Phillips screwdriver. |
| | If required, drill a No.  27 (.144 in) diameter hole and 21/32 in diameter hole using dimensions shown. | Tools: Electric drill, No.  27 and 21/32 in drill bits. |



DETAIL A

1. ANTENNA BASE
2. CAP SCREW (3/8–16 x 1 3/4 in)
3. IET WASHER (3/8 in)
4. GASKET
5. ANTENNA BRACKET
6. REINFORCEMENT BRACKET
7. NUT (3/8–16 in)
8. IET WASHER (5/16 in)
9. TAPPING SCREW (5/16–12 x 1 in)
10. GROUND STRAP
11. MACHINE SCREW
12. ELECTRICAL COVER
13. NUT
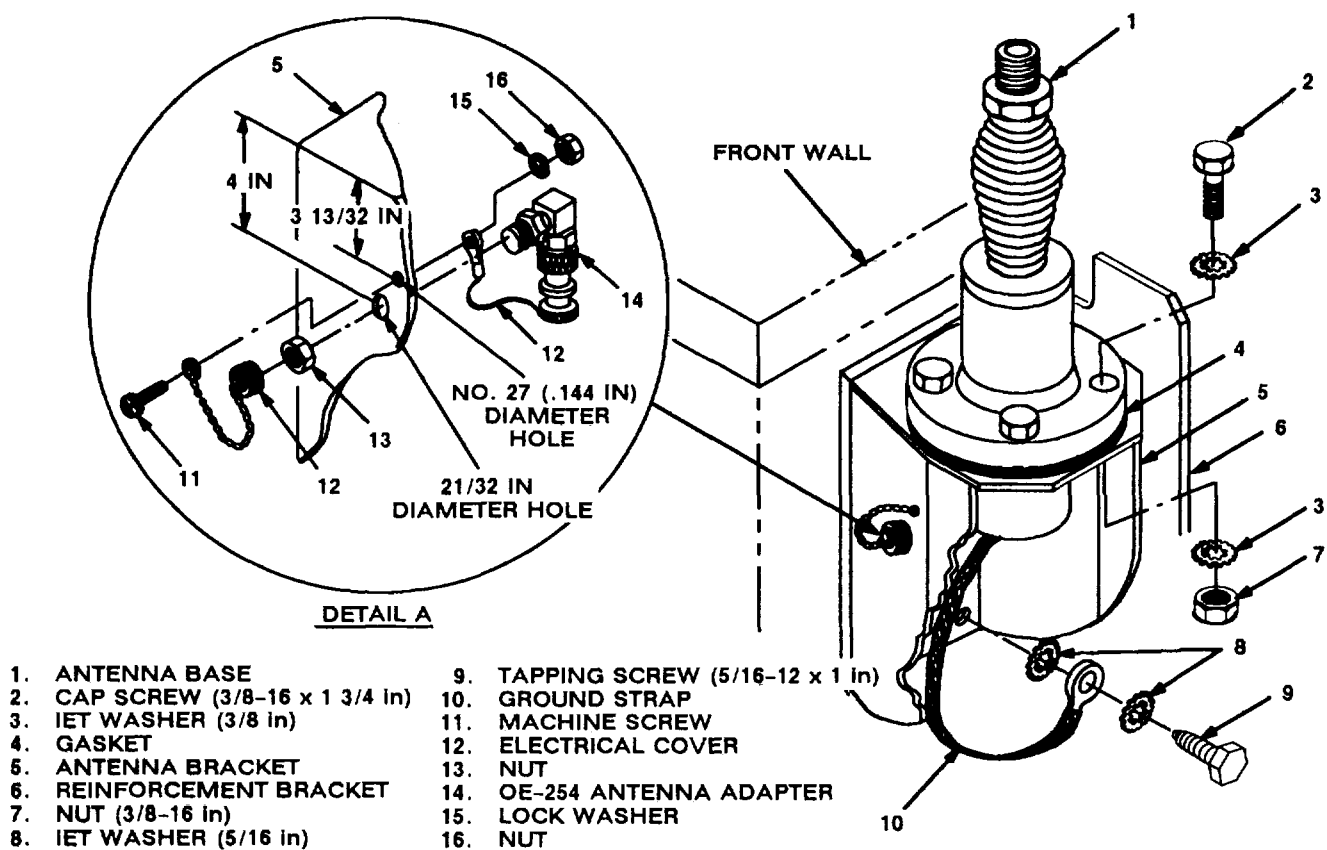14. OE–254 ANTENNA ADAPTER
15. LOCK WASHER
16. NUT

*Figure 5-2 (2).  Antenna Base Installation: Installing Antenna Base and OE-254 Adapter*

**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.<br><br>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. | |
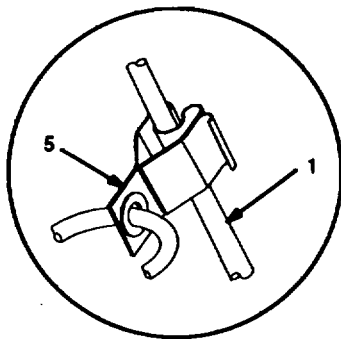


DETAIL B
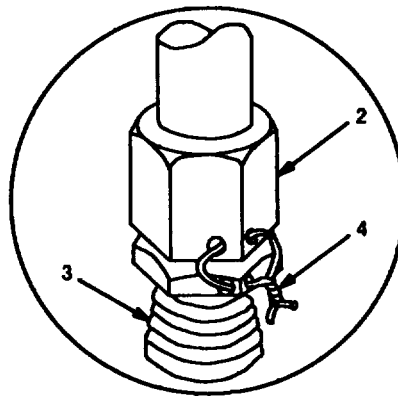
DETAIL A

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 equipment rack shelf should be removed before installing the mounting base.   See figure 5-4 and perform the following steps.



1.  MOUNTING BASE
2.  PLATE SPACER
3.  THUMBSCREW
4.  RIM CLENCHING CLAMP
5.  lET WASHER (5/16 in)
6.  NUT (5/16-24 in)
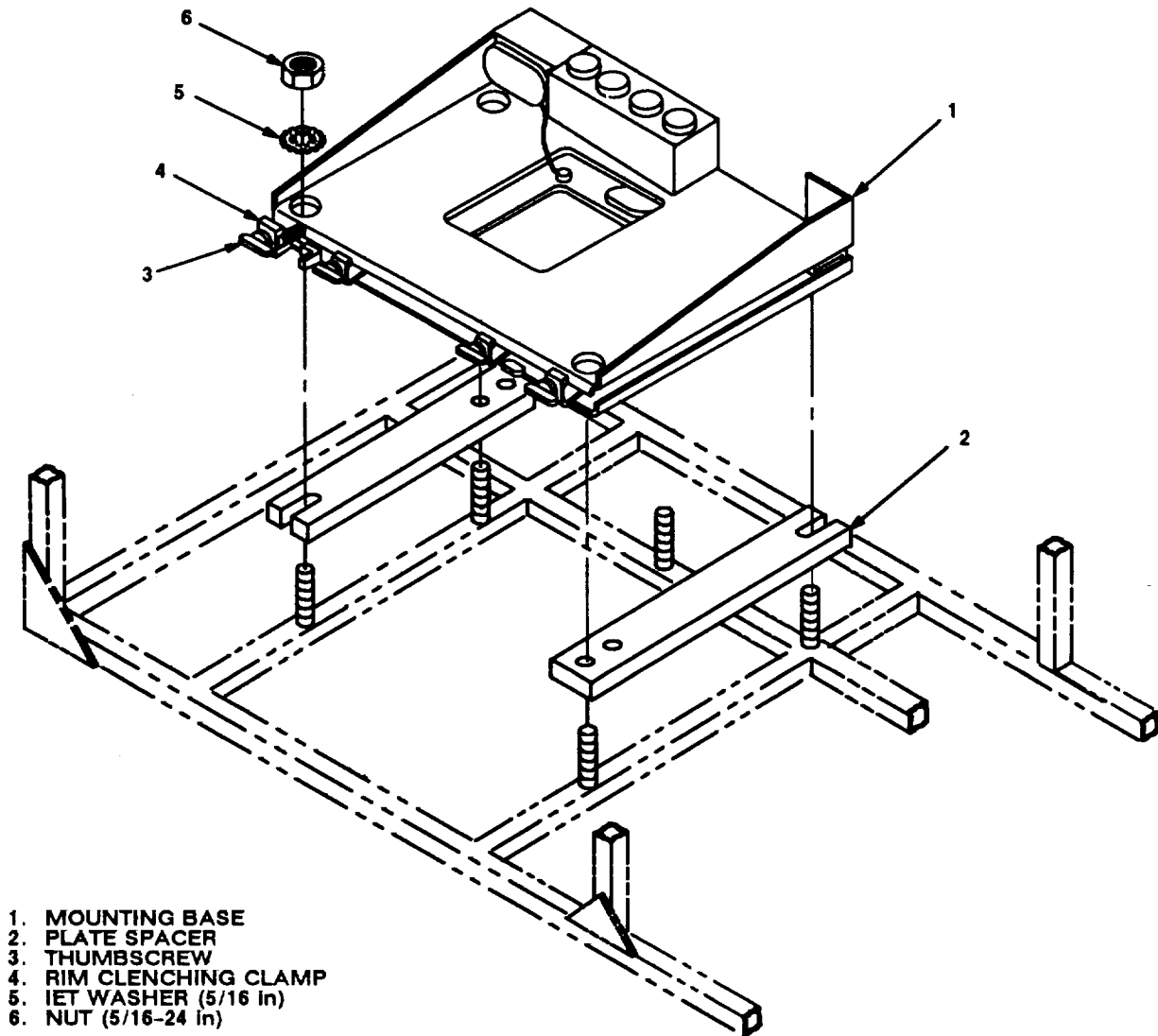
*Figure 5-4.  Mounting Base Installation: Bottom Equipment Rack Shelf*

16

**5.2 Installation of Mounting Base, Electrical Equipment MT-63521VRC (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. Two plate spacers (2). | Place on bottom equipment rack shelf over existing studs.  See figure 5-4. | |
| b. Two outer thumbscrews (3). | Turn ccw until both sets of threads have cleared center of holes. | |
| c. Mounting base (1). | Place over plate spacers and existing studs. | |
| d. Four nuts (6) and four IET washers (5). | Install and secure to mounting base (1), plate spacer (2) and shelf. | Tools: 1/2 in socket. |
| e. Two outer thumbscrews (3). | Tighten and secure to rim clenching clamps (4) and mounting base (1). | |

<div align="center">17</div>

**5.3 Installation of Loudspeaker - Control Unit LS-671/VRC (speaker)**.  Use the following procedure to install both speakers.  See figure 5-1 (1) for locations.

| ITEM | ACTION | REMARKS |
|---|---|---|
| a.  Mounting holes for mounting plate (8). | Using dimensions shown and mounting plate as a template,  drill two 11/32 in diameter holes through top frame support in equipment rack.  See figure 5-5. | Tools: Electric drill and 11/32 in drill bit. |
| b.  Mounting plate (8). | Aline bottom slots over holes drilled in step a. | |
| c.  Two machine bolts (4), four flat washers (3), two lock washers (2) and two nuts (1). | Install and secure to mounting plate (8) and frame support. | Tools: 1/2 in socket and 1/2 in open/box wrench. |
| d.  Speaker (7). | Place on mounting plate (8). | |
| e.  Two externally-relieved body screws (6). | Thread through speaker (7) and secure to mounting plate (8). | Tools: Flatblade screwdriver. |
| f.  Handset (5). | Connect and secure to speaker (7) connector J2. | |



1. NUT (5/16–24 in)
2. LOCK WASHER (5/16 in)
3. FLAT WASHER (5/16 in)
4. MACHINE BOLT (5/16 – 24 x 1 1/2 in)
5. HANDSET
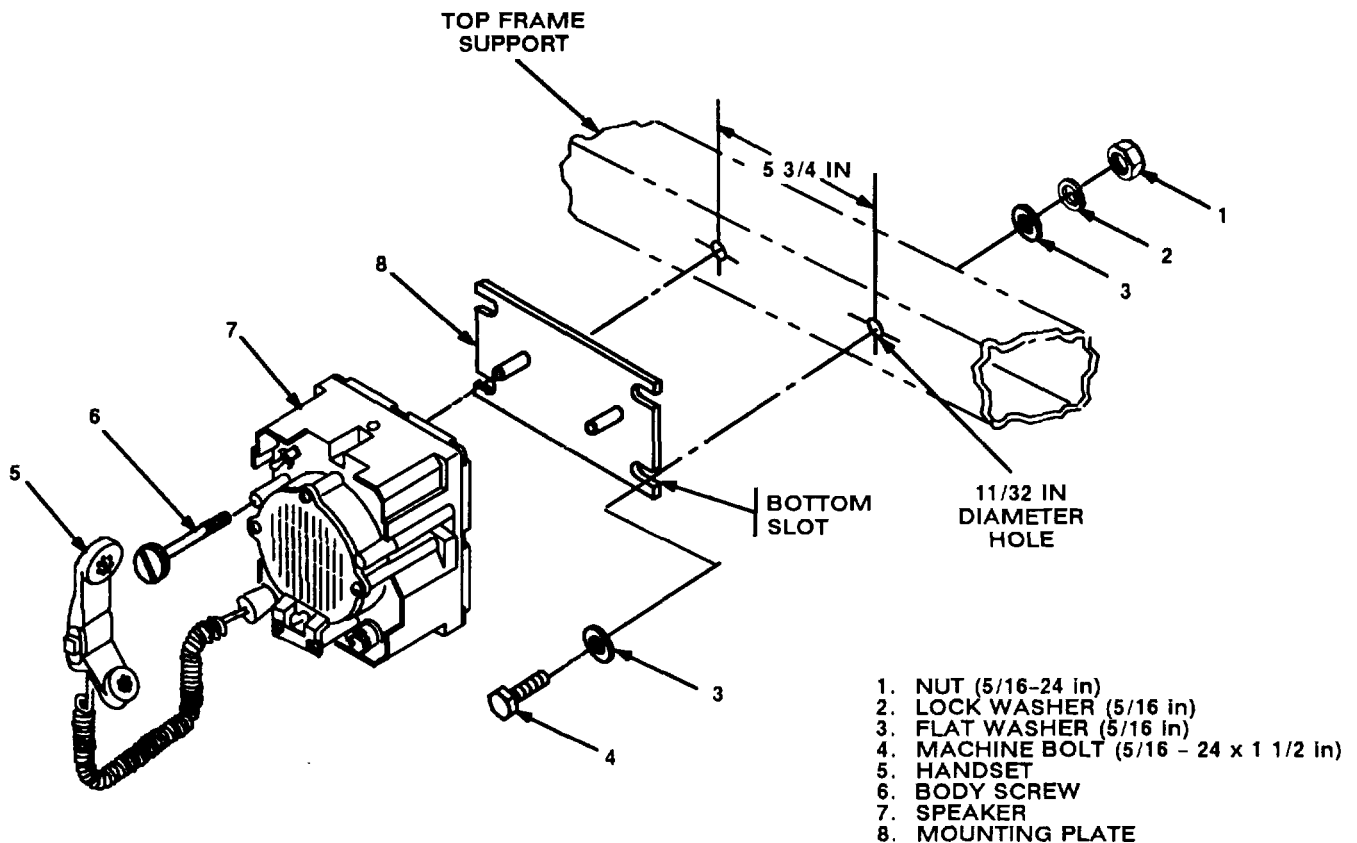6. BODY SCREW
7. SPEAKER
8. MOUNTING PLATE

*Figure 5-5.  Speaker Installation: Equipment Rack*

**5.4 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. RF cable (12) connector P2. | Position on top of mounting base (7). See figure 5-6. | |
| b. RF cable (12). | Route above mounting base (7) through equipment rack and roadside heater/air conditioner compartment to upper front wall. | |
| c. Roadside mounting holes for loop clamps (2). | Drill seven 3/16 in diameter holes in roadside heater/air conditioner compartment and upper front wall. See figure 5-6 for location(s). | Tools: Electric drill and 3/16 in drill bit. |
| d. Seven loop clamps (2), seven pan-head tapping screws (1/4-14 x 3/4 in) and seven lock washers (1/4 in). | Wrap clamps around RF cable (12); then install to holes drilled in step c. | Tools: Phillips screwdriver. |
| e. RF cable (12) connector P1. | Insert through cable hole; then connect and secure to antenna base (1) connector J1. See figure 5-6. | |
| f. Two grommets (13, 14). | Cut through on mark shown; then wrap around RF cable (12) and install to cable hole (in outer and inner panels of front wall). See figure 5-6, detail A. | Thicker grommet installs to outer hole.<br><br>Tools: Pocket knife. |
| g. Speaker cable (10) connector P1. | Connect and secure to speaker (11) connector J1. See figure 5-6. | |
| h. Speaker cable (8) connector P1. | Connect and secure to speaker (9) connector J1. | |
| i. Speaker cables (8, 10). | Route behind equipment rack to rear of mounting base (7). | |
| j. Speaker cable (10) connector P2. | Connect and secure to mounting base (7) connector J3. | |
| k. Speaker cable (8) connector P2. | Connect and secure to mounting base (7) connector J4. | |

**5.4 Installation of Cables.** Continued

1. ANTENNA BASE (ROADSIDE)
2. LOOP CLAMP (1/4–1/4 in)
   TAPPING SCREW (1/4–14 x 3/4 in)
   LOCK WASHER (1/4 in)
3. ANTENNA BASE (CURBSIDE)
4. RF CABLE, CG-3855/VRC (18 FT, 0 IN)
5. TIEDOWN STRAP
6. POWER CABLE, CX-13302/VRC (7 FT, 0 IN)
7. MOUNTING BASE
8. SPEAKER CABLE, CX-13292/VRC (11 FT, 0 IN)
9. SPEAKER (RIGHT)
10. SPEAKER CABLE, CX-13292/VRC (11 FT, 0 IN)
11. SPEAKER (LEFT)
12. RF CABLE, CG-3855/VRC (18 FT, 0 IN)
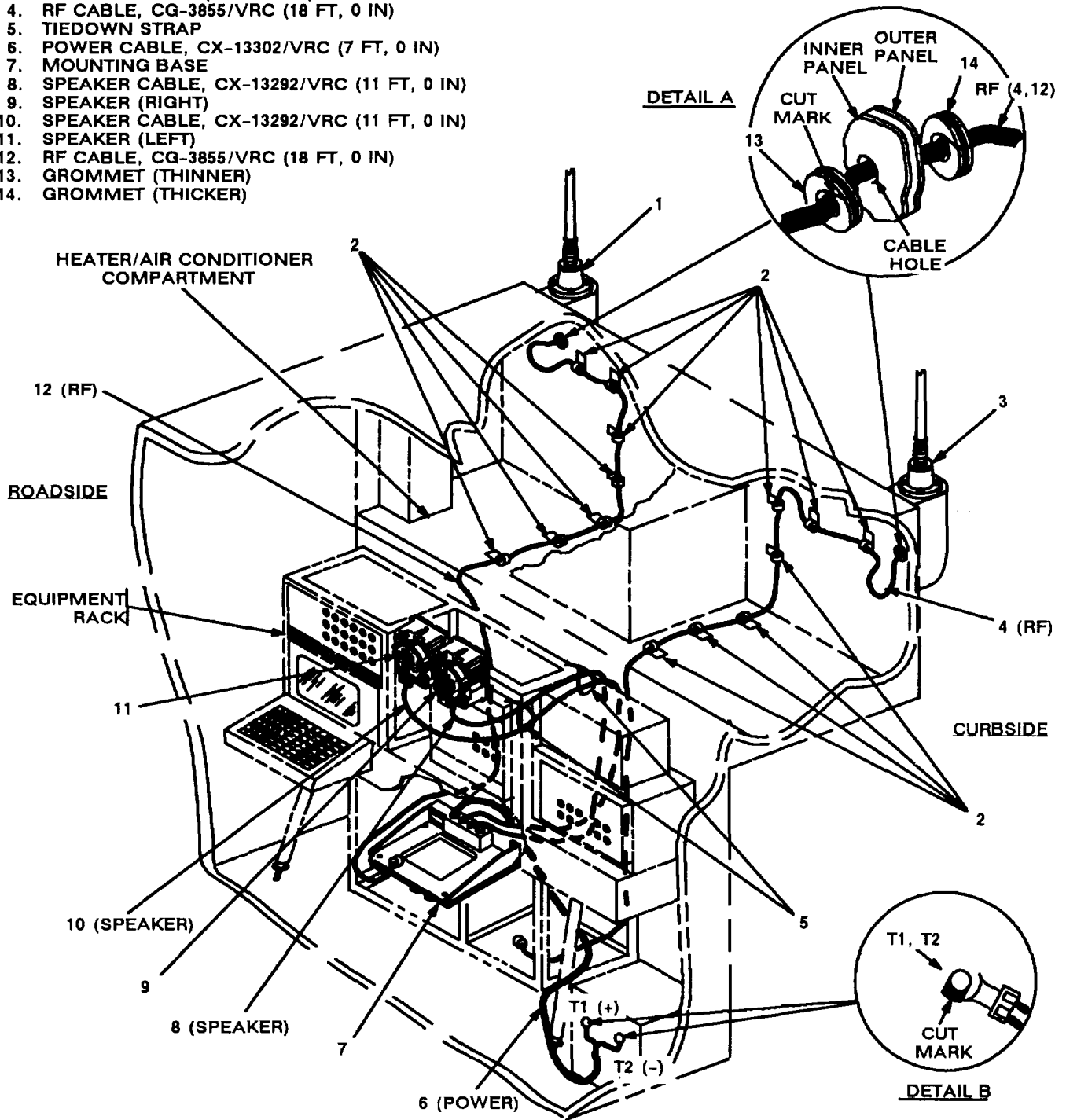13. GROMMET (THINNER)
14. GROMMET (THICKER)

DETAIL A

DETAIL B

*Figure 5-6. Cable Installation: RF, Speaker and Power Cabling*

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**5.4 Installation of Cables**.  Continued

| ITEM | ACTION | REMARKS |
|------|--------|---------|
| l.  Two tiedown straps (5). | Wrap around speaker cables (8, 10) and install loosely to equipment rack. See figure 5-6 for location(s). | |
| m.  RF cable (4) connector P2. | Position on bottom right shelf of equipment rack.  See figure 5-6 | |
| n.  RF cable (4). | Route up wall behind equipment rack and through curbside heater/air conditioner compartment to upper front wall. | |
| o.  Curbside mounting holes for loop clamps (2). | Drill seven 3/16 in diameter holes in curbside heater/air conditioner compartment and upper front wall.  See figure 5-6 for location(s). | Tools: Electric drill and 3/16 in drill bit. |
| p.  Seven loop clamps (2), seven pan-head tapping screws (1/4-14 x 3/4 in) and seven lock washers (1/4 in). | Wrap clamps around RF cable (4); then install to holes drilled in step o. | Tools: Phillips screwdriver. |
| q.  RF cable (4) connector P1. | Insert through cable hole; then connect and secure to antenna base (3) connector J1.  See figure 5-6. | |
| r.  Two grommets (13, 14). | Cut through on mark shown; then wrap around RF cable (4) and install to cable hole (in outer and inner panels of front wall).  See figure 5-6, detail A. | Thicker grommet installs to outer hole.<br><br>Tools: Pocket knife. |
| s.  Power cable (6) terminal leads: T1 (red) and T2 (black). | If required, cut through and remove marked area shown; then connect and secure to battery posts.  See figure 5-6, detail B and figure 5-6. | Red (+) secures to positive post.<br>Black (-) secures to negative post. |
| t.  Power cable (6). | Route behind equipment rack to rear of mounting base (7). | |
| u.  Adhesive-sealant. | Apply to all previously installed grommets and drilled holes. | |
| v.  Power cable (6) connector P2. | Connect and secure to mounting base (7) connector J1.  See figure 5-6. | |

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**5.5 Installation of MK-24991VRC.** When required, install MK-2499/VRC (TSEC/KY-57 security equipment) in the location shown in figure 5-1 (2). Refer to section 5.7 for connection of cables.

**5.6 Installation of Mounting Base, Electrical Equipment MT-63531VRC**. If Radio Set AN/VRC-92 or AN/VRC-92A is authorized, use the following instructions to install MT-6353/VRC mounting base in the location shown in figure 5-1 (2). Refer to section 5.7 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    Place on mounting plate (5); then
   base (1).                        aline mounting holes. See figure 5-7.



1. MOUNTING BASE
2. NUT (5/16-24 in)
3. IET WASHER (5/16 in)
4. MACHINE SCREW (5/16-24 x 3/4 in)
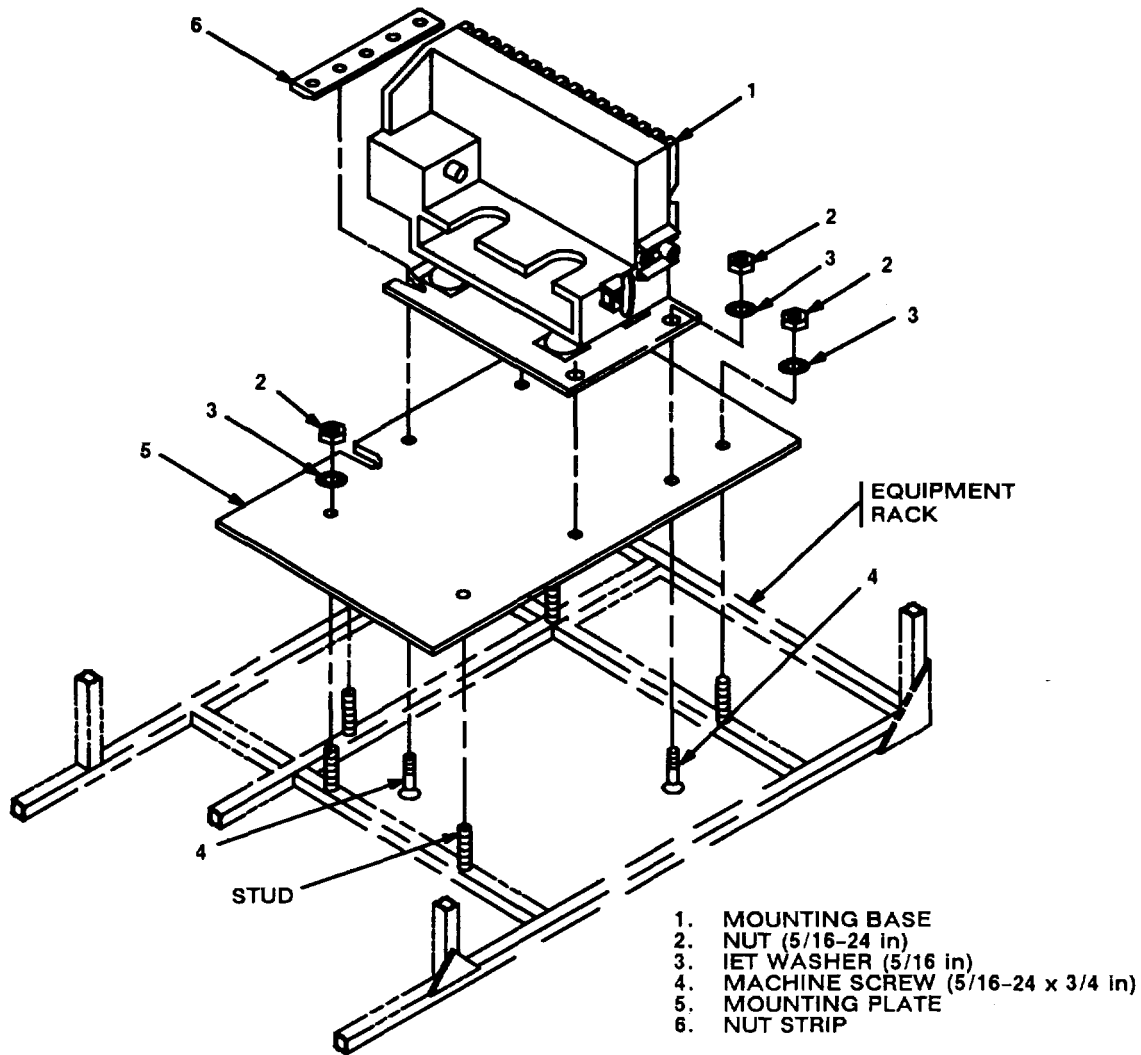5. MOUNTING PLATE
6. NUT STRIP

*Figure 5-7. MT-6353/VRC Mounting Base Installation*

**5.6  Installation of Mounting Base, Electrical Equipment MT-6363/VRC**.  Continued

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

<div align="center">

**NOTE**
</div>

**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 5.7, step b.)**

| ITEM | ACTION | REMARKS |
|------|--------|---------|
| b.  MT-6353/VRC mounting base (1). | Aline front holes and rear slots with matching holes in mounting plate (5). See figure 5-7. | |
| c.  Two flat-head machine screws (4) and nut strip (6). | Install and secure to rear slots in MT-6353/VRC mounting base (1) and mounting plate (5). | Tools: 1/2 in open/box wrench. |
| d.  Two flat-head machine screws (4), two IET washers (3) and two nuts (2). | Install and secure to front holes in MT-6353/VRC mounting base (1) and mounting plate (5). | Tools: 1/2 in socket or 1/2 in open/box wrench. |
| e.  Mounting plate (5). | Place on bottom right shelf of equipment rack; then aline holes over existing studs. | |
| f.  Five nuts (2) and five IET washers (3). | Install and secure to mounting plate (5) and existing studs. | Tools: 1/2 in socket. |

**5.7 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 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 11-5820-890-20-4 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. | |
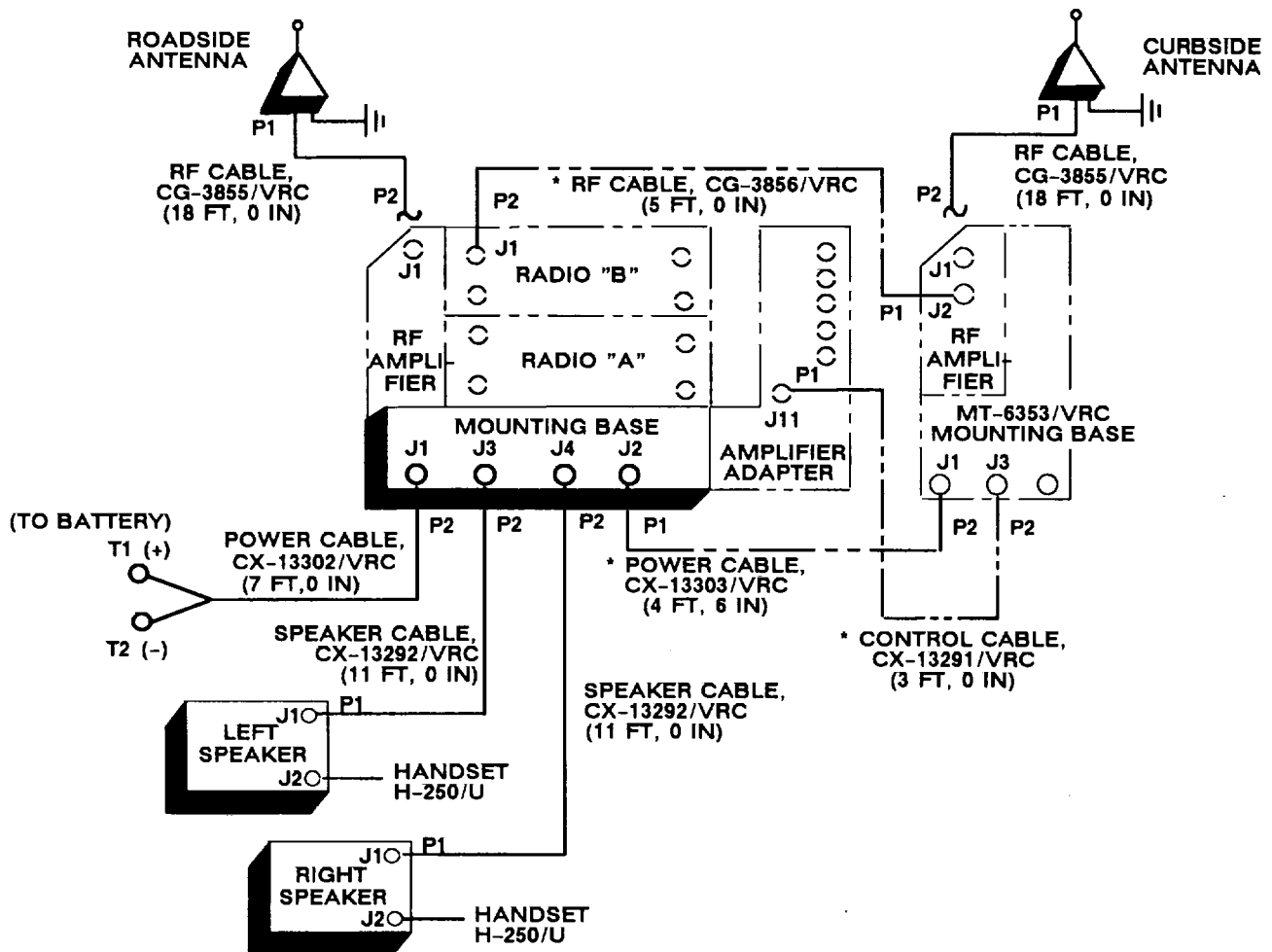
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**23**
</div>

**5.7 Post-Installation and Checkout.** Continued



* NOT SUPPLIED IN THIS MK.

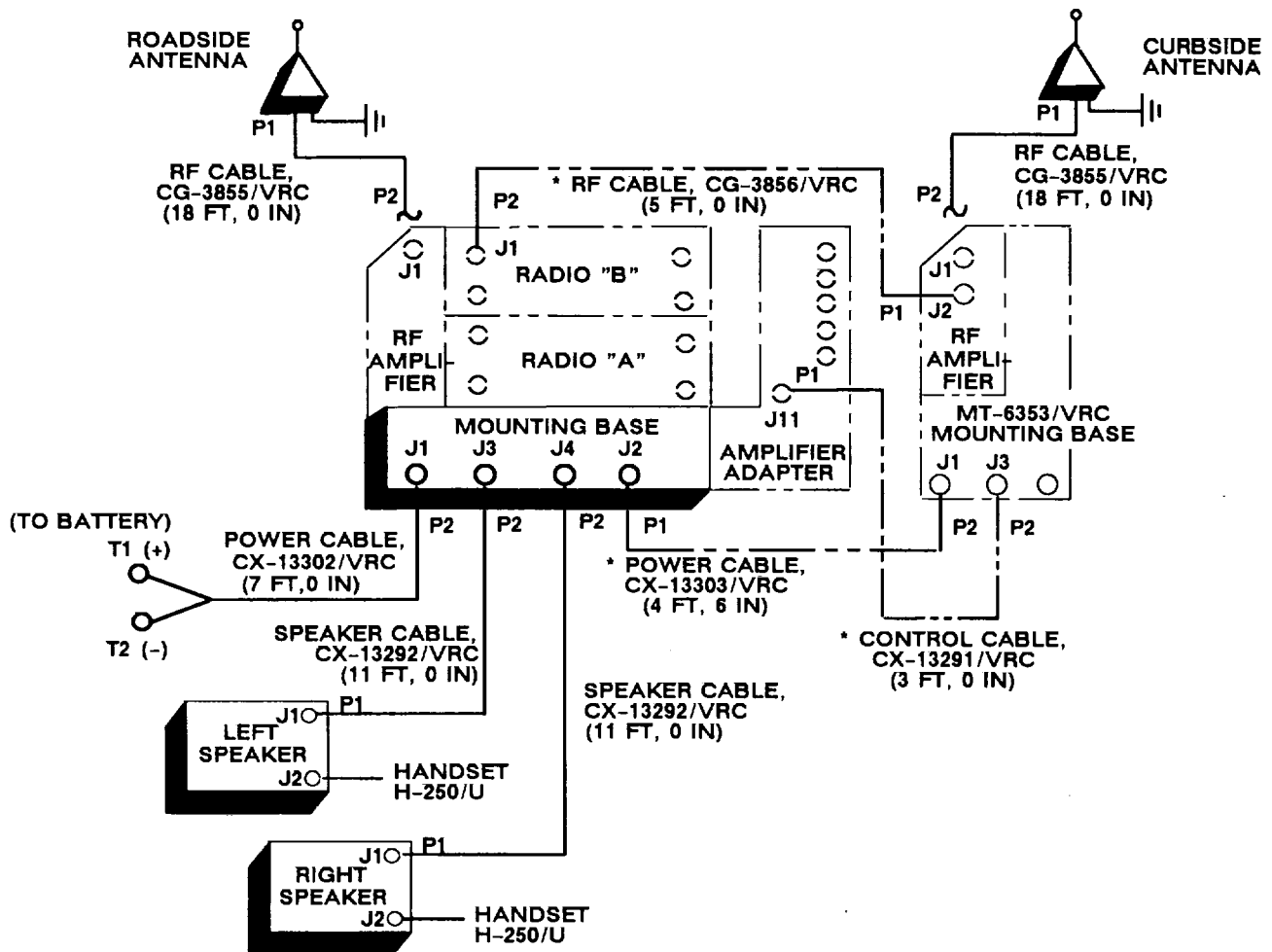| CABLE ASSEMBLY | FROM | | | TO | | |
|---|---|---|---|---|---|---|
| | CABLE CONN. | UNIT | UNIT CONN. | CABLE CONN. | UNIT | UNIT CONN. |
| CX-13302/VRC (7 FT, 0 IN) | P2 | Mounting base | J1 | T1:Red (+) T2: Black (-) | Battery | (+) post (-) post |
| CX-13292/VRC (11 FT, 0 IN) | P2 | Mounting base | J3 | P1 | Speaker (left) | J1 |
| CX-13292/VRC (11 FT, 0 IN) | P2 | Mounting base | J4 | P1 | Speaker (right) | J1 |
| CG-3855/VRC (18 FT, 0 IN) | P2 | RF amplifier | J1 | P1 | Roadside antenna base | J1 |

*Figure 5-8 (1). Cable Diagram: For ANIVRC-92A*

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**5.7 Post-Installation and Checkout**. Continued

| CABLE ASSEMBLY | FROM | | | TO | | |
|---|---|---|---|---|---|---|
| | CABLE CONN. | UNIT | UNIT CONN. | CABLE CONN. | UNIT | UNIT CONN. |
| CG-3855/VRC (18 FT, 0 IN) | P2 | RF amplifier (MT-6353/VRC) | J1 | P1 | Curbside antenna base | J1 |
| * 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) | P2 | Radio "B" | J1 | P1 | 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 5-8 (1). Cable Diagram: For AN/VRC-92A Continued*

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**5.7 Post-Installation and Checkout**. Continued



* NOT SUPPLIED IN THIS MK.

| CABLE ASSEMBLY | FROM | | | TO | | |
|---|---|---|---|---|---|---|
| | CABLE CONN. | UNIT | UNIT CONN. | CABLE CONN. | UNIT | UNIT CONN. |
| CX-13302/VRC (7 FT, 0 IN) | P2 | Mounting base | J1 | TI: Red (+) T2: Black (-) | Battery | (+) post (-) post |
| CX-13292/VRC (11 FT, 0 IN) | P2 | Mounting base | J3 | P1 | Speaker (left) | J1 |
| CX-13292/VRC (11 FT, 0 IN) | P2 | Mounting base | J4 | P1 (right) | Speaker | J1 |

*Figure 5-8 (2). Cable Diagram: For AN/VRC-92*

**5.7 Post-Installation and Checkout.** Continued

| CABLE ASSEMBLY | FROM | | | TO | | |
| --- | --- | --- | --- | --- | --- | --- |
| | CABLE CONN. | UNIT | UNIT CONN. | CABLE CONN. | UNIT | UNIT CONN. |
| CG-3855/VRC (18 FT, 0 IN) | P2 | RF amplifier | J1 | P1 | Roadside antenna base | J1 |
| CG-3855/VRC (18 FT, 0 IN) | P2 | RF amplifier (MT-6353/VRC) | J1 | P1 | Curbside antenna base | J1 |
| *CX-13303/VRC (1 FT, 6 IN) | P1 | MT-6429/VRC "A" | J2 | P2 | MT-6429/VRC "B" | J1 |
| *CX-13303/VRC (2 FT, 6 IN) | P1 | Mounting base | J2 | P2 | MT-6429/VRC "A" | J1 |
| *CX-13293/VRC (4 FT, 0 IN) | P1 | Radio "B" | J5 | P2 P3 | TSEC/KY-57 "B" | AUD RAD |
| *CX-13293/VRC (4 FT, 0 IN) | P1 | Radio "A" | J5 | P2 P3 | TSEC/KY-57 "A" | AUD RAD |
| * 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) | P2 | Radio "B" | J1 | P1 | RF amplifier (MT-6353/VRC) | J2 |
| * CX-13303/VRC (4 FT, 6 IN) | P1 | MT-6429/VRC "B" | J2 | P2 | MT-6353/VRC mounting base | J1 |

* Not supplied in this MK.

*Figure 5-8 (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 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 -5820-890-1 0-1 | 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 11-5820-890-20-3 | Unit Maintenance Manual handbook (ICOM Radio Sets) |
| TM 11-5820-890-20-4 | Unit Maintenance Manual (Non-ICOM Radio Sets) |
| TM 11 -5820-890-20P | Repair Parts and Special Tools List |

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