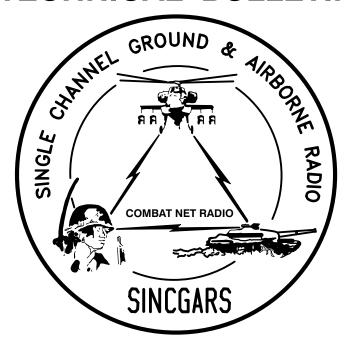
TECHNICAL BULLETIN



INSTALLATION INSTRUCTIONS FOR
INSTALLATION KIT, ELECTRONIC EQUIPMENT,
MK-2384/VRC (NSN 5895-01-216-9747) (EIC: N/A)
TO PERMIT INSTALLATION OF RADIO SET:
AN/VRC-89/91/92 SERIES AND
AN/VRC-87/88/90 SERIES
IN A
CARRIER, COMMAND POST, LIGHT TRACKED, M577

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HEADQUARTERS, DEPARTMENT OF THE ARMY

1 AUGUST 1999

NO. 11-5820-890-20-63

INSTALLATION INSTRUCTIONS FOR INSTALLATION KIT, ELECTRONIC EQUIPMENT, MK-2384/VRC (NSN 5895-01-216-9747) (EIC: N/A) TO PERMIT INSTALLATION OF RADIO SET: AN/VRC-89/91/92 SERIES AND AN/VRC-87/88/90 SERIES IN A CARRIER, COMMAND POST, LIGHT TRACKED, M577

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.

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^{*}This manual supersedes TB 11-5820-890-20-63, dated 1 September 1993

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0.1 SCOPE.

This technical bulletin provides Installation Instructions for Installation Kit, Electronic Equipment, MK-2384/VRC, commonly referred to as the Mounting Kit (MK). The MK shall be installed into the following type of vehicle(s):

Carrier, Command Post, Light Tracked, M577

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 vehicle 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-89/91/92 Series is:

Radio Set AN/VRC-89/91/92 Series (for RT-1523(C)/U)

Included in the Radio Set AN/VRC-87/88/90 Series is:

Radio Set AN/VRC-87/88/90 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-2384/VRC (MK) contains the items needed to mount Radio Set: AN/VRC- 89/91/92 Series and AN/VRC-87/88/90 Series in a Carrier, Command Post, Light Tracked, M577 (vehicle).

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 4.0 work hours is required. Typical vehicle downtime is 4.5 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-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 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 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 9-2300-257-20.
- **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-89/91/92 Series and AN/VRC-87/88/90 Series. Refer to Table 4–2 and figure 4–2 to identify additional items required to install Radio Set AN/VRC-92 Series.
- 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-89/91/92 Series and AN/VRC-87/88/90 Series

NSN	ITEM DESCRIPTION AND PART NUMBER	QUANTITY IN MK	SMR CODE	FIGURE, ITEM NO.
5985–01–297–2971 5305–00–847–1159	Antenna AS-3900/VRC (A3017899-1) Screw, Cap, Hexagon (3/8-16 x 1 3/4 in)	3 12	PAOOFA PAOZZA	4–1, 2
5310-00-913-8881	MS35307–365 Nut, Hexagon (3/8–16 in) MS51971–3 (Not Used)	12	PAOZZA	
5310-00-061-1258	Washer, Lock, Internal/External–Toothed (3/8 in) MS45904–76 (8 Not Used)	24	PAOZZA	
5310-00-889-2527	Washer, Lock, Internal/External–Toothed (5/16 in) MS45904–72	6	PAOZZA	
5306-00-225-9086	Bolt, Machine (5/16–24 x 5/8 in) MS90726–31 (1 Not Used)	3	PAOZZA	
5330-01-205-2864	Gasket (A3013655–1)	3	PAOZZA	
5965-01-222-1420	Loudspeaker–Control Unit LS–671/VRC (A3014065–1)	2	PAOFFA	4–1, 6
5965-00-876-2375	Loudspeaker, Permanent Magnet LS-454/U	1	PAOZZA	4–1, 7
5975–01–188–8873	Mounting Base, Electrical Equipment MT–6352/VRC (A3013367–1)	2	PAOOFA	4–1, 1
5306-00-225-9089	Bolt, Machine (5/16–24 x 1 in) MS90726–34	10	PAOZZA	
5310-00-889-2527	Washer, Lock, Internal/External–Toothed (5/16 in) MS45904–72	20	PAOZZA	
5310-00-880-7746	Nut, Hexagon (5/16–24 in) MS51968–5	10	PAOZZA	
5995–01–219–1847	Cable Assembly, Power, Electrical CX-13306/VRC (3 FT, 0 IN) (A3014043-2)	1	PAOZZA	4–1, 8
5995–01–219–1845	Cable Assembly, Power, Electrical CX-13306/VRC (8 FT, 0 IN) (A3014043-4)	1	PAOZZA	4–1, 8
5995–01–219–7024	Cable Assembly, Radio Frequency CG–3856/VRC (4 FT, 0 IN) (A3014032–2)	1	PAOZZA	4–1, 9
5995–01–219–7025	Cable Assembly, Radio Frequency CG–3856/VRC (5 FT, 0 IN) (A3014032–3)	1	PAOZZA	4–1, 9
5995-01-219-7026	Cable Assembly, Radio Frequency CG–3856/VRC (9 FT, 0 IN) (A3014032–4)	1	PAOZZA	4–1, 9
5995-01-219-7028	Cable Assembly, Radio Frequency CG-3856/VRC (17 FT, 0 IN) (A3014032-6)	2	PAOZZA	4–1, 9
5995-01-303-4951	Cable Assembly, Special Purpose, Electrical CX-13313/VRC (2 FT, 7 IN) (A3018360-1)	1	PAOZZA	4–1, 10
5995-01-219-4932	Cable Assembly, Special Purpose, Electrical CX-13300/VRC (5 FT, 0 IN) (A3014044-3)	1	PAOZZA	4–1, 11
5995-01-259-9283	Cable Assembly, Special Purpose, Electrical CX–13292/VRC (8 FT, 0 IN) (A3014038–12)	2	PAOZZA	4–1, 11

Table 4–1. Parts List for Installation of Radio Set: AN/VRC-89/91/92 Series and AN/VRC-87/88/90 Series. Continued

NSN	ITEM DESCRIPTION AND PART NUMBER	QUANTITY IN MK	SMR CODE	FIGURE, ITEM NO.
5985-01-226-8171	Adapter, Antenna - OE-254 (A3014066-1)	2	PAOZZA	4–1, 5
5306-00-225-8496	Bolt, Machine (5/16–18 x 5/8 in) MS90725–31	3	PAOZZA	
5340-00-809-1490	Clamp, Loop (1/4–1/4 in) MS21333–98	1	PAOZZA	
5340-00-067-3868	Clamp, Loop (1/4–5/16 in) MS21333–109	4	PAOZZA	
5340-00-984-8540	Clamp, Loop (1/2-1/4 in) MS21333-102	1	PAOZZA	
5340-00-088-1254	Clamp, Loop (5/8–1/4 in) MS21333–104	4	PAOZZA	
5340-00-809-1500	Clamp, Loop (1-1/4 in) MS21333-107	4	PAOZZA	
5340-00-400-0002	Clamp, Loop (1 1/4–1/4 in) MS9350–19	7	PAOZZA	
5340-00-702-2848	Clamp, Loop (1–3/8 in) MS21333–128	1	PAOZZA	
4020-01-341-8795	Fiber Rope Assembly, Single Leg (A3167672–1)	3	PAOZZA	4–1, 4
5965-00-043-3463	Handset H-250/U	3	PAOZZA	4–1, 3
5305-01-191-3640	Screw, Tapping, Hex-Head (1/4–20 x 5/8 in) MS51851–85	14	PAOZZA	
5305-01-090-3012	Screw, Tapping, Hex-Head (5/16–18 x 3/4 in) MS51851–106	2	PAOZZA	
5975-00-111-3208	Strap, Tiedown, Electrical Components MS3367–5–90	30	PAOZZA	
5310-00-582-5965	Washer, Lock (1/4 in) MS35338-44	14	PAOZZA	
5310-00-407-9566 5305-00-068-0502	Washer, Lock (5/16 in) MS35338-45 Screw, Cap, Hexagon (1/4-20 x 3/4 in)	5	PAOZZA	
	MS90725-6	1	PAOZZA	
5310-00-880-7746	Nut, Hexagon (5/16–24 in) MS551968–5	1	PAOZZA	
5310-00-889-2527	Washer, Lock, Internal/External Toothed (5/16 in)			
F240 00 000 0500	MS45904–72	3	PAOZZA	
5310-00-889-2528	Washer, Lock, Internal/External Toothed (1/4 in) MS45904–68	2	PAOZZA	
5306-00-225-9089	Bolt, Machine (5/16-24 x 1 in) MS90726-34	1	PAOZZA	
	Lead, Electrical (5 in) A3013552-10	1	XBOZZA	

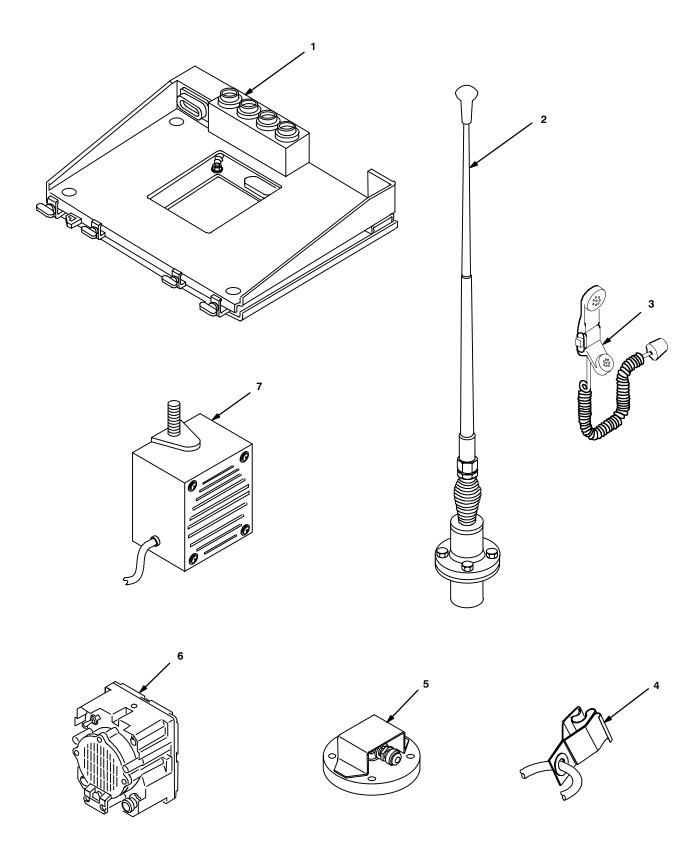
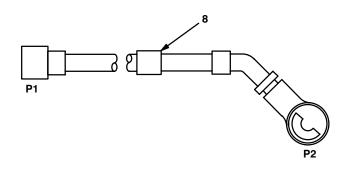
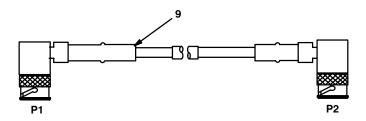
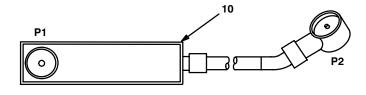


Figure 4-1 (1). MK Illustrated Parts List







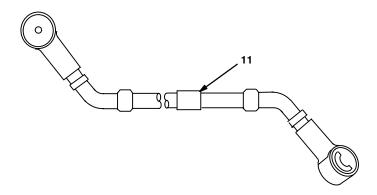


Figure 4-1 (2). MK Illustrated Parts List

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	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	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

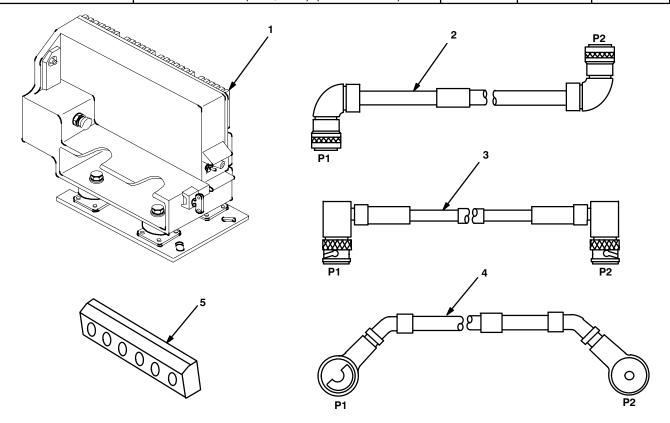


Figure 4-2. Illustrated Parts List for Table 4-2

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

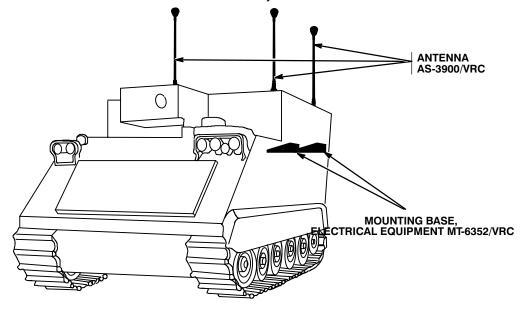
4.4 Tools and Test, Measurement and Diagnostic Equipment (TMDE) Required. The following tools and TMDE are needed for installation.

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 1/2 in 9/16 in	5120-00-228-9505 5120-00-228-9506 5120-00-228-9507	1 1 1
Handle, Socket Wrench Socket: 7/16 in 1/2 in 9/16 in	5120-00-240-5364 5120-00-227-6703 5120-00-237-0977 5120-00-227-6704	1 1 1
Electric Drill Drill Bits: Size L (.413) 11/32 in 13/32 in	5130-00-889-8994 5133-00-262-2160 5133-00-227-9664 5133-00-227-9668	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 vehicle. See figure 5–1 for an overall view of where vehicular 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.



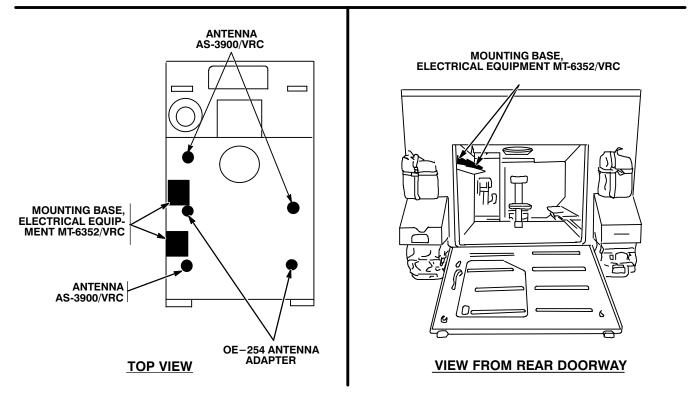
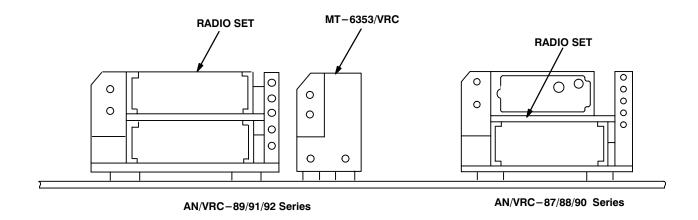


Figure 5-1 (1). MK and Radio Installation: MK Equipment Locations

5. INSTALLATION PROCEDURES. Continued

INSTALLATION FOR AN/VRC -89/91/92 Series AND AN/VRC -87/88/90 Series



ROADSIDE RADIO SHELF

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

5.1 Installation of Antenna AS-3900/VRC (antenna) and OE-254 Antenna Adapter (OE-254 adapter). Use the following procedures to install three antennas and two antenna adapters. See figure 5-1 (1) for locations.

5.1.1 Installation of Antenna Base. Perform steps a thru d to install two roadside antenna bases. Perform steps e thru h to install curbside antenna base.

ITEM	ACTION	REMARKS
1 1 - IV	7.011014	TIEND THE

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).

Apply a thin coat of silicone compound to both sides; then place on port and aline mounting holes. See figure 5–2 (1).

b. Antenna base (3). Place on top of gasket (4) and port; then aline mounting holes.

c. Four cap screws (1) Install and secure to antenna base (3) Tools: 9/16 in socket. and four IET washers and port. (2).

d. Ground strap (5), Install and secure to existing boss on Tools: 1/2 in socket. machine bolt (6) and two IET washers (7).

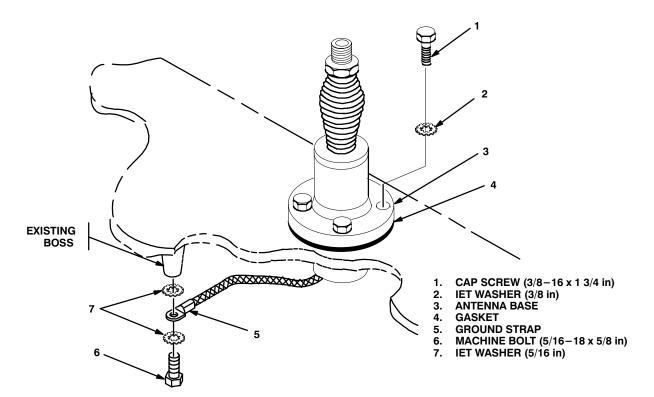


Figure 5-2 (1). Antenna Base Installation: Roadside

5.1.1 Installation of Antenna Base. Continued

	ITEM	ACTION	REMARKS
e.	Gasket (3).	Apply thin coat of silicone compound to both sides. Place on port and aline with mounting holes. See figure 5-2 (2).	
f.	Antenna base (6).	Place on top of of gasket (3) and aline mounting holes.	
g.	Four cap screws (1) and four IET washers (2).	Install and secure to antenna base (1) and port.	Tools: 9/16 in socket.
h.	Ground strap (5), two IET washers (4) and existing bolt.	Install and secure to back of existing work light bracket.	

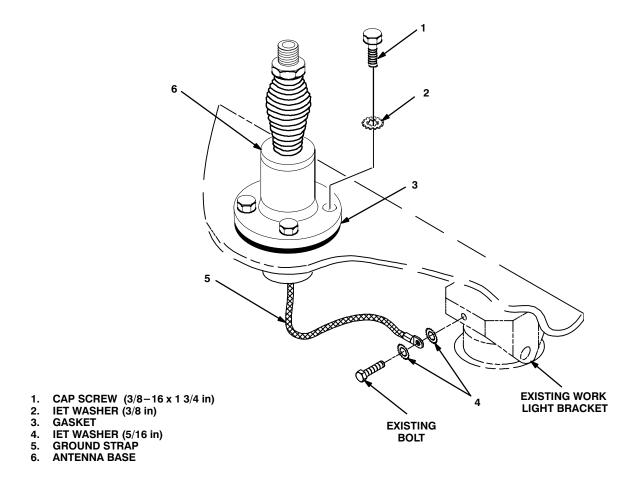


Figure 5-2 (2). Antenna Base Installation: Curbside

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.

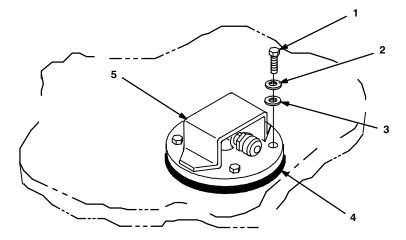
ITEM **ACTION REMARKS** Antenna elements (1, 2). Apply silicone compound to element threads and assemble. See figure 5-3. b. Antenna element (2). Install and hand-tighten to antenna base (3). Lock wire (4). Install to antenna element (2) and antenna base (3). See figure 5-3, detail A. Cut and remove 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. 3 DETAIL B DETAIL A **ANTENNA ELEMENT (UPPER)** 1. 2. ANTENNA ELEMENT (LOWER) **ANTENNA BASE** 3. 4. **LOCK WIRE**

Figure 5-3. Top Antenna Assembly Installation

FIBER ROPE ASSEMBLY

5.1.3 Installation of OE-254 Adapter. Use the following procedure to install two adapters.

	ITEM	ACTION	REMARKS
a.	Gasket (4).	Apply thin coat of silicone compound to both sides. Place over port and aline mounting holes. See figure 5-4.	
b.	OE-254 adapter (5).	Place on top of gasket (4) and aline mounting holes.	
C.	Four cap screws (1), four lock washers (2) and four flat washers (3).	Install and secure to OE-254 adapter (5) and port.	Tools: 9/16 in open/box wrench.



- CAP SCREW (3/8-16 x 1 3/4 in)
 LOCK WASHER (3/8 in)
 FLAT WASHER (3/8 in)
 GASKET

- OE-254 ADAPTER

Figure 5-4. OE-254 Adapter Installation

5.2 Installation of Mounting Bases, 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 shelf should be removed before installing the mounting base(s). See figure 5-5 to perform the following steps.

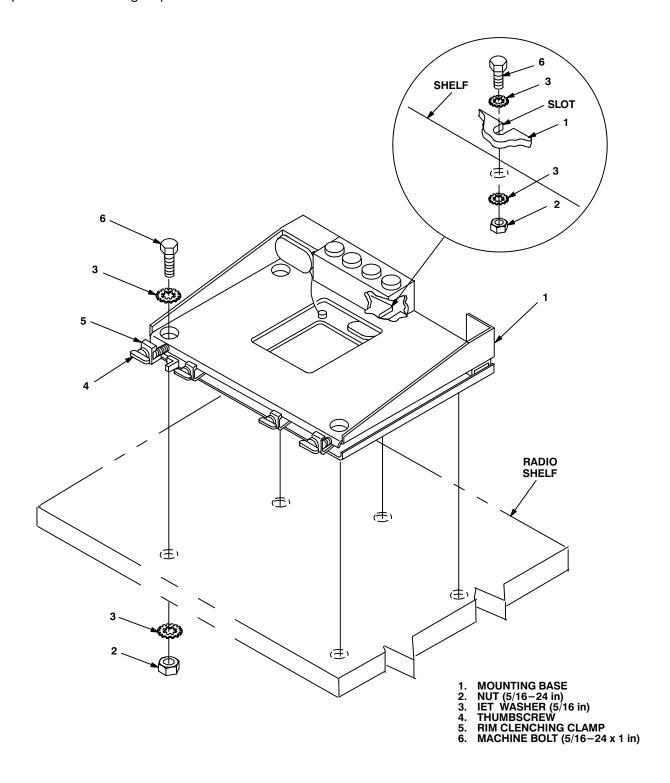


Figure 5-5. Mounting Base Installation: Roadside Radio Shelf

5.2 Installation of Mounting Bases, 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.

Deinstall and retain. Discard existing Existing shelf support. washers from mounting hardware.

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 radio shelf around the existing mounting holes that mate with left front and rear mounting holes of mounting base (1). Remove a 1" square area of paint on existing ceiling mount around the existing mounting hole that mates with top existing mounting hole in shelf support. Remove a 1" square area of paint on one side on top and both sides on bottom of existing shelf support around existing mounting holes that mate with existing ceiling mount on top and existing radio shelf on bottom. Remove a 1" square area of paint on existing radio shelf around the existing mounting holes that mate with bottom of shelf support. Remove the paint from existing wall boss and rear of shelf. Clean the paint removed areas and apply a thin coat of conductive anti-seize compound.

Tools: Electric grinder or equivalent.

c. Lead, electrical, one machine bolt (1/4-20 x3/4 in) and two IET washers (1/4 in)

Install to first existing wall boss forward of

shelf.

Tools: 7/16 in socket.

Tools: Electric drill and

d. Rear of existing shelf.

Drill one 11/32 in diameter hole through cleared center of holes.

11/32 in drill bit.

e. Lead, electrical, one machine bolt (5/16-24 x 1 in) three IET washers (5/16 in) and one nut (5/16-24 in).

Install and secure to hole drilled in step d.

Tools: 1/2 in socket and 1/2 in open/box wrench.

Existing shelf support.

Reinstall to shelf using existing nuts and bolts and four IET washers (3/8 in).

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

	ITEM	ACTION	REMARKS
g.	Mounting base (1).	Place on roadside radio shelf. See Figure 5-5.	
h.	Two outer thumbscrews (4).	Turn ccw until both sets of threads have cleared center of holes.	
i.	Mounting base (1). (4).	Align four holes and rear slot with matching hole pattern in shelf.	
j.	Five machine bolts (6), ten internal/external—toothed (IET) washers (3) and five nuts (2).	Install and secure to mounting base (1) and radio shelf.	Tools: 1/2 in socket and 1/2 in open/box wrench.
k.	Two outer thumbscrews (4).	Tigthen and secure to rim clenching clamps (5) and mounting base.	

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.	RF cable (14) connector P1.	Connect and secure to antenna base (1) connector J1. See figure 5-6 (1).	
b.	Mounting hole for loop clamp (11).	Approximately halfway between curbside wall and antenna base (1), drill a Size L (.290 in) diameter hole, 1 in deep, in curbside ceiling. See figure 5-6 (1) for location(s).	Tools: Electric drill and size L drill bit.
C.	Loop clamp (11), hexhead tapping screw (5/16-18 x 3/4 in) and lock washer (5/16 in).	Wrap clamp around RF cable (14); then install to hole drilled in step b.	Tools: 1/2 in socket.
d.	RF cable (15) connector P1.	Connect and secure to OE-254 adapter (17) connector J1. See figure 5-6 (1).	
e.	Mounting hole for loop clamp (12).	Approximately halfway between curbside wall and OE-254 adapter (17), drill a Size L (.290 in) diameter hole, 1 in deep, in ceiling. See figure 5-6 (1) for location(s).	Tools: Electric drill and Size L drill bit.
f.	Loop clamp (12), hexhead tapping screw (5/16-18 x 3/4 in) and lock washer (5/16 in).	Wrap clamp around RF cable (15); then install to hole drilled in step e.	Tools: 1/2 in socket.
g.	Loop clamp (13), hexhead tapping screw (1/4-20 x 5/8 in) and lock washer (1/4 in).	Wrap clamp around RF cable (14); then install to existing boss on curbside wall.	Tools: 7/16 in socket.
h.	Loop clamp (16), hexhead tapping screw (1/4-20 x 5/8 in) and lock washer (1/4 in).	Wrap clamp around RF cables (14,15); then install to existing boss on curbside wall.	Tools: 7/16 in socket.
i.	RF cables (14, 15).	Route above rear doorway to roadside shelf. See figure 5-6 (1).	
j.	Eleven tiedown straps (5).	Install loosely around RF cables (14,15) and existing cable harness. See figure 5-6 (1) for location(s).	
k.	RF cable (6) connector P1.	Connect and secure to antenna base (3) connector J1.	

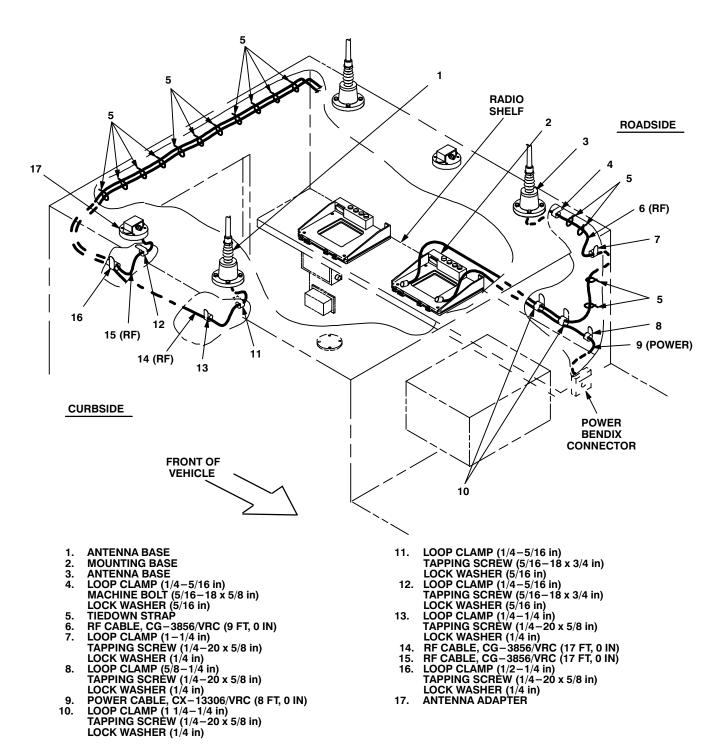


Figure 5-6 (1). Cable Installation: Initial Cabling

	ITEM	ACTION	REMARKS
l.	Loop clamp (4), machine bolt (5/16-18 x 5/8 in) and lock washer (5/16 in).	Wrap clamp around RF cable (6); then install to existing boss. See figure 5-6 (1) for location(s).	Tools: 1/2 in socket.
m.	RF cable (6).	Route along roadside ceiling with existing cable harness to forward roadside wall; then position on radio shelf. See figure 5-6 (1).	
า.	Two tiedown straps (5).	Install loosely around RF cable (6) and existing cable harness on forward roadside ceiling. See figure 5-6 (1) for location(s).	
ο.	Loop clamp (7), hexhead tapping screw (1/4-20 x 5/8 in) and lock washer (1/4 in).	Wrap clamp around RF cable (6) and existing cable harness on forward wall; then install to existing boss.	Tools: 7/16 in socket.
p.	Two tiedown straps (5).	Install loosely around RF cable (6) and existing cable harness on forward roadside wall.	
q.	P2 connectors of power cable (9) and RF cable (6).	Position on top of mounting base (2). See figure 5-6 (1).	
:	Power cable (9).	Route behind radio shelf; then connect and secure connector P1 to power Bendix connector.	
6.	Loop clamp (8), hexhead tapping screw (1/4-20 x 5/8 in) and lock washer (1/4 in).	Wrap clamp around power cable (9); then install to existing boss on forward roadside wall. See figure 5-6 (1) for location(s).	Tools: 7/16 in socket.
•	Two loop clamps (10), two hex-head tapping screws (1/4-20 x 5/8 in) and two lock washers (1/4 in).	Wrap clamps around power cable (9), RF cable (6) and existing harness; then install to existing bosses.	Tools: 7/16 in socket.
J.	Tiedown strap (1).	Install loosely around RF cables (14,15) and existing cable harness in rear roadside corner. See figure 5-6 (2) for location(s).	
<i>l</i> .	Two loop clamps (10), two tapping screws (1/4–20 x 5/8 in) and two lock washers (1/4 in).	Wrap clamps around power cable (9) and RF cable (6); then install on top of existing loop clamps and bosses. See figure 5-6 (2) for location(s) and figure 5-6 (2), detail B, for stackup.	Tools: 7/16 in socket.
Ν.	SP cable (24) connector P2.	Connect and secure to mounting base (20) connector J3. See figure 5-6 (2), detail A.	

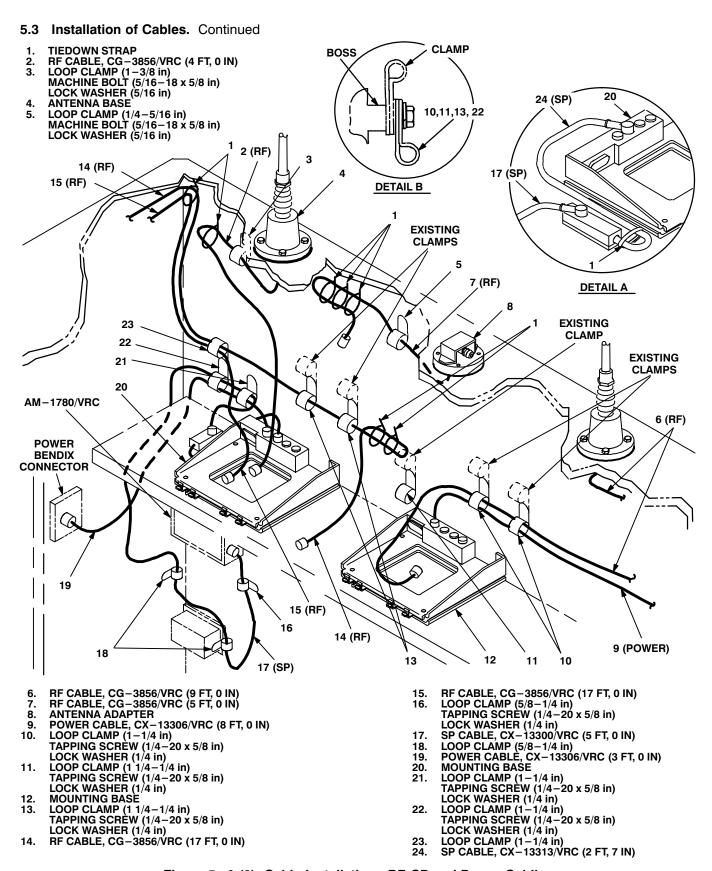


Figure 5-6 (2). Cable Installation: RF, SP and Power Cabling

	ITEM	ACTION	REMARKS
x.	SP cable (24).	Position on left side of mounting base (20); then secure with tiedown strap (1). See figure 5-6 (2), detail A.	
y.	SP cable (17) connector P2.	Connect and secure to SP cable (24) connector P1. See figure 5-6 (2).	
Z.	SP cable (17).	Route behind rear edge of roadside radio shelf to AM-1780/VRC.	
aa.	SP cable (17) connector P1.	Connect and secure to to AM-1780/VRC connector J501.	
ab.	Loop clamp (11), hexhead tapping screw (1/4-20 x 5/8 in) and lock washer (1/4 in).	Install to top of existing clamp and boss. See figure 5-6 (2) for location(s) and figure 5-6 (2), detail B, for stackup.	Tools: 7/16 in socket.
ac.	Two loop clamps (13), two hex-head tapping screws (1/4-20 x 5/8 in) and two lock washers (1/4 in).	Wrap clamps around RF cable (14); then install to top of existing clamps and bosses.	Tools: 7/16 in socket.
ad.	RF cable (14).	Double back; then secure loosely with two tiedown straps (1). See figure 5-6 (2) for location(s).	
ae.	RF cable (7) connector P1.	Connect and secure to roadside OE-254 adapter (8) connector J1. See figure 5-6 (2).	
af.	Loop clamp (5), machine bolt (5/16-18 x 5/8 in) and lock washer (5/16 in).	Wrap clamp around RF cable (7); then install to existing boss. See figure 5-6 (2) for location(s).	Tools: 1/2 in socket.
ag.	RF cable (7).	Route along ceiling with existing cable harness and double back. See figure 5-6 (2).	
ah.	Three tiedown straps (1).	Install loosely around doubled RF cable (7) and existing cable harness near ceiling. See figure 5-6 (2) for location(s).	
ai.	RF cable (2) connector P1.	Connect and secure to rear roadside antenna base (4) connector J1. See figure 5-6 (2).	
aj.	Loop clamp (3), machine bolt (5/16-18 x 5/8 in) and lock washer (5/16 in).	Wrap clamp around RF cable (2); then install to existing boss. See figure 5-6 (2) for location(s).	Tools: 1/2 in socket.
ak.	RF cable (2).	Double back near ceiling; then secure loosely with tiedown strap (1).	

	ITEM	ACTION	REMARKS
al.	RF cable (2) connector P2.	Position on top of mounting base (20). See figure 5-6 (2).	
am.	Loop clamp (16), hexhead tapping screw (1/4-20 x 5/8 in) and lock washer (1/4 in).	Wrap clamp around SP cable (17) and install to existing boss. See figure 5-6 (2) for location(s).	Tools: 7/16 in socket.
an.	Two loop clamps (18) and existing mounting hardware.	Wrap clamps around SP cable (17); then install to existing bosses.	
ao.	Power cable (19) connector P1.	Connect and secure to rear power Bendix connector. See figure 5-6 (2).	
ар.	Power cable (19).	Route up roadside wall behind shelf; then position P2 connector on top of mounting base (20).	
aq.	Loop clamp (21), hexhead tapping screw (1/4-20 x 5/8 in) and lock washer (1/4 in).	Wrap clamp around power cable (19) and SP cable (17); then install to existing boss. See figure 5-6 (2) for location(s).	Tools: 7/16 in socket.
ar.	Loop clamp (22).	Wrap clamp around power cable (19) and SP cable (17).	
as.	Loop clamp (23).	Wrap clamp around RF cables (14,15).	
at.	Loop clamps (22, 23), hex-head tapping screw (1/4-20 x 5/8 in) and lock washer (1/4 in).	Join clamps together; then install to existing boss. See figure 5-6 (2) for location(s) and figure 5-6 (2), detail B, for stackup.	Tools: 7/16 in socket.
au.	Power cable (19) connector P2.	Connect and secure to mounting base (20) connector J1. See figure 5-6 (2).	
av.	Power cable (9) connector P2.	Connect and secure to mounting base (12) connector J1.	

5.4 Installation of LS-454/U and LS-671/VRC Speakers. Mounting locations for speakers may be determined by the vehicle commander. Typical methods used for mounting speakers are as follows:

LS-454/U Speaker. See figure 5-7 (1).

- a. Determine speaker (3) location.
- b. Drill 13/32 in diameter hole through mounting surface.
- 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

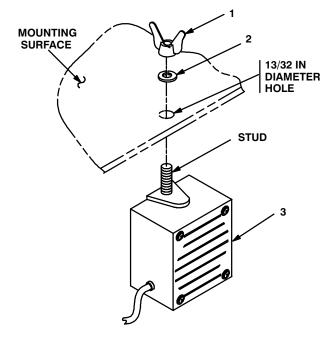


Figure 5-7 (1). Speaker Installation: LS-454/U

LS−671/VRC Speaker. See figure 5−7 (2).

- a. Determine speaker (4) location.
- b. Drill 11/32 in diameter hole through mounting surface.
- c. Place speaker (4) against underside of mounting surface; then aline with drilled hole.
- d. Using a 1/2 in socket or 1/2 in open/box wrench, install and secure speaker (4) to mounting surface with machine bolt (1), lock washer (2) and flat washer(3).
- e. Install and secure handset (5) to speaker (4) connector J2.
 - 1. MACHINE BOLT (5/16-24 x 1/2 in)
 - 2. LOCK WASHER (5/16 in)
 - 3. FLAT WASHER (5/16 in)
 - 4. SPEAKER
 - 5. HANDSET

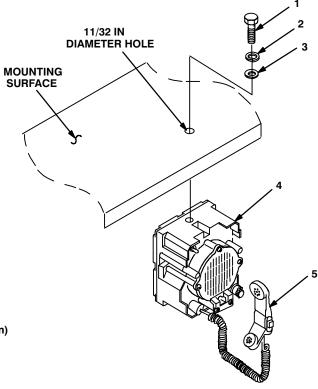


Figure 5-7 (2). Speaker Installation: LS-671/VRC

5.5 Installation of Mounting Base, Electrical Equipment MT-6353/VRC. If Radio Set AN/VRC-92 Series 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

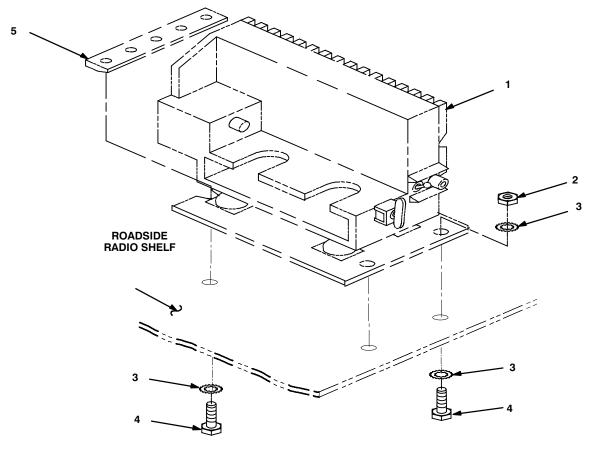
NOTE

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. 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.)

a. MT-6353/VRC mounting Remove a 2" square area of paint on the Tools: Electric grinder or base (1) and existing radio underside of the mounting base (1) equivalent. around the front two mounting holes. shelf. Remove a 2" square area of paint on the existing radio shelf around the two front mounting holes. Clean the paint removed areas and apply a thin coat of conductive anti-seize compound. b. MT-6353/VRC mounting Place on roadside shelf over existing holes. base (1). See Figure 5-8. c. MT-6353/VRC mounting Align front holes and rear slots with matching hole pattern in shelf. See Figure base (1). Tools: 1/2 in socket. d. Two machine bolts (4), Install and secure to rear slots in MT-6353/ two IET washers (3) and VRC mounting base (1). nut strip (5). e. Two machine bolts (4), Install and secure to front holes in MT-Tools: 1/2 in socket and four IET washers (3) and 6353/VRC mounting base (1) and radio 1/2 in open/box wrench.

shelf.

two nuts (2).



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

Figure 5-8. MT-6353/VRC Mounting Base 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 5–9 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 con-nected.	
e.	Radio issued with vehicle.	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

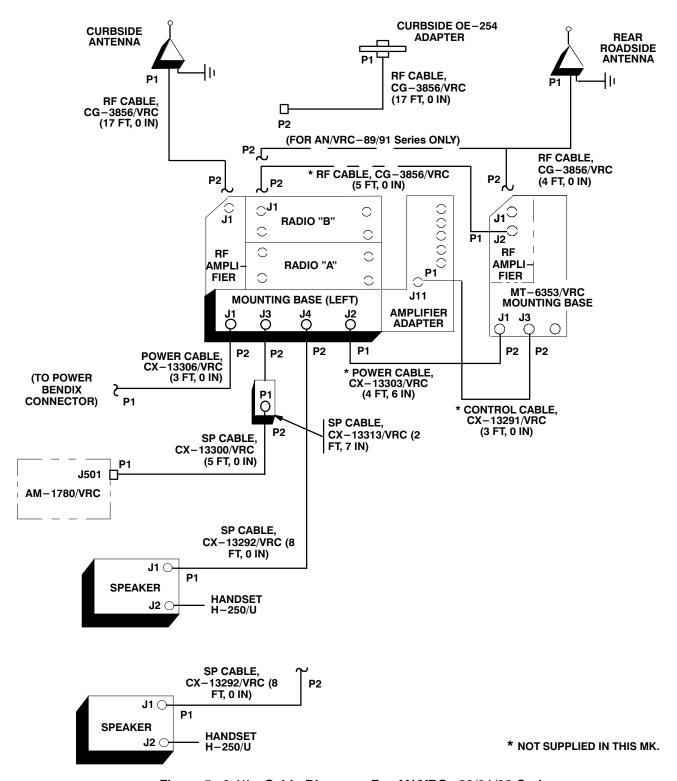


Figure 5-9 (1). Cable Diagram: For AN/VRC-89/91/92 Series

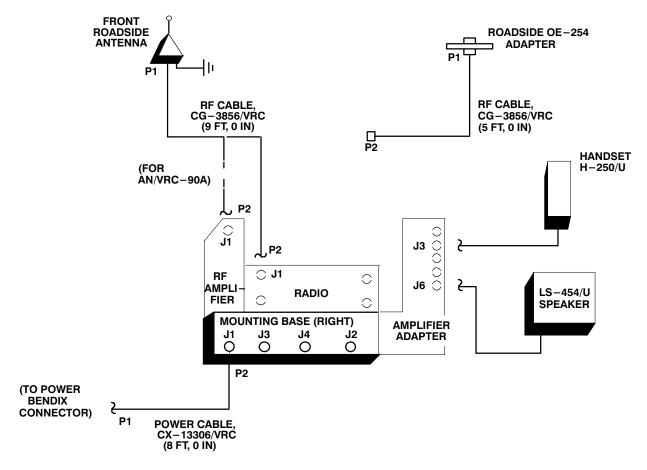
5.6 Post-Installation and Checkout. Continued

		FROM		ТО		
CABLE ASSEMBLY	CABLE CONN.	UNIT	UNIT CONN.	CABLE UNIT		UNIT CONN.
CX-13306/VRC (3 FT, 0 IN)	P2	Mounting base (left)	J1	P1	Power Bendix connector	
CG-3856/VRC (17 FT, 0 IN)	P1	Curbside antenna base	J1	P2	RF amplifier	J1
CG-3856/VRC (4 FT, 0 IN)	P1	Rear roadside antenna base	J1	P2	Radio "B" or RF amplifier (MT-6353/VRC)	J1
CG-3856/VRC (17 FT, 0 IN)	P1	Curbside OE-254 adapter	J1		To be determined by vehicle commander	
CX-13313/VRC (2 FT, 7 IN)	P1	CX-13300/VRC (5 FT, 0 IN)	P2	P2	Mounting base (left)	J3
CX-13300/VRC (5 FT, 0 IN)	P1	AM-1780/VRC	J501	P2	CX-13313/VRC (2 FT, 7 IN)	P1
CX-13292/VRC (8 FT, 0 IN)	P1	Speaker	J1	P2	Mounting base (left)	J4
CX-13292/VRC (8 FT, 0 IN)	P1	Speaker	J1		To be determined by vehicle commander	
* 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 amplifer (MT-6353/VRC)	J2
* CX-13303/VRC (4 FT, 6 IN)	P1	Mounting base (left)	J2	P2	MT-6353/VRC mounting base	J1

^{*} Not supplied in this MK.

Figure 5-9 (1). Cable Diagram: For AN/VRC-89/91/92 Series Continued

5.6 Post-Installation and Checkout. Continued



		FROM			ТО	
CABLE ASSEMBLY	CABLE CONN.	UNIT	UNIT CONN.	CABLE CONN.	UNIT	UNIT CONN.
CX-13306/VRC (8 FT, 0 IN)	P2	Mounting base (right)	J1	P1	Power Bendix connector	
CG-3856/VRC (9 FT, 0 IN)	P1	Front roadside antenna	J1	P2	RF amplifier or radio	J1
CG-3856/VRC (5 FT, 0 IN)	P1	Roadside OE-254 adapter	J1		To be determined by vehicle commander	
Handset cable		Handset			Amplifier-adapter	J3
Speaker cable		LS-454/U speaker			Amplifier-adapter	J6

Figure 5-9 (2). Cable Diagram: For AN/VRC-87/88/90 Series

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

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