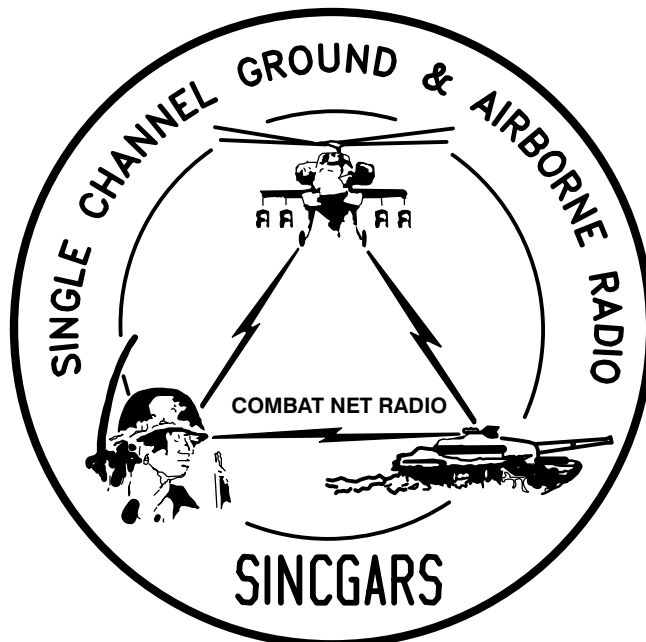


TECHNICAL BULLETIN



**INSTALLATION INSTRUCTIONS FOR
INSTALLATION KIT, ELECTRONIC EQUIPMENT,
MK-2406/VRC (NSN 5895-01-227-5840) (EIC: N/A)
TO PERMIT INSTALLATION OF
RADIO SET AN/VRC-89/91 (DUAL) SERIES
IN A
CARRIER, PERSONNEL, FULL TRACKED, ARMORED,
FIRE SUPPORT, M981**

Approved for public release; distribution is unlimited.

HEADQUARTERS, DEPARTMENT OF THE ARMY

1 AUGUST 1999

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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 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@ce-com3.monmouth.army.mil.

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

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*This manual supersedes TB 11-5820-890-20-74, dated 1 September 1993.

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0.1 SCOPE.

This technical bulletin provides Installation Instructions for Installation Kit, Electronic Equipment, MK–2406/VRC, commonly referred to as the Mounting Kit (MK). The MK shall be installed into the following type of vehicle(s):

- Carrier, Personnel, Full Tracked, Armored, Fire Support, M981

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 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.

Radio Set AN/VRC–89/91 Series includes:

- Radio Set AN/VRC–89/91 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–2406/VRC (MK) contains the items needed to mount two AN/VRC–89/91 Series radio sets in a Carrier, Personnel, Full Tracked, Armored, Fire Support, M981 (vehicle).

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 4.5 work hours is required. Typical vehicle downtime is 5.0 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–3916/VRC	5.1	1.5
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 9–2350–261–20.

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 (Dual) 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 (Dual) Series

NSN	ITEM DESCRIPTION AND PART NUMBER	QUANTITY IN MK	SMR CODE	FIGURE, ITEM NO.
5985-01-353-4943	Antenna, Vehicular, AS-3916/VRC (A3207487-1)	4	PAOOF A	4-1, 2
5305-00-847-1159	Screw, Cap, Hexagon (3/8-16 x 1 3/4 in) MS35307-365	16	PAOZZA	
5310-00-913-8881	Nut, Hexagon (3/8-16 in) MS51971-3 (Not Used)	16	PAOZZA	
5310-00-061-1258	Washer, Lock, Internal/External-Toothed (3/8 in) MS45904-76 (16 Not Used)	32	PAOZZA	
5310-00-889-2527	Washer, Lock, Internal/External-Toothed (5/16 in) MS45904-72 (Not Used)	8	PAOZZA	
5306-00-225-9086	Bolt, Machine (5/16-24 x 5/8 in) MS90726-31 (Not Used)	4	PAOZZA	
5330-01-205-2864	Gasket (A3013655-1) (Not Used)	4	PAOZZA	
4010-01-381-1521	Wire Rope Assembly (A3207523-1)	4	PAOZZA	
5985-01-235-9189	Antenna AS-3683/PRC (A3147901-1)	1	PAOOOA	4-1, 3
5975-01-188-8873	Mounting Base, Electrical Equipment MT-6352/VRC (A3013367-1)	2	PAOOF A	4-1, 1
5306-00-225-9089	Bolt, Machine (5/16-24 x 1 in) MS90726-34	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	
5995-01-225-0503	Cable Assembly, Power, Electrical CX-13306/VRC (5 FT, 0 IN) (A3014043-6)	1	PAOZZA	4-1, 7
5995-01-242-6504	Cable Assembly, Power, Electrical CX-13303/VRC (4 FT, 0 IN) (A3014040-4)	1	PAOZZA	4-1, 5
5995-01-219-7024	Cable Assembly, Radio Frequency CG-3856/VRC (4 FT, 0 IN) (A3014032-2)	1	PAOZZA	4-1,8
5995-01-219-7026	Cable Assembly, Radio Frequency CG-3856/VRC (9 FT, 0 IN) (A3014032-4)	1	PAOZZA	4-1,8
5995-01-219-7028	Cable Assembly, Radio Frequency CG-3856/VRC (17 FT, 0 IN) (A3014032-6)	1	PAOZZA	4-1,8
5995-01-225-1658	Cable Assembly, Radio Frequency CG-3856/VRC (21 FT, 0 IN) (A3014032-7)	1	PAOZZA	4-1,8
5995-01-219-7307	Cable Assembly, Special Purpose, Electrical CX-13300/VRC (6 FT, 0 IN) (A3014044-4)	4	PAOZZA	4-1, 6
6160-01-284-4200	Battery Box CY-8523A/PRC (A3148167-1)	1	PAOFFA	4-1, 4
5306-00-225-9089	Bolt, Machine (5/16-24 x 1 in) MS90726-34	1	PAOZZA	
5340-00-079-7837	Clamp, Loop (1/4-13/64 in) MS21333-67	2	PAOZZA	
5340-00-057-2906	Clamp, Loop (5/8-13/64 in) MS21333-73	1	PAOZZA	
5340-00-050-2740	Clamp, Loop (3/4-13/64 in) MS21333-75	7	PAOZZA	

Table 4-1. MK Parts List for Installation of Radio Set AN/VRC-89/91 (Dual) Series Continued

NSN	ITEM DESCRIPTION AND PART NUMBER	QUANTITY IN MK	SMR CODE	FIGURE, ITEM NO.
5340-00-922-6302	Clamp, Loop (1 1/2-13/64 in) MS21333-81	3	PAOZZA	
	Clamp, Loop (1 3/8-3/8 in) (A3013069-3)	1	PAOZZA	
5310-00-880-7746	Nut, Hexagon (5/16-24 in) MS51968-5	1	PAOZZA	
5305-00-191-3641	Screw, Tapping, Hex-Head (No.10-24 x 5/8 in)	13	PAOZZA	
	MS51851-65			
5975-00-111-3208	Strap, Tiedown, Electrical Components	30	PAOZZA	
	MS3367-5-9			
5310-00-407-9566	Washer, Lock (5/16 in) MS35338-45	1	PAOZZA	
5310-00-045-3296	Washer, Lock (No. 10) MS35338-43	13	PAOZZA	

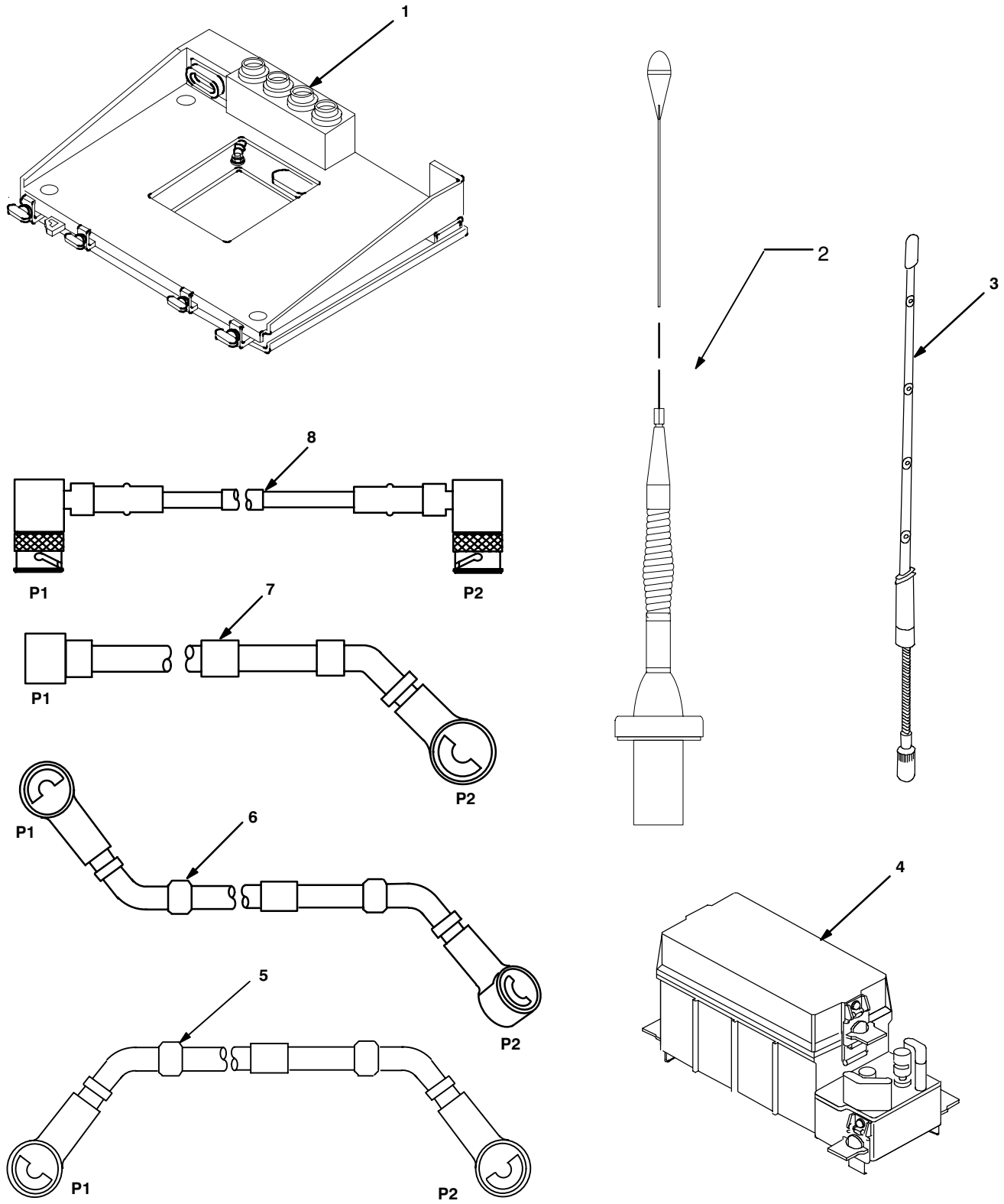


Figure 4-1. MK Illustrated Parts List

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

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

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

NOMENCLATURE	NSN	QUANTITY
Radio Set*		1
Electric Grinder or Equivalent		1
Pocket Knife, Electrician's	5110-00-240-5943	1
Screwdriver, No. 2 Point Phillips, 4 in	5120-00-234-8913	1
Screwdriver, 1/4 in Flatblade, 4 in	5120-00-222-8852	1
Pliers, Round Nose	5120-00-240-6172	1
Pliers, Diagonal Cutting	5110-00-965-0974	1
Wrench, Open/Box: 7/16 in	5120-00-228-9505	1
1/2 in	5120-00-228-9506	1
9/16 in	5120-00-228-9507	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

* 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, typically will be installed. When installing MK equipment, be sure to read and follow instructions and illustrations carefully.

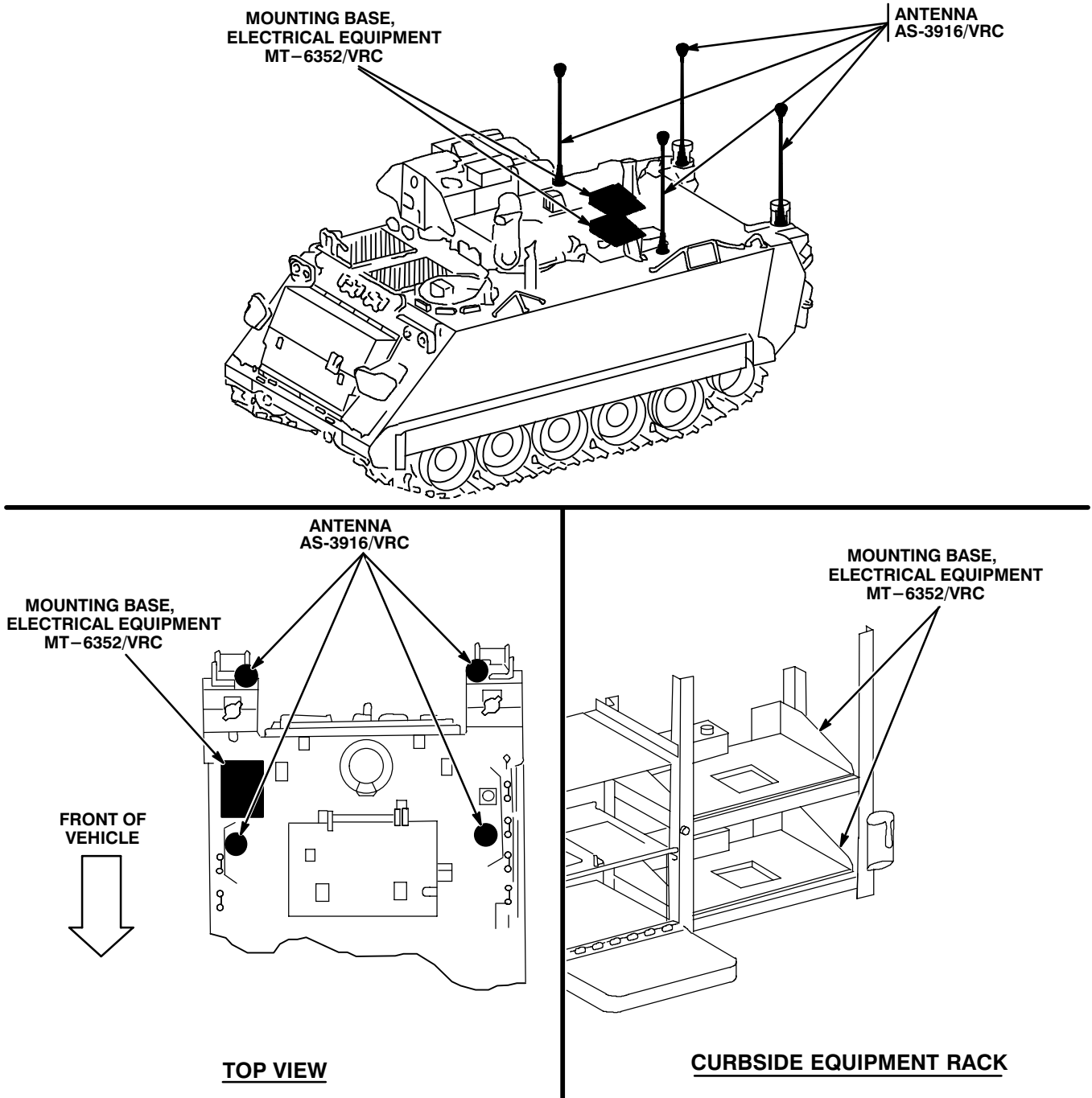


Figure 5-1 (1). MK and Radio Installation: MK Equipment Locations

5. INSTALLATION PROCEDURES. Continued.

INSTALLATION
FOR DUAL
AN/VRC-89/91 Series

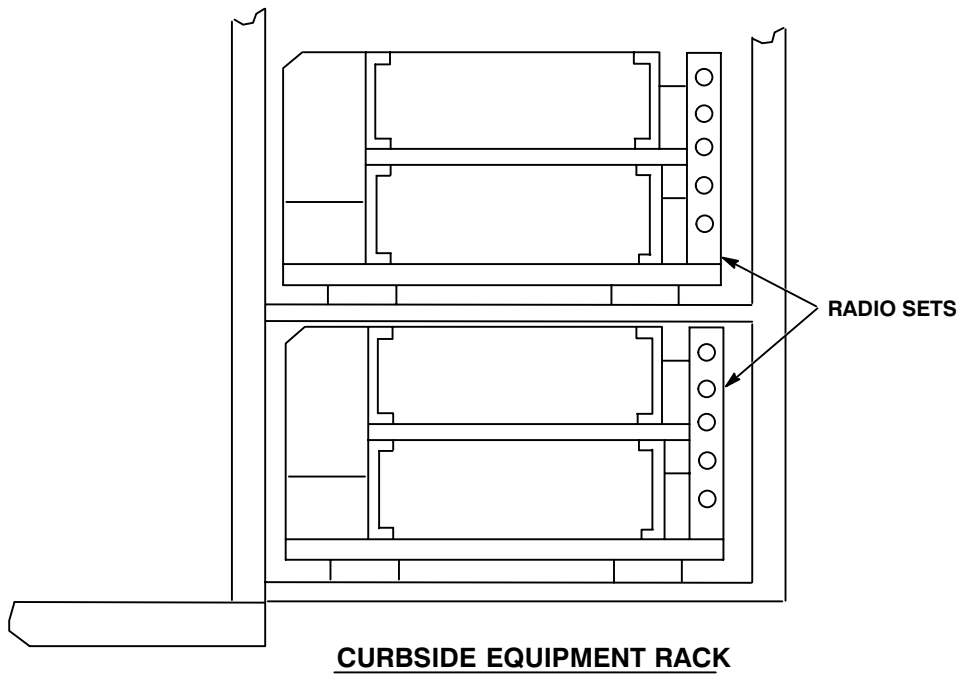


Figure 5-1 (2). MK and Radio Installation: Radio Equipment Locations

5.1 Installation of Antenna, Vehicular, AS-3916/VRC (antenna).

5.1.1 Installation of Antenna Base. Perform steps a thru d to install forward antenna bases. Perform steps e thru j to install rear antenna bases. Remove ground strap from antenna base(s).

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. Existing antenna port.	Remove the paint (1" strip) for 360° centered around the four mounting holes. Clean the paint removed area and apply a thin coat of conductive anti-seize compound (CASC).	Tools: Electric grinder or equivalent.
b. Antenna base (3).	Place on top of port; then align mounting holes.	
c. Four cap screws (1) and four internal/external (IET) washers(2).	Install and secure to antenna base (3) and antenna port.	Tools: 9/16 in socket.
d. Antenna base (3) and antenna port.	Apply a bead of adhesive-sealant/silicon compound 360° around the seam between antenna base (3) and antenna port.	

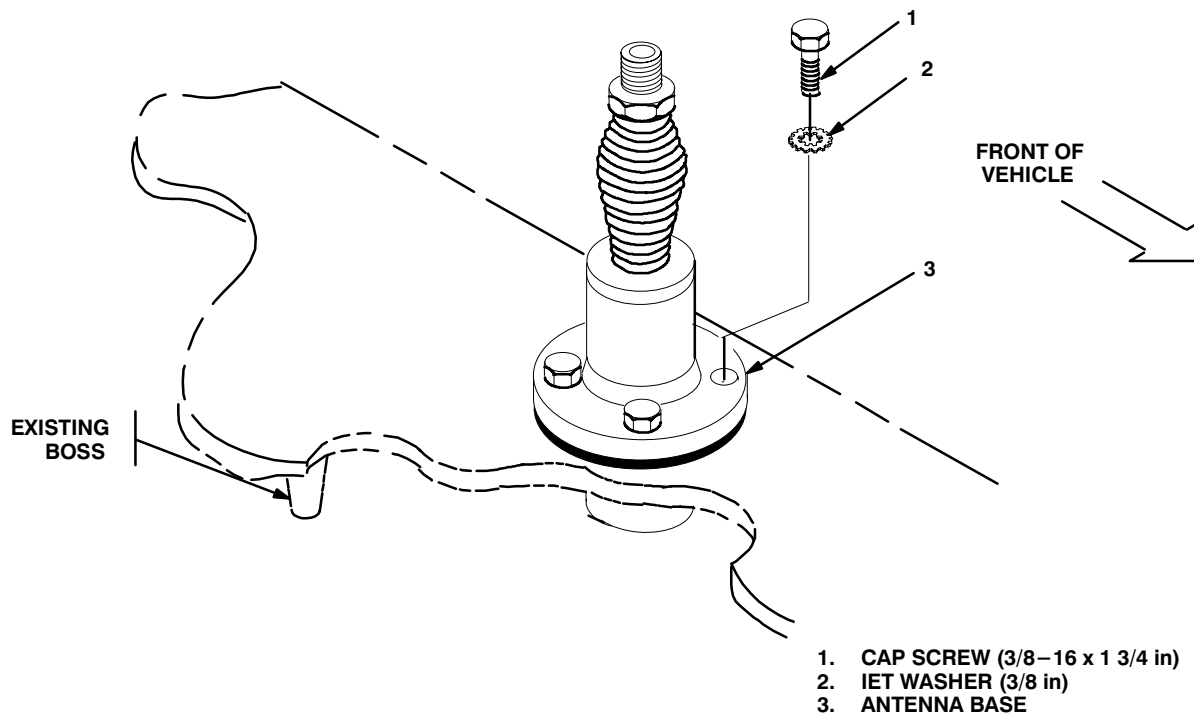


Figure 5-2 (1). Antenna Base Installation: Installing Forward Antenna Bases

5.1.1 Installation of Antenna Base. Continued

ITEM	ACTION	REMARKS
e. Existing antenna bracket, cover plate and mounting hardware.	Temporarily remove from rear of vehicle. See figure 5-2 (2).	
f. RF cable (4,5) connector P1.	Insert through cable holes in rear ceiling and roof; then position along side of existing wiring harness.	
g. Existing antenna bracket, cover plate and mounting hardware (removed in step e.)	Reinstall.	
h. Existing antenna bracket.	Remove the paint (1" strip) for 360° centered around the four mounting holes. Clean the paint removed areas and apply a thin coat of conductive anti-seize compound (CASC).	Tools: Electric grinder or equivalent.

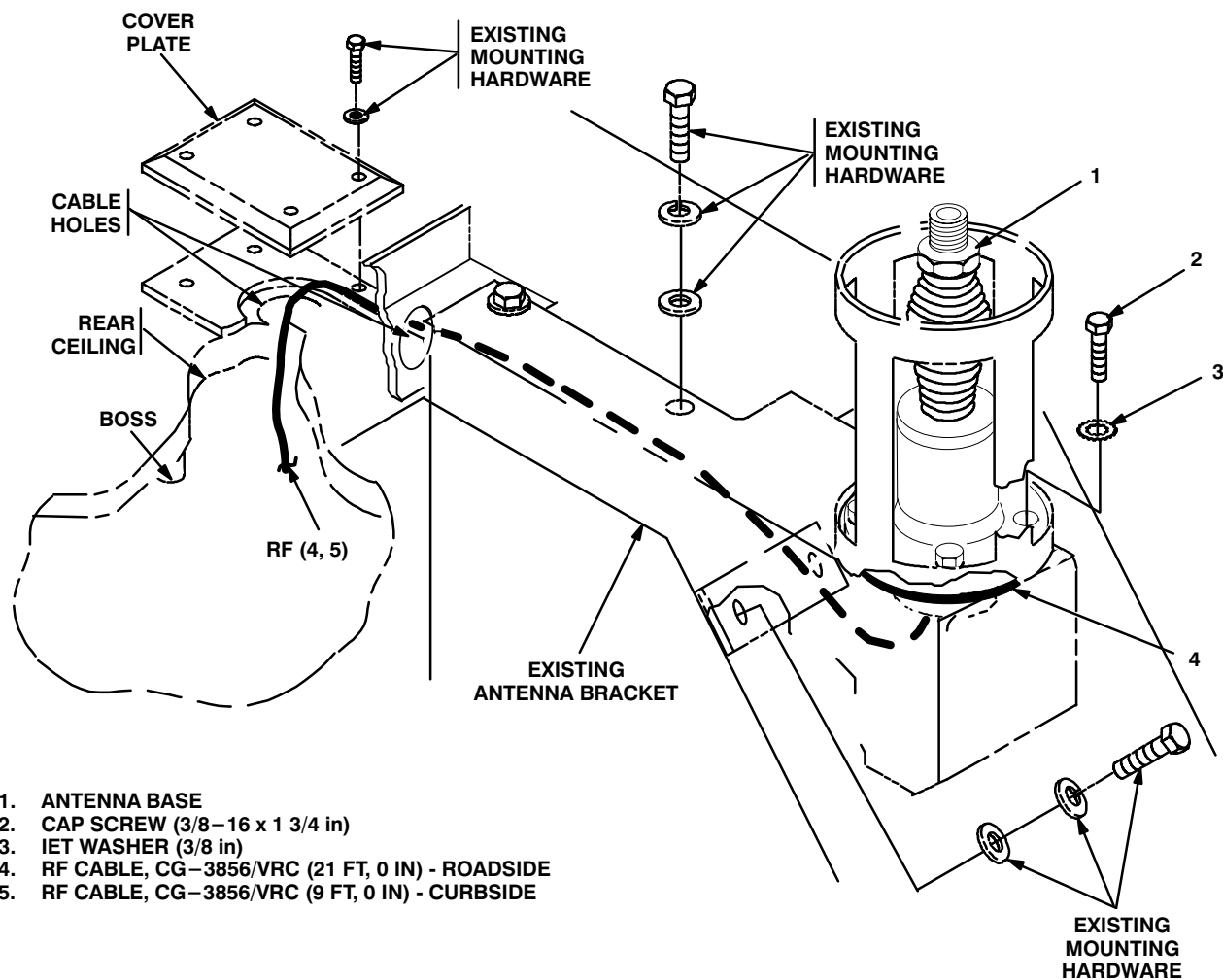


Figure 5-2 (2). Antenna Base Installation: Installing Rear Antenna Bases

5.1.1 Installation of Antenna Base. Continued

ITEM	ACTION	REMARKS
i. Antenna base (1).	Place on existing antenna bracket and align over mounting holes.	
j. Four cap screws (2) and four internal/external-toothed (IET) washers (3).	Install and secure to antenna base (1) and existing antenna bracket.	Tools: 9/16 in socket.
k. Antenna base (1) and antenna bracket.	Apply a bead of adhesive–sealant/silicon compound 360° around the seam between antenna base (1) and antenna port.	
l. RF cable (4, 5)	Connect and secure to antenna base (1) connector J1.	

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).	Install and secure to antenna base (2).	
b. Wire rope assembly (3).	Attach clip to antenna element (1). Tie rope to vehicle to position antenna in desired location. See Figure 5-3, Detail A.	

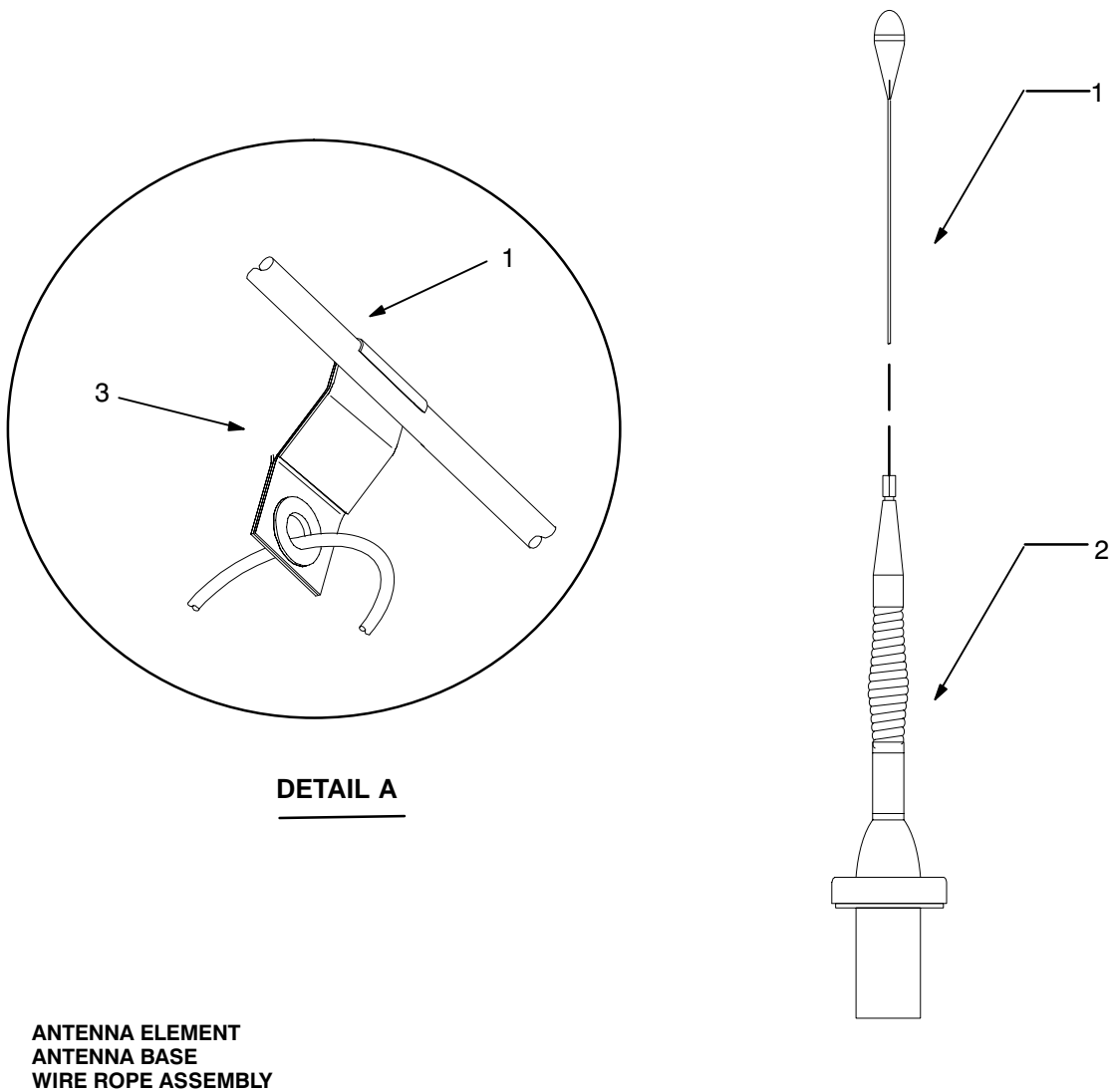


Figure 5-3. Top Antenna Assembly Installation

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

ITEM	ACTION	REMARKS
NOTE		
Apply a thin coat of adhesive–sealant to both sides of each internal/external–toothed (IET) washer during installation, and to the area of contact where IET washer is to be placed.		
a. Mounting base (1) and existing radio shelf.	Remove a 2” square area of paint on the underside of the mounting base (1) around left front and rear mounting holes. Remove a 2” square area of paint on the existing radio shelf around the existing mounting holes that mate with left front and rear mounting holes of mounting base (1). Clean the paint removed areas and apply a thin coat of conductive anti–seize compound (CASC).	Tools: Electric grinder or equivalent.
b. Two outer thumbscrews (4).	Turn ccw until both sets of threads have cleared center of holes.	
c. Mounting base (1)	Align four holes and rear slot with matching hole pattern in shelf.	
d. 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.
e. Two outer thumbscrews (4).	Tighten and secure to rim clenching clamps (5) and mounting base (1).	

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

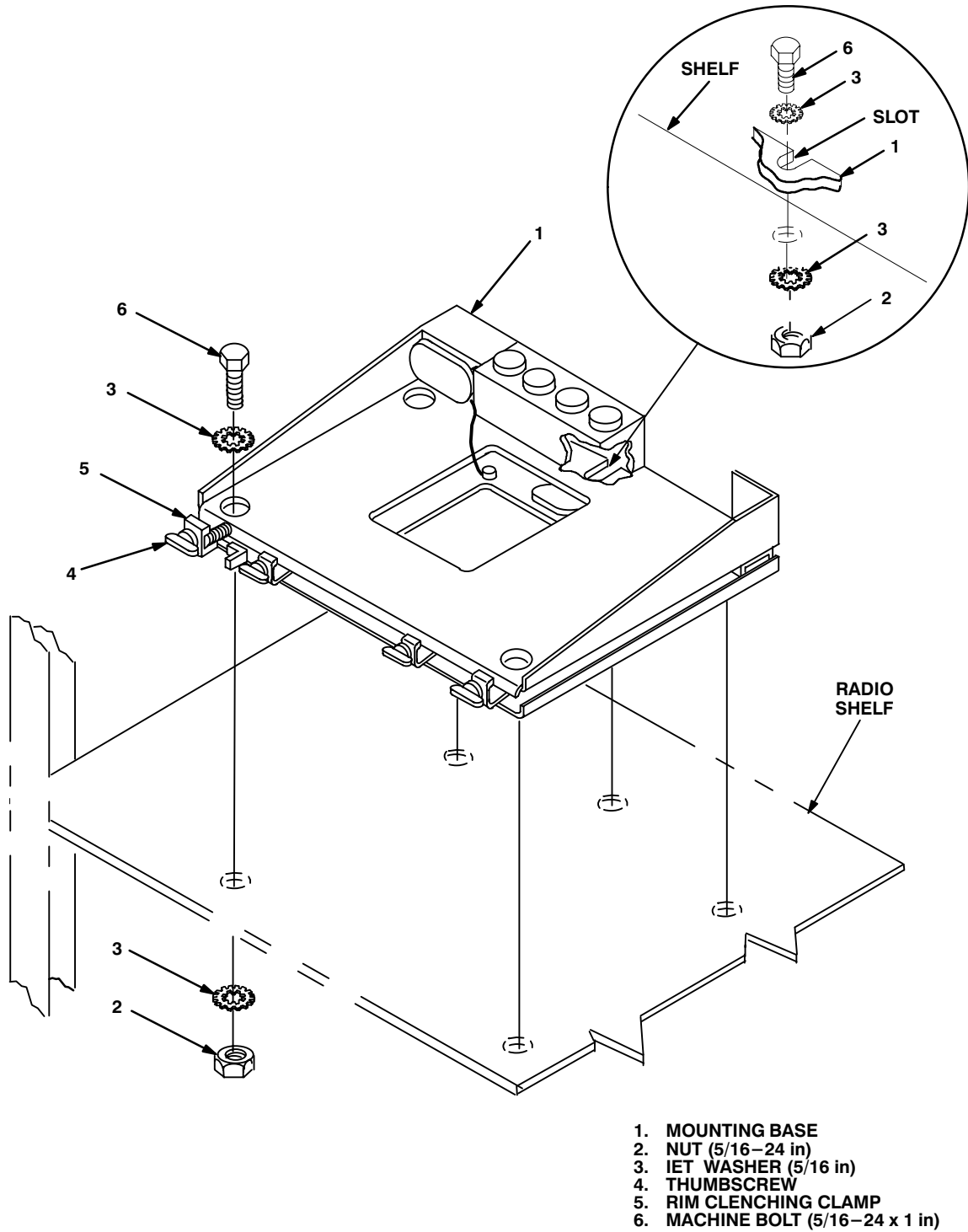


Figure 5-4. Mounting Base Installation: Curbside Equipment Rack

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 (2).	Route forward along roadside wall and position on top of existing cable harness. See figure 5-5 (1).	
b. Three loop clamps (4), three hex-head tapping screws (no.10-24 x 5/8 in) and three lock washers (no. 10).	Wrap clamps around RF cable (2) and existing cable harness; then install to existing bosses on roadside wall. See figure 5-5 (1) for location(s).	Tools: 5/16 in socket.
c. RF cable (1) connector P1.	Connect and secure to antenna base (3) connector J1. See figure 5-5 (1).	
d. RF cables (1, 2).	Route forward along existing cable harness and through roadside section of cable trough.	

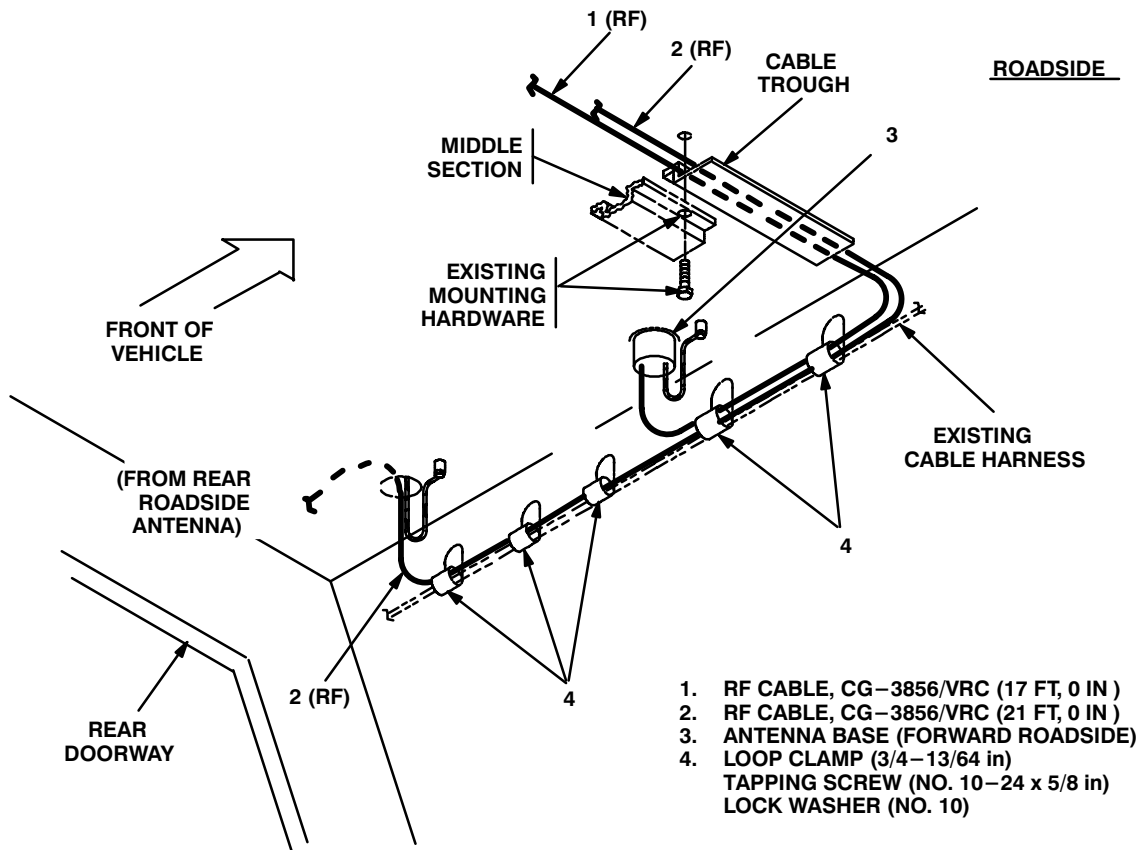
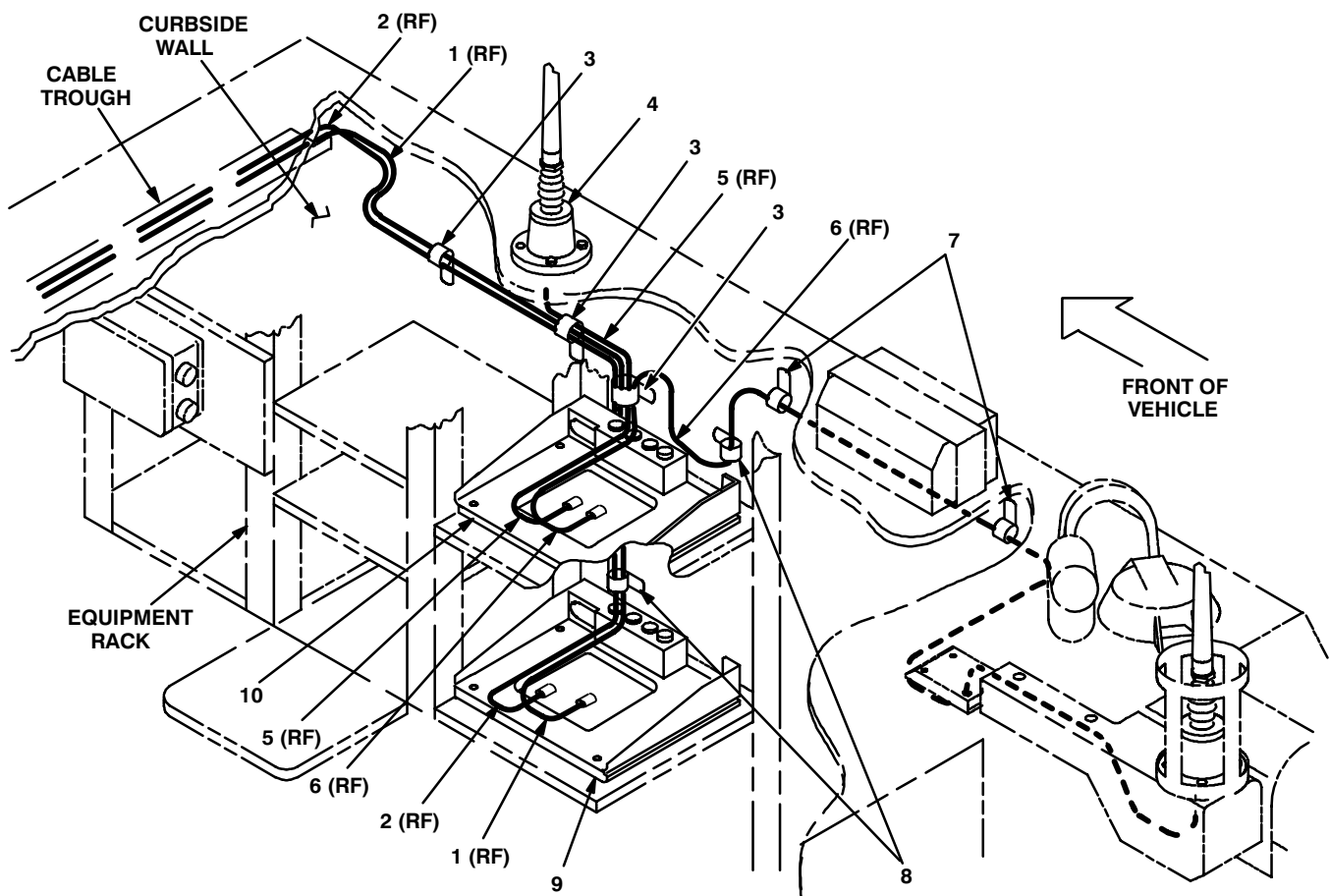


Figure 5-5 (1). Cable Installation: RF Cabling – Roadside Interior

5.3 Installation of Cables. Continued

ITEM	ACTION	REMARKS
e. Two loop clamps (4), two hex-head tapping screws (no.10-24 x 5/8 in) and two lock washers (no. 10).	Wrap clamps around RF cables (1, 2) and existing cable harness; then install to existing bosses on roadside wall. See figure 5-5 (1) for location(s).	Tools: 5/16 in socket.
f. Middle cable trough section and existing mounting hardware.	Temporarily remove. See figure 5-5 (1).	
g. RF cables (1, 2).	Route through curbside section of cable trough to curbside wall. See figure 5-5 (2).	



- | | |
|---|------------------------------------|
| 1. RF CABLE, CG-3856/VRC (17 FT, 0 IN) | 7. LOOP CLAMP (1/4-13/64 in) |
| 2. RF CABLE, CG-3856/VRC (21 FT, 0 IN) | TAPPING SCREW (NO. 10-24 x 5/8 in) |
| 3. LOOP CLAMP (1 1/2-13/64 in) | LOCK WASHER (NO. 10) |
| TAPPING SCREW (NO. 10-24 x 5/8 in) | 8. LOOP CLAMP (3/4-13/64 in) |
| LOCK WASHER (NO. 10) | TAPPING SCREW (NO. 10-24 x 5/8 in) |
| 4. ANTENNA BASE (FORWARD CURBSIDE) | LOCK WASHER (NO. 10) |
| 5. RF CABLE, CG-3856/VRC (4 FT, 0 IN) | 9. MOUNTING BASE (LOWER) |
| 6. RF CABLE, CG-3856/VRC (9 FT, 0 IN) | 10. MOUNTING BASE (UPPER) |

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

5.3 Installation of Cables. Continued

ITEM	ACTION	REMARKS
h. Middle cable trough section and existing mounting hardware (removed in step f).	Reinstall and secure. See figure 5–5 (1).	
i. RF cables (1, 2).	Route down behind equipment rack and to lower mounting base (9). See figure 5–5 (2).	
j. P2 connectors of RF cables (1, 2).	Position on top of mounting base (9).	
k. Loop clamp (3), hex-head tapping screw (no.10–24 x 5/8 in) and lock washer (no. 10).	Wrap clamp around RF cables (1, 2); then install to existing boss on curbside wall. See figure 5–5 (2) for location(s).	Tools: 5/16 in socket.
l. RF cable (5) connector P1.	Connect and secure to antenna base (4) connector J1. See figure 5–5 (2).	
m. RF cable (5) connector P2.	Position on top of mounting base (10).	
n. Loop clamp (3), hex-head tapping screw (no.10–24 x 5/8 in) and lock washer (no. 10).	Wrap clamp around RF cables (1, 2, 5); then install to existing bosses on curbside wall. See figure 5–5 (2) for location(s).	Tools: 5/16 in socket.
o. Loop clamp (8), hex-head tapping screw (no.10–24 x 5/8 in) and lock washer (no. 10).	Wrap clamp around RF cables (1, 2); then install to existing boss on curbside wall, near mounting base (9).	Tools: 5/16 in socket.
p. RF cable (6).	Route forward along curbside wall to equipment rack. See figure 5–5 (2).	
q. RF cable (6) connector P2.	Position on top of mounting base (10).	
r. Two loop clamps (7), two hex-head tapping screws (no.10–24 x 5/8 in) and two lock washers (no. 10).	Wrap clamps around RF cable (6); then install to existing bosses on curbside wall. See figure 5–5 (2) for location(s).	Tools: 5/16 in socket.
s. Loop clamp (8), hex-head tapping screw (no.10–24 x 5/8 in) and lock washer (no. 10).	Wrap clamp around RF cable (6); then install to existing boss on curbside wall, near mounting base (10).	Tools: 5/16 in socket.
t. Loop clamp (3), hex-head tapping screw (no.10–24 x 5/8 in) and lock washer (no. 10).	Wrap clamp around RF cables (1, 2, 5, 6); then install to existing boss on curbside wall.	Tools: 5/16 in socket.

5.3 Installation of Cables. Continued

ITEM	ACTION	REMARKS
u. SP cable (11) connector P1.	Connect and secure to AM-7046/VRC connector J511. See figure 5-5 (3).	
v. SP cable (12) connector P1.	Connect and secure to AM-7046/VRC connector J509.	
w. SP cable (10) connector P1.	Connect and secure to AM-7046/VRC connector J501.	

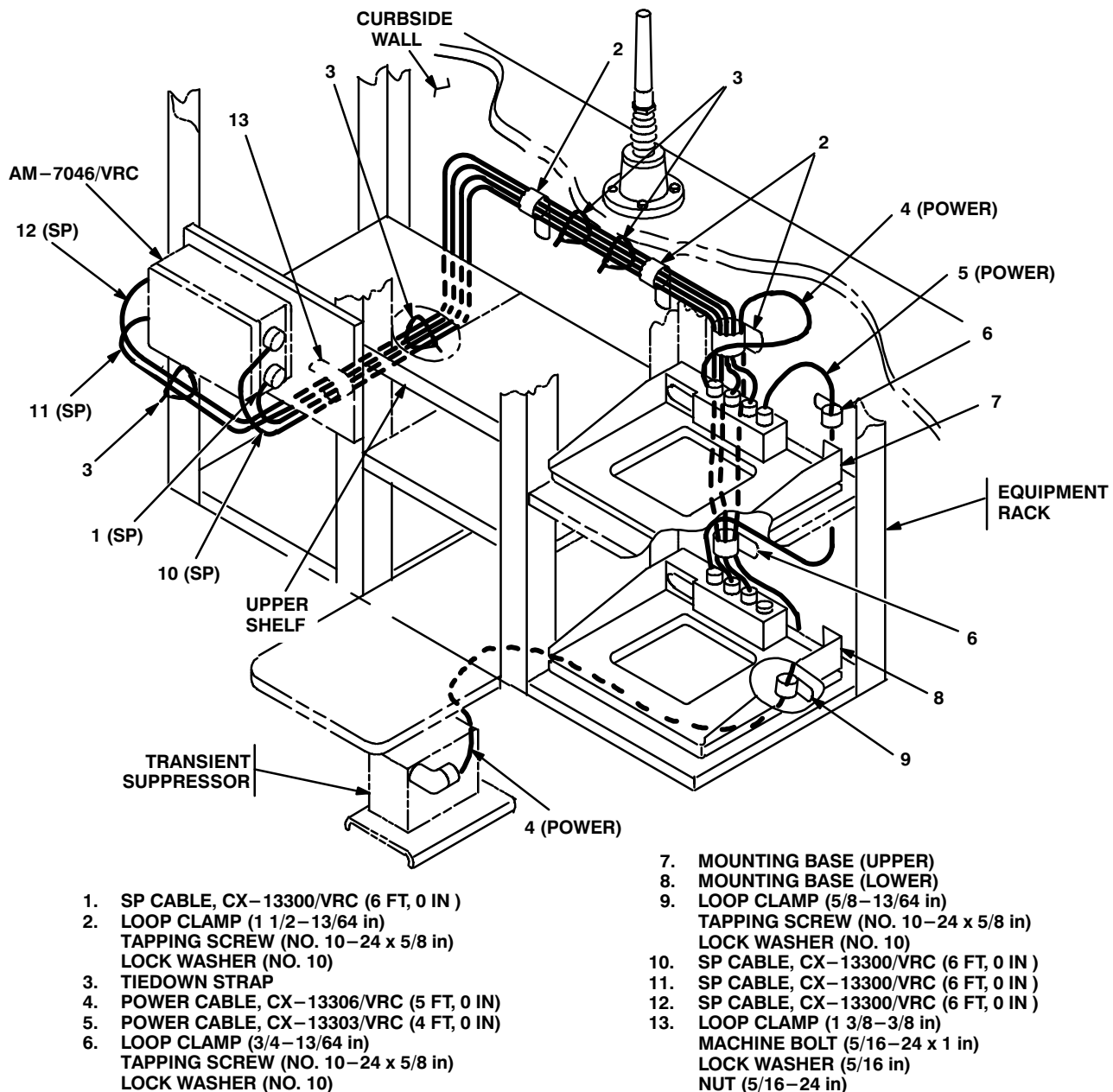


Figure 5-5 (3). Cable Installation: SP and Power Cabling

5.3 Installation of Cables. Continued

ITEM	ACTION	REMARKS
x. SP cable (1) connector P1.	Connect and secure to AM–7046/VRC connector J503. See figure 5–5 (3).	
y. SP cables (1,10,11,12).	Route below AM–7046/VRC and equipment rack shelf to curbside wall.	
z. Tiedown strap (3).	Install loosely around SP cables (11,12), below AM–7046/VRC. See figure 5–5 (3) for location(s).	
aa. Loop clamp (13), machine bolt (5/16–24 x 1 in), lock washer (5/16 in) and nut (5/16–24 in).	Wrap clamp around SP cables (1,10,11, 12); then install to underside of equipment rack shelf.	Tools: 1/2 in socket and 1/2 in open/box wrench.
ab. Tiedown strap (3).	Install loosely around SP cables (1,10,11, 12), below upper shelf.	
ac. SP cables (1,10,11,12).	Route behind equipment rack to upper mounting base (7). See figure 5–5 (3).	
ad. Two loop clamps (2), two hex-head tapping screws (no.10–24 x 5/8 in) and two lock washers (no. 10), previously installed in steps k and n.	Wrap clamps around SP cables (1,10,11, 12); then install to existing bosses on curbside wall. See figure 5–5 (3) for location(s).	Tools: 5/16 in socket.
ae. Two tiedown straps (3).	Install loosely around SP cables (1,10,11, 12), below forward curbside antenna.	
af. SP cable (12) connector P2.	Connect and secure to mounting base (7) connector J3. See figure 5–5 (3).	
ag. SP cable (11) connector P2.	Connect and secure to mounting base (7) connector J4.	
ah. Power cable (4) connector P2.	Position on top of mounting base (7).	
ai. Power cable (4).	Route down behind equipment rack to transient supressor.	
aj. Power cable (4) connector P1.	Connect and secure to transient supresor.	
ak. SP cables (1, 10).	Route behind equipment rack to lower mounting base (8).	
al. SP cable (10) connector P2.	Connect and secure to mounting base (8) connector J3. See figure 5–5 (3).	
am.SP cable (1) connector P2.	Connect and secure to mounting base (8) connector J4.	

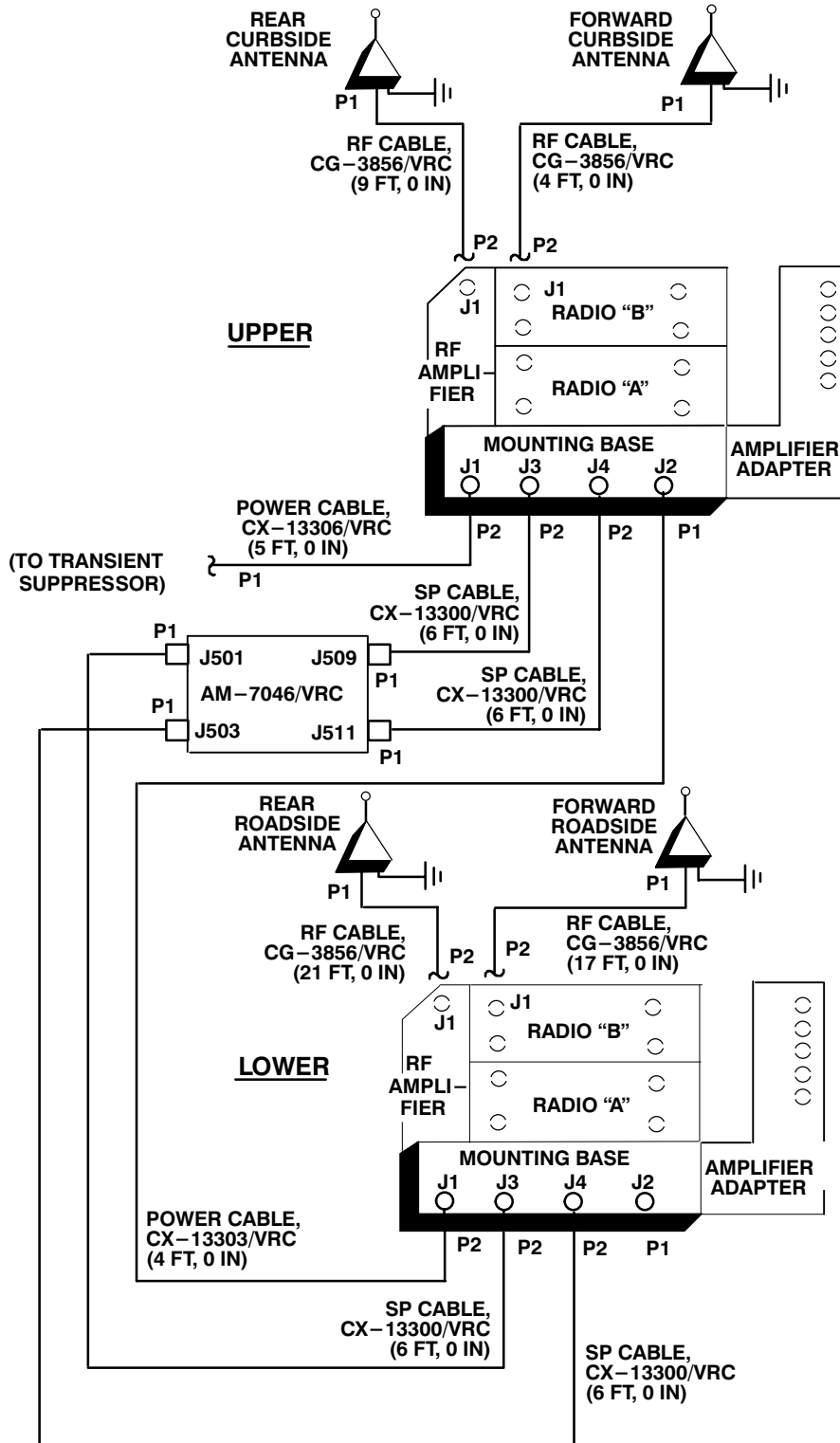
5.3 Installation of Cables. Continued

ITEM	ACTION	REMARKS
an. Loop clamp (2), hex-head tapping screw (no.10–24 x 5/8 in) and lock washer (no. 10), previously installed in step t.	Wrap clamp around SP cables (1,10,11, 12) and power cable (4); then install to existing boss on curbside wall. See figure 5–5 (3) for location(s).	Tools: 5/16 in socket.
ao. Loop clamp (6), hex-head tapping screw (no.10–24 x 5/8 in) and lock washer (no. 10), previously installed in step o.	Wrap clamp around SP cables (1,10) and power cable (4); then install to existing boss on curbside wall.	Tools: 5/16 in socket.
ap. Loop clamp (9), hex-head tapping screw (no.10–24 x 5/8 in) and lock washer (no. 10).	Wrap clamp around power cable (4); then install to existing boss on curbside wall.	Tools: 5/16 in socket.
aq. Power cable (5) connector P1.	Connect and secure to mounting base (7) connector J2.	
ar. Power cable (5).	Route down behind equipment rack to lower self.	
as. Power cable (5) connector P2.	Connect and secure to mounting base (8) connector J1.	
at. Loop clamp (6), hex-head tapping screw (no.10–24 x 5/8 in) and lock washer (no. 10), previously installed in step s.	Wrap clamp around power cable (5); then install to existing boss on curbside wall.	Tools: 5/16 in socket.
au. Power cable (4) connector P2.	Connect and secure to mounting base (7) connector J1.	

5.4 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 11-5820-890-20-2 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.	

5.4 Post-Installation and Checkout. Continued



* NOT SUPPLIED IN THIS MK.

Figure 5-6. Cable Diagram: For AN/VRC-89/91 Series

5.4 Post-Installation and Checkout. Continued

CABLE ASSEMBLY	FROM			TO		
	CABLE CONN.	UNIT	UNIT CONN.	CABLE CONN.	UNIT	UNIT CONN.
CX-13306/VRC (5 FT, 0 IN)	P2	Mounting base (upper)	J1	P1	Transient suppressor	
CX-13303/VRC (4 FT, 0 IN)	P1	Mounting base (upper)	J2	P2	Mounting base (lower)	J1
CG-3856/VRC (17 FT, 0 IN)	P1	Forward roadside antenna base	J1	P2	Radio "B" (lower)	J1
CG-3856/VRC (21 FT, 0 IN)	P1	Rear roadside antenna base	J1	P2	RF amplifier (lower)	J1
CG-3856/VRC (4 FT, 0 IN)	P1	Forward curbside antenna base	J1	P2	Radio "B" (upper)	J1
CG-3856/VRC (9 FT, 0 IN)	P1	Rear curbside antenna base	J1	P2	RF amplifier (upper)	J1
CX-13300/VRC (6 FT, 0 IN)	P2	Mounting base (upper)	J3	P1	AM-7046/VRC	J509
CX-13300/VRC (6 FT, 0 IN)	P2	Mounting base (upper)	J4	P1	AM-7046/VRC	J511
CX-13300/VRC (6 FT, 0 IN)	P2	Mounting base (lower)	J3	P1	AM-7046/VRC	J501
CX-13300/VRC (6 FT, 0 IN)	P2	Mounting base (lower)	J4	P1	AM-7046/VRC	J503

Figure 5-6. Cable Diagram: For AN/VRC-89/91 Series

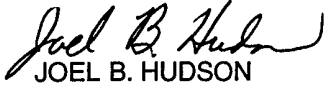
APPENDIX A

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	Vehicular Radio Sets and Authorized Installations (SINCGARS)
TM 11-5820-890-10-1	Operator's Manual (ICOM Radio Sets)
TM 11-5820-890-10-3	Operator's Manual (Non-ICOM Radio Sets)
TM 11-5820-890-20-1	Unit Maintenance Manual (ICOM Radio Sets)
TM 11-5820-890-20-2	Unit Maintenance Manual (Non-ICOM Radio Sets)
TM 11-5820-890-20P	Repair Parts and Special Tools List

By Order of the Secretary of the Army:

Official:



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

9916735

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3-10	3-3		3-1
5-6	5-8		
		FO-3	

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

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

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

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

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

REASON: To replace the cover plate.

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

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

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