TECHNICAL BULLETIN

SINGLE CHANNEL GROUND & AIRBORNE RADIO

COMBAT NET RADIO

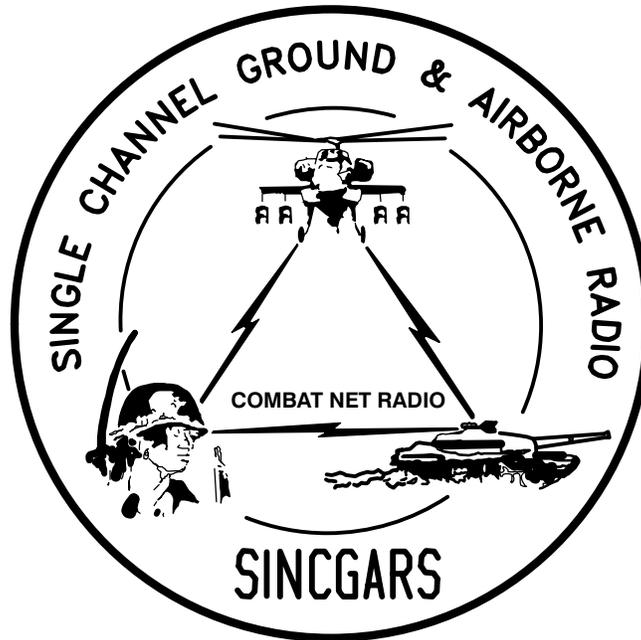SINCGARS

INSTALLATION INSTRUCTIONS FOR
INSTALLATION KIT, ELECTRONIC EQUIPMENT
MK−2299/VRC (NSN 5895−01−299−5863) (EIC: N/A)
TO PERMIT INSTALLATION OF
RADIO SET AN/VRC−87/88C Series
IN A
HOWITZER, MEDIUM, SELF−PROPELLED, 155MM GUN,
M109 A2/A3/A4

Approved for public release; distribution is unlimited.

HEADQUARTERS, DEPARTMENT OF THE ARMY

1 AUGUST 1999

TECHNICAL BULLETIN

NO. 11–5820–890–20–16

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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@cecom3.monmouth.army.mil.

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

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*This manual supersedes TB 11–5820–890–20–16, dated 1 September 1993.

LIST OF ILLUSTRATIONS

LIST OF TABLES

0.1 SCOPE.

This technical bulletin provides Installation Instructions for Electronic Equipment MK−2299/VRC, commonly referred to as the Mounting Kit (MK). The MK shall be installed into the following type of vehicle(s):

- Howitzer, Medium, Self-Propelled, 155MM Gun, M109 A2/A3/A4

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−87/88C Series includes:

- Radio Set AN/VRC−87/88C 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 Electronic Equipment MK−2299/VRC (MK) contains the items needed to mount Radio Set AN/VRC−87/88C Series in a Howitzer, Medium, Self-Propelled, 155MM Gun, M109 A2/A3/A4 (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 2.5 work hours is required. Typical vehicle downtime is 3.0 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−3900/VRC	5.2	1.0
Mounting Base, Electrical Equipment MT−6352/VRC	5.3	1.5
Cables	5.5	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 9−2350−217−Series.

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. Refer to Table 4−1 and Figure 4−1 to identify and inventory MK parts supplied to install Radio Set AN/VRC−87/88C 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−87/88C 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)	1	PAOOFA	4−1, 3
5305−00−847−1159	Screw, Cap, Hexagon (3/8−16 x 1 3/4 in) MS35307−365	4	PAOZZA	
5310−00−913−8881	Nut, Hexagon (3/8−16 in) MS51971−3	4	PAOZZA	
5310−00−061−1258	Washer, Lock, Internal/External−Toothed (3/8 in) MS45904−76	8	PAOZZA	
5310−00−889−2527	Washer, Lock, Internal/External−Toothed (5/16 in) MS45904−72	2	PAOZZA	
5306−00−225−9086	Bolt, Machine (5/16−24 x 5/8 in) MS90726−31 (Not Used)	1	PAOZZA	
5330−01−205−2864	Gasket (A3013655−1)	1	PAOZZA	
5975−01−285−2352	Mounting Base, Electrical Equipment MT−6576/VRC (A3018353−1)	1	PAOOFA	4−1, 1
5306−00−225−9089	Bolt, Machine (5/16−24 x 1 in) MS90726−34	4	PAOZZA	
5310−00−889−2527	Washer, Lock, Internal/External−Toothed (5/16 in) MS45904−72	8	PAOZZA	
5310−00−880−7746	Nut, Hexagon (5/16 − 24 in) MS51968−5 (Not Used)	4	PAOZZA	
6160−01−339−7723	Tray, Battery CY−8664/VRC (A3167734−1)	1	PAOFFA	4−1, 5
5306−00−225−9089	Bolt, Machine (5/16−24 x 1 in) MS90726−34	3	PAOZZA	
5310−00−889−2527	Washer, Lock, Internal/External−Toothed (5/16 in) MS45904−72 (3 Not Used)	6	PAOZZA	
5310−00−880−7746	Nut, Hexagon (5/16 − 24 in) MS51968−5 (Not Used)	3	PAOZZA	
5310−00−407−9566	Washer, Lock, (5/16 in) MS35338−45 (Alternate)	3	PAOZZA	
5310−00−081−4219	Washer, Flat (5/16 in) MS27183−12 (Alternate)	3	PAOZZA	
5995−01−219−1847	Cable Assembly, Power, Electrical CX−13306/VRC (3 FT, 0 IN) (A3014043−2)	1	PAOZZA	4−1, 11
5995−01−219−7034	Cable Assembly, Radio Frequency CG−3855/VRC (15 FT, 0 IN) (A3014031−7)	1	PAOZZA	4−1, 12
5995−01−304−8428	Cable Assembly, Special Purpose, Electrical CX−13290/VRC (2 FT, 0 IN) (A3014035−6)	1	PAOZZA	4−1, 10
5995−01−219−2008	Cable Assembly, Special Purpose, Electrical CX−13300/VRC (3 FT, 0 IN) (A3014044−2)	1	PAOZZA	4−1, 14
5995−01−303−4951	Cable Assembly, Special Purpose, Electrical CX−13313/VRC (2 FT, 7 IN) (A3018360−1)	1	PAOZZA	4−1, 13

Table 4−1. Parts List for Installation of Radio Set AN/VRC−87/88C Series Continued

NSN	ITEM DESCRIPTION AND PART NUMBER	QUANTITY IN MK	SMR CODE	FIGURE, ITEM NO.
6160−01−284−4200	Battery Box CY−8523A/PRC (A3148167−1)	1	PAOFFA	4−1, 4
5306−00−225−9086	Bolt, Machine (5/16−24 x 5/8 in) MS90726−31	15	PAOZZA	
	Bracket, Multiple Angle (A3018331−1)	1	XBOZZA	4−1, 6
	Bracket, Mounting (A3018332−1)	1	XBOZZA	4−1, 7
	Bracket, Mounting (A3018343−1)	1	XBOZZA	4−1, 8
	Bracket, Mounting - Antenna (A3050655−1)	1	XBOZZA	4−1, 2
5340−00−764−7052	Clamp, Loop (1 3/16−5/16 in) MS21333−116	1	PAOZZA	
4020−01−341−8795	Fiber Rope Assembly, Single Leg (A3167672−1)	1	PAOZZA	4−1, 9
5340−01−070−4478	Insert, Screw Thread (5/16−24 in) MS51831−203	5	PAOZZA	
5340−00−805−0337	Insert, Screw Thread (1/4−28 in) MS51831−202	6	PAOZZA	
	Protector, Electrical Cable Assembly (A3050654−4)	1	XBOZZA	
5305−00−068−0506	Screw, Cap, Hexagon (1/4−28 x 3/4 in) MS90726−6	6	PAOZZA	
5305−00−269−3208	Screw, Cap, Hexagon (3/8−16 x 5/8 in) MS90725−57	4	PAOZZA	
	Spacer, Sleeve (A3018986−2)	4	XBOZZA	
5975−00−111−3208	Strap, Tiedown, Electrical Components MS3367−5−9	10	PAOZZA	
5305−00−454−0376	Thumbscrew (1/4−20 x 2 1/2 in) MS21316−39	4	PAOZZA	
	Tubing, Nonmetallic - Polyurethane (A3018681−1)	1	XBOZZA	
5310−00−582−5965	Washer, Lock (1/4 in) MS35338−44	6	PAOZZA	
5310−00−889−2527	Washer, Lock, Internal/External−Toothed (5/16 in) MS45904−72	9	PAOZZA	
5310−00−889−2528	Washer, Lock, Internal/External−Toothed (1/4 in) MS45904−68	5	PAOZZA	
5310−00−061−1258	Washer, Lock, Internal/External−Toothed (3/8 in) MS45904−76	4	PAOZZA	
5310−00−809−4058	Washer, Flat (1/4 in) MS27183−10	2	PAOZZA	
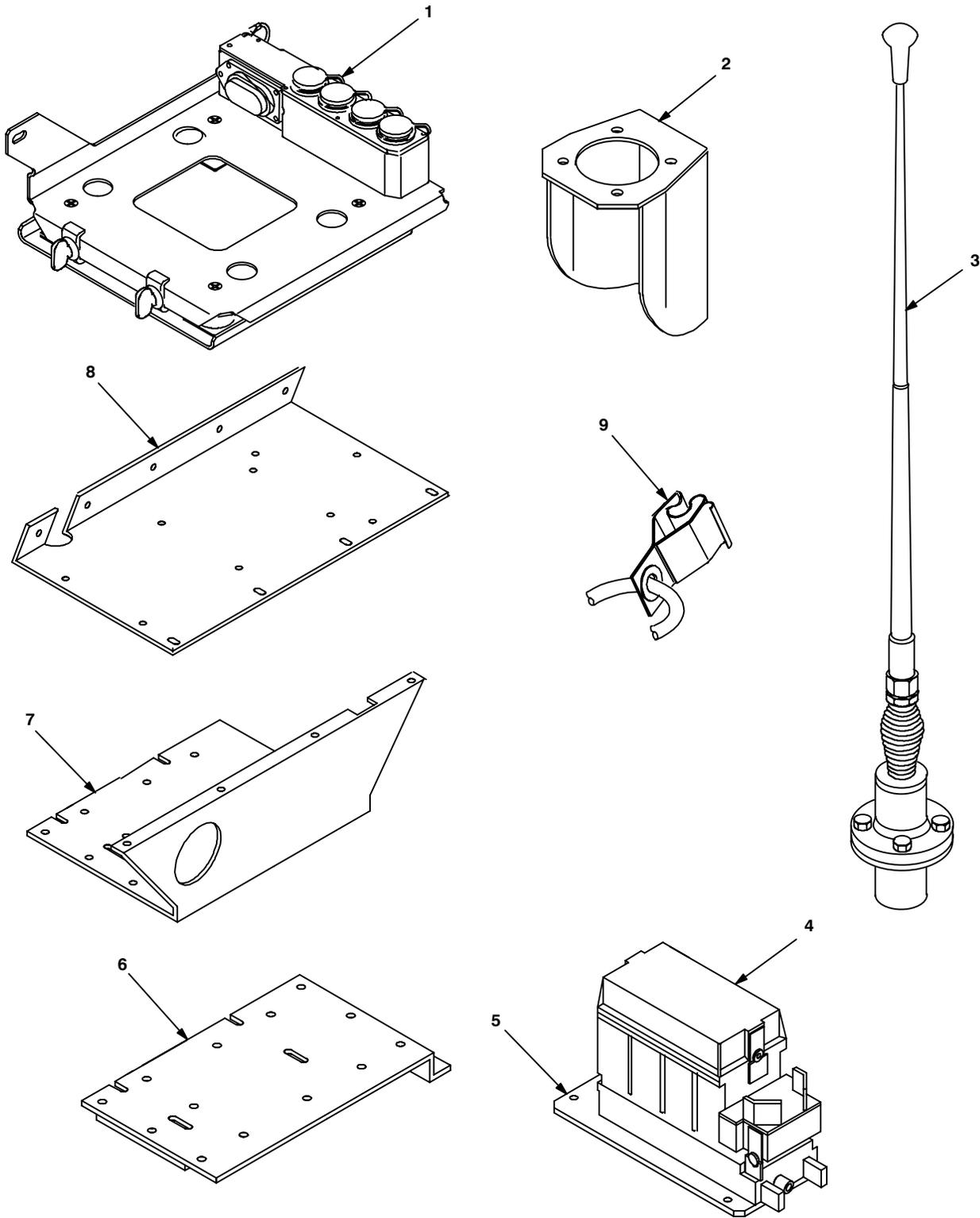
Figure 4−1 (1).   MK Illustrated Parts List

10

P1　　　　　　　　　　P2

11

P1
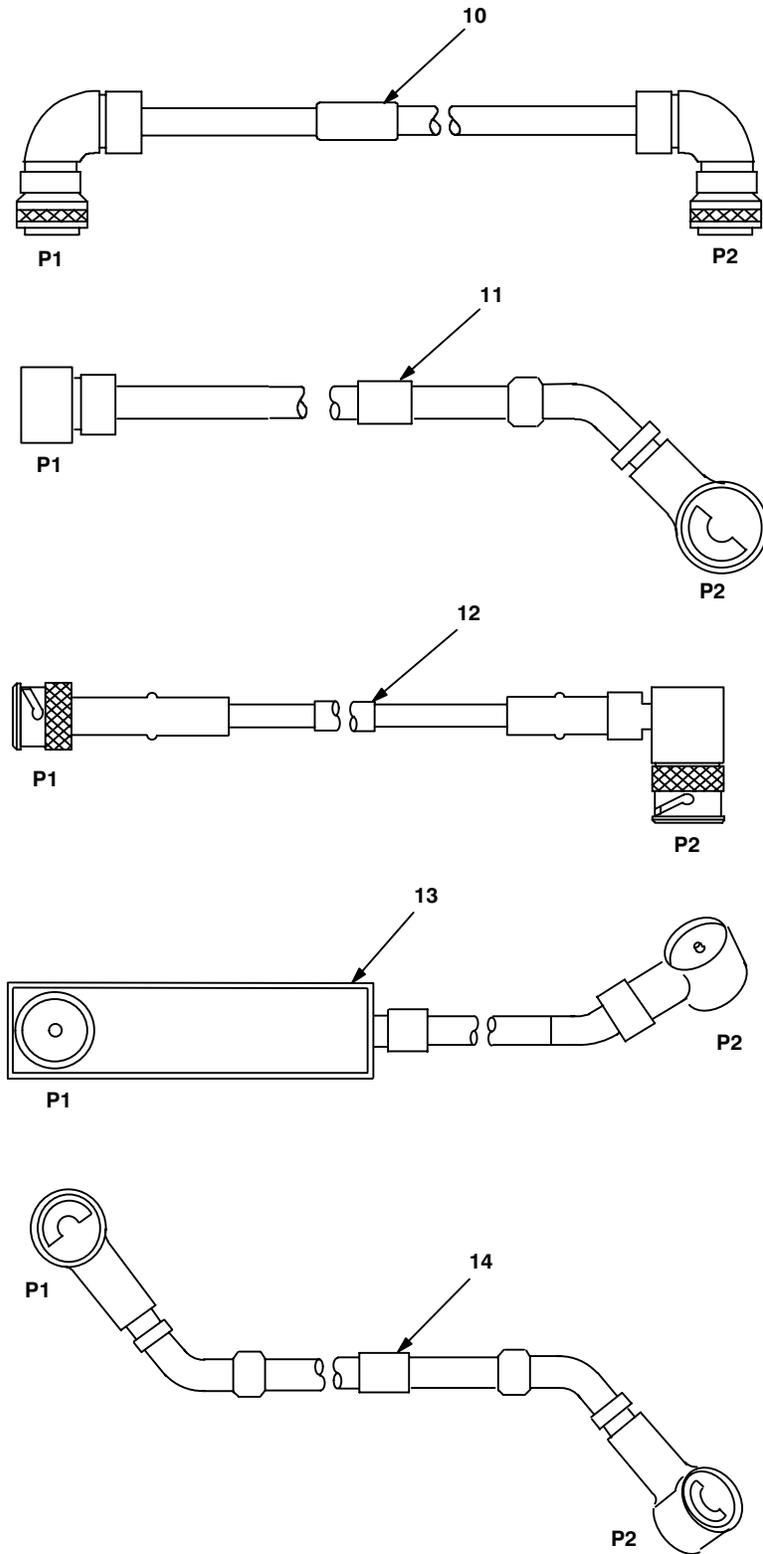
P2

12

P1

P2

13

P1　　　　　　　　　　P2

P1

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P2

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

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

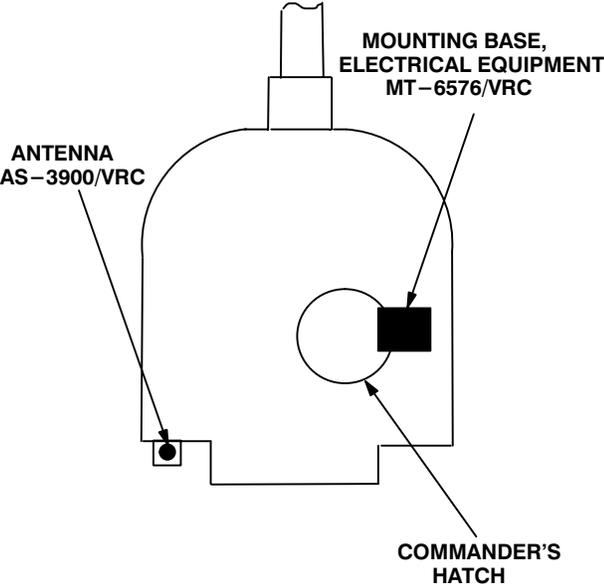| NSN	NOMENCLATURE
8040−00−117−8510	Adhesive−Sealant, Clear, RTV
6850−00−880−7616	Silicone Compound, MIL−S−8660
8030−00−292−1102	Conductive Anti−seize Compound

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
Hammer, Hand; 4 oz. Head	5120−00−243−2985	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
Tap Handle		1
Tap: 7/16 − 14 UNC−2B		1
1/2 − 13 UNC−2B		1
Electric Drill	5130−00−889−8994	1
Drill Bits: 5/8 in	5133−00−262−2172	1
29/64 in	5133−00−227−9671	1
Size 1 (.228 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 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.

ANTENNA
AS−3900/VRC

MOUNTING BASE,
ELECTRICAL EQUIPMENT
MT−6576/VRC

MOUNTING BASE,
ELECTRICAL EQUIPMENT
MT−6576/VRC

BATTERY BOX
CY−8523A/PRC

AM−1780/VRC

ANTENNA
AS−3900/VRC

MOUNTING BASE,
ELECTRICAL EQUIPMENT
MT−6576/VRC

SWITCH
BOX

GUN DISPLAY UNIT
CONTROL CASE
(P/O VEHICLE)

BATTERY TRAY
CY−8664/VRC
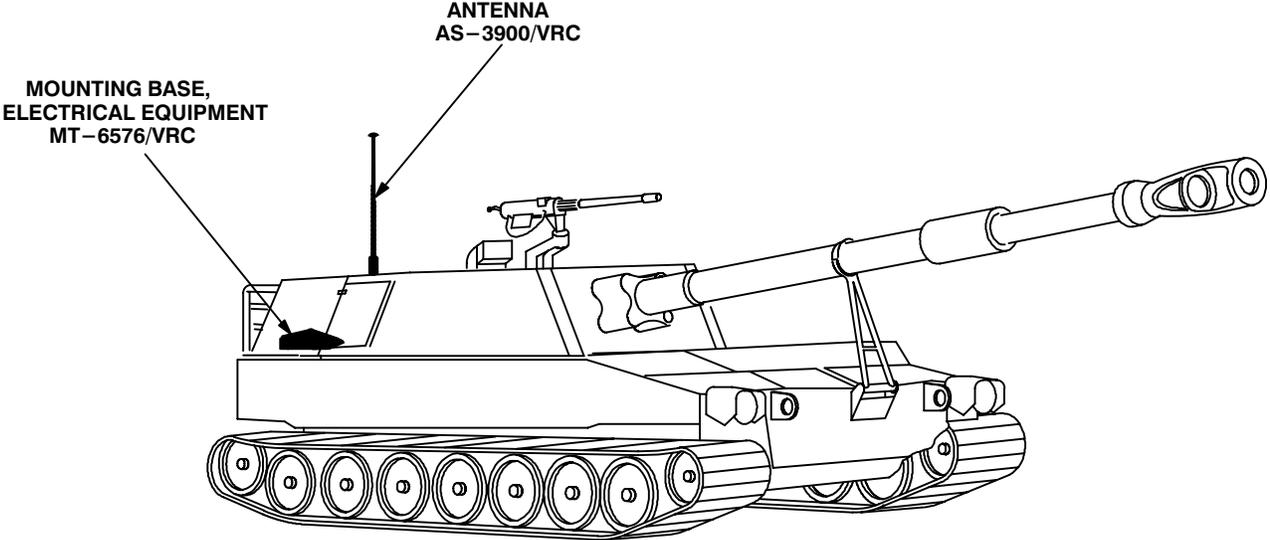
COMMANDER'S
HATCH

TOP VIEW
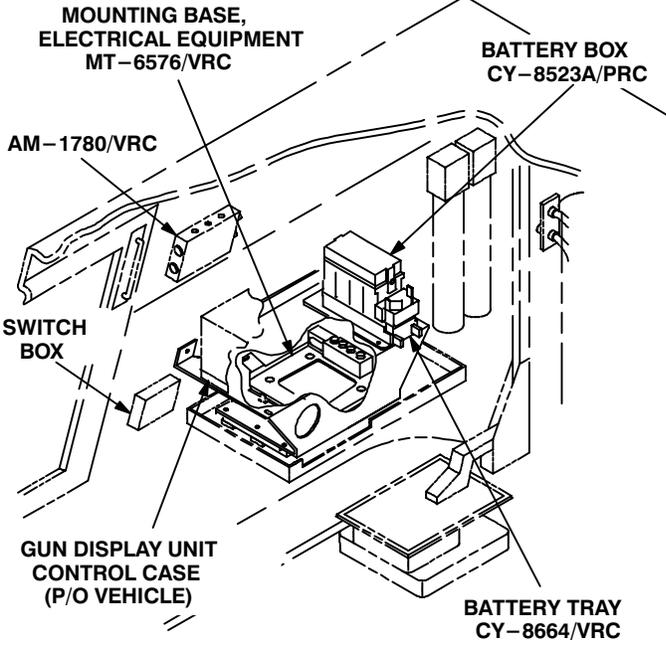
COMMANDER'S STATION

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

5. INSTALLATION PROCEDURES. Continued

**INSTALLATION
FOR
AN/VRC−87/88C Series**

CAB WALL

RADIO SET

BRACKET
ASSEMBLY

MOUNTING
BLOCK
(P/O VEHICLE)

COMMANDER'S STATION

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

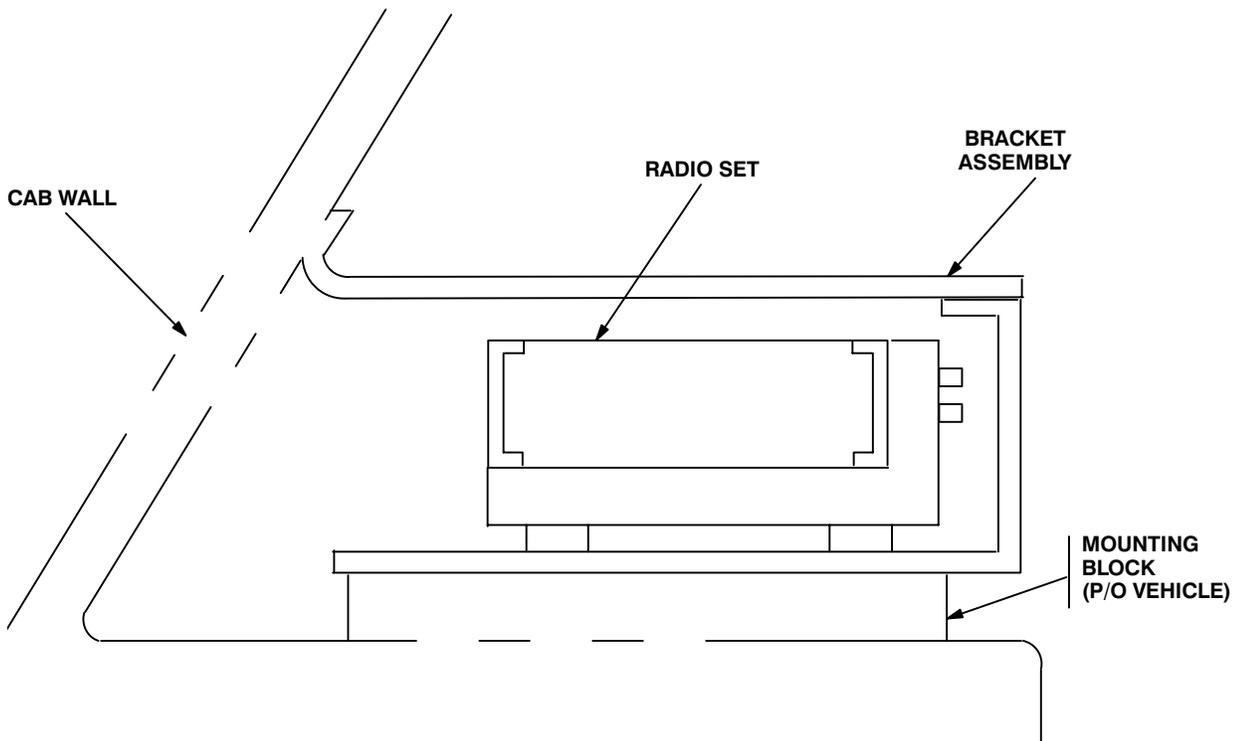**5.1 Modifications to Vehicle.** When indicated, use steps a through d to install inserts for antenna bracket, mounting bracket (upper) and electrical cable protector.   Perform the steps e and f to replace existing switch box mounting hardware.

ITEM	ACTION	REMARKS
a. All drilled holes.	Remove all burrs and sharp edges from entry surface. See figure 5−2 (1).	
b. Holes drilled for antenna bracket and electrical cable protector.	Cut screw threads in holes 7/16 in deep.	Tools: Tap handle and tap (7/16−14 UNC−2B).
c. Holes drilled for mounting bracket (upper).	Cut screw threads in holes 1/2 in deep.	Tools: Tap handle and tap (1/2−13 UNC−2B).
d. Inserts.	Install to tapped holes; then secure with locking keys.	Tools: Hammer.
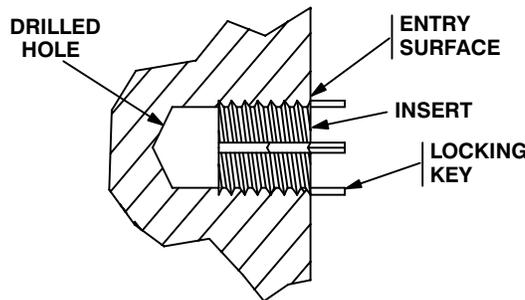
Figure 5−2 (1). Modifying Vehicle: Installing Inserts

e. Existing switch box mounting hardware.	Remove. See figure 5−2 (2).	Existing mounting hardware not shown.
f. Four thumbscrews (1), four lock washers (2) and four spacers (3).	Install and secure to switch box and existing bosses.	

1.   **THUMBSCREW**
2.   **LOCK WASHER (1/4 in)**
3.   **SPACER**
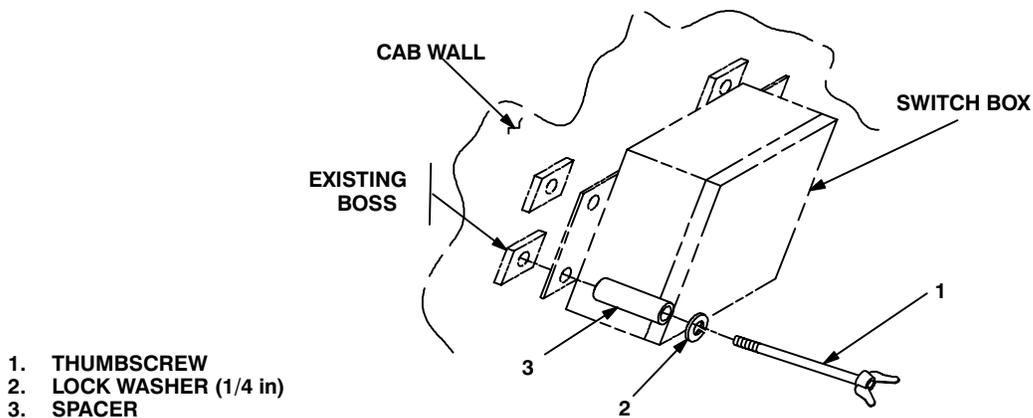
Figure 5−2 (2). Modifying Vehicle: Installing Mounting Hardware

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5.2 Installation of Antenna AS−3900/VRC (antenna). See figure 5−1 (1) for location.

5.2.1 Installation of Antenna Base.

ITEM	ACTION	REMARKS

NOTE

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

a. Mounting hole for antenna bracket (1). — From inside edge of roadside stowage rack, use dimensions shown to mark top left hole location. See figure 5−3 (1).

b. Roadside stowage rack. — Temporarily remove.

c. Holes for antenna bracket (1) and RF cable. — Using hole location marked in step a and antenna bracket as a template, drill four Size X (.397 in) diameter holes (7/8 in deep) in wall and one 5/8 diameter hole through wall. — Tools: Electric drill, Size X drill bit and 5/8 in drill bit.

d. Four inserts (1/4−28 in). — Refer to section 5.1, steps a, b and d for installation.

e. Antenna bracket (1). — Place against rear wall and aline mounting holes. See figure 5−3 (1).

1. ANTENNA BRACKET
2. IET WASHER (1/4 in)
3. CAP SCREW (1/4 − 28 x 3/4 in)
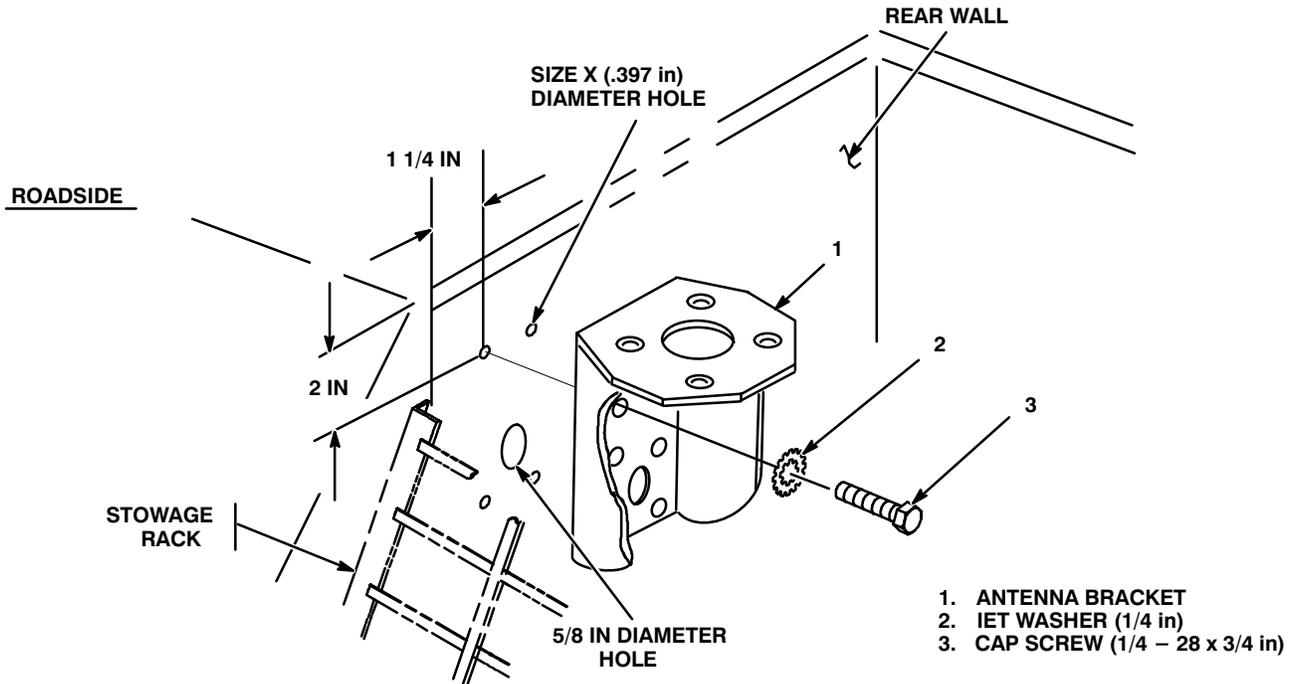
Figure 5−3 (1). Antenna Base Installation: Installing Antenna Bracket

5.2.1   Installation of Antenna Base. Continued

ITEM	ACTION	REMARKS
f. Three cap screws (3) and three internal/external−toothed (IET) washers (2).	Install and secure to top two and bottom right mounting holes in antenna bracket (1) and rear wall. See figure 5−3 (1).	
g. Gasket (5).	Place on antenna bracket (4) and aline mounting holes. See figure 5−3 (2).	
h. Antenna base (1).	Place on top of gasket (5) and antenna bracket (4); then aline mounting holes.	
i. Four cap screws (2), eight IET washers (3) and four nuts (6).	Install and secure to antenna base (1) and antenna bracket (4).	Tools: 9/16 in socket and 9/16 in open/box wrench.
j. Ground strap (9), cap screw (8) and two IET washers (7).	Install and secure to bottom left hole in antenna bracket (4) and rear wall.	Tools: 7/16 in socket.

REAR WALL

1.   **ANTENNA BASE**
2.   **CAP SCREW (3/8−16 x 1 3/4 in)**
3.   **IET WASHER (3/8 in)**
4.   **ANTENNA BRACKET**
5.   **GASKET**
6.   **NUT (3/8−16 in)**
7.   **IET WASHER (1/4 in)**
8.   **CAP SCREW (1/4−28 x 3/4 in)**
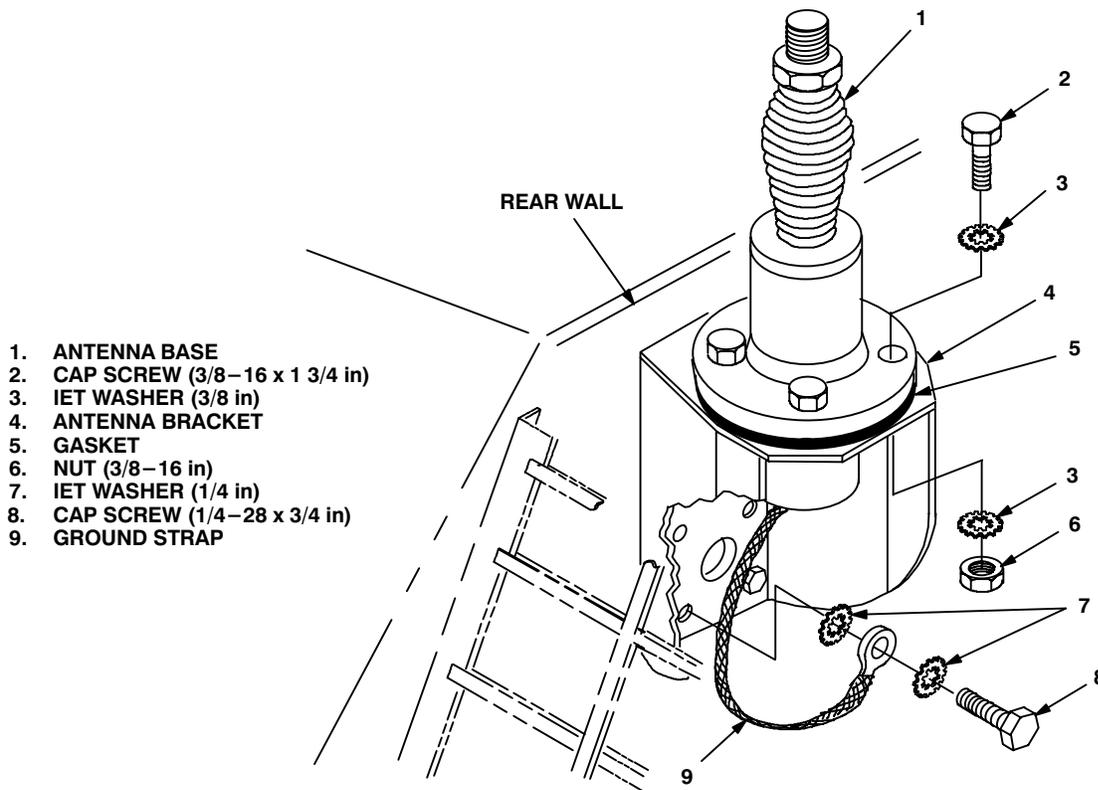9.   **GROUND STRAP**

Figure 5−3 (2).   Antenna Base Installation: Installing Antenna Base

5.2.2 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 5−4.	
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 5−4, 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 5−4, detail B.	
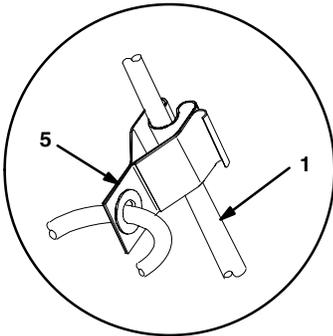
DETAIL B
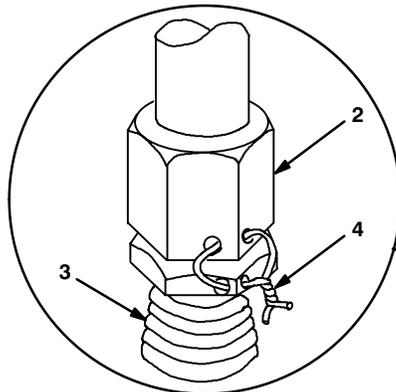
DETAIL A

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

Figure 5−4. Top Antenna Assembly Installation

5.3 Installation of Mounting Base, Electrical Equipment MT−6576/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 mounting bracket should be removed before installing the mounting base. See figure 5−5 and perform the following steps.

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. Gun display unit (GDU) control case, control case mount and existing mount−ing hardware.	Temporarily remove. See figure 5–1 (1) for GDU control case location.	
b. Multiple angle bracket (4), mounting bracket (lower) (3), and mounting bracket (upper) (7).	Remove a 1" square area of paint around six existing mounting holes in multiple angle bracket (4). Remove a 1" square area of paint on both sides of mounting bracket (3) around six existing mounting holes that mate with mounting holes of multiple angle bracket (4). Remove a 1" square area of paint around the four top mounting holes in mounting bracket (3) and the underside of mounting bracket (7) around the four mounting holes that mate with mounting holes in mounting bracket (3). Clean the paint removed area and apply a thin coat of conductive anti−seize compound.	Tools: Electric grinder or equivalent.

1. **MACHINE BOLT (5/16−24 x 5/8 in)**
2. **IET WASHER (5/16 in)**
3. **MOUNTING BRACKET (LOWER)**
4. **MULTIPLE ANGLE BRACKET**
5. **CAP SCREW (3/8−16 x 5/8 in)**
6. **IET WASHER (3/8 in)**
7. **MOUNTING BRACKET (UPPER)**

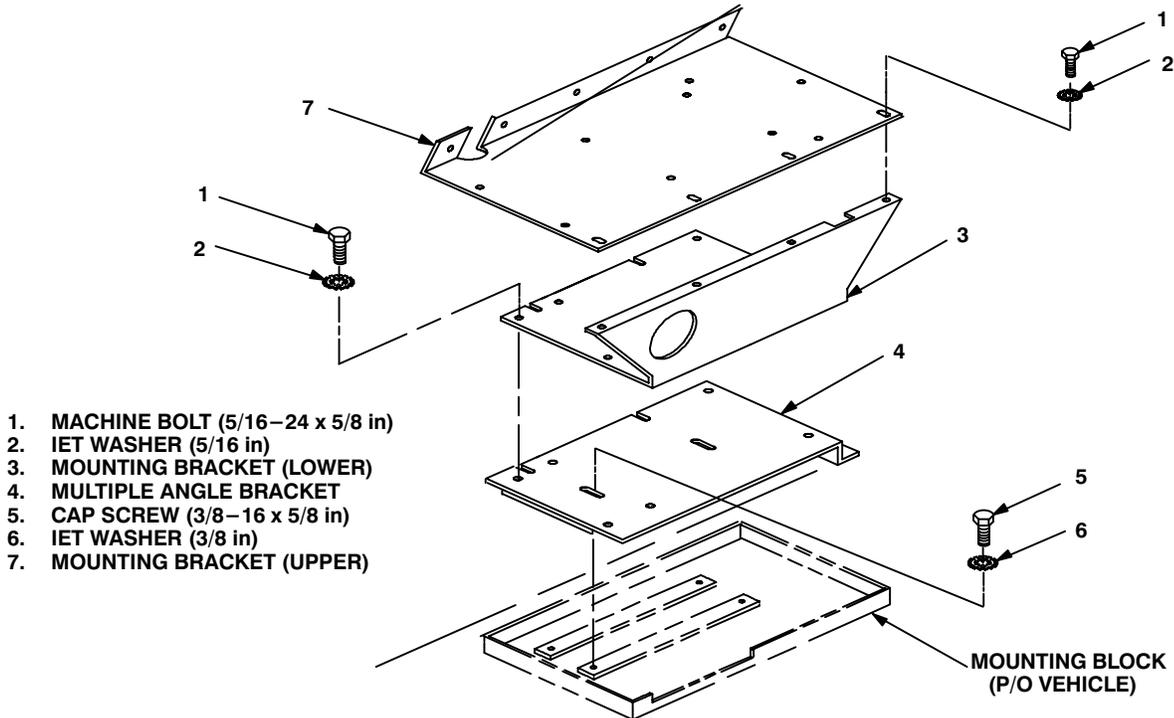**MOUNTING BLOCK (P/O VEHICLE)**

Figure 5−5 (1).   Mounting Base Installation: Installing Brackets

5.3 Installation of Mounting Base, Electrical Equipment MT−6576/VRC (mounting base). Continued

ITEM	ACTION	REMARKS
c. Multiple angle bracket (4), four cap screws (5) and four internal/external–toothed (IET) washers (6).	Install (without securing) to mounting block. See Figure 5–5 (1).	Tools: 1/2 in socket.
d. Mounting bracket (3), six machine bolts (1) and	Install and secure to mounting bracket (3).	Tools: 1/2 in socket. NOTE: IET washers are supplied in attached bags.
e. Mounting bracket (7), four machine bolts (1) and four internal/external–toothed (IET) washers (2).	Install (without securing) to mounting bracket (3).	Tools: 1/2 in socket.
f. Assembled brackets (3,4, 7).	Adjust until mounting bracket (7) seats flush against cab wall.	
g. Mounting holes for mounting bracket (7).	Using rear of mounting bracket as a template, mark five mounting hole locations on cab. wall.	
h. Mounting bracket (7) and mounting hardware (installed in step e).	Temporarily remove from mounting bracket (3).	Tools: 1/2 in socket.
i. Assembled brackets (3,4) and mounting hardware.	Temporarily remove from mounting block.	Tools: 9/16 in socket.
j. Mounting holes for mounting bracket (7).	Using hole locations marked in step g, drill five 29/64 in diameter holes (1 in deep in cab wall.	Tools: Electric drill and 29/64 in drill bit. NOTE: all holes should be drilled at a 90 degree angle (perpendicular) to mounting surface.
k. Five inserts (5/16–24 in).	See section 5.1, steps a, c, and d for for installation.	
l. Assembled brackets (3,4) and mounting hardware (removed in step 1).	Reinstall and secure to mounting block. see Figure 5–5(1).	Tools: 9/16 in socket.
m. Mounting base (3) and mounting bracket (4).	Remove a 2" square area of paint on the underside of mounting base (3) around four mounting holes. Remove a 2" square area of paint on mounting bracket (4) around the existing mounting holes that mate with mounting holes of mounting base (3). Clean the paint removed areas and apply a thin coat of conductive anti–seize compound.	Tools: Electric grinder or equivalent.
n. Mounting base (3).	Place on mounting bracket (4) and align with matching hole pattern. See Figure 5–5(2).	
o. Four machine bolts (1) and four internal/external–toothed (IET) washers (2).	Install and secure to mounting base (3) and mounting bracket (4).	Tools: 1/2 in socket.

5.3 Installation of Mounting Base, Electrical Equipment MT−6576/VRC (mounting base). Continued

ITEM	ACTION	REMARKS

1. **MACHINE BOLT (5/16−24 x 1 in)**
2. **IET WASHER (5/16 in)**
3. **MOUNTING BASE**
4. **MOUNTING BRACKET (LOWER)**
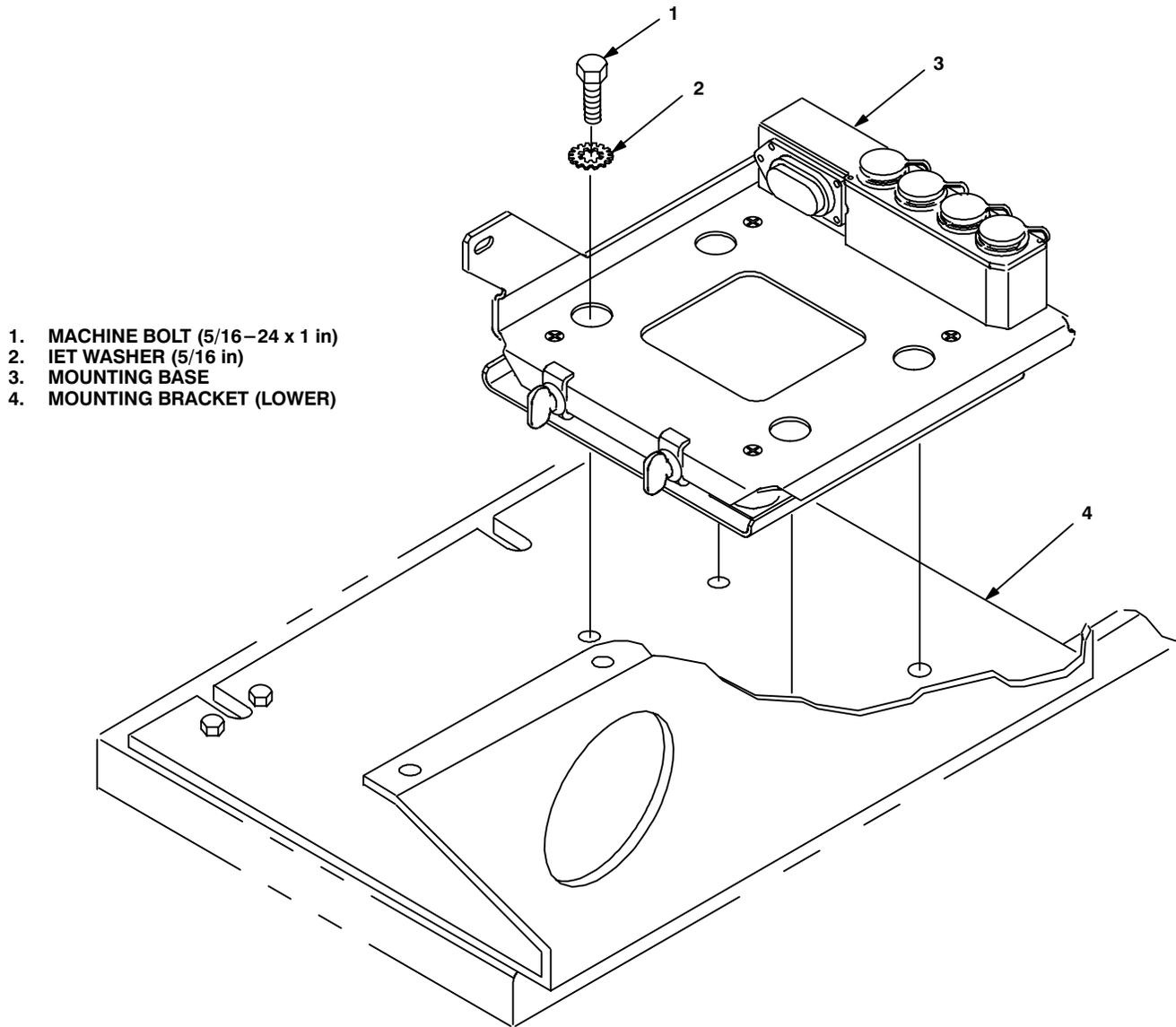
Figure 5−5 (2).   Mounting Base Installation: Installing Mounting Base

p. Mounting bracket (6).	Reposition on top of mounting bracket (4); then align mounting holes. See Figure 5–5(3).	
q. Four machine bolts (5) and four internal/external–toothed (IET) washers (2).	Reinstall and secure to front holes in mounting brackets (6,4).	Tools: 1/2 in socket. NOTE: Same mounting hardware removed in step h.

5.3   Installation of Mounting Base, Electrical Equipment MT−6576/VRC (mounting base). Continued

| ITEM	ACTION	REMARKS
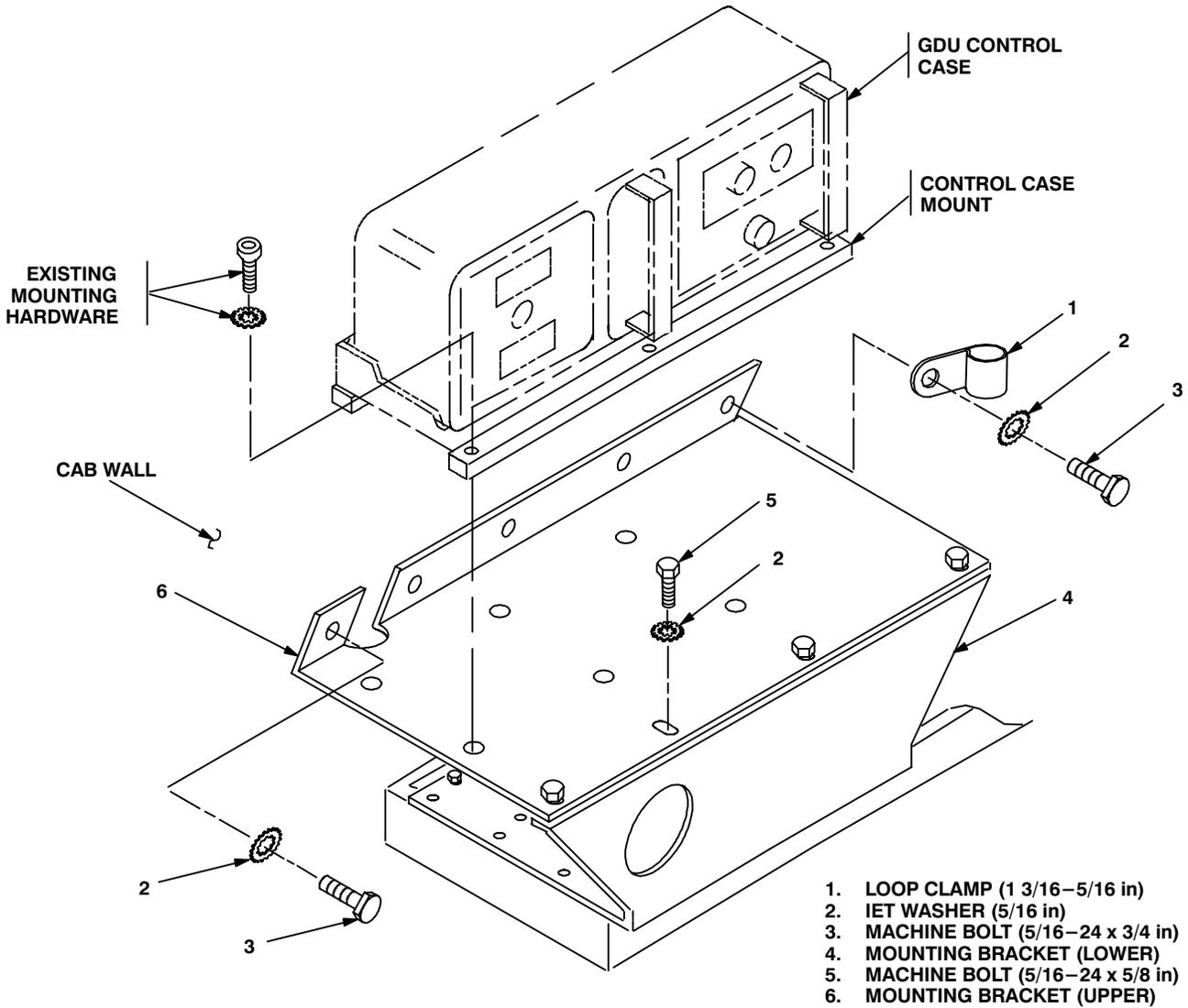
Figure 5−5 (3).   Mounting Base Installation: Reinstalling Upper Mounting Bracket

r.   Loop clamp (1), machine bolt (3) and internal/exter−nal−toothed (IET) washers (2)

Install loosley to right rear hole in mounting bracket (6) and cab wall. See Figure 5−5(3).

s.   Four machine bolts (3) and four internal/external−toohed (IET) washers (2).

Install and secure to remaining holes in mounting bracket (6) and cab wall.

t.   GDU control case, control case mount and existing mounting hardware.

Install and secure to mounting bracket (6).

5.4 Installation of Tray, Battery CY−8664/VRC (battery tray) and Battery Box CY−8523A/PRC (battery box).

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. Battery tray (5).	Place on right side of mounting bracket (4) and aline mounting holes. See figure 5−6.	
b. Three machine bolts (2), and three IET washers (3).	Install and secure to battery tray (5) and mounting bracket (4).	Tools: 1/2 in socket.
c. Battery box (1).	Place on battery tray (5); then secure with four spring latches.	

SPRING LATCH

1. BATTERY BOX
2. MACHINE BOLT (5/16 − 24 x 3/4 in)
3. IET WASHER (5/16 in)
4. MOUNTING BRACKET
5. BATTERY TRAY
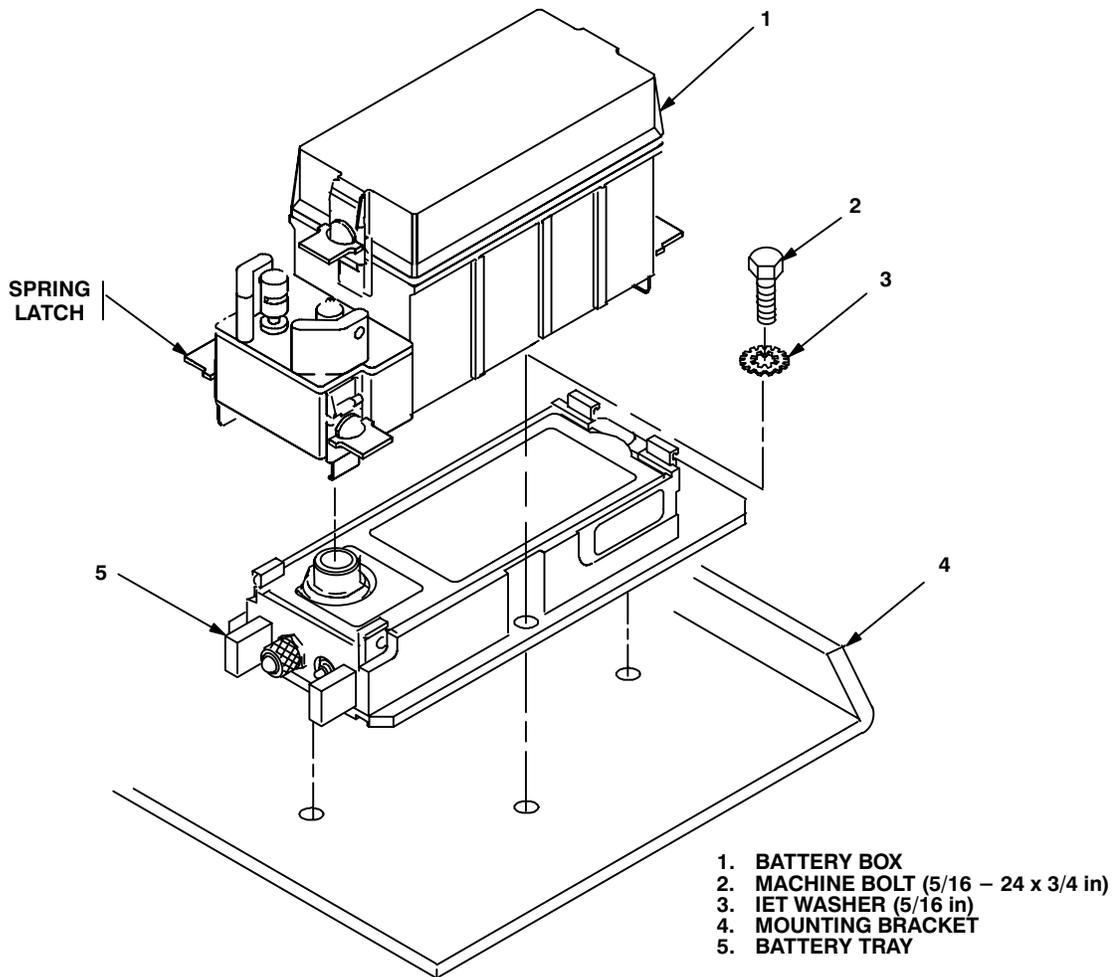
Figure 5−6. Battery Tray and Battery Box Installation

5.5 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) connector P1.	From inside cab, insert through cable hole in rear wall and antenna bracket (1); then connect and secure to antenna base (4) connector J1. See figure 5−7 (1).	

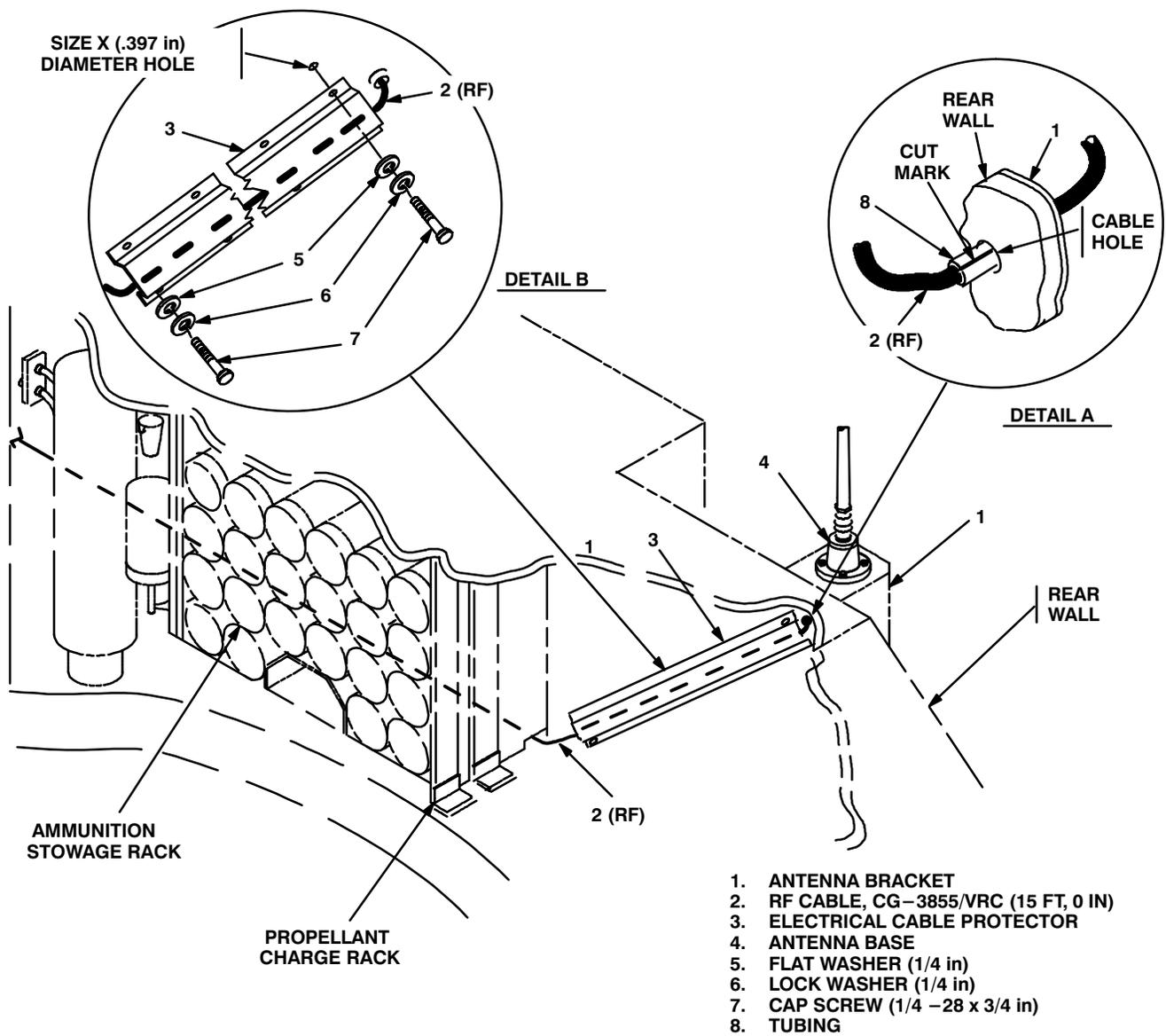1. ANTENNA BRACKET
2. RF CABLE, CG−3855/VRC (15 FT, 0 IN)
3. ELECTRICAL CABLE PROTECTOR
4. ANTENNA BASE
5. FLAT WASHER (1/4 in)
6. LOCK WASHER (1/4 in)
7. CAP SCREW (1/4 −28 x 3/4 in)
8. TUBING

Figure 5−7 (1). Cable Installation: RF Cabling

5.5 Installation of Cables. Continued

ITEM	ACTION	REMARKS
b. Tubing (8).	Cut to approximate length of rear wall thickness; then cut through mark shown. See figure 5−7 (1), detail A. Wrap around RF cable (3) and insert in cable hole.	Tools: Pocket knife.
c. RF cable (2).	Route behind propellant charge rack and below ammunition storage rack to filter assembly. See figures 5−7 (1) and 5−7 (2).	
d. Mounting holes for electrical cable protector (3).	Using cable protector as a template, position over RF cable and drill two size X(.397 in) diameter holes (3/4 in deep) in rear cab wall. See figure 5−7 (1), detail B for locations.	Tools: Electric drill and size X drill bit.
e. Two inserts (1/4−28 in).	See section 5.1, steps a, b, and d.	
f. Electrical cable protector	Reposition over RF cable and aline mounting holes. See figure 5−7 (1).	
g. Two cap screws (7), two lock washers (6) and two flat washers (5).	Install and secure to eletrical cable protector (3) and rear wall. See figure (1), detail B for locations.	Tools: 7/16 in socket.
h. Adhesive-sealant.	Apply to and around cable hole in rear wall and antenna bracket (1). See figure 5−7 (1), detail A.	
i. RF cable (2).	Route behind filter assembly and mounting bracket (7) to mounting base (8). See figure 5−7 (2).	
j. RF cable (2) connector P2.	Position on top of mounting base (8).	
l. SP cable (1) connector P1.	Connect and secure to AM−1780/VRC connector J501.	
m. SP cable (1) connector P2.	Insert through loop clamp (3); then connect and secure to SP cable (10) connector P1. See figure 5−7 (2), detail A.	
n. SP cable (10) connector P2.	Connect and secure to mounting base (8) connector J3.	
o. Tiedown strap (11).	Wrap around and secure to SP cable (10) behind mounting base (8).	

5.5 Installation of Cables. Continued

1. SP CABLE, CX−13300/VRC (3 FT, 0 IN)
2. RF CABLE, CG−3855/VRC (15 FT, 0 IN)
3. LOOP CLAMP (1 3/16−5/16 in)
4. BATTERY BOX
5. POWER CABLE, CX−13306/VRC (3 FT, 0 IN)
6. BATTERY TRAY
7. MOUNTING BRACKET (UPPER)
8. MOUNTING BASE
9. CONTROL CABLE, CX−13290/VRC (2 FT, 0 IN)
10. SP CABLE, CX−13313/VRC (2 FT, 7 IN)
11. TIEDOWN STRAP

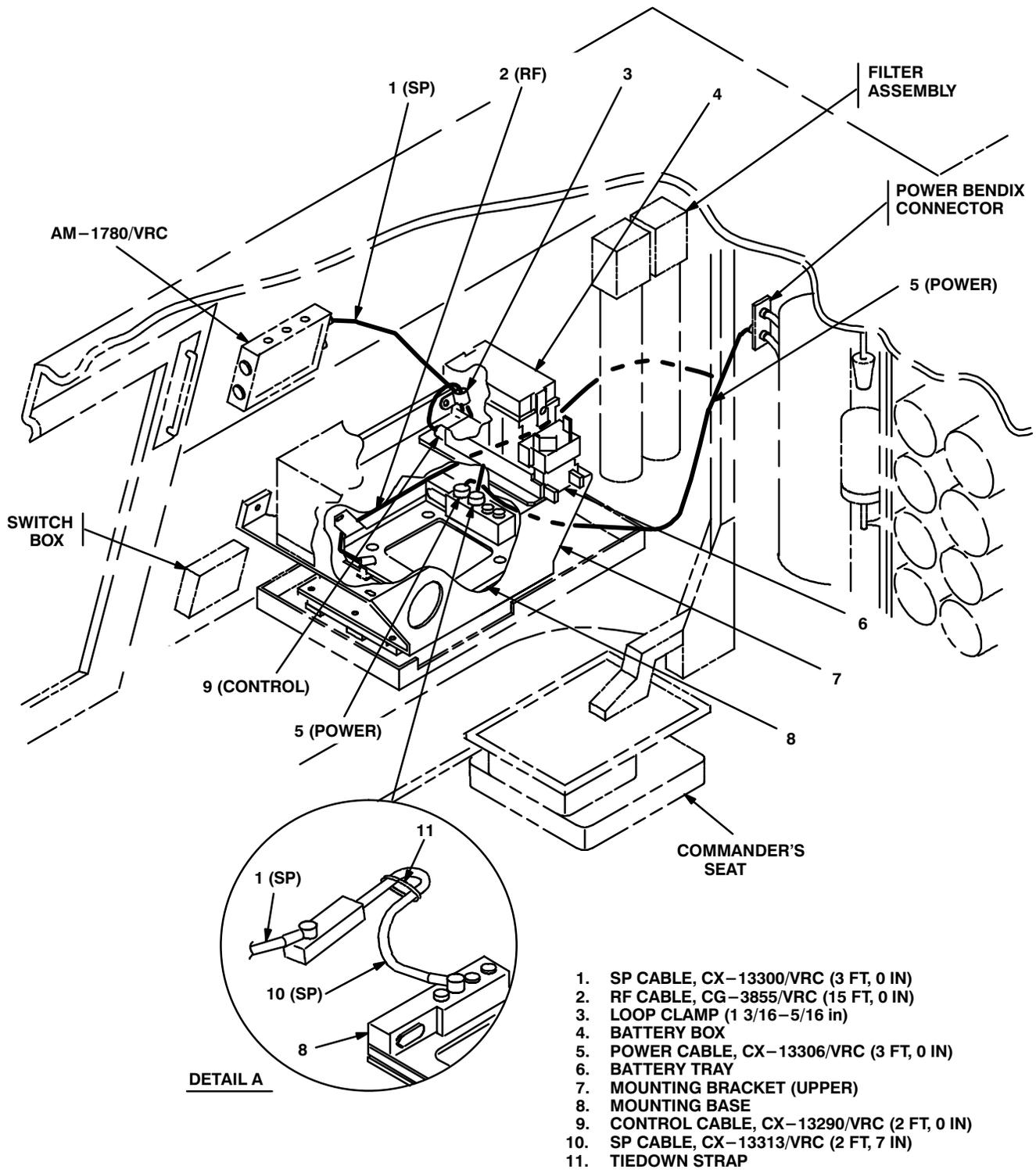**Figure 5−7 (2). Cable Installation: Power, SP and RF Cabling**

5.5   Installation of Cables. Continued

ITEM	ACTION	REMARKS
p. Control cable (9) connector P1.	Connect and secure to battery tray (6) connector J1.	
q. Control cable (9) connector P2.	Insert through loop clamp (3), then position on side of mounting base (8).	
r. Power cable (5) connector P1.	Connect and secure to power Bendix connector.	
s. Power cable (5) connector P2.	Connect and secure to mounting base (8) connector J1.	

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

ITEM	ACTION	REMARKS
a. Equipment.	Check for secure mounting. Check for loose parts, connectors and mounting hardware.	
b. Cables.	Check for proper installation and connection of cables. See figure 5−8 for cable connections. Unused cables should be stowed in appropriate place inside the 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.	

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

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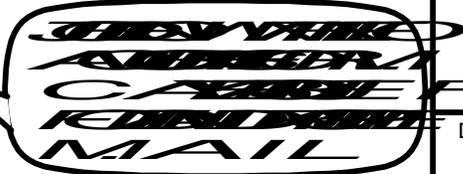
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TM 11−5840−340−12	23 Jan 74	Radar Set AN/PRC−76

BE EXACT PIN-POINT WHERE IT IS				IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:
PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO	
2−25	2−28			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 wind 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. |
| 3−10 | 3−3 | | 3−1 | 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. |
| 5−6 | 5−8 | | | Add new step f.1 to read, ☐ Replace cover plate removed in step d above."

REASON: To replace the cover plate. |
| | | FO−3 | | 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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