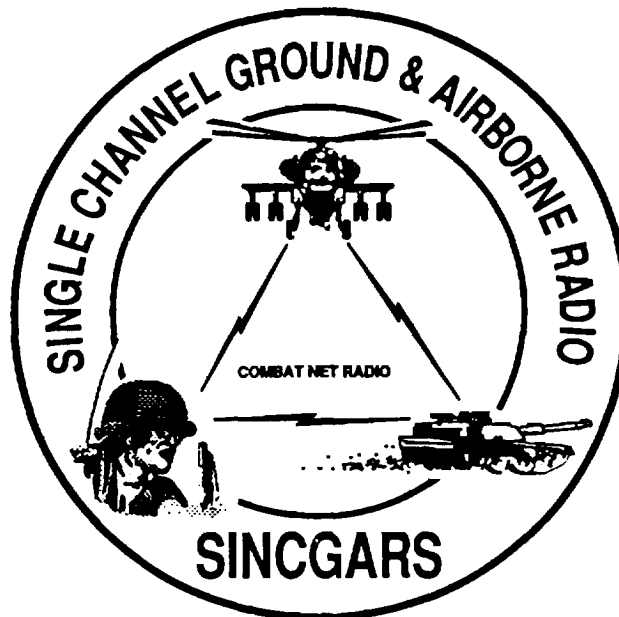

TECHNICAL BULLETIN



INSTALLATION INSTRUCTIONS FOR
INSTALLATION KIT
ELECTRONIC EQUIPMENT MK-2347/VRC
(NSN 5895-01-328-1990) (EIC: N/A)
TO PERMIT INSTALLATION OF RADIO SETS
ANNVRC-89/91/92 SERIES
INTO U.S. ARMY WATERCRAFT

Approved for public release; distribution is unlimited.

HEADQUARTERS, DEPARTMENT OF THE ARMY
1 SEPTEMBER 1993

INSTALLATION INSTRUCTIONS FOR
 INSTALLATION KIT
 ELECTRONIC EQUIPMENT MK-2347NRC
 (NSN 5895-01-328-1990) (EIC: N/A)
 TO PERMIT INSTALLATION OF RADIO SETS
 ANNRC-89/91/92 SERIES
 INTO U.S. ARMY WATERCRAFT

REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, US Army Communications Electronics Command and Fort Monmouth, ATTN: AMSEL-LC-LM-LT, Fort Monmouth, New Jersey 07703-5007.

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

TABLE OF CONTENTS

Subject	Section	Page
Scope	0.1	1
General Information	0.2	1
Maintenance Forms, Records, and Reports	0.3	1
Reports of Maintenance and Unsatisfactory Equipment	0.3.1	1
Report of Packing and Handling Deficiencies	0.3.2	1
Discrepancy in Transportation Deficiency Report (TDR) (SF 361)	0.3.3	1
Consolidated Index of Army Publications	0.4	1
Purpose of Installation	1.	2
End Item or System to be Modified	2.	2
Application Times	3.	2
Time for Completion of Installation.....	3.1	2
Time for Installation of One Assembly or Component.....	3.2	2
Preparation for Installation.....	4.	2
Preparation of Vehicle	4.1	2
Preparation of MK	4.2	2
MK, Distribution, and Consumables	4.3	3
Tools and Test, Measurement, and Diagnostic Equipment (TMDE) Required	4.4	9
Installation Procedures	5.	10
Installation of Antenna, Vehicular, AS-3900NRC	5.1	12
Installation of Antenna Mounting Bracket.....	5.1.1	12
Installation of Antenna Base	5.1.2	14
Installation of Top Antenna Assembly.....	5.1.3	18
Installation of Mounting Base, Electrical Equipment MT-6352/VRC (mounting base)	5.2	19
Installation of Loudspeaker, Control Unit LS-671NRC (speaker).....	5.3	21
Installation of Cables	5.4	23
Installation of Mounting Base, Electrical Equipment MT-6353NRC	5.5	25
Installation of MK-2499NRC.....	5.6	27
Post-Installation and Checkout	5.7	27
Appendix A References.....		A-1

LIST OF ILLUSTRATIONS

Figure	Title	Page
4-1	MK Illustrated Parts List	6
4-2	Additional Items Illustrated Parts List	7
4-3	TSEC/KY-57 Illustrated Parts List	8
5-1(1)	MK and Radio Installation: MK Equipment Locations (Typical).....	10
5-1(2)	MK and Radio Installation: Radio Equipment Locations	11
5-2(1)	Antenna Mounting Bracket Installation	13
5-2(2)	Antenna Base Installation: Location B.....	15
5-2(3)	Antenna Base Installation: Location A.....	17
5-2(4)	Top Antenna Assembly Installation.....	18
5-3	Mounting Base Installation	20
5-4	Speaker Installation	22
5-5	Cable Installation	24
5-6	MT-6353NRC Mounting Base Installation	26
5-7(1)	Cable Diagram: For ANVRC-89A/91A/92A	28
5-7(2)	Cable Diagram: For ANNRC-89/91/92.....	30

LIST OF TABLES

Table	Title	Page
4-1	Parts List for Installation of Radio Set AN/VRC-89/91/92	4
4-2	Additional Items Required for Installation of Radio Set(s) ANNRC-92 Series	7
4-3	Additional Items Required for Installation when using RT-1439NRC.....	8

0.1 SCOPE.

This technical bulletin provides installation instructions for Installation Kit, Electronic Equipment MK-2347NRC, commonly referred to as the Mounting Kit (MK). The MK shall be installed into the following type of vehicle(s):

- US Army Watercraft

The MK is used for installation of radio set components at field locations. The information contained in this technical bulletin is the official authorization to perform the installation at the unit maintenance level.

NOTES

- **This technical bulletin is not an authorization for requisition or turn-in of vehicles.**
- **This technical bulletin does not establish quantity or types of vehicles assigned to using units.**

This technical bulletin does not contain information on the maintenance or replacement of the MKs. This information is contained in the MAC of TM 11-5820-890-20-2, TM 11-5820-890-20-4 and RPSTL of TM 11-5820-890-20P.

0.2 GENERAL INFORMATION.

The MK becomes operable when all the radio set components are installed in the vehicle and correct power is supplied. Refer to TM 11-5820-890-20-1 or TM 11-5820890-20-4 for installation, Operational (OP) Check instructions, and required maintenance procedures. Refer to TM 11-5820-890-20P for repair parts.

Included in the radio set ANNRC-89/91/92 Series are:

- Radio Set ANNRC89/91/92 (for RT-1439NRC)
- Radio Set ANNRC-9A/91A/92A (for RT-1523(C)/U)

0.3 MAINTENANCE FORMS, RECORDS, AND REPORTS.

0.3.1 Reports of Maintenance and Unsatisfactory Equipment. See Section 4.2.2.3 for information.

0.3.2 Report of Packing 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-2347NRC (MK) contains the items needed to mount Radio Set ANNRC-89NA91 A/92A in a US Army Watercraft (vehicle). If Radio Set ANNRC-92A or ANNRC-92 are authorized, see Section 5.5 for instructions to install Mounting Base MT-6353NRC. If Radio Set ANNRC-89/91/92 is to be installed, communications security equipment (TSEC/KY-57) will need to be installed also; see Section 5.6 for information.

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 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 items will not reflect the typical vehicle downtime.

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

4. PREPARATION FOR INSTALLATION.

This section explains how to prepare the vehicle and MK for installation.

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

4.1.1 Items to be Removed. Remove existing ANNRC-12 radio family installation kit/harness. See TM 11-5820-401-20-2 for removing items used with intercom systems, or TM 11-5820-401-20-1 (used without intercom systems), and TM 9-2320-289-20.

4.1.2 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 cover 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 in 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.

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 ANNRC-89/91/92 Series

NSN	ITEM DESCRIPTION AND PART NUMBER	QUANTITY IN MK	SMR CODE	FIGURE ITEM NO.
5985-01-297-2971	Antenna, Vehicular AS-3900NRC (A3017899-1)	2	PAOOF A	4-1, 2
5305-00-847-1159	Screw, Cap, Hexagon (3/8-16 x 1 3/4 in) MS35307-365	8	PAOZZA	
5310-00-913-8881	Nut, Hexagon (3/8-16 in) MS51971-3	8	PAOZZA	4-1, 1
5310-00-061-1258	Washer, Lock, Internal/External Toothed (3/8 in) MS45904-76	16	PAOZZA	
5310-00-889-2527	Washer, Lock, Internal/External-Toothed (5/16 in) MS45904-72	4	PAOZZA	4-1, 3
5306-00-225-9086	Bolt, Machine (5/16-24 x 5/8 in) MS90726-31 (Not Used)	2	PAOZZA	
5330-01-205-2864	Gasket (A3013655-1)	2	PAOZZA	4-1, 5
5975-01-188-8873	Mounting Base, Electrical Equipment MT-6352NRC (A3013367-1)	1	PAOOF A	
5306-00-225-9089	Screw, Cap, Hexagon (5/16-24 x 1 in) MS90726-34	5	PAOZZA PAOZZA	4-1, 4
5310-00-889-2527	Washer Lock, Internal/External Toothed (5/16 in) MS45904-72	10	PAOZZA	
5310-00-880-7746	Nut, Hexagon (5/16-24) MS51968-5 (Not Used)	5	PAOZZA	4-1, 7
5995-01-219-4704	Cable Assembly, Special Purpose, Electrical CX-13292NRC (6 FT, 0 IN) (A3014038-3)	2	PAOZZA	
5965-01-222-1420	Loudspeaker, Control Unit LS-671/VNRC (A301 4065-1)	2	PAOOF A	4-1, 6
5965-00-043-3463	Handset, H-250/U	2	PAOZZA	
4020-01-341-8795	Bracket, Mounting (A3050655-1)	1	XBOZZA	4-1, 8
5325-00-262-9162	Fiber Rope Assembly, Single Leg (A3167672-1)	2	PAOZZA	
5306-00-685-7886	Grommet, Nonmetallic 1/4 MS35489-94	1	PAOZZA	4-1, 9
5306-00-021-3912	Bolt, Machine (5/16-24 x 5/8 in) MS35308-331	2	PAOZZA	
5306-00-021-3915	Bolt, Machine (5/16-24 x 1 in) MS35308-334	7	PAOZZA	4-1, 10
5306-00-021-3915	Bolt, Machine (5/16-24 x 1 1/4 in) MS35308-336	2	PAOZZA	
5305-00-207-2297	Screw, Cap, Hexagon (1/4-20 x 1 1/2 in) MS35307-312	6	PAOZZA	4-1, 11
5305-00-252-5082	Screw, Cap, Hexagon (5/16-24 x 2 in) MS35308-340	5	PAOZZA	
5305-00-822-5853	Screw, Cap, Hexagon (3/8-16 x 2 1/2 in) MS35307-368	4	PAOZZA	4-1, 12
5310-00-974-6623	Washer, Lock (5/16 in) MS35338-140	2	PAOZZA	
5310-00-625-5756	Washer, Flat (5/16 in) MS15795-812	2	PAOZZA	

Table 4-1. Parts List for Installation of Radio Set ANNRC-89/91/92 Series

NSN	ITEM DESCRIPTION AND PART NUMBER	QUANTITY IN MK	SMR CODE	FIGURE ITEM NO.
5310-00-903-5966	Nut, Hexagon (1/4-20) MS51971-1	6	PAOZZA	
5310-00-939-2655	Nut, Hexagon (5/16-24) MS51971-2	7	PAOZZA	
5310-00-889-2528	Washer, Lock, Internal/External-Toothed (1/4 in) MS45904-68	12	PAOZZA	
5310-00-889-2527	Washer, Lock, Internal/External-Toothed (5/16 in) MS45904-72	2	PAOZZA	

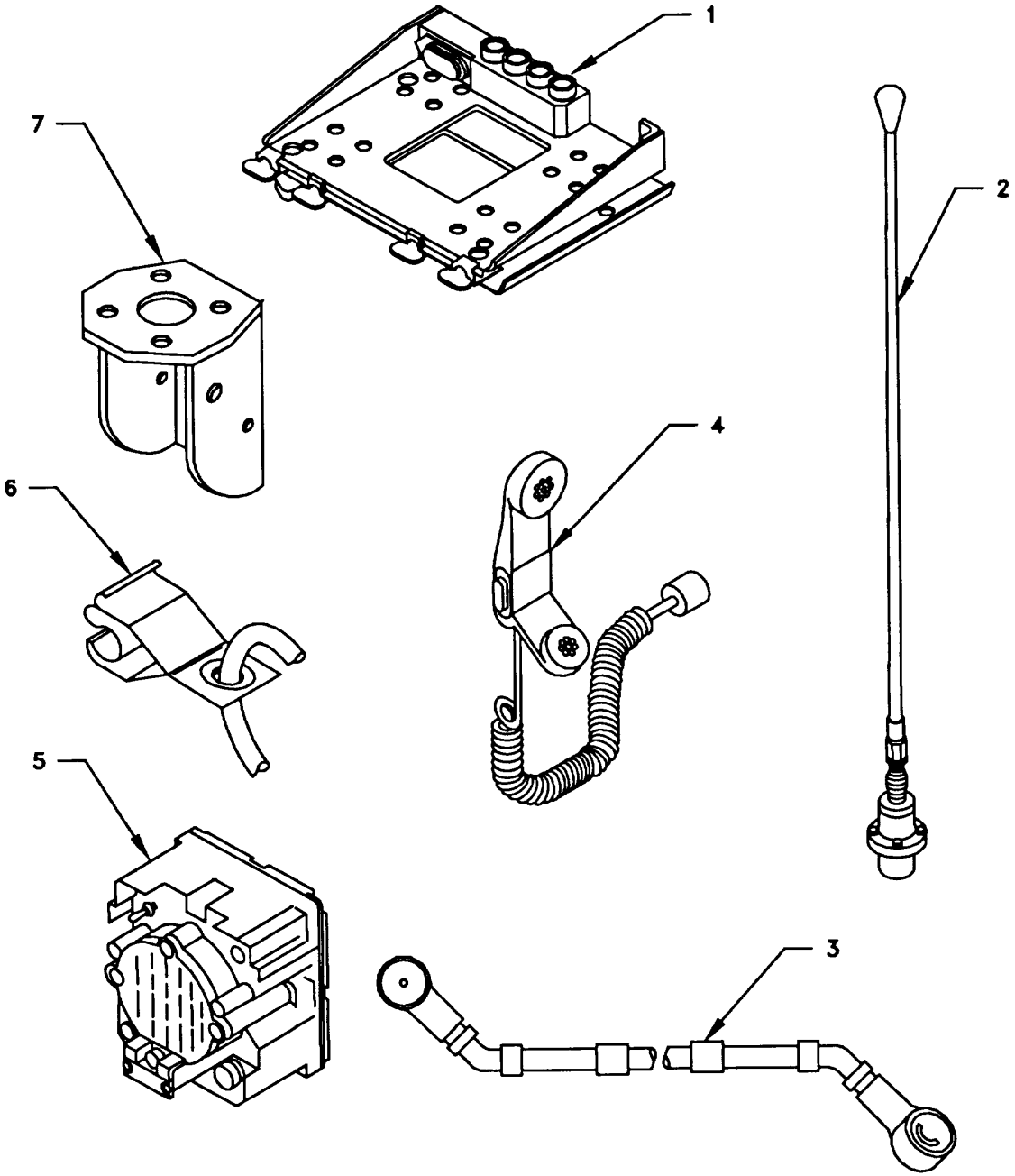


Figure 4-1. MK Illustrated Parts List

Table 4-2. Additional Items Required for Installation of Radio Set(s) ANNRC-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-6353NRC (A3014053-1)	1	PAOFHA	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 MS3367-9	4		
5995-01-300-9324	Cable Assembly, Power, Electrical CX-13303NRC (4 FT, 6 IN) (A3014040-9)	1	PAOZZA	4-2, 1
5995-01-222-4209	Cable Assembly, Special Purpose, Electrical CX-13291NRC (3 FT, 0 IN) (A3014037-1)	1	PAOZZA	4-2, 2
5995-01-219-7025	Cable Assembly, Radio Frequency CG-3856NRC (5 FT, 0 IN) (A3014032-3)	1	PAOZZA	4-2, 3

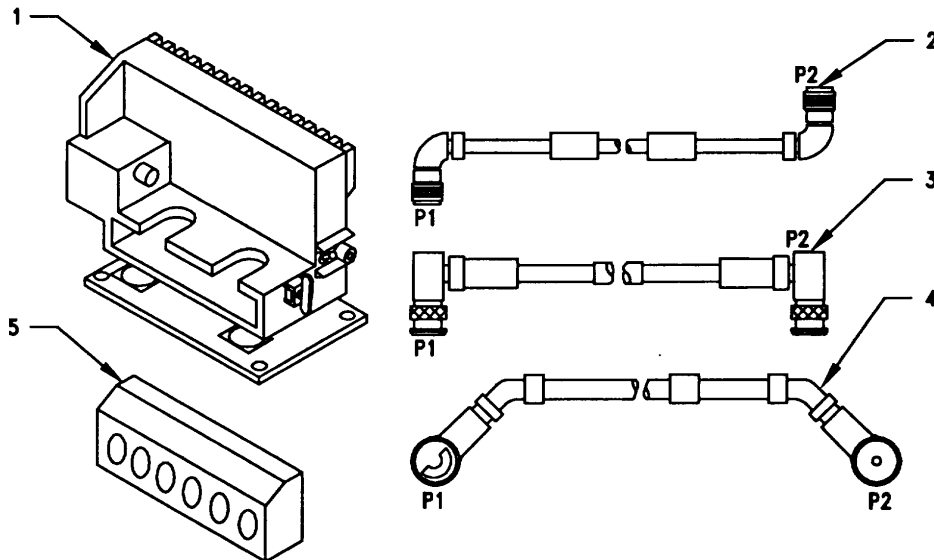


Figure 4-2. Additional Items Illustrated Parts List

Table 4-3. Additional Items Required for Installation when using RT-1439NRC

NSN	ITEM DESCRIPTION AND PART NUMBER	QUANTITY IN MK	SMR CODE	FIGURE ITEM NO.
5995-01-300-9293	Cable Assembly, Special Purpose, Electrical CX-13293NRC (7 FT, 0 IN) (A3014034-3)	2	PAOZZA	4-3, 1
5995-01-225-1655	Cable Assembly, Power, Electrical CX-13303NRC (1 FT, 6 IN) (A3014040-6)	1	PAOZZA	4-3, 3
5995-01-291-1130	Cable Assembly, Power, Electrical CX-13303NRC (7 FT, 0 IN) (A3014040-11)	1	PAOZZA	4-3, 2

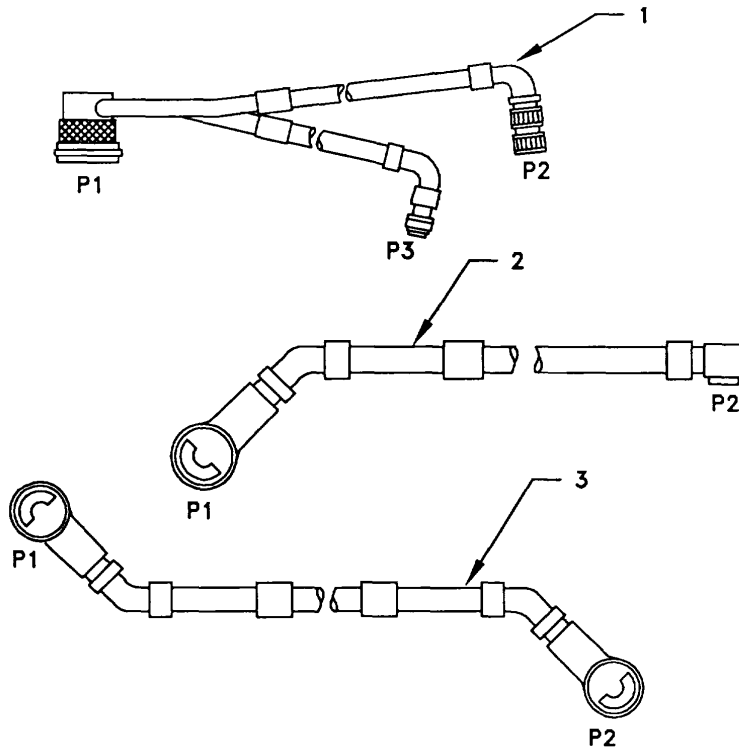


Figure 4-3. TSEC/KY-57 Illustrated Parts List

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

NSN	NOMENCLATURE
8040-00-117-8510	Adhesive-Sealant, Clear, RTV
6850-00-880-7616	Silicone Compound, MIL-S-8660

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

NOMENCLATURE	NSN	QUANTITY
Radio Set* 1		
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
Electric Drill	5130-00-889-8994	1
Drill Bit: 9/32 in	5133-00-189-9246	1
11/32 in	5133-00-227-9644	1
3/4 in	5133-00-266-9471	1
*Use radio issued with your vehicle if available.		

5. INSTALLATION PROCEDURES.

This section describes where and how to install MK items in the vehicle. See Figure 5-1 for an overall view of where the MK equipment, as well as radio components, will be installed. When installing MK equipment, be sure to read and follow instructions and illustrations carefully. If Radio Set ANNRC-92A or ANNRC-92 are authorized, see Section 5.5 for instructions to install Mounting Base MT-6353NRC. If Radio Set ANNRC-89/91/92 is to be installed, communications security equipment (TSEC/KY-57) will need to be installed also; see Section 5.6 for information.

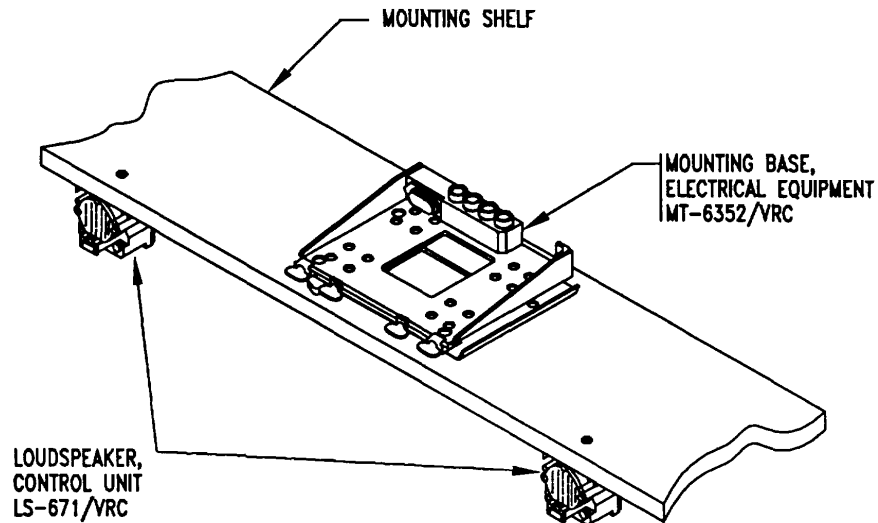


Figure 5-1(1). MK and Radio Installation: MK Equipment Locations (Typical)

5. INSTALLATION PROCEDURES. Continued.

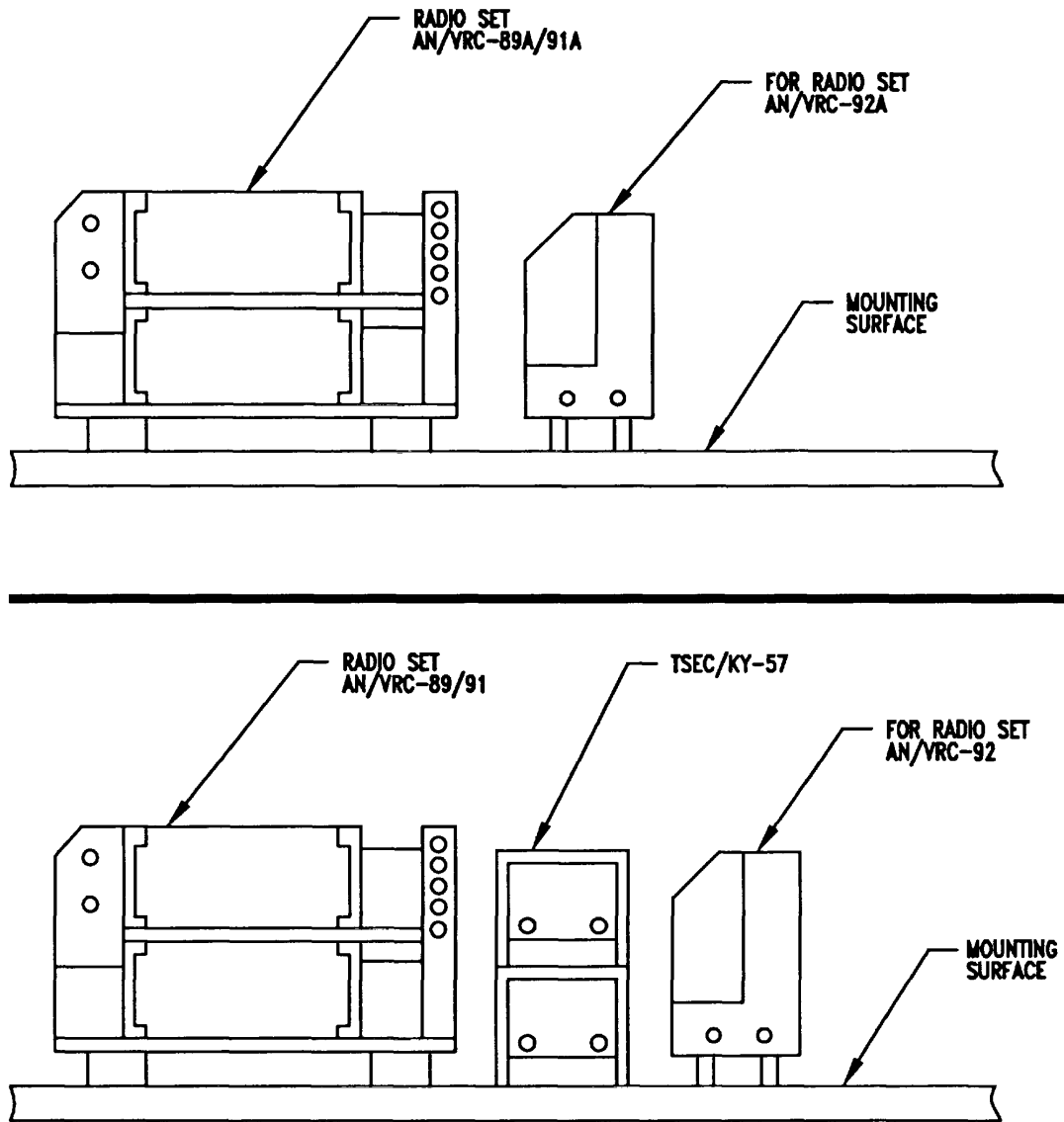


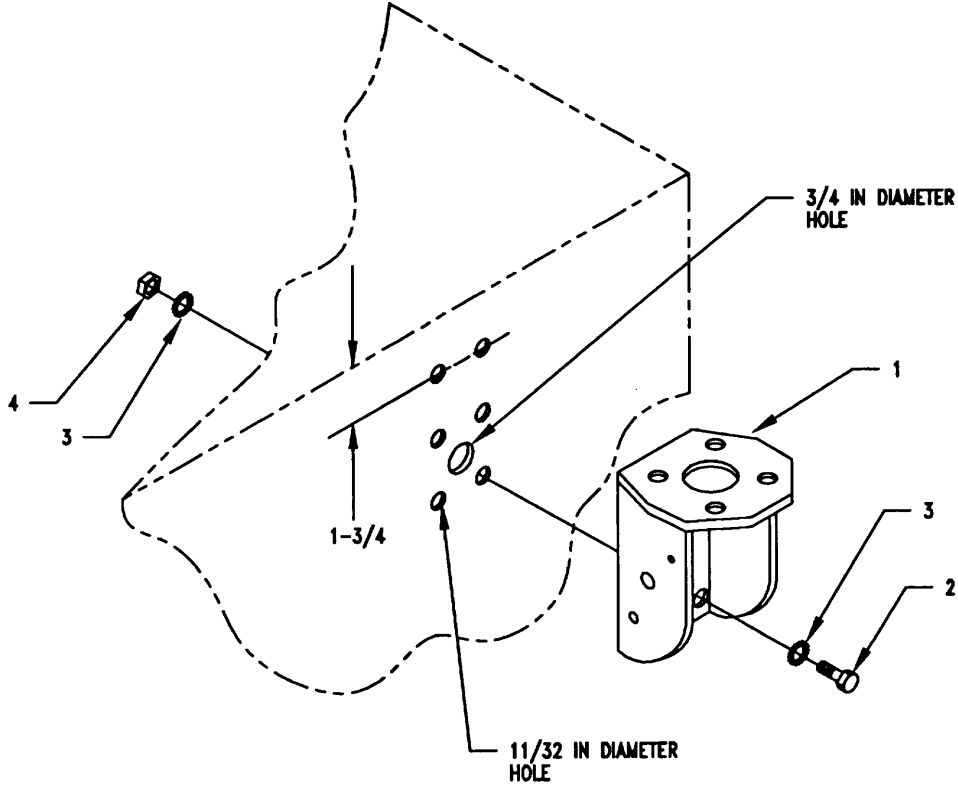
Figure 5-1(2). MK and Radio Installation: Radio Equipment Locations

5.1 Installation of Antenna, Vehicular, AS-3900NRC (antenna).

5.1.1 Installation of Antenna Mounting Bracket. Use the following procedures to install mounting bracket. Due to dissimilarity between the types of watercraft, the exact location of the antenna mounting bracket will vary.

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 holes for antenna mounting bracket (1)	Using the dimensions shown and the mounting bracket as a template, drill six 1 1/32 in diameter holes and one 3/4 in diameter hole through the mounting surface. See Figure 5-2(1).	Tools: Electric drill and 1 1/32 in and 3/4 in drill bit.
b Mounting bracket (1), six cap screws (2), twelve internal/external-toothed (IET) washers (3) and six nuts (4).	Install and secure to mounting surface See Figure 5-2(1)	Tools: 7/16 in socket and 7/16 in open/box wrench.

5.1.1 Installation of Antenna Mounting Bracket. Continued.



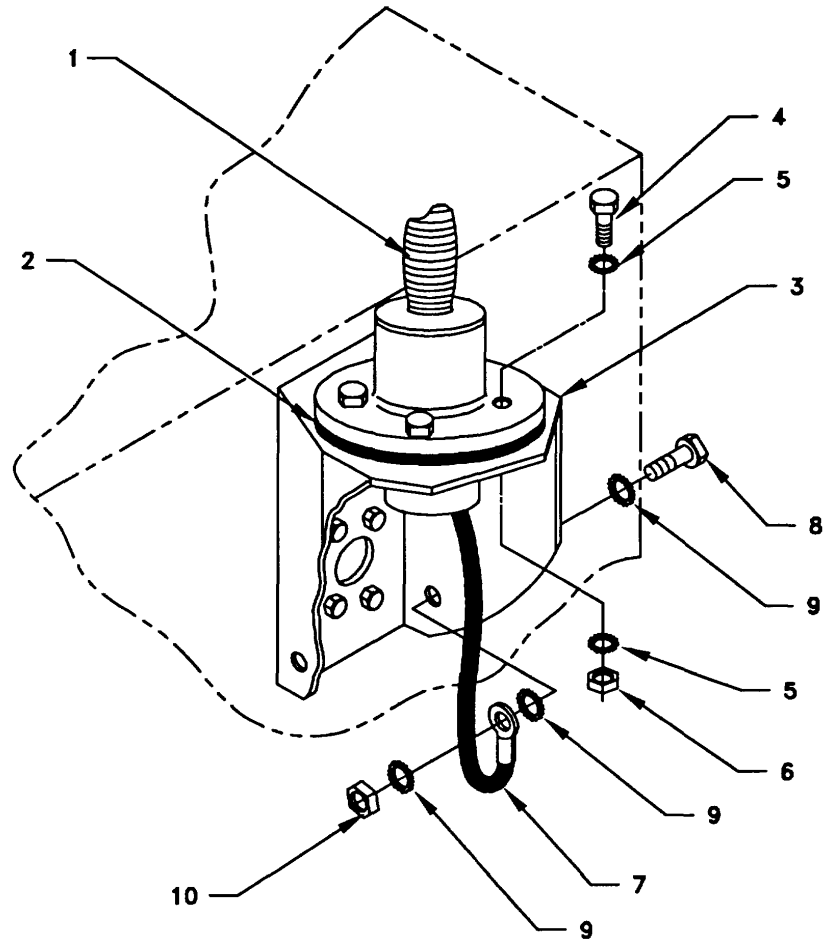
- 1. MOUNTING BRACKET
- 2. CAP SCREW (1/4-20 X 1 1/2 IN)
- 3. IET WASHER (1/4 IN)
- 4. NUT (1/4-20 IN)

Figure 5-2(1). Antenna Mounting Bracket Installation

5.1.2 Installation of Antenna Base. Use the following procedures to install antenna 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 Gasket (2)	Place on mounting bracket (3) and aline mounting holes. See Figure 5-2(2).	
b Antenna base (1)	Place on top of gasket (2) and mounting bracket (3); then aline mounting holes. See Figure 5-2(2).	
c Four cap screws (4), eight internal/external-toothed (IET) washers (5) and four nuts (6).	Install and secure to antenna base (1) and mounting bracket (3)	Tools: 9/16 in socket and 9/16 in open/box wrench.
d Ground strap (7), one machine bolt (8), three Internal/external-toothed (IET) washers (9) and nut (10).	Install and secure to mounting bracket (3)	Tools: 1/2 in socket and 1/2 in open/box wrench.

5.1.2 Installation of Antenna Base. Continued.



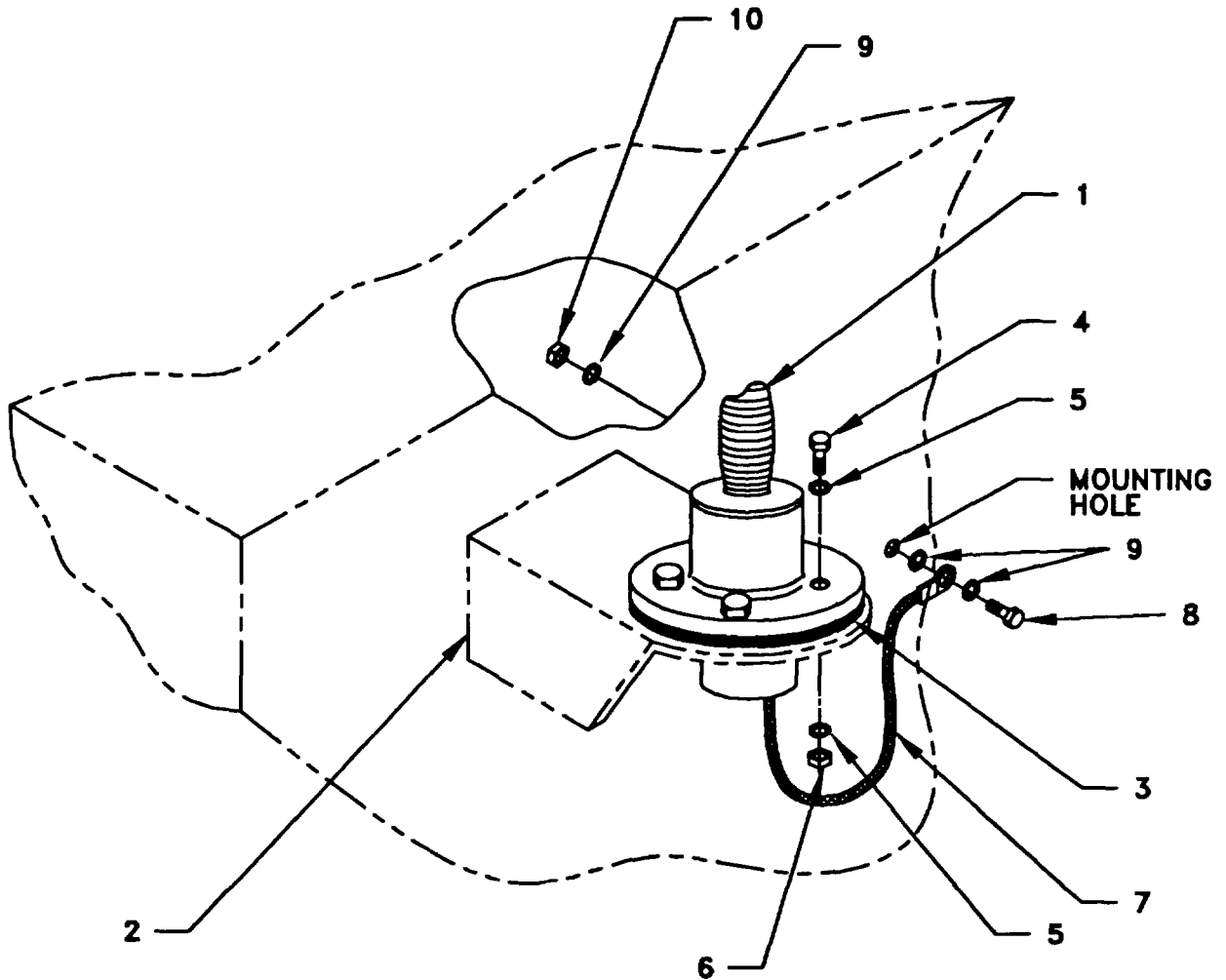
- | | |
|----------------------------------|------------------------------|
| 1. ANTENNA BASE | 6. NUT (3/8-16 IN) |
| 2. GASKET | 7. GROUND STRAP P/O ANTENNA |
| 3. MOUNTING BRACKET | 8. MACHINE BOLT (5/16-24 IN) |
| 4. CAP SCREW (3/8-16 X 1 3/4 IN) | 9. IET WASHER (5/16 IN) |
| 5. IET WASHER (3/8 IN) | 10. NUT (5/16-24 IN) |

Figure 5-2(2). Antenna Base Installation: Location B

5.1.2 Installation of Antenna Base. Continued.

ITEM	ACTION	REMARKS
NOTE		
If the existing antenna mounting bracket is thick, use the longer cap screws (3/8-16 x 2 1/2 in) supplied when installing antenna base (1).		
a Gasket (3)	Place on existing antenna bracket (2) and align over mounting holes. See Figure 5-2(3).	
b Antenna base (1) (2) and align mounting holes Figure 5-2(3).	Place on gasket (3) and antenna bracket See	
c Four cap screws (4), eight internal/external-toothed (IET) washers (5) and four nuts (6).	Install and secure to antenna base (1) and antenna bracket (2) 5-2(3).	Tools: 9/16 in socket and 9/16 in See Figure open/box wrench.
d Ground strap (7), one machine bolt (8), three Internal/external-toothed (IET) washers and nut (10).	Install and secure to existing mounting hole in mounting surface 5-2(3).	Tools: 1/2 in socket and 1/2 in See Figure open/box wrench.

5.1.2 Installation of Antenna Base. Continued.

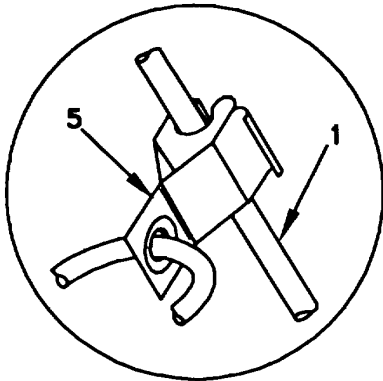


- | | |
|--|----------------------------------|
| 1. ANTENNA BASE | 6. NUT (3/8-16 IN) |
| 2. EXISTING ANTENNA BRACKET | 7. GROUND STRAP P/O ANTENNA |
| 3. GASKET | 8. MACHINE BOLT (5/16-24 X 1 IN) |
| 4. CAP SCREW (3/8-16 X 1 3/4 IN) OR
CAP SCREW (3/8-16 X 2 1/2 IN) | 9. IET WASHER (5/16 IN) |
| 5. IET WASHER (3/8 IN) | 10. NUT (5/16-24 IN) |

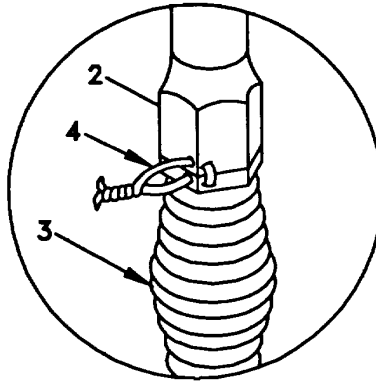
Figure 5-2(3). Installation of Antenna Base: Location A

5.1.3 Installation of Top Antenna Assembly. The top antenna assembly includes two antenna elements. Use the following procedures to assemble, install and tiedown all antennas.

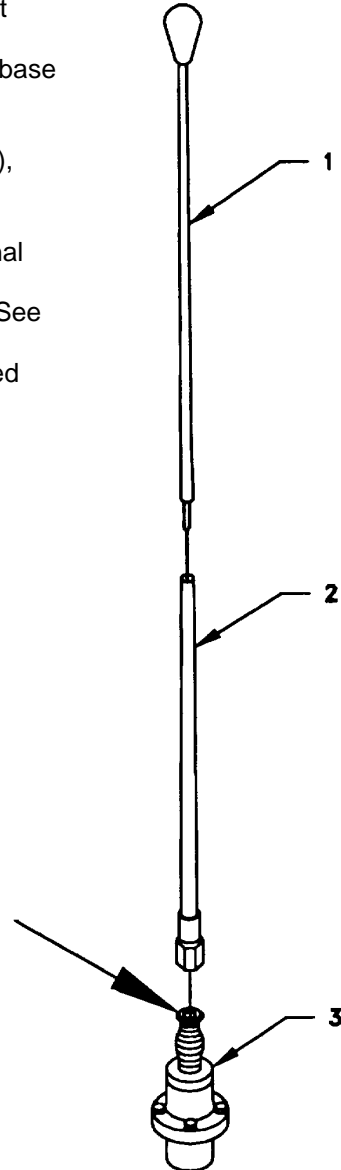
ITEM	ACTION	REMARKS
a. Antenna elements (1,2)	Apply silicone compound to element threads and assemble.	
b. Antenna element (2).	Install and hand-tighten to antenna base (3).	
c. Lock wire (4).	Install to antenna element (2) and antenna base (3). See Figure 5-2(4), Detail A.	
d. Fiber rope assembly (5)	Cut and remove excess with diagonal cutting pliers. Attach clip to antenna element (1). See Figure 5-2(4), Detail B. Tie rope to vehicle to position antenna in desired location.	



DETAIL B



DETAIL A



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

Figure 5-2(4). Top Antenna Assembly Installation

5.2 Installation of Mounting Base, Electrical Equipment MT-6352/VRC (mounting base). Remove and retain attaching bag of 5/16 in mounting hardware for installation. To insure good electrical grounding, any rust, corrosion or paint around mounting holes in radio shelf should be removed before installing the mounting base. See Figure 5-3 and perform the following steps.

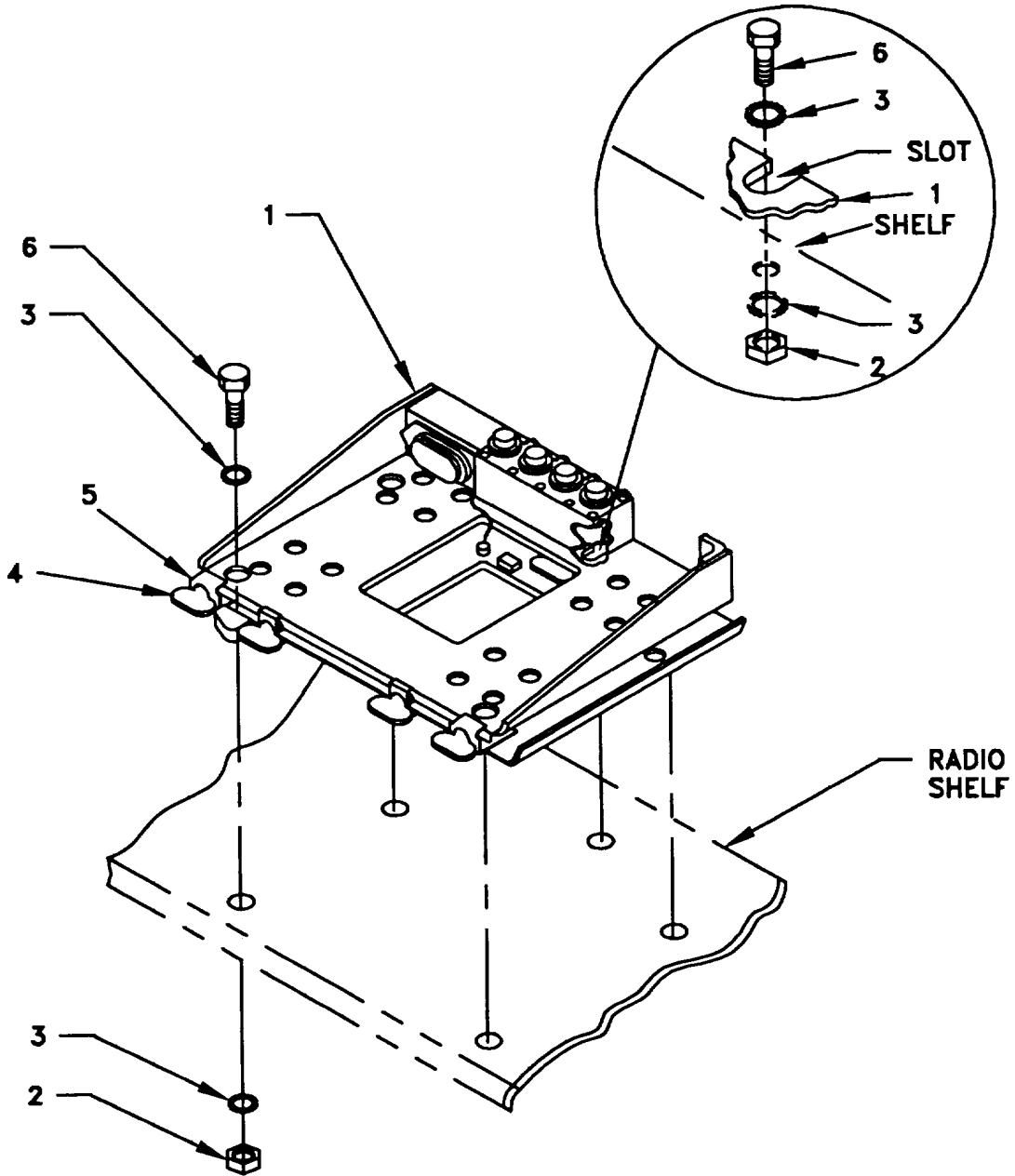
ITEM	ACTION	REMARKS
------	--------	---------

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 washers are to be placed. When installing mounting base to a thick shelf, use the longer cap screws supplied.

a. Mounting base (1).	Place on radio shelf over existing holes. See Figure 5-3.	
b. Two outer thumbscrews (4).	Turn ccw until both sets of threads have cleared center of holes.	
c. Mounting base (1).	Aline four holes and rear slot with matching hole pattern in shelf.	
d. Five machine bolts or five cap screws (6), ten internal /external-toothed (IET) washers (3) and five nuts (2).	Install and tighten to mounting base (1) and 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.



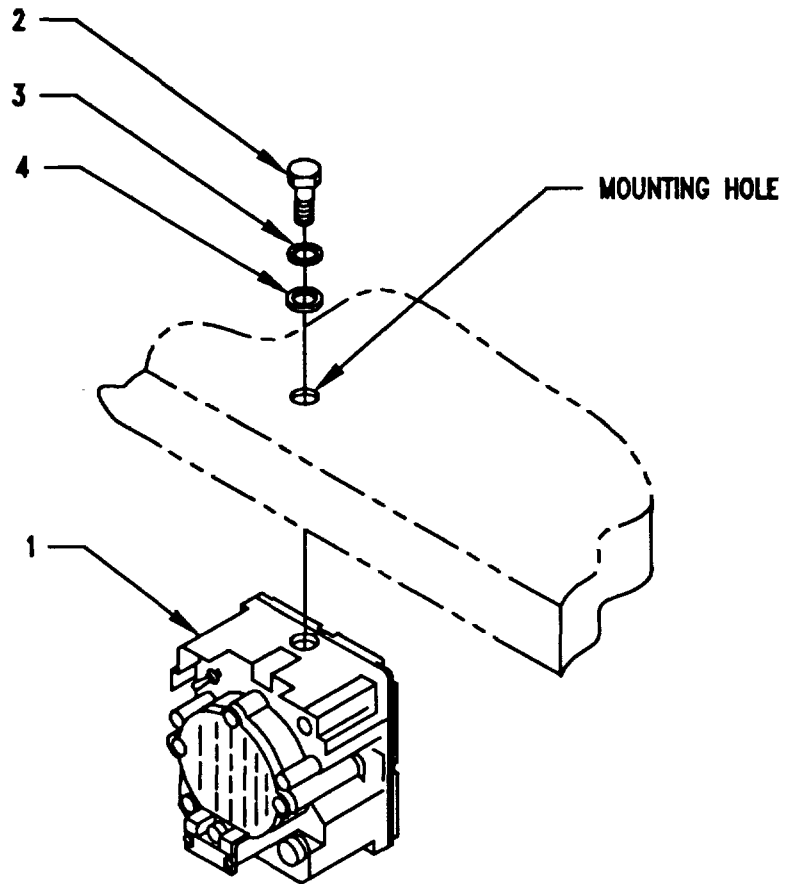
- 1. MOUNTING BASE
- 2. NUT (5/16-24 IN)
- 3. IET WASHER (5/16 IN)
- 4. THUMBSCREW
- 5. RIM CLENCHING CLAMP
- 6. MACHINE BOLT (5/16-24 X 1 IN) OR SCREW, CAP, HEXAGON (5/16-24 X 2 IN)

Figure 5-3. Mounting Base Installation

5.3 Installation of Loudspeaker, Control Unit LS-671NRC (speaker). Mounting locations for speakers to be determined by vehicle commander.

ITEM	ACTION	REMARKS
NOTE		
When installing loudspeaker (1) to a thick shelf, use the longer machine bolts (5/16-24 x 1 1/4 in) supplied.		
a. Mounting hole for speaker (1).	Drill an 11/32 in diameter hole through mounting surface approximately as shown in Figure 5-4.	Tools: Electric drill and 11/32 in drill bit.
b. One machine bolt (2), one lock washer (3) and one flat washer (4).	Install and secure to speaker (1) and shelf. See Figure 5-4.	Tools: 1/2 in socket.
c. Handset.	Connect and secure to speaker (1) connector J2.	
d. Steps a through c.	Repeat to install remaining speaker.	

5.3 Installation of Loudspeaker, Control Unit LS-671NRC (speaker). Continued.



1. SPEAKER
2. MACHINE BOLT (5/16-24 X 5/8 IN) OR
MACHINE BOLT (5/16-24 X 1 1/4 IN)
3. LOCK WASHER (5/16 IN)
4. FLAT WASHER (5/16 IN)

Figure 5-4. Speaker Installation

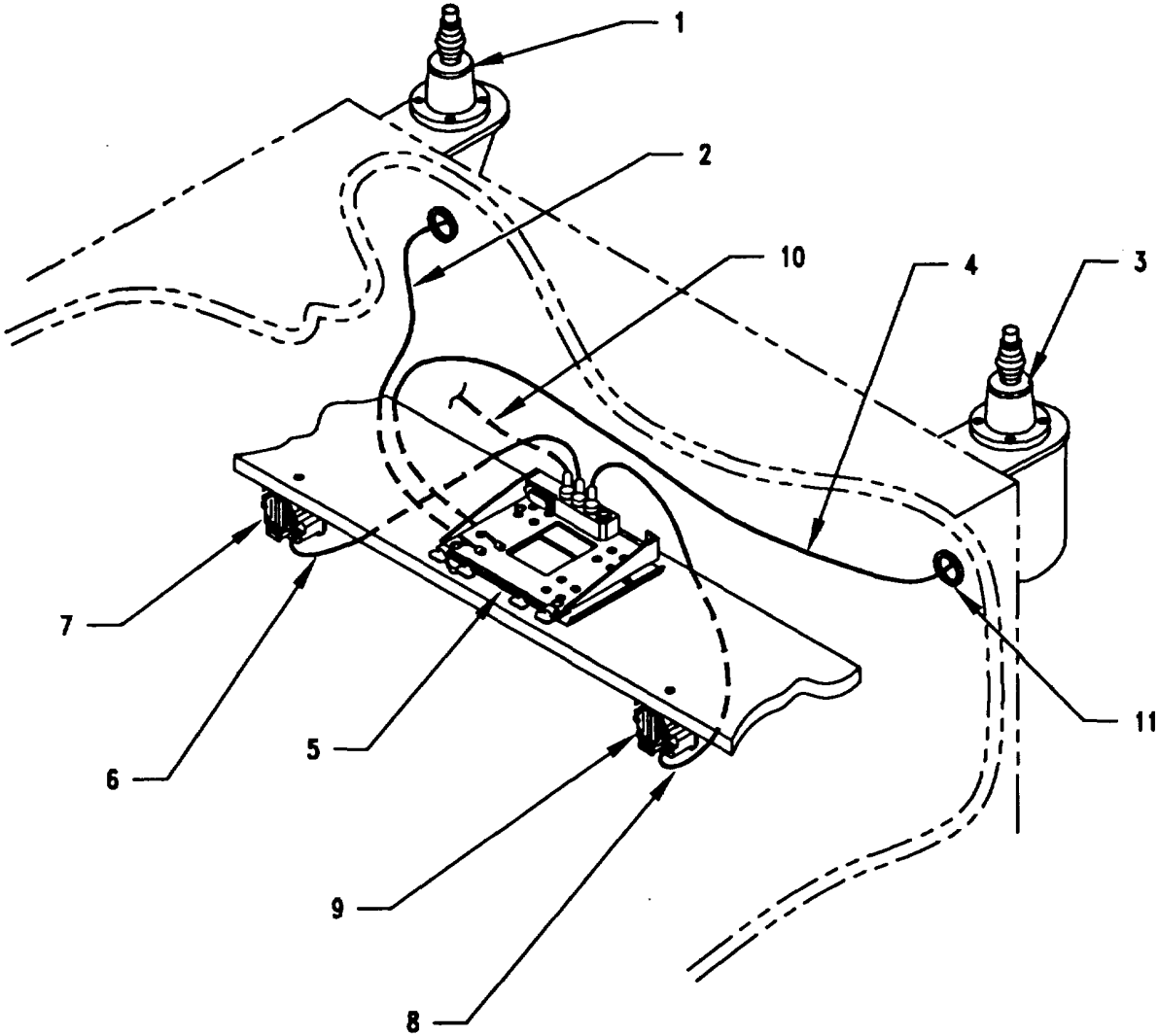
5.4 Installation of Cables. Use the following procedures to install cables.

WARNING

Make sure vehicle power source is positioned OFF or disconnected before installing cables

ITEM	ACTION	REMARKS
a. Existing RF cable (2) connector P1.	Connect and secure to antenna base (1) connector J1. See Figure 5-5.	
b. Existing RF cable (4) connector P1.	Connect and secure to antenna base (3) connector J1. See Figure 5-5.	
c. Grommet (11).	Locate the 3/4 in diameter hole drilled in paragraph 5.1.2. Feed RF cable (4) through the hole and insert grommet (11). Seal the cable and grommet with RTV sealant.	
d. Existing RF cables (2, 4).	Route through vehicle and position on left side of mounting base (5). See Figure 5-5.	
e. Speaker cable (6) connector P1.	Connect and secure to speaker (7) connector J1. See Figure 5-5.	
f. Speaker cable (8) connector P1.	Connect and secure to speaker (9) connector J1. See Figure 5-5.	
g. Speaker cables (6, 8). mounting base (5).	Route under radio shelf to rear of	
h. Speaker cable (6) connector P2.	Connect and secure to mounting base (5) connector J3.	
i. Speaker cable (8) connector P2.	Connect and secure to mounting base (5) connector J4.	
j. Existing power cable (10) connector P2.	Connect and secure to mounting base (5) connector J1. See Figure 5-5.	

5.4 Installation of Cables. Continued.



- 1. ANTENNA BASE (LOCATION A)
- 2. EXISTING RF CABLE
- 3. ANTENNA BASE (LOCATION B)
- 4. EXISTING RF CABLE
- 5. MOUNTING BASE
- 6. SPEAKER CABLE CX-13292/VRC (6 FT, 0 IN)
- 7. LOUDSPEAKER, CONTROL UNIT LS-671/VRC (LEFT)
- 8. SPEAKER CABLE, CX-13292/VRC (6 FT, 0 IN)
- 9. LOUDSPEAKER, CONTROL UNIT LS-671/VRC (RIGHT)
- 10. EXISTING POWER CABLE
- 11. GROMMET

Figure 5-5. Cable Installation

5.5 Installation of Mounting Base, Electrical Equipment MT-6353NRC. If Radio Set ANNRC-92 is authorized, use the following instructions to install MT-6353NRC mounting base in location shown in Figure 5-1(2). Refer to Section 5.7 for connection of cables.

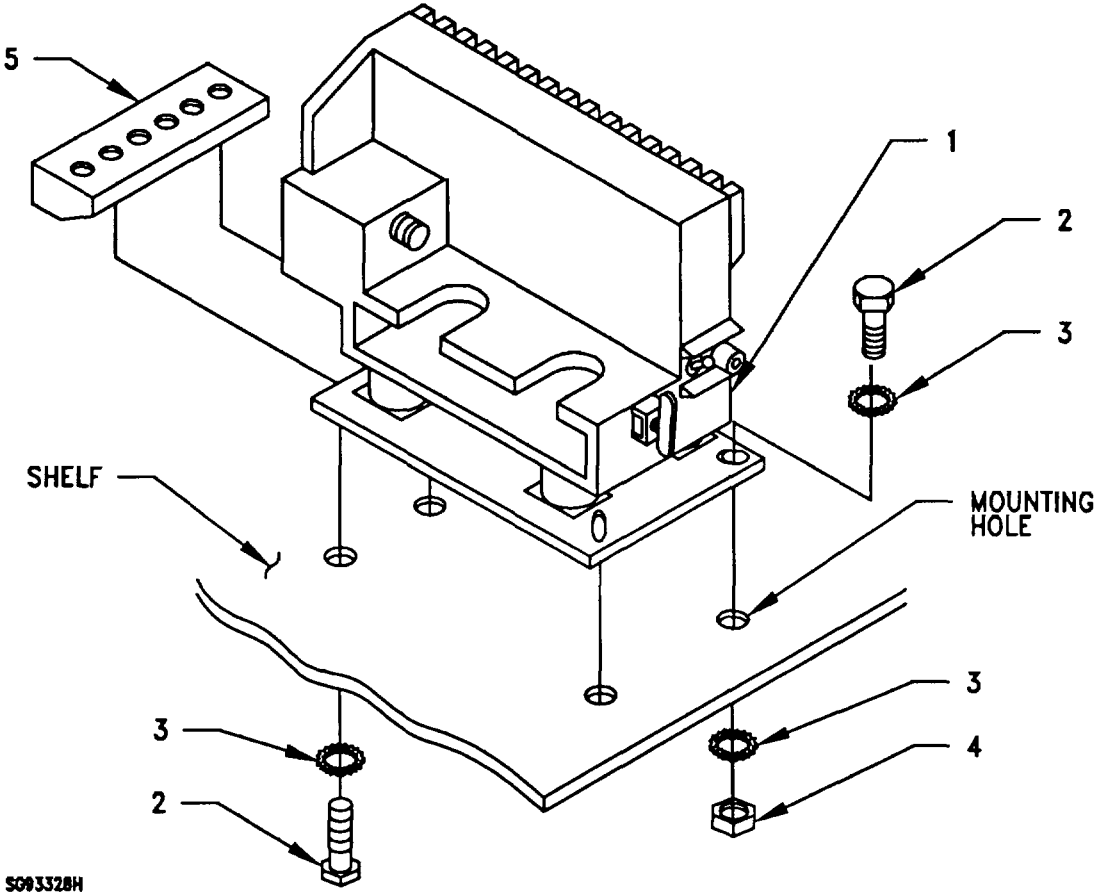
ITEM	ACTION	REMARKS
------	--------	---------

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 washers are to be placed. Before proceeding, connect and secure CX-13291NRC control cable and CX-13303NRC power cable to MT-6353NRC mounting base. (Refer to Section 5-7, step b).

a. Holes for mounting base (1).	If existing, go to step b. If not existing, use mounting base as template and drill four 11/32 in diameter holes through shelf. See Figure 5-6.	Tools: Electric drill and 11/32 in drill bit.
b. MT-6353NRC mounting base (1).	Place on shelf over mounting holes. Aline front holes and rear slots with matching hole pattern in shelf. See Figure 5-6.	
c. Two machine bolts (2), two internal /external-toothed washers (3) and nut strip (5).	Install and secure to rear slots in mounting base (1) and shelf.	Tools: 1/2 in socket.
d. Two machine bolts (2), four internal/ external-toothed (IET) washers (3) and two nuts (4).	Install and secure to front holes in mounting base (1) and shelf.	Tools: 1/2 in socket and 1/2 in open/box wrench.

5.5 Installation of Mounting Base, Electrical Equipment MT-6353NRC. Continued.



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

Figure 5-6. MT-6353NRC Mounting Base Installation

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

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

ITEM	ACTION	REMARKS
a. Equipment.	Check for secure mounting. Check for loose parts, connectors, and mounting hardware.	
b. Cables.	Check for proper installation and connection of cables. See Figure 5-7 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 11-5820-890-20-4 for installation and operational (OP) checks and instructions.	
f. MK line replaceable units.	See TM 11-5820-890-20P for Repair Parts and Special Tools List (RPSTL) information.	

5.7 Post-Installation and Checkout. Continued.

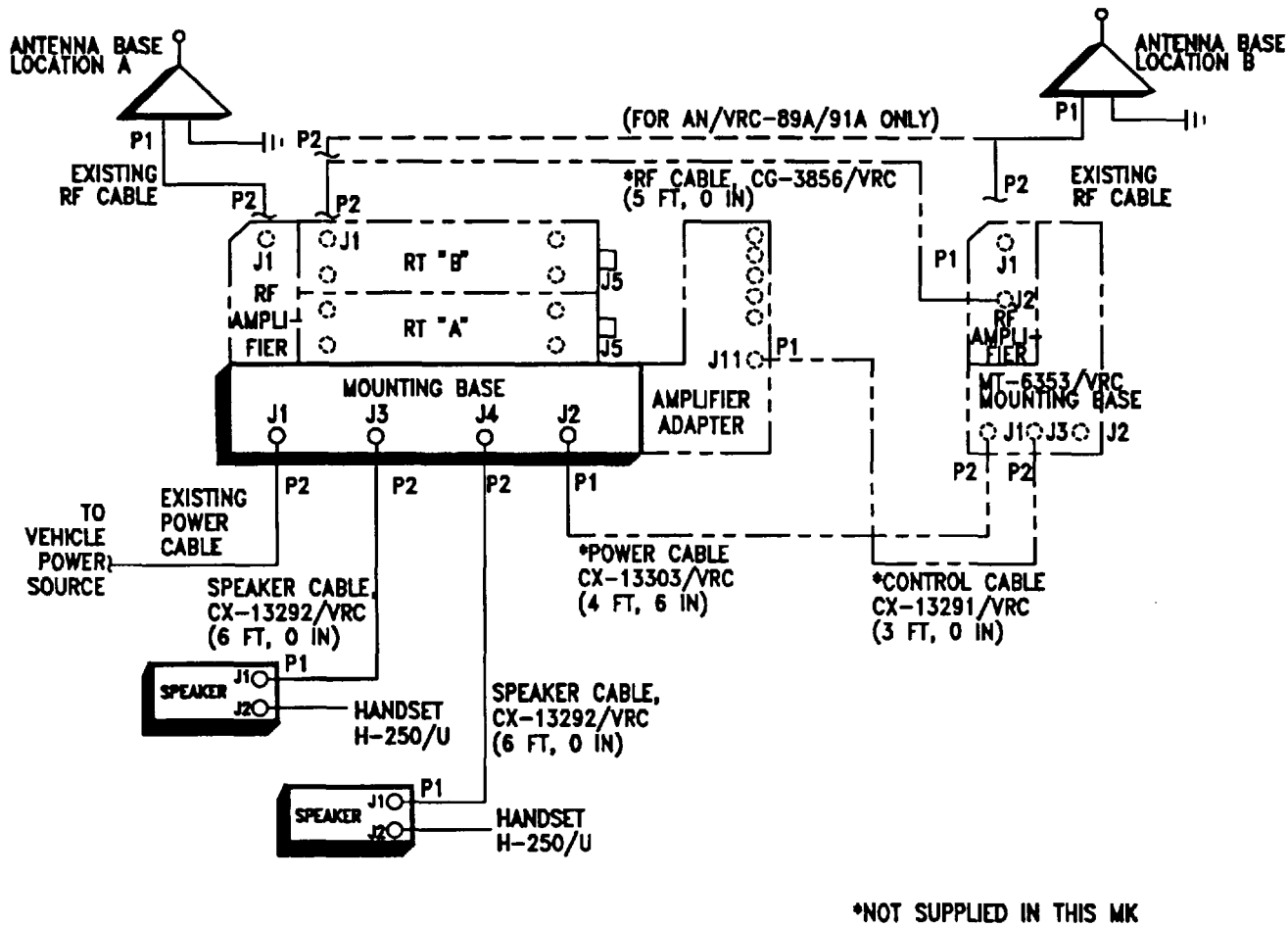


Figure 5-7(1). Cable Diagram: For AN/VRM-89A/91A192A

5.7 Post-installation and Checkout. Continued.

CABLE ASSEMBLY	FROM			TO		
	CABLE CONN.	UNIT	UNIT CONN.	CABLE CONN.	UNIT	UNIT CONN.
Existing power cable	P2	Mounting base	J1	P1	Vehicle power source	
CX-13292/VRC (6 FT, 0 IN)	P2	Mounting base	J3	P1	Speaker (left)	J1
CX-13292/VRC (6 FT, 0 IN)	P2	Mounting base	J4	P1	Speaker (right)	J1
Existing RF cable	P2	RF amplifier	J1	P1	Antenna base Location A	J1
Existing RF cable	P2	RT "B" or RF amplifier (MT-6353/VRC)	J1	P1	Antenna base Location B	J1
*CX-13291/VRC (3 FT, 0 IN)	P1	Amplifier adapter	J11	P2	MT-6353/VRC Mounting base	J3
*CG-3856/VRC (5 FT, 0 IN)	P2	RT "B"	J1	P1	RF amplifier (MT-6353/VRC)	J2
*CX-13303/VRC (4 FT, 6 IN)	P1	Mounting base	J2	P2	MT-6353/VRC Mounting base	J1

* Not supplied in this MK.

Figure 5-7(1). Cable Diagram: For AN/VRC-89A/91A/92A (Cont.)

5.7 Post-Installation and Checkout. Continued.

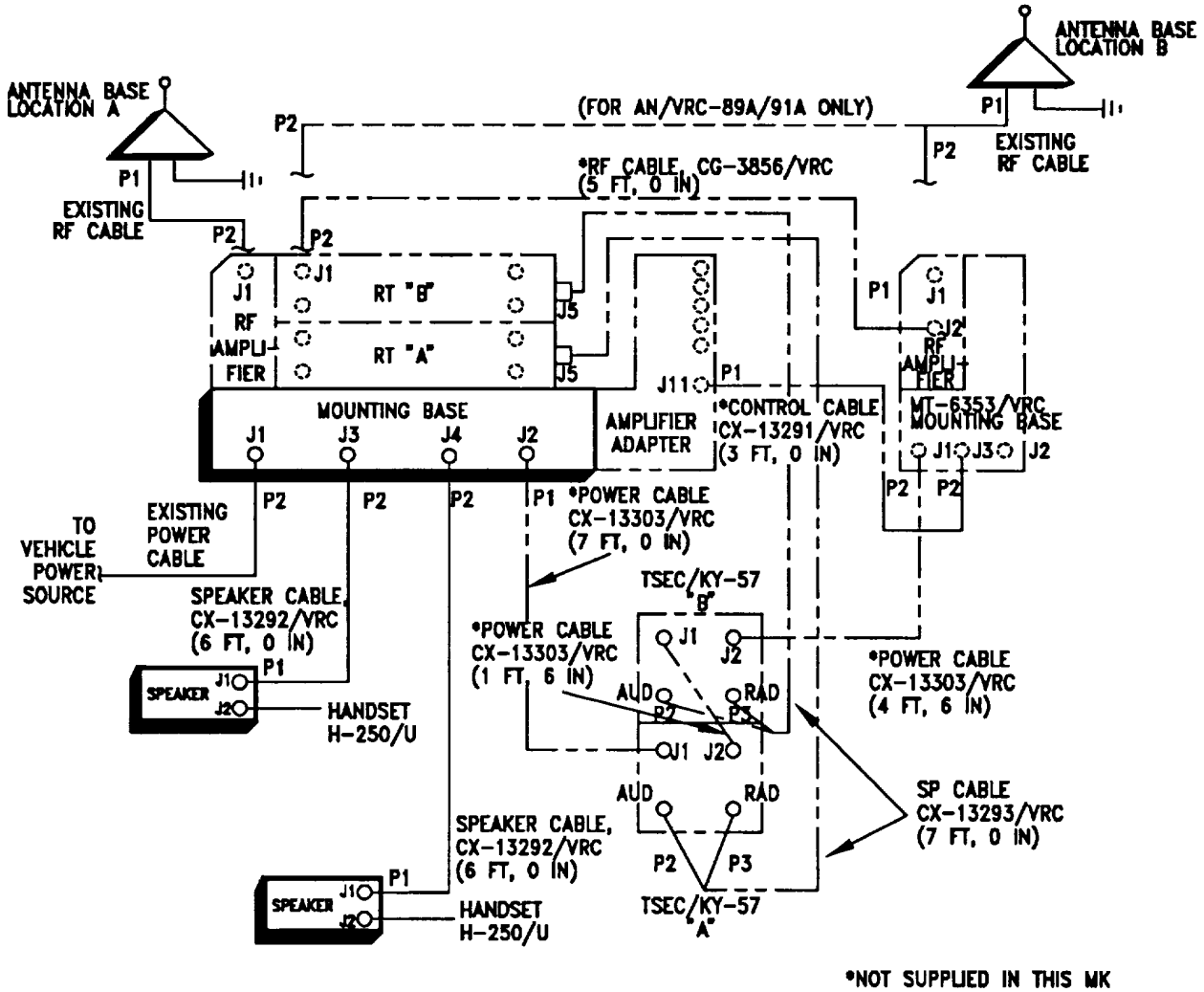


Figure 5-7(2). Cable Diagram: For AN/VR-89/91/92

5.7 Post-Installation and Checkout. Continued.

CABLE ASSEMBLY	FROM			TO		
	CABLE CONN.	UNIT	UNIT CONN.	CABLE CONN.	UNIT	UNIT CONN.
Existing power cable	P2	Mounting base	J1	P1	Vehicle power source	
CX-13292/VRC (6 FT, 0 IN)	P2	Mounting base	J3	P1	Speaker (left)	J1
CX-13292/VRC (6 FT, 0 IN)	P2	Mounting base	J4	P1	Speaker (right)	J1
Existing RF cable	P2	RF amplifier	J1	P1	Antenna base Location A	J1
Existing RF cable	P2	RT "B" or RF amplifier (MT-6353/VRC)	J1	P1	Antenna base Location B	J1
*CX-13303/VRC (1 FT, 6 IN)	P1	TSEC/KY-57 "A"	J2	P2	TSEC/KY-57 "B"	J1
*CX-13303/VRC (7 FT, 0 IN)	P1	Mounting base	J2	P2	TSEC/KY-57 "A"	J1
*CX-13293/VRC (7 FT, 0 IN)	P1	RT "B"	J5	P2 P3	TSEC/KY-57 "B"	AUD RAD
*CX-13293/VRC (7 FT, 0 IN)	P1	RT "A"	J5	P2 P3	TSEC/KY-57 "A"	AUD RAD
*CX-13291/VRC (3 FT, 0 IN)	P1	Amplifier adapter	J11	P2	MT-6353/VRC Mounting base	J3
*CG-3856/VRC (5 FT, 0 IN)	P1	RT "B"	J1	P2	RF amplifier (MT-6353/VRC)	J2
*CX-13303/VRC (4 FT, 6 IN)	P1	Mounting base	J2	P2	MT-6353/VRC Mounting base	J1

* Not supplied in this MK.

Figure 5-7(2). Cable Diagram: For AN/VRC-89/91/92 (Cont.)

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 (ICOM Radio Sets)
TM 11-5820-890-20-4	Unit Maintenance Manual (Non-ICOM Radio Sets)
TM 11-5820-890-20P	Repair Parts and Special Tools List

A-1/(A-2 blank)

By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Chief of Staff

Official:


MILTON H. HAMILTON
Administrative Assistant to the
Secretary of the Army
06482

DISTRIBUTION:

To be distributed in accordance with DA Form 12-36-E, block 9676
requirements for TB 11-5820-890-20-23.

*U.S. GOVERNMENT PRINTING OFFICE: 1994 - 510-106/00211

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS



THEN... JOT DOWN THE DOPE ABOUT IT ON THIS FORM, CAREFULLY TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL!

SOMETHING WRONG WITH THIS PUBLICATION?

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER

PUBLICATION DATE

PUBLICATION TITLE

BE EXACT... PIN-POINT WHERE IT IS

PAGE NO.

PARA-GRAPH

FIGURE NO.

TABLE NO.

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

TEAR ALONG PERFORATED LINE

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

SIGN HERE:

DA FORM 2028-2 JUL 79

PREVIOUS EDITIONS ARE OBSOLETE.

P.S.—IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS.

PIN: 072512-000