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TM 11-2748

WAR DEPARTMENT TECHNICAL MANUAL

T7-537

INSTALLATION OF RADIO AND INTERPHONE EQUIPMENT

MEDIUM TANK M4A3 OR M4A3E2,

75-MM GUN, WET STOWAGE;

MEDIUM TANK M4A1, M4A2, OR M4A3,

76-MM GUN, WET STOWAGE;

MEDIUM TANK M4 OR M4A3,

105-MM HOWITZER

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WASHINGTON 25, D. C., 12 JANUARY 1945

INSTALLATION OF RADIO AND INTERPHONE EQUIPMENT IN

MEDIUM TANK M4A3 OR M4A3E2,

75-MM GUN, WET STOWAGE;

MEDIUM TANK M4A1, M4A2, OR M4A3,

76-MM GUN, WET STOWAGE;

MEDIUM TANK M4 OR M4A3,

105-MM HOWITZER



WAR DEPARTMENT • JANUARY 1945

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WAR DEPARTMENT

WASHINGTON 25, D. C., 12 January 1945

TM 11-2748, Installation of Radio and Interphone Equipment in Medium Tank M4A3 or M4A3E2, 75-mm Gun, Wet Stowage; Medium Tank M4A1, M4A2, or M4A3, 76-mm Gun, Wet Stowage; Medium Tank M4 or M4A3, 105-mm Howitzer, is published for the information and guidance of all concerned.

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BY ORDER OF THE SECRETARY OF WAR:

OFFICIAL:

J. A. ULIO
Major General
The Adjutant General

G. C. MARSHALL
Chief of Staff

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For explanation of symbols, see FM 21-6.

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DESTRUCTION NOTICE

WHY—To prevent the enemy from using or salvaging this equipment for his benefit.

WHEN—When ordered by your commander.

HOW—1. Smash—Use sledges, axes, handaxes, pickaxes, hammers, crowbars, heavy tools.

2. Cut—Use axes, handaxes, machetes.

3. Burn—Use gasoline, kerosene, oil, flame throwers, incendiary grenades.

4. Explosives—Use firearms, grenades, TNT.

5. Disposal—Bury in slit trenches, fox holes, other holes. Throw in streams. Scatter.

USE ANYTHING IMMEDIATELY AVAILABLE FOR DESTRUCTION OF THIS EQUIPMENT

WHAT—1. Smash—All vacuum tubes, crystals, control dials, coupling coils, transformers, speakers in receivers, external loudspeakers, microphones, headsets, dynamotors, and cable connectors.

2. Cut—All connecting wires, cording, and cabling.

3. Burn—All equipment and all associated training, technical, and installation manuals.

4. Bury or scatter—All remains, after destroying their usefulness.

DESTROY EVERYTHING

RESTRICTED

SAFETY NOTICE

This equipment uses high voltages which are dangerous to life. Observe all safety precautions.

1. Make no adjustments inside the equipment with the power switch on.
2. Do not operate the equipment with the shields removed.
3. Do not connect power to any unit of these radio sets until operating instructions have been read completely.

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SECTION I

GUIDE TO USE OF THIS MANUAL

1. Purpose

This manual provides methods and procedure, based upon actual field experience, for installation of radio and interphone equipment in Medium Tank M4A3 or M4A3E2, 75-mm gun, wet stowage; in Medium Tank M4A1, M4A2, or M4A3, 76-mm gun, wet stowage; or in Medium Tank M4 or M4A3, 105-mm howitzer. Items required to make a complete operating installation are listed for each set. Official nomenclature followed by empty parentheses, such as Headset HS-30-(), is used to indicate any model of equipment regardless of its procurement.

2. Equipment

Installations covered include the following Radio Sets:

SCR-506-()	SCR-528-()
SCR-508-()	AN/VRC-3-()

3. Holes and Brackets

Brackets required for installation of the radio set

are normally located prior to delivery of the vehicle. Drilling instructions are given in this manual for any other necessary holes and brackets. Do not relocate any holes or brackets unless absolutely necessary.

4. Preliminary Check

Study the illustrations, the installation methods outlined, and any subsequent changes to this manual.

Caution: The vehicles covered in this manual have 24-volt electrical systems. Before installing the radio sets, be sure they are designed for 24-volt operation; otherwise tubes will be burned out or dynamotors damaged.

5. Operating Check

Carefully study the Technical Manual covering the radio set before trying to operate it; then, make a thorough operating check to determine whether the equipment has been properly installed and is in working order.

SECTION II

**IGNITION NOISE SUPPRESSION IN MEDIUM TANK M4A3 OR M4A3E2,
75-MM GUN, WET STOWAGE; IN MEDIUM TANK M4A1, M4A2, OR M4A3,
76-MM GUN, WET STOWAGE; OR IN MEDIUM TANK M4 OR M4A3,
105-MM HOWITZER**

6. General

Excessive ignition or other electrical noises may interfere with the operation of radio equipment in the various vehicles covered in this manual. The Technical Manual issued with each vehicle will be helpful in locating the source of the noise, since it describes the suppression system used. Instructions for operating radio equipment used in the vehicle also should be studied.

7. Procedure

Locate and suppress ignition noises as follows:

a. Start the motor of the vehicle and turn on the radio set. Put the receiver sensitivity control at *maximum*; then, listening to the receiver output with a headset, slowly tune the receiver over the entire range of frequencies to be used for communication.

b. When the frequency (or frequencies) with greatest noise level is found, turn off the vehicle engine. If this noise continues, the source is outside the ignition system. If the noise stops, the trouble is in the ignition system.

c. Start the engine again. Adjust the receiver sensitivity control until engine noises can be distinguished easily from static, etc. Interference may then be identified as follows:

<i>Interference</i>	<i>Usual source</i>
Popping sound: corresponds to ignition firing; stops when engine is turned off; accelerates when engine is raced.	Ignition system.
Intermittent, clicking sound: lingers for several seconds when ignition is turned off.	Generator regulator.

Interference

Usual source

Whining sound: varies with speed of engine; ceases only when generator stops rotating.

Generator.

Sparking, or continuous crackling noise.

Brushes and commutator of generator.

d. Interference from other electrical parts and circuits of the vehicle, such as panel gauges and heater fans, can usually be identified by individually turning off the gauges, fans, or other suspected mechanisms.

e. If the source of the interference still cannot be found by any of the preceding methods, connect a probe antenna (fig. 1) to the antenna terminal of the radio set. Slowly move the loop of the probe antenna over the various parts of the electrical system of the vehicle. Keep the loop close to, but not in contact with, the part being examined. Noise from interference-producing parts should be heard in the receiver.

f. Usually interference can be eliminated by cleaning, tightening, or replacing noise-producing parts. Examine and tighten all suppressor and shielding components, and all connections and grounding bonds. Clean the surface under them. This will assure good electrical contact between wires and terminals, and between metal casings and the frame of the vehicle. (Insulated but ungrounded metal parts absorb and reradiate electrical noises.)

g. If interference persists, suppressor components should be checked by substituting new ones. If a replacement is not available, disconnect the suspected component, and the test capacitors, resistors, and chokes within it. Replace any that are defective.

SECTION III

RADIO SET SCR-506-()

8. Required Parts

Items necessary for the installation of Radio Set SCR-506-() in Medium Tank M4A3 or M4A3E2, 75-mm gun, wet stowage; in Medium Tank M4A1, M4A2, or M4A3, 76-mm gun, wet stowage; or in Medium Tank M4 or M4A3, 105-mm howitzer, are listed below:

Quantity	Stock No.	Item
1	2A275-27	Antenna A-27, phantom.
1	2A224	Antenna AN-24-A, auxiliary antenna.
1	2Z1250.82	Bracket (fig. 24) for Antenna 2-27, phantom.
1		Bracket (fig. 2), for Loudspeaker LS-3.
1	2Z2595-263	Chest CH-263-(), for spare parts.
1	4B417-4	Chest Set TD-4.
2	2Z2651-421 to -424, incl.	Clamps MC-421 to MC-424, inclusive.
2	6Z3147	Connector No. 61007 and Bondnut BL-50.
2	3E1307-5.5	Cord CD-307-A, 48 in. long, for Headset HS-30-().
2	3E1604	Cord CD-604, for Headset HS-30-().
1	3E1314	Cord CD-314, for Loudspeaker LS-3.
1	3E1318	Cord CD-318-A, control cord for Microphone T-45.
1	2Z3367	Cover BG-67-(), for Mast Base MP-37 or MP-57.
1	3H1641	Dynamotor DM-41-(), 24 volts, for Radio Receiver BC-652-().
1	3H1643	Dynamotor DM-43-(), 24 volts, for Radio Transmitter BC-653-().
1	2A1355-40	Guy Set GY-40, in Bag BG-125.
1	6L50-506V8	Hardware bag.
2	2B800-16	Headset H-16/U or HS-30-().
	2B830	
1	2A224/1	Instructions, installation of auxiliary Antenna AN-24-A.

Quantity	Stock No.	Item
3	3G586	Insulator IN-86, 2 for auxiliary antenna, 1 for tying down mast sections.
2	3G598	Insulator IN-98.
2	3Z3445	Key J-45.
1	2Z6303.1	Loudspeaker LS-3.
2	6D13136	TM 11-630, for Radio Set SCR-506-().
1	2A2087	Mast Base MP-37 or MP-57.
	2A2088-57	
2	2A2349 to 2A2353, incl.	Mast Sections MS-49* to MS-53, inclusive.
3	2A2354	Mast Section MS-54, for stationary operation, included with Guy Set GY-40.
1	2B1645	Microphone T-45 or T-17.
	2B1617	
2	2B1567	Microphone Cover M-367.
1	2Z6721-253	Mounting FT-253-(), including two cords CO-280, attached, and spare fuses and hardware in attached cloth bag.
1	2C4452	Radio Receiver BC-652-(), with necessary tubes and Crystal Unit DC-24-() installed, spare fuses, and lamps.
1	2C6530-653	Radio Transmitter BC-653-(), including one set of tubes installed, spare fuses, and lamps.
1	2Z8056	Roll BG-56-().
50 ft.	6Z7926	Rope RP-5, for auxiliary antenna and tying down mast sections.
1	2C7978	Switch Box BC-658-().
1	2C4452/T1	Tubes, sets of spares, for Radio Receiver BC-652-().
1	2C6530-653/T1	Tubes, sets of spares, for Radio Transmitter BC-653-().
15 ft.	1B146	Wire W-146.

9. Assembly and Installation

Components of Radio Set SCR-506-() should be installed in Medium Tank M4A3 or M4A3E2, 75-

mm gun, wet stowage; in Medium Tank M4A1, M4A2, or M4A3, 76-mm gun, wet stowage; or in Medium Tank M4 or M4A3, 105-mm howitzer; as shown in figures 3 and 11 and as directed below:

<i>Part and location</i>	<i>Method and materials</i>
Bracket (fig. 2), on floor of right sponson, at front.	Weld bracket securely in place shown as item 44 of figure 3. Refer to item 47 of figure 11 for Medium Tank M4A1, M4A2, or M4A3, 76-mm gun, wet stowage.
Mounting FT-253-(), on right sponson floor, at front.	Secure to sponson floor with twelve 1/4-inch screws and nuts. Apply shakeproof washers as shown in detail in figure 3. Refer to figure 11 for Medium Tank M4A1, M4A2, or M4A3, 76-mm gun, wet stowage.
Dynamotor DM-41-() and Radio Receiver BC-652-(), on Mounting FT-253-().	If Dynamotor DM-41-() is supplied uninstalled, remove screws around outer edge of receiver panel and screw in rear center of cabinet. Pull receiver chassis out of case, put dynamotor into place provided for it, and secure with snap-slide fasteners. All connections to dynamotor are made by flexible lead terminating in Plug P-250. Installation of proper dynamotor and inserting plug in socket, automatically adjusts receiver circuits for correct operating voltage. The nameplate on front panel of receiver should be turned to indicate 24-VOLT OPERATION. Place receiver on mounting and secure with thumbscrews provided.
Dynamotor DM-43-() and Radio Transmitter BC-	If Dynamotor DM-43-() is supplied uninstalled, slide it into dynamotor

Part and location
653-(), on Mounting FT-253-().

Method and materials
compartment at lower right end of transmitter chassis and secure with five screws provided. Remove patch cover plate located on top of radio transmitter, extreme right, and see that the six connector links are in position for 24-volt operation, as indicated by arrow on the link terminal strip. Voltage indicator plate on dynamotor panel should be turned to indicate 24-VOLT OPERATION. Place transmitter on mounting and secure with thumbscrews provided.

Mast Base MP-37 or MP-57, through holes in right sponson ceiling, above radio set.

Locate as shown in figure 3 for 75-mm gun and 105-mm howitzer installations. Refer to figure 11 for 76-mm gun installation. Assemble as shown in figure 4.

Loudspeaker LS-3, on bracket (fig. 2), and Cord CD-314.

Secure Loudspeaker LS-3 to bracket with hardware included on back of speaker. Connect Cord CD-314 between radio set and loudspeaker.

Insulator IN-98.

Attach to bracket provided on right sponson ceiling, using three No. 8 screws and lockwashers. Place gasket between insulator and bracket. Insert fiber washers (supplied with Insulator IN-98) between lockwasher and insulator.

Wire W-146.

Cut a 36-inch length of Wire W-146. Clean and solder-tin 1 inch at each end. Attach Wire W-146 to binding post on Mast Base MP-57, and attach to Insulator IN-98 with

<i>Part and location</i>	<i>Method and materials</i>	<i>Part and location</i>	<i>Method and materials</i>
Switch Box BC-658- ().	Mount on bracket attached to ceiling of right sponson, above radio set, with No. 8 screws and lock-washers. Plug one pair of cords from switch box into radio set and other pair of cords into co-driver's Interphone Control Box BC-606-(). Secure cords with same clamps securing power cords of radio set. Refer to figure 22 for wiring of slip rings and terminal boxes.	and Bondnut BL-50.	left side of hull. Install through knock-out holes to secure cords.
Power Cord CO-280; connector No.61007	Route power cords to vehicle terminal box on	Mast Sections MS-49 to MS-53, inclusive; Clamps MC-421 to MC-424, inclusive.	Screw mast sections together, place clamps over joints to prevent loss of sections, and screw assembled sections into Mast Base MP-57. When removed, stow mast sections in Roll BG-56-(), and place Cover BG-67-() over mast base.
		Headset H-16/U, Microphone T-45, and Chest Set TD-4.	Use, when available, in place of Headset HS-30-(), Microphone T-17, and associated cording.
		Antenna A-27, phantom, and bracket (fig. 24).	Fasten in convenient place in vehicle with hardware provided.

SECTION IV

RADIO SET SCR-508-() OR SCR-528-() AND ASSOCIATED INTERPHONE EQUIPMENT

10. Required Parts

Items necessary for the installation of Radio Set SCR-508-() or SCR-528-() and associated interphone equipment in Medium Tank M4A3 or

M4A3E2, 75-mm gun, wet stowage; in Medium Tank M4A1, M4A2, or M4A3, 76-mm gun, wet stowage; or in Medium Tank M4 or M4A3, 105-mm howitzer, are listed below:

Quantity		Stock No.	Item
Radio Set SCR-508-()	Radio Set SCR-528-()		
1	1	2A262	Antenna A-62, phantom, including bracket (fig. 5), necessary hardware, and antenna lead.
5	5	4B417-4	Chest Set TD-4.
3	3	6Z3147	Connector No. 61007 and Bondnut BL-50.
6	6	3E1307-5.5	Cord CD-307-A, 65 in. long, for Headset HS-30-().
5	5	3E1318	Cord CD-318-A.
6	6	3E1604	Cord CD-604, 6 in. long, for Headset HS-30-().
a32 ft	a32 ft	3E2213	Cordage CO-213.
1	1	2Z3396	Cover BG-96.
1	1	2Z2595-264	Chest CH-264, for spare tubes, headsets, etc.
2	1	3H1636	Dynamotor DM-36-(), 24 volts, including attached spare parts.
1	1	3H1637	Dynamotor DM-37-(), 24 volts, including attached spare parts.
1	1	6L50-508V8	Hardware bag.
6	6	2B800-16	Headset H-16/U or HS-30-().
		2B830	
5	5	2C1738	Interphone Control Box BC-606-().
b1	b1	2A2081-15	Mast Base AB-15/GR.
c2	c2	2A2416	Mast Section MS-116-A.
c2	c2	2A2417	Mast Section MS-117-A.
c2	c2	2A2418	Mast Section MS-118-A.
1	1	2B1617	Microphone T-17.
5	5	2B1645	Microphone T-45.
2	2	2B1567	Microphone Cover M-367.
1	1	2Z6721	Mounting FT-237-(), including spare fuses and necessary hardware in attached bag.
2	1	2C4403	Radio Receiver BC-603-(), including set of tubes installed, spare fuses, lamps, and set of spare tubes.
1	1	2C4694	Radio Transmitter BC-604-(), including set of tubes installed, spare fuses, lamps, set of spare tubes, and 80 crystals in Crystal Holders FT-241-().
1	1	2Z8056	Roll BG-56-().
2	2	6D13313	TM 11-600, for Radio Sets SCR-508-(), SCR-528-(), and SCR-538-().
6 ft	6 ft	1B128	Wire W-128.

a Installation of Radio Set SCR-508-(), or SCR-528-() and associated interphone equipment in Medium Tank M4A1, M4A2, or M4A3, 76-mm gun, wet stowage, will require 38 feet of Cordage CO-213.

b Mast Base MP-48 or MP-48-A, with Cover BG-108, or Mast

Base MP-65, may replace Mast Base AB-15/GR. When Mast Base MP-48-A is supplied, delete 6 feet of Wire W-128.

c When Mast Base MP-48 or MP-48-A is supplied in place of Mast Base AB-15/GR, two each Mast Sections MS-51, MS-52, and MS-53, with Clamps MC-423 and MC-424, are supplied in place of Mast Sections MS-116-A, MS-117-A, and MS-118-A.

11. Assembly and Installation

Components of Radio Set SCR-508-() or SCR-528-() and associated interphone equipment should be installed in Medium Tank M4A3 or M4A3E2, 75-mm gun, wet stowage; in Medium Tank M4A1, M4A2, or M4A3, 76-mm gun, wet stowage, or in Medium Tank M4 or M4A3, 105-mm howitzer; as shown in figures 3, 7, 8, and 11, and as directed below:

<i>Part and location</i>	<i>Method and materials</i>
Mast Base AB-15/GR, on antenna mount plate, right side of turret bulge.	Locate mast base as shown in figure 3. Refer to figure 11 for Medium Tank M4A1, M4A2, or M4A3, 76-mm gun, wet stowage. Assemble mast base as follows: Refer to figure 7. Hold lower insulator, item 7 by hand. Turn body of mast base, item 2, counterclockwise until item 7 with bolt, item 8; adapter, item 9; and binding post, item 11 attached, are separated from item 2. Place one of the large neoprene washers, item 6, over hole in antenna mounting plate. Place insulator (upper), item 5, over item 6. Place the small neoprene washer, item 4, over hole in item 5, and place plain washer, item 3, over item 4. Insert body of mast base, item 2, through items 3, 4, 5, and 6. Place the other large neoprene washer, item 6, over flange of insulator (lower), item 7. Insert bolt, item 8 (attached to insulator, item 7), into bottom of item 2 from underneath. Turn item 2 clockwise until threads in item 8 and item 2 are fully engaged. Place a 3/4-inch open-end

<i>Part and location</i>	<i>Method and materials</i>
	wrench on hexagonal portion of item 2 and tighten mast base securely. Refer to figure 8 for Mast Base MP-48-A, or figure 9 for Mast Base MP-48.
Mounting FT-237-(), on radio mounting shelf in turret bulge.	Secure mounting to shelf with eight 5/16"-24 x 3/4-inch screws, elastic stop nuts, and shakeproof washers provided. Place shakeproof washers between Mounting FT-237-() and mounting shelf as shown in detail in figure 3. Refer to figure 11 for Medium Tank M4A1, M4A2, or M4A3, 76-mm gun, wet stowage.
Two Interphone Control Boxes BC-606-() (driver and codriver), on bracket attached to center of hull ceiling.	Secure boxes in place with No. 8 screws and lock-washers provided, in position shown in figure 3 or 11.
Two Interphone Control Boxes BC-606-() (turret gunner and commander), on bracket attached to right wall of turret, center.	Secure box in place with No. 8 screws and lock-washers provided, in position shown in figure 3 or 11.
Interphone Control Box BC-606-() (loader), on bracket attached to left wall of turret, near bulge.	Secure boxes in place with No. 8 screws and lock-washers provided, in position shown in figure 3 or 11.
Dynamotor DM-37-() and Radio Transmitter BC-604-(), on Mounting FT-237-().	If Dynamotor DM-37-() is not already installed, remove crystal case from transmitter cabinet by loosening two screw locks on front panel and pulling out crystal case. Loosen four screw locks holding cover on top of transmitter, and remove

<i>Part and location</i>	<i>Method and materials</i>
	cover. Plug dynamotor unit into receptacle on left rear of transmitter chassis and tighten screws in its base. Place transmitter on Mounting FT-237-(), and secure by means of thumbscrew locking devices provided.
Dynamotor DM-36-() and Radio Receiver BC-603-(), on Mounting FT-237-().	If Dynamotor DM-36-() is not already installed, remove case from receiver by loosening screw lock in rear center of case. Plug dynamotor into receptacle on top of chassis and tighten screws in its base. Place receiver on Mounting FT-237-(), and secure by means of thumbscrew locking devices provided.
Antenna A-62, phantom.	Refer to figure 10. Secure antenna to its bracket, in position 1 for figure 3 installation and position 3 for figure 11 installation, using No. 6 screws and lockwashers included on phantom antenna. Remove two No. 10-32 screws from front left corner of Mounting FT-237-(). Secure bracket, with antenna attached, to mounting as shown in figure 10, position 1 for figure 3 or position 3 for figure 11.
Three connectors No. 61007 and Bondnuts BL-50.	Install one connector and bondnut through knock-out hole in hull terminal box for Cordage CO-213, and two through knock-out holes in turret terminal box for power cord and Cordage CO-213.
Spare headsets, cords, tubes, etc.	Stow headsets, spare tubes, and spare parts in Chest

<i>Part and location</i>	<i>Method and materials</i>
Chest CH-264.	CH-264. Refer to chart supplied on chest for location of items. When used with Radio Set SCR-508-(), place chest in tool box of vehicle, or stow in any convenient place recommended by using organization. When used with Radio Set SCR-528-(), place chest on Mounting FT-237-(), in space provided for a second radio receiver.
Mast Sections MS-116-A, MS-117-A, and MS-118-A.	Screw mast sections together and tape joints to prevent loss of sections. Screw assembled mast sections into Mast Base AB-15/GR. When mast sections are removed, stow them in Roll BG-56-(). When Mast Sections MS-51, MS-52, and MS-53 are used, place Clamps MC-423 and MC-424 on joints.
Wire W-128.	Use a 30-inch length of Wire W-128 (item 37 of figure 3 or item 30 of figure 11) to connect antenna binding post (marked ANT) on Mounting FT-237-() to Mast Base MP-48 or MP-48-A. When using Antenna A-62, phantom, for aligning transmitter, disconnect 30-inch length and connect 20-inch length (item 38 of figure 3 or item 31 of figure 11) to antenna post on Mounting FT-237-().

12. Preparation of Cordage CO-213

a. Figures 3 and 11 list the approximate lengths of cordage required for connecting the interphone components. Prepare the cordage as directed in

TM 11-600, and make a trial or pilot installation in the vehicle to determine the exact lengths required before cutting a quantity of the cordage. *Wire up as much of the equipment as possible before installing in the vehicle.*

b. After Cordage CO-213 has been cut to proper lengths, prepare each end of every length for connection to five Interphone Control Boxes BC-606- () and to Mounting FT-237-() as follows: Strip back 3½ inches of the outer rubber and 2½ inches of the inner and outer shields for connections to the interphone control boxes. Strip back 6 inches of the outer rubber and 5 inches of the shields for connections to Mounting FT-237-(). Using a pointed instrument, separate the weave of the exposed 1-inch ends of the shield braids. Strip about ½ inch of insulation from the black lead, at point exposed by separation of the shields. Twist the wires of both shield braids around the exposed portion of the black lead and solder together, using a minimum of solder. Use the black lead for ground connection, as shown in figure 6.

c. Prepare the ends of the cordage for connection

to the vehicle terminal boxes in the same manner as above, except that 8½ inches of outer rubber and 7½ inches of the outer shielding are stripped back, and the shielded pair of red and green wires are cut off and taped as shown in figure 6. Solder properly numbered lugs, from the terminal box, to the wire, as shown in figure 6.

13. Wiring of Components

Insert the prepared cordage through the appropriate hole in Interphone Control Box BC-606-() and fasten by means of the clamp provided. Solder ends of wires to numbered studs, as shown in figure 6. Insert the prepared cordage (connecting to radio set) through the appropriate hole in Mounting FT-237-() and secure with clamp provided at terminal board inside Mounting FT-237-(). Connect cordage wires to terminals on terminal board as shown in figure 6. Use connectors and bondnuts to secure cordage through knock-out holes in the terminal boxes and connect cordage wires to terminal box, as shown in figure 6. Refer to figure 22 for wiring of slip rings and terminal boxes.

Part No.	Description	Quantity
1B128	Wire W-128	6 ft.
62872-S	Taping rubber or neoprene	8 in.
22900	Transformer C-110	4
2	TM 11-600 for Radio Set	2
2C7978	Switch Box BC-628 ()	2
228807-26	Spacer, wood 4 x 10 x 17	1
229056	Koll BC-50 ()	1
2C3995-1008	Radio Receiver and Transmitter BC-1000 ()	1
221625	Microphone T-12	1
313947	Mounting FT-237 ()	1
2A2418	Master Section MS-118-A	2
2A2417	Master Section MS-117-A (storage only)	2
2A2416	Master Section MS-116-A (for Medium Tank M4A1, M4A2, or M4A3, 50 mm gun, wet storage)	2
2A2400-00	(for Master Base Bracket M4A1, M4A2, or M4A3, 50 mm gun, wet storage)	1
2A2090-20 or 2A2090-00	Master Base Bracket M4A1 (for Master Base Bracket M4A1, M4A2, or M4A3, 50 mm gun, wet storage)	1
221800-10	Headset H-10-U	4
22A2802-3V118	Hardware bag	1
3E2212	Cordage CO-213	10 ft.
3E1214	Cord CD-318 ()	1

Refer to figures 12, 13, and 14 for brackets for 75 and 90 mm gun, and 102 mm howitzer installations respectively.
When Headset H-10-U is not available, Headset H-10 () with Cord CD-604 may be substituted.

SECTION V

RADIO SET AN/VRC-3-()

14. Required Parts

Items necessary for the installation of Radio Set AN/VRC-3-() in Medium Tank M4A3 or M4A3E2, 75-mm gun, wet stowage; in Medium Tank M4A1, M4A2, or M4A3, 76-mm gun, wet stowage; or in Medium Tank M4 or M4A3, 105-mm howitzer, are listed below:

Quantity	Stock No.	Item
1	3A70	Battery BA-70.
a1		Bracket, for Mounting FT-317-().
2		Bracket (fig. 13), for Switch Box BC-658-().
1	6F428	Case CS-128-().
1	3E1307-5.5	Cord CD-307-A, spare.
1	3E1318	Cord CD-318-(), spare.
10 ft.	3E2213	Cordage CO-213.
1	2S4502-3/H8	Hardware bag.
b1	2B800-16	Headset H-16/U.
1	2A2090-50 or 2A2090-60	Mast Base Bracket MP-50 (or Mast Base Bracket MP-60 for Medium Tank M4A1, M4A2, or M4A3, 76-mm gun, wet stowage).
c1	2A2081-15	Mast Base AB-15/GR.
2	2A2416	Mast Section MS-116-A (for Medium Tank M4A1, M4A2, or M4A3, 76-mm gun, wet stowage, only).
2	2A2417	Mast Sections MS-117-A.
2	2A2418	Mast Section MS-118-A.
1	3H3947	Mounting FT-317-().
1	2B1645	Microphone T-45.
1	2C5395-1000	Radio Receiver and Transmitter BC-1000-().
1	2Z8056	Roll BG-56-().
1	2Z8807-76	Spacer, wood, 4 x 10 x 1", any available hardwood.
2	2C7978	Switch Box BC-658-().
2		TM 11-637, for Radio Set AN/VRC-3-().
d1	2Z9940	Transformer C-410.
6 in.	6Z8727-2	Tubing, rubber or neoprene, 3/8-inch, ID, 7/8-inch OD.
6 ft.	1B128	Wire W-128.

a Refer to figures 12, 18, and 21 for brackets for 75-mm gun, 76-mm gun, and 105-mm howitzer installations, respectively.

b When Headset H-16/U is not available, Headset HS-30-(), with Cord CD-604, may be substituted.

c When Mast Base AB-15/GR and Mast Sections MS-116-A, MS-117-A, and MS-118-A are not available, Mast Base MP-48 or MP-48-A, Cover BG-108, Mast Sections MS-52, MS-53 and Clamp MC-424 should be substituted.

d Transformer C-410, when not available separately, may be obtained by dismantling Cord CD-604 or CD-605.

15. Assembly and Installation

Components of Radio Set AN/VRC-3-() should be installed in Medium Tank M4A3 or M4A3E2, 75-mm gun, wet stowage; in Medium Tank M4A1, M4A2 or M4A3, 76-mm gun, wet stowage; or Medium Tank M4 or M4A3, 105-mm howitzer; as shown in figure 15, 16, or 20, respectively, and as directed below:

<i>Part and location</i>	<i>Method and materials</i>
Brackets (fig. 13) and spacers (fig. 14D).	Weld one bracket (fig. 13) (item 14 of figures 15 and 20; item 15 of figure 16) to wall of turret, right side, 24 inches rearward from commander's Interphone Control Box BC-606-(), as shown in view B-B of figure 15 or 16, or 4½ inches above commander's interphone control box as shown in view B-B of figure 20. Weld other bracket below loader's Interphone Control Box BC-606-() on left side of turret wall and weld spacers, item 19, to left side of turret wall, as shown in view A-A of figure 15, 16, or 20. Remove smoke mortar and two canteen brackets on left side of turret below loader's interphone control box.

Bracket (fig. 12, 18, or 21), for securing Refer to detail D (figs. 15 and 30) and detail C (fig.

Part and location

Mounting FT-317-
(), on ring guard.

Mounting FT-317-
(), on bracket (fig.
12, 18, or 21).

Two Switch Boxes
BC-658-() and
Transformer C-
410, in turret.

Method and materials

16) and plan view of tur-
ret in figure 15, 16, or 20.
Starting from grenade
box at rear of turret be-
low radio shelf, count
screws securing turret
ring guard, in a clockwise
direction from grenade
box. Remove eighth and
ninth screws (figs. 15 and
20) or ninth and tenth
screws (fig. 16). Use
screws to secure bracket
to ring guard, as shown in
detail D of figure 15 or
20 and detail C of figure
16.

Drill holes in lower plate of
Mounting FT-317-(),
as shown in detail E of
figure 15 or detail C of
figure 20. Fasten Mount-
ing FT-317-() to
bracket with four 3/8"-24
x 3/4-inch screws, nuts,
and shakeproof washers
supplied with the bracket,
as shown in details C and
D of figures 15 and 16,
or details D and E of fig-
ure 20. Cut an 18-inch
length of Wire W-128
and solder one terminal
(fig. 17) to one end, and
Terminal TM-91 to the
other end, for grounding
radio set. Secure termi-
nal (fig. 17) by means
of one of the 3/8-inch
screws securing upper
part of Mounting FT-
317-() to bracket (fig.
12, 18, or 21).

Modify loader's Switch Box
BC-658-() (left side
of turret) as shown in
detail A of figures 15, 16,
or 20. Drill 9/16-inch
holes as shown for en-
trance of Cordage CO-

Part and location

Method and materials

213 and for securing
clamp No. 4. Modify
commander's Switch Box
BC-658-() (right side
of turret) as shown in
detail A, figure 15, 16,
or 20. Remove patch
cords from RADIO side
of switch in switch box.
Refer to figure 23 and
connect Cordage CO-213
in two Switch Boxes BC-
658-() as shown. Se-
cure Cordage CO-213 in
switch boxes with clamp
No. 4, as shown in figure
19. Secure clamps with
screws used for mounting
boxes. Cut headset patch
cord on RADIO side of
loader's Switch Box BC-
658-(), about 14 inches
from Plug PL-55. Clean
and solder-tin tips of
cordage, and solder Ter-
minal TM-163 to each
tip. Shorten all patch
cords on both boxes to re-
quired length. Open case
of Transformer C-410
by removing four screws
in flat side of case. Con-
nect Terminal TM-163 to
each terminal on Trans-
former C-410 as shown
in figure 23. Terminal
lugs on cord leading to
switch box will be con-
nected to terminals 3 and
4 in transformer. These
terminals are indicated
CORD by an arrow on
edge of case. Connect
terminal lugs on cord
having Plug PL-55 to
terminals 1 and 2 in trans-
former. These terminals
are indicated HEADSET
by arrow on edge of case.
Secure switch boxes to

Part and location

Method and materials

brackets (fig. 13) with hardware provided. Place switch box with two sets of patch cords and Transformer C-410 attached, on left side of turret, and the other switch box on right side, and route Cordage CO-213, as shown in figure 15, 16, or 20. Secure cordage with clamps No. 4, using No. 8-32 screws provided, and spacers used for securing interphone system cordage clamps. Insert Plugs PL-55 and PL-68 on patch cords from commander's switch box into proper jacks on commander's Interphone Control Box BC-606-(). Insert Plugs PL-55 and PL-68 on patch cords on INTERPHONE side of loader's switch box into proper jacks on loader's interphone control box. Insert other Plug PL-68 into microphone jack on Radio Receiver and Transmitter BC-1000-(), and insert Plug PL-55 (on patch cord with transformer attached) into PHONE No. 1 jack.

Mast Base Bracket MP-50, on turret bulge, right side, for Medium Tank M4A3 or M4A3E2, 75-mm gun, wet stowage; or Medium Tank M4 or M4A3, 105-mm howitzer.

Remove cover plate from mast base bracket provided for British Radio BR-19 aerial, located on turret bulge, right side. Cut Mast Base Bracket MP-50, as shown in detail B of figure 15 or 20, and weld bracket securely over hole provided in British mast base bracket.

Mast Base Bracket MP-60, on turret

Modify Mast Base Bracket MP-60 as shown in de-

Part and location

Method and materials

bulge, left side, for Medium Tank M4A1, M4A2, or M4A3, 76-mm gun, wet stowage.

Mast Base MP-48 or MP-48-A (for Radio Set SCR-508-() or SCR-528-()).

tail B, figure 16. Drill a 11/32-inch diameter hole through cover over hole provided in turret roof at left, for British high-frequency mast base. Weld Mast Base Bracket MP-60 to turret roof over hole, as shown in figure 16.

Remove Mast Base MP-48 or MP-48-A installed in mast base well on left rear of turret for Radio Set SCR-508-() or SCR-528-(), and place it on Mast Base Bracket MP-50, welded at right rear of turret. Assemble Mast Base MP-48-A as shown in figure 8, or Mast Base MP-48, as shown in figure 9. Check lead-in wire on mast base for correct length and install new internal lead-in, if required. Pass lead-in wire into turret through hole in center of British mast base bracket. Place 6-inch piece of rubber or neoprene tubing 3/8-inch inner diameter and 7/8-inch outer diameter, over wire and cement tubing in hole through turret. If tubing is not available, neoprene grommets, used for Mast Base MP-48-A, may be cemented in hole, or wire may be wrapped with sufficient rubber tape and cement to provide a waterproof closure. Cut lead-in wire to proper length (about 30 inches, clean and solder-tin tip, and connect to TR post on Mounting FT-237-() of Radio Set

Part and location

Method and materials

Part and location

Method and materials

SCR-508-() or SCR-528-(). When Mast Base AB-15/GR is used with Radio Set SCR-508-() or SCR-528-(), leave mast base in place, and install Mast Base AB-15/GR (supplied with Radio Set AN/VRC-3-()) on Mast Base Bracket MP-50. Connect lead-in wire for Radio Set SCR-508-() or SCR-528-() to this Mast Base AB-15/GR, and waterproof lead-in as explained above.

Note. Mast Base AB-15/GR (for Radio Set AN/VRC-3-()) will be located on Mast Base Bracket MP-60 in the installation in Medium Tank M4A1, M4A2, or M4A3, 76-mm gun, wet stowage. Therefore it will not be necessary to relocate Mast Base MP-48 or MP-48-A (for Radio Set SCR-508-() or SCR-528-()) on Mast Base Bracket MP-50 in that particular installation.

tions) or on Mast Base Bracket MP-60 (for 76-mm gun installation only).

base well (left rear of turret) or on Mast Base Bracket MP-60. Cut 64-inch length of Wire W-128 (18-inch length for 76-mm gun installation only). Strip about 1/2 inch of insulation at each end, and clean and solder-tin tips. Solder a terminal (fig. 17) to one end of wire. Connect the other end to binding post on bottom of Mast Base AB-15/GR. When Mast Base AB-15/GR is not available, use Mast Base MP-48 or MP-48-A and refer to figure 9 or 8 for assembly of respective mast bases.

Battery BA-70 and Radio Receiver and Transmitter BC-1000-(), on Mounting FT-317-().

Install Battery BA-70 as directed in TM 11-637, supplied with equipment. Place Radio Receiver and Transmitter BC-1000-() on Mounting FT-317-() and secure in place with bracket provided. Use wood spacer on Mounting FT-317-(), beneath Radio Receiver and Transmitter BC-1000-().

Mast Sections MS-116-A, MS-117-A, and MS-118-A, on Mast Base AB-15/GR. (Mast Section MS-116-A is used only for Medium Tank M4A1, M4A2, or M4A3, 76-mm gun, wet stowage.)

Screw mast sections together. Screw assembled antenna into Mast Base AB-15/GR. Carry mast sections in Roll BG-56-() when not in use. When Mast Base MP-48 or MP-48-A is substituted for Mast Base AB-15/GR, issue Mast Sections MS-52 and MS-53, and Clamp MC-424.

Microphone T-45 and Headset H-16/U.

Headset H-16/U is used with Cord CD-307-A. Microphone T-45 is used with Cord CD-318-(). Headset H-16/U and Cord CD-307-A must be used in conjunction with interphone equipment in tank, and may not be used for portable operation of radio set, since impedance of Headset H-16/U does not match impedance of radio set.

Mast Base AB-15/GR in mast base well in left rear of turret (for 75-mm gun and 105-mm howitzer installa-

Refer to figure 7. Disassemble Mast Base AB-15/GR by holding lower insulator and turning body of mast base. Assemble mast base in mast

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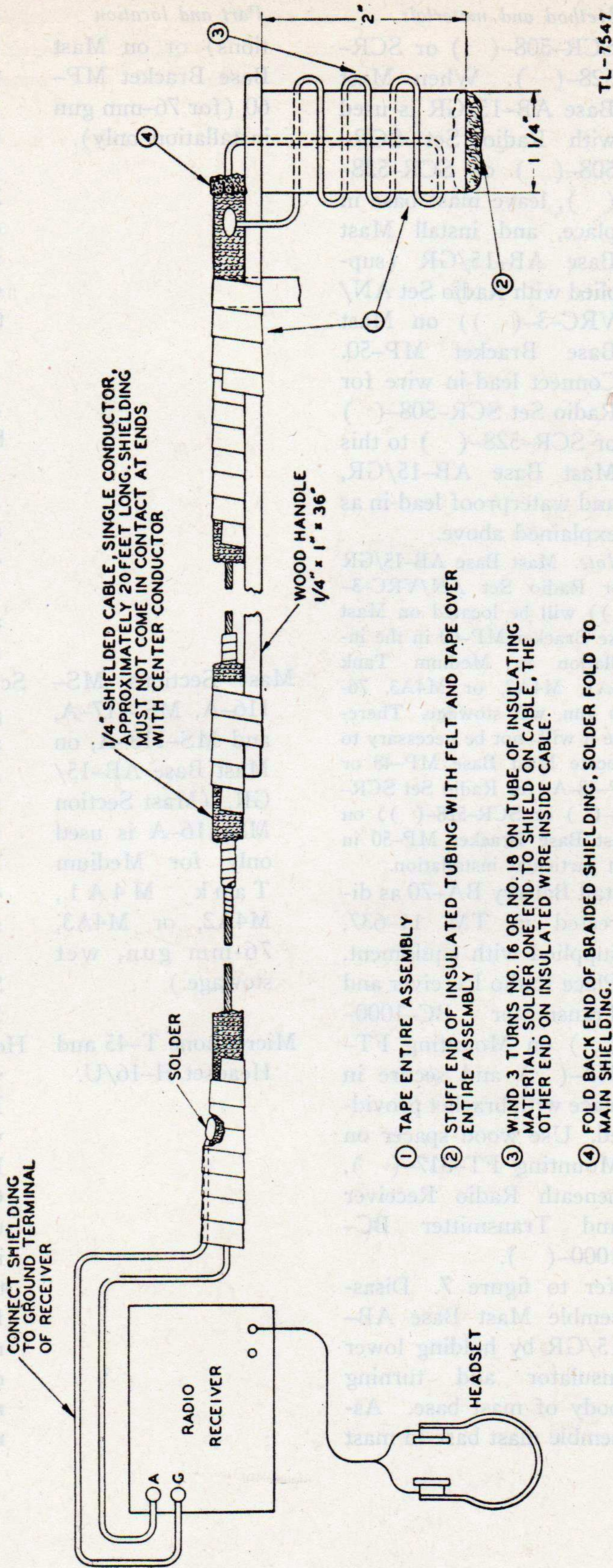


Figure 1. Probe antenna.

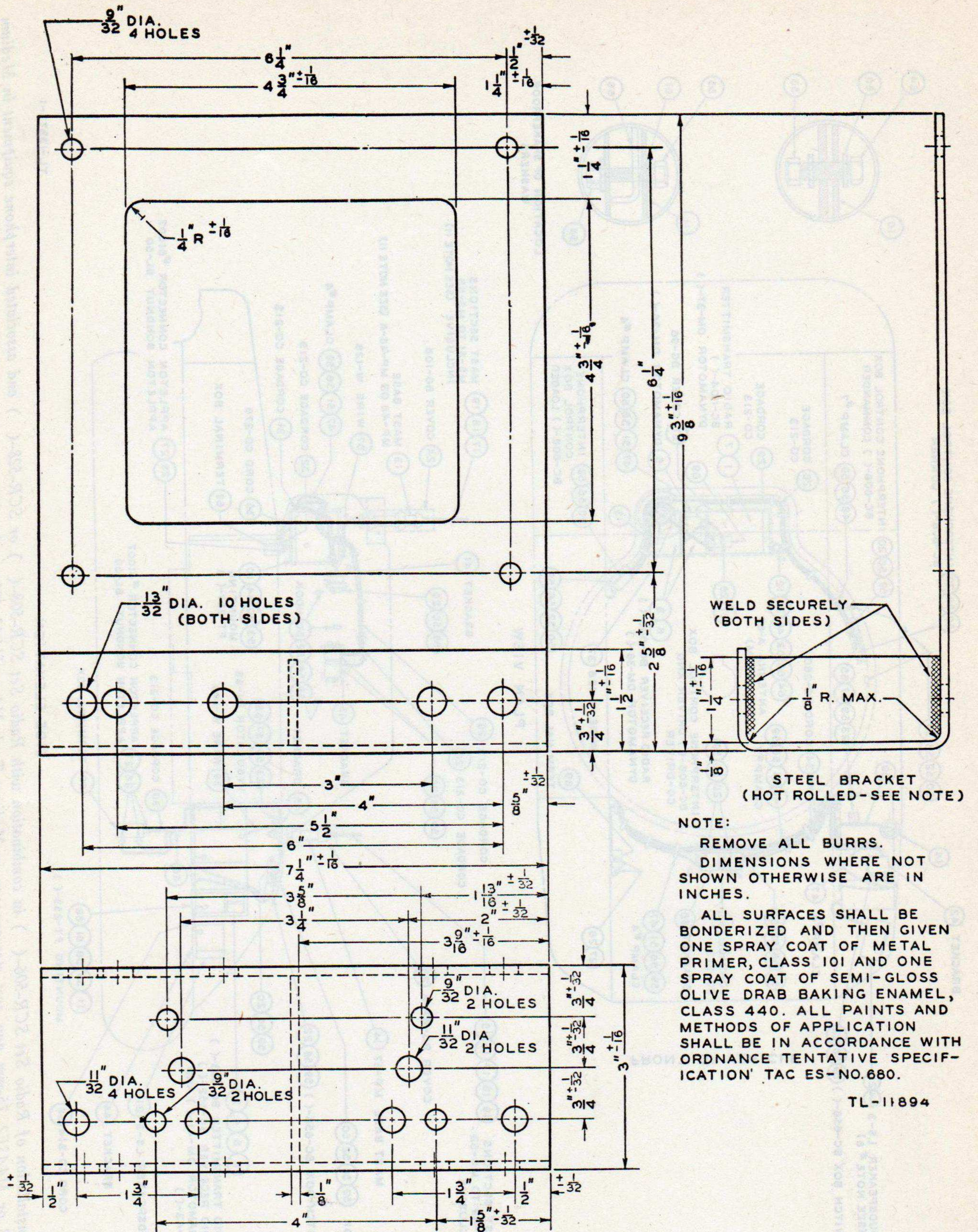


Figure 2. Bracket for Loudspeaker LS-3.

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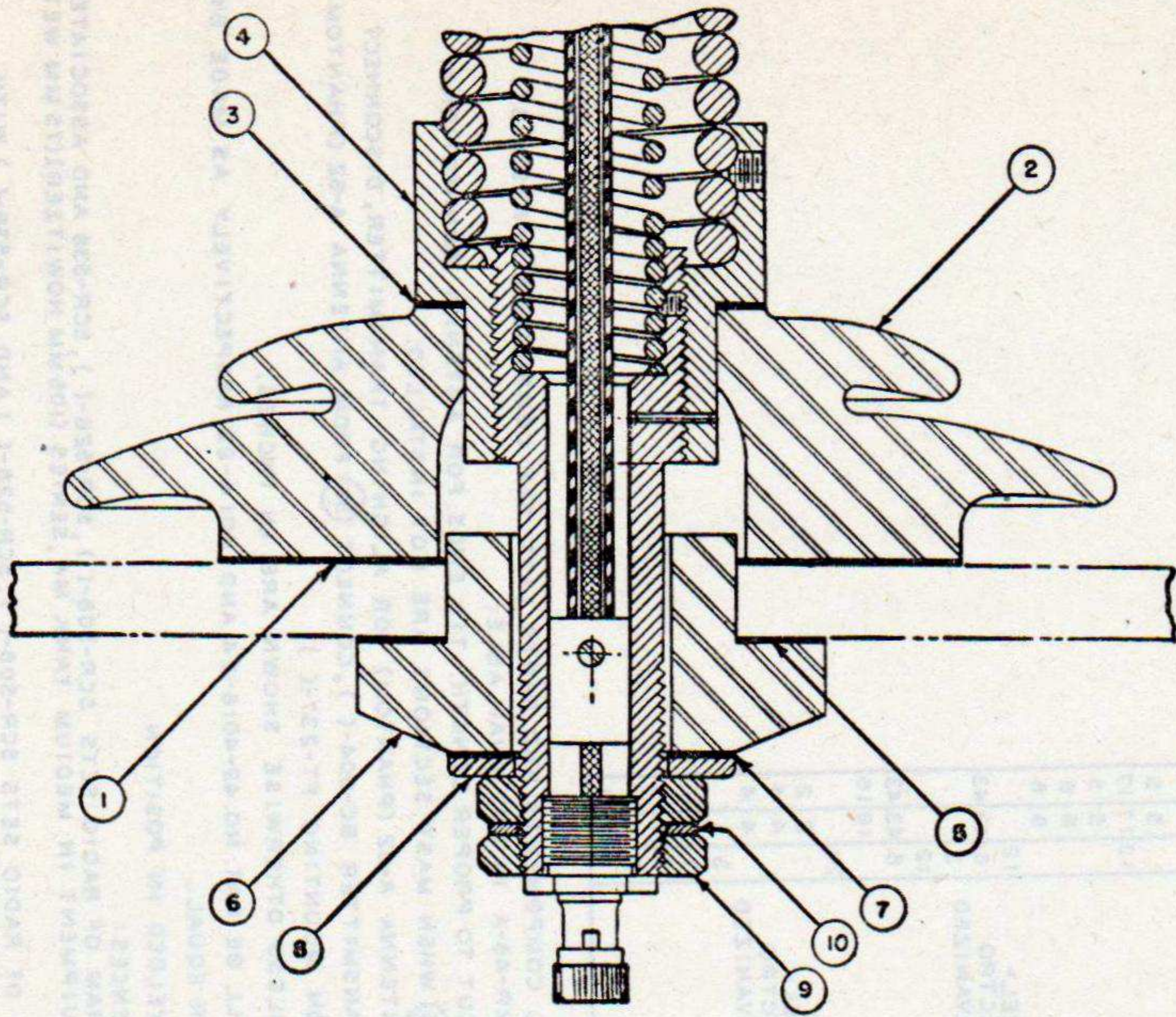
ITEM NO.	NAME OF ITEM	QUAN. REQ.	ITEM NO.	NAME OF ITEM	QUAN. REQ.
1	RADIO TRANSMITTER BC-604-()	1	40	BRACKET A 349613	1
2	RADIO TRANSMITTER BC-653-()	1	41	BRACKET B 210579	1
3	RADIO RECEIVER BC-603-()	1	42	BRACKET A 349547	1
4	RADIO RECEIVER BC-652-()	1	43	BRACKET PER FIG. 2 (SEE NOTE #8)	1
5	DYNAMOTOR DM-36-()	1	44	BRACKET A 277877 (SEE NOTE #10)	1
6	DYNAMOTOR DM-37-()	1	45	CLAMP PER FIG. 19	7
7	DYNAMOTOR DM-41-()	1	46	CLAMP PER FIG. 19	9
8	DYNAMOTOR DM-43-()	1	47	CLAMP PER FIG. 19	9
9	MOUNTING FT-237-()	1	48	HOOK	5
10	MOUNTING FT-253-()	1	49	SPACER PER FIG. 14 (SEE NOTE #10)	5
11	ANTENNA A-62 (PHANTOM)	1	50	SPACER (SEE NOTE #10)	13
12	MAST BASE MP-48-A (SEE NOTE #2)	1	51	ELASTIC STOP NUT 5/16"-24 STD.	17
13	MAST BASE MP-57	1	52	HEX. HEAD MACH. SCREW 5/16"-24 X 3/4" LONG	5
14	MAST SECTION MS-49 AND CLAMP MC-421	1	53	HEX. HEAD MACH. SCREW 1/4"-20 X 1 1/2" LONG	5
15	MAST SECTION MS-50 AND CLAMP MC-422	1	54	ROUND HEAD MACH. SCREW #8-32 X 3/8" LONG	8
16	MAST SECTION MS-51 AND CLAMP MC-423	1	55	ROUND HEAD MACH. SCREW #8-32 X 3/4" LONG	8
17	MAST SECTION MS-52 AND CLAMP MC-424	1	56	HEX. NUT 1/4"-20 STD.	12
18	MAST SECTION MS-53	1	57	LOCKWASHER S.A.E. REG. FOR #8 SCREW	6
19	INTERPHONE CONTROL BOX BC-606-()	1	58	SHAKEPROOF WASHER 1/4" I.E.T. (SEE NOTE #7)	43
20	LOUDSPEAKER LS-3	5	59	SHAKEPROOF WASHER 1/4" I.E.T. (SEE NOTE #7)	43
21	SWITCH BOX BC-658-()	1	60	ROUND HEAD MACH. SCREW #10-32 X 5/8" LONG	16
22	INSULATOR IN-98	1	61	ROUND HEAD MACH. SCREW #6-32 X 3/8" LONG	24
23	COVER BG-108 (SEE NOTE #4)	1	62	LOCKWASHER S.A.E. STD. FOR #6 SCREW	2
24	COVER BG-87-() (SEE NOTE #4)	1	63	HEX. NUT S.A.E. #8-32 STD.	2
25	APPLETON CONNECTOR CAT.#81007	1	64	BRACKET B 298176 (SEE NOTE #10)	4
26	APPLETON BONDNUT CAT.#BL-50	2	65	COVER BG-96	4
27	CORDAGE CO-213 105" LONG	2	66	SPACER PLATE FURNISHED WITH (11)	3
28	CORDAGE CO-213 90" LONG	2	67	TERMINAL BOX 500332 (SEE NOTE #10)	1
29	CORDAGE CO-213 85" LONG	1	68		6
30	CORDAGE CO-213 85" LONG	1	69		2
31	CORDAGE CO-213 42" LONG	1			1
32	CORDAGE CO-213 36" LONG	1			1
33	CORDAGE CO-213 13" LONG	1			1
34	CORD CO-280	2			1
35	CORD CO-278	1			1
36	CORD CO-314	1			1
37	WIRE W-128 30" LONG (SEE NOTE #3)	1			1
38	WIRE W-128 20" LONG (SEE NOTE #5)	1			1
39	WIRE W-146 38" LONG	1			1

NOTES:

- 1-FOR ADDITIONAL COMPONENTS AND PARTS LIST SEE COMPONENT PARTS LIST.
- 2-USE MP-48 IF MP-48-A IS NOT AVAILABLE.
- 3-(37) AND (39) CUT TO PROPER LENGTH. TIN ENDS FOR ANTENNA CONNECTIONS.
- 4-USE (25) AND (24) WHEN MAST SECTIONS ARE NOT INSTALLED.
- 5-WHEN USING ANTENNA A-62 (PHANTOM) FOR ALIGNING TRANSMITTER, DISCONNECT (37) FROM RADIO TRANSMITTER BC-604-(), CONNECT (38) FROM ANTENNA A-62 (PHANTOM) TO ANTENNA POST ON MOUNTING FT-237-().
- 6-DIMENSIONS UNLESS OTHERWISE SHOWN ARE IN INCHES.
- 7-(60) AND (61) SHALL BE CAT. NO. 42-4018-24 AND 4014-22 RESPECTIVELY AS MADE BY SHAKEPROOF INC. OR EQUAL.
- 8-(4) SHALL BE WELDED IN POSITION.
- 9-DRAWING REFERENCES:
WIRING DIAGRAM OF RADIO SETS SCR-508-(), SCR-528-(), SCR-538 AND ASSOCIATED INTERPHONE EQUIPMENT IN MEDIUM TANK M4, SERIES (105MM HOWITZER)(75MM WET) FIG. 6.
INSTALLATION OF RADIO SETS SCR-508-(), SCR-528-() AND SCR-538-() WITH SCR-506-() AND ASSOCIATED INTERPHONE EQUIPMENT IN MEDIUM TANK M4 SERIES (76MM) FIG. 11.
- 10-(41) (42) (43) (45) (51) (52) (66) AND (69) ARE FURNISHED WITH THE VEHICLE BY THE MFR.
- 11-USE MAST BASE AB-15/GR AND MAST SECTIONS MS-116-A, AND MS-117-A AND MS-118-A WHEN AVAILABLE.

Figure 3-Continued.

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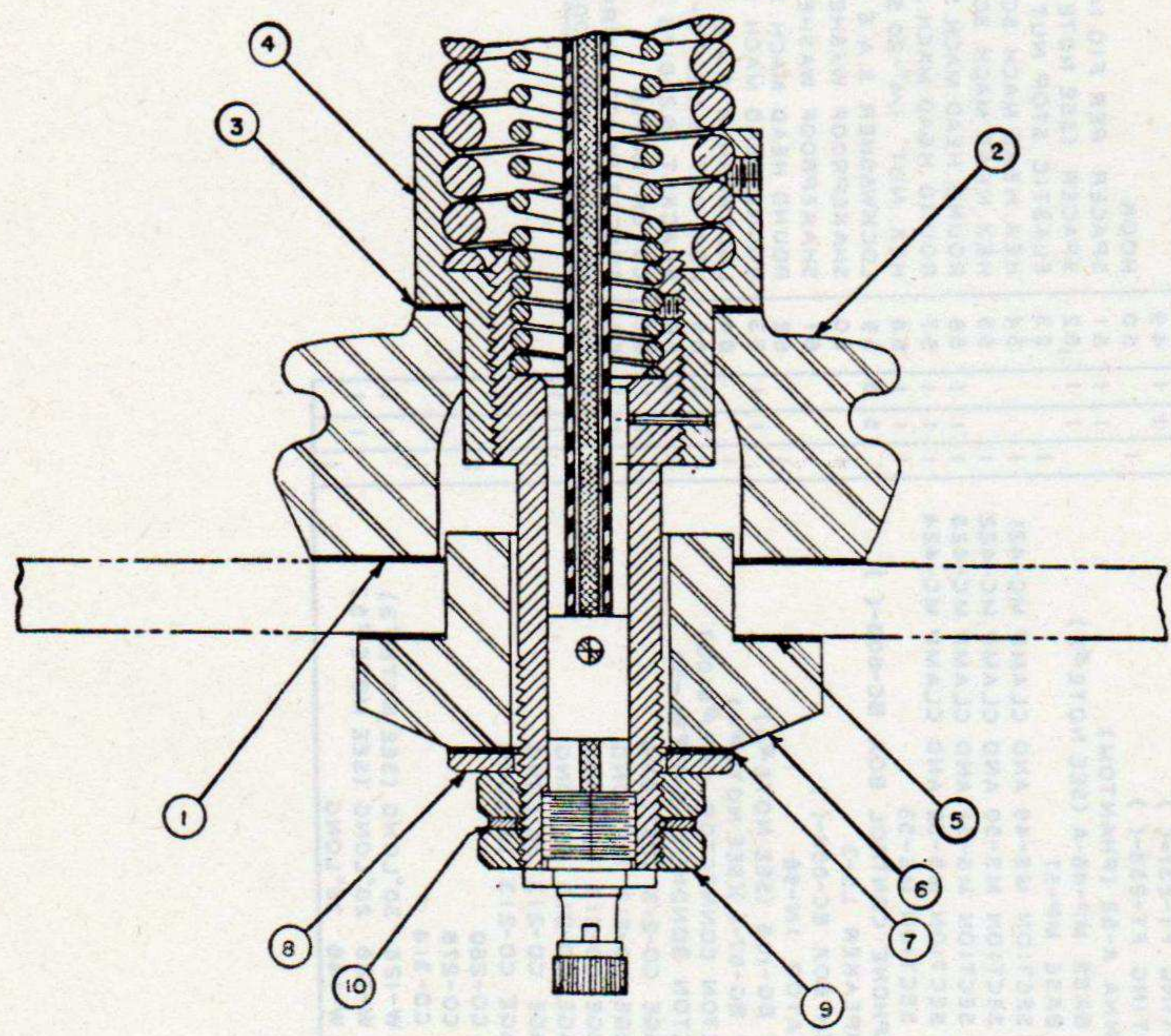


- ① - FIBER WASHER
- ② - PORCELAIN INSULATOR
- ③ - FABRIC WASHER
- ④ - SPRING RETAINER
- ⑤ - FIBER WASHER
- ⑥ - PORCELAIN INSULATOR
- ⑦ - FABRIC WASHER
- ⑧ - STEEL WASHER
- ⑨ - STEEL NUT
- ⑩ - LOCKWASHER

BASED ON
SC-D-1244-N

TL-7539

Figure 4. Mast Base MP-37 and MP-57, assembly for installation.



- ① - FIBER WASHER
- ② - PORCELAIN INSULATOR
- ③ - FABRIC WASHER
- ④ - SPRING RETAINER
- ⑤ - FIBER WASHER
- ⑥ - PORCELAIN INSULATOR
- ⑦ - FABRIC WASHER
- ⑧ - STEEL WASHER
- ⑨ - STEEL NUT
- ⑩ - LOCKWASHER

BASED ON
SC-D-1244-N

TL-7540

Figure 4. Mast Base MP-37 and MP-57, assembly for installation—Continued.

SECRET

КОМПОНЕНТ / COMPONENT
ИНТЕРФОННОЕ КОНТАКТНОЕ КОШОК РС-808-1

КОМПОНЕНТ / COMPONENT
ИНТЕРФОННОЕ КОНТАКТНОЕ КОШОК РС-808-1

КОМПОНЕНТ / COMPONENT
ИНТЕРФОННОЕ КОНТАКТНОЕ КОШОК РС-808-1

КОМПОНЕНТ / COMPONENT
ИНТЕРФОННОЕ КОНТАКТНОЕ КОШОК РС-808-1

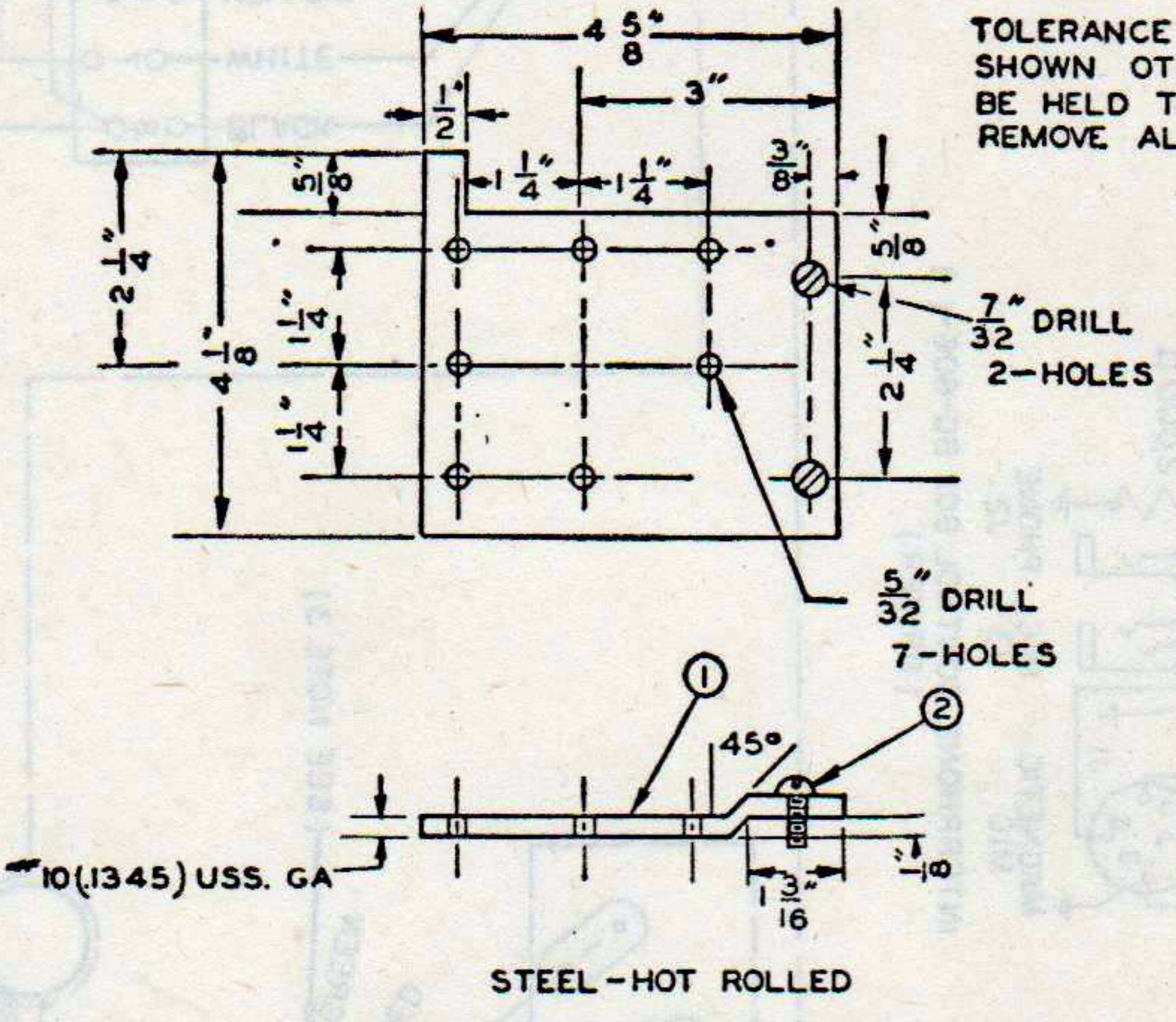
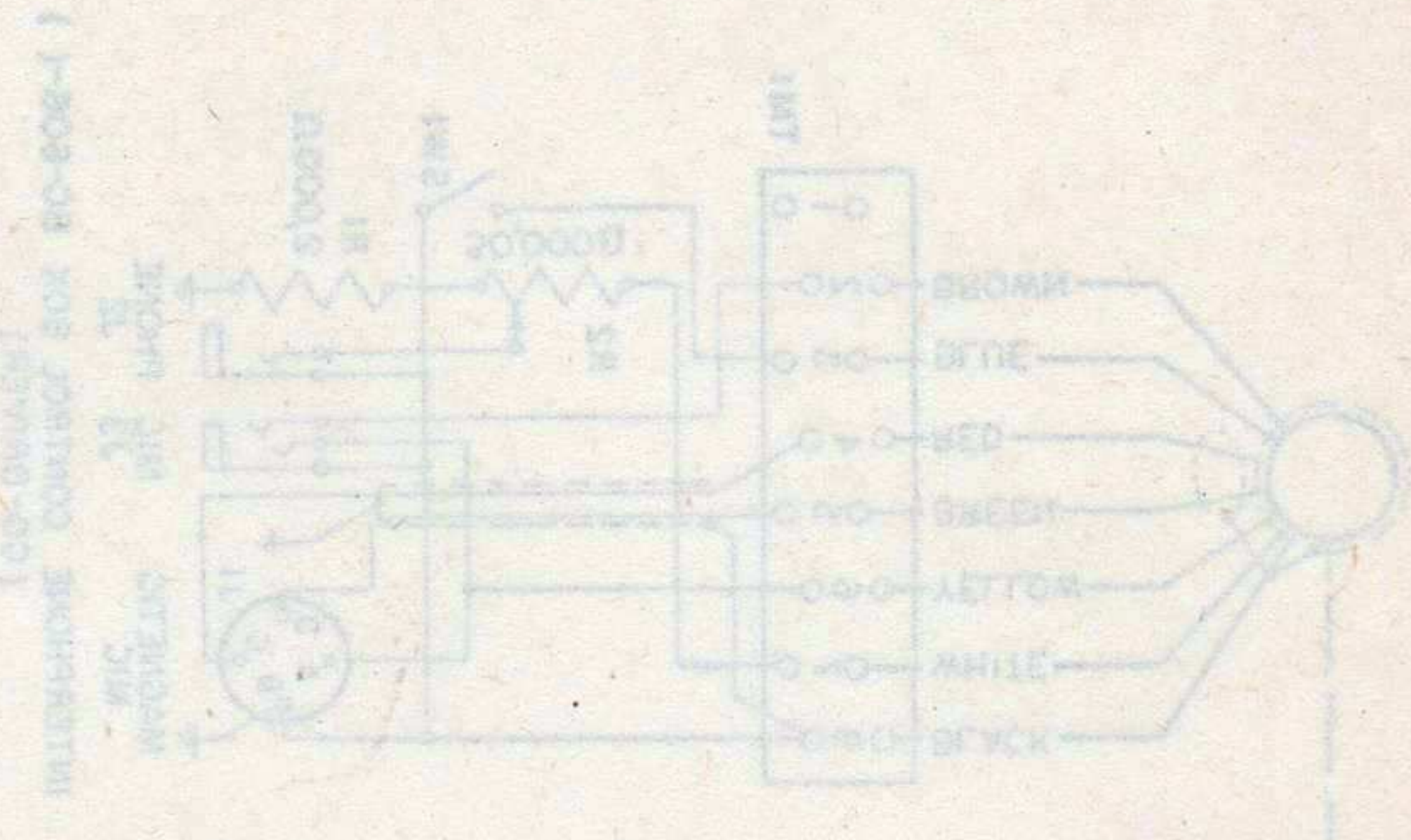
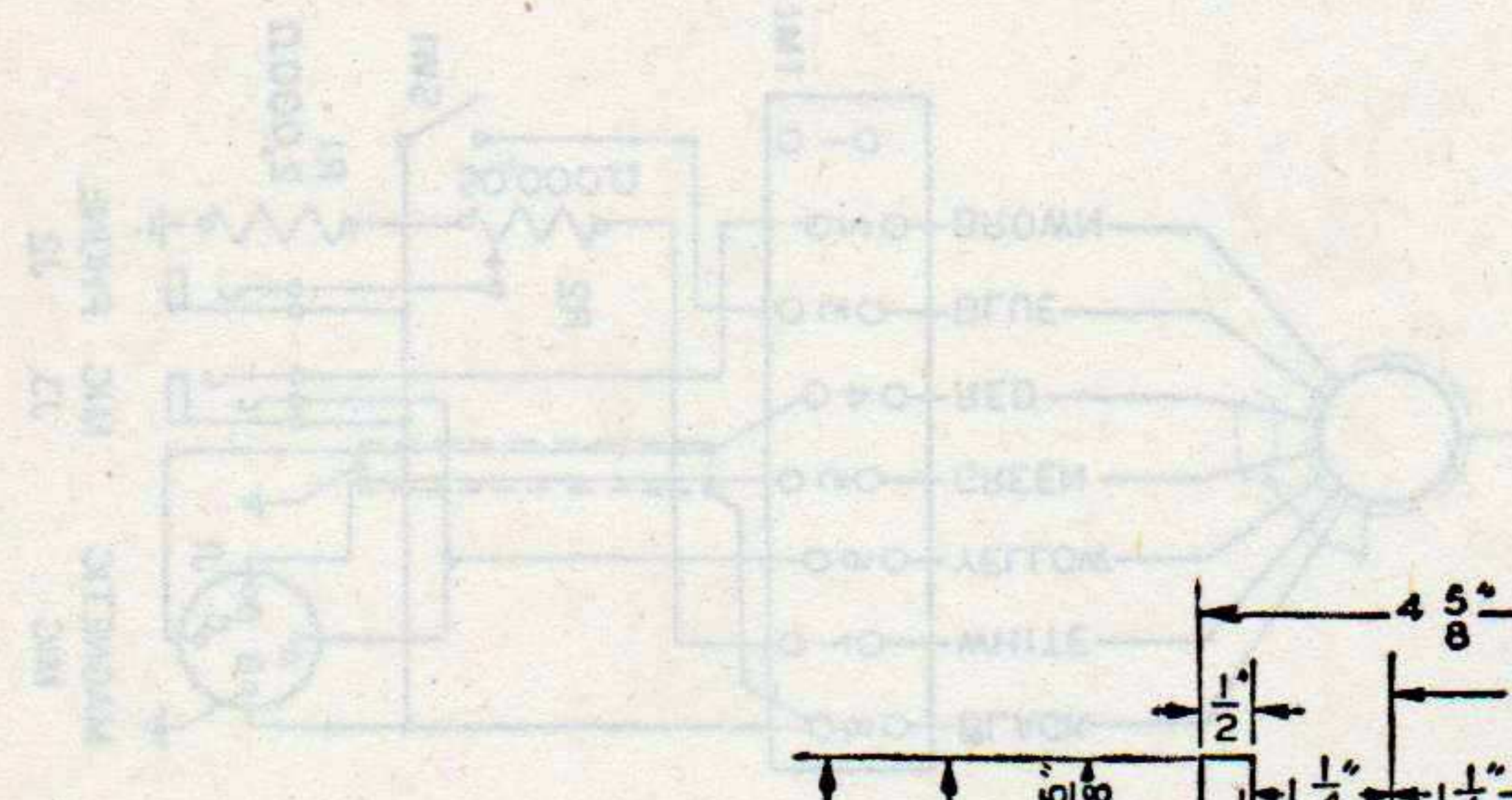
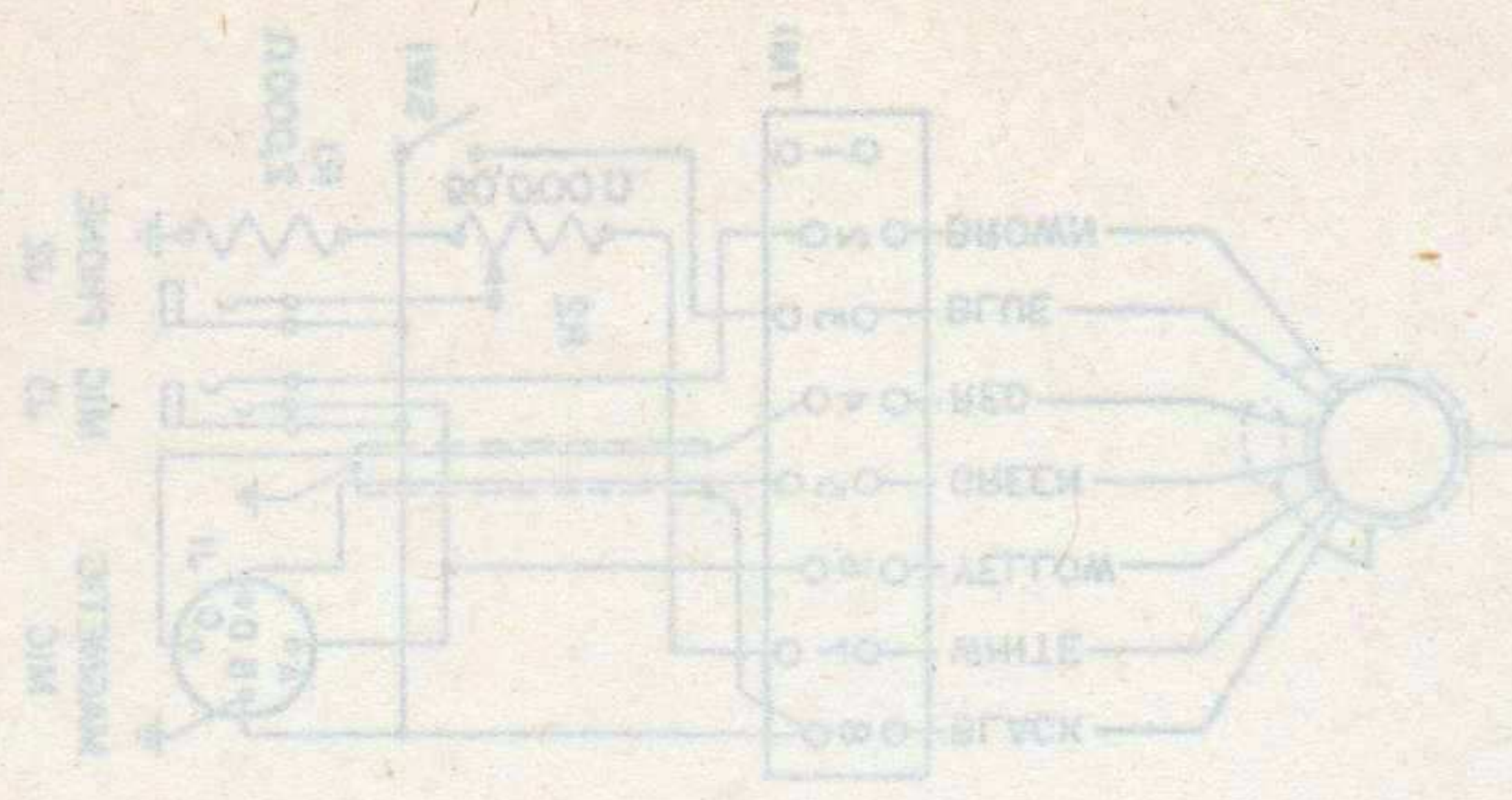
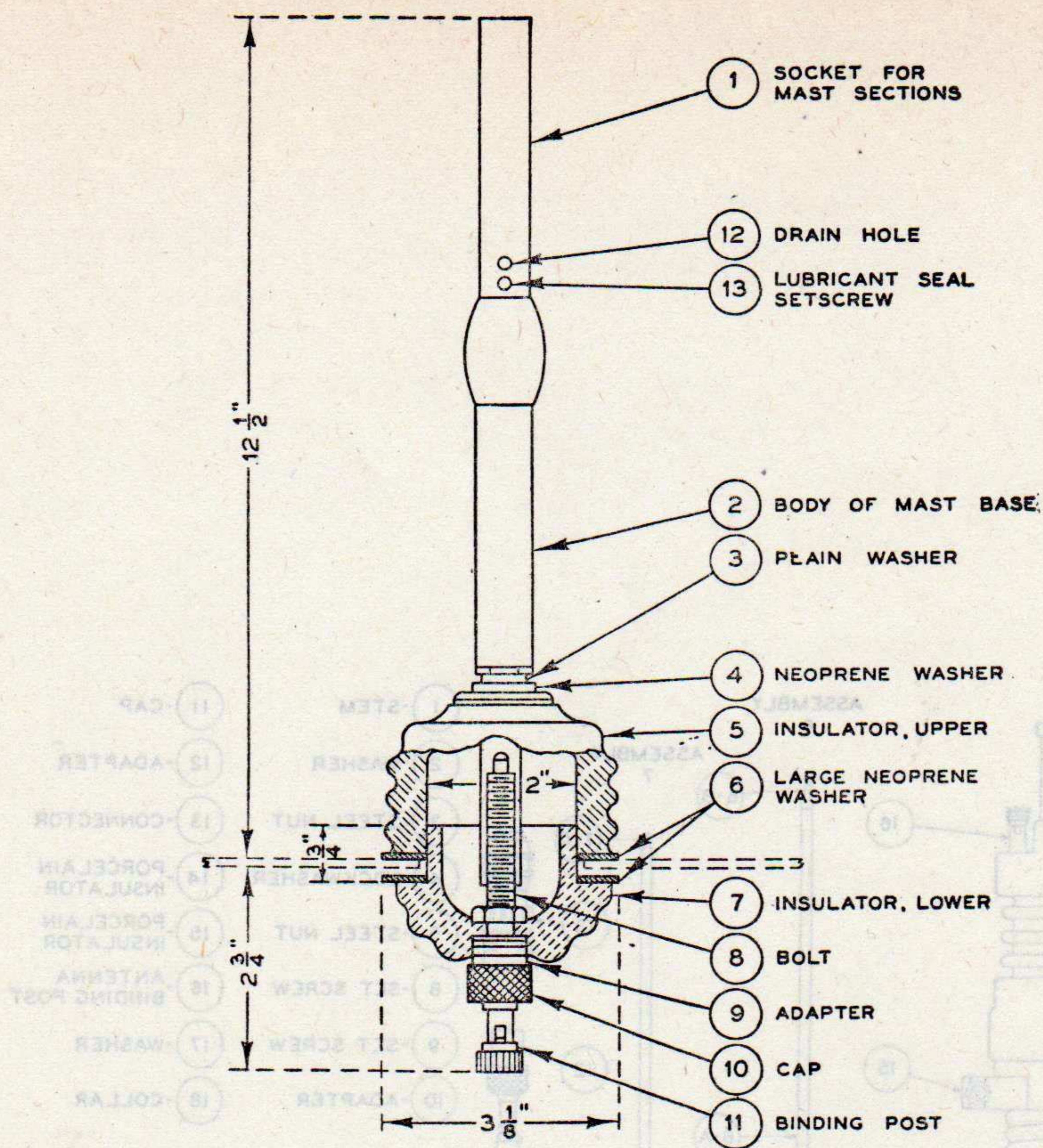
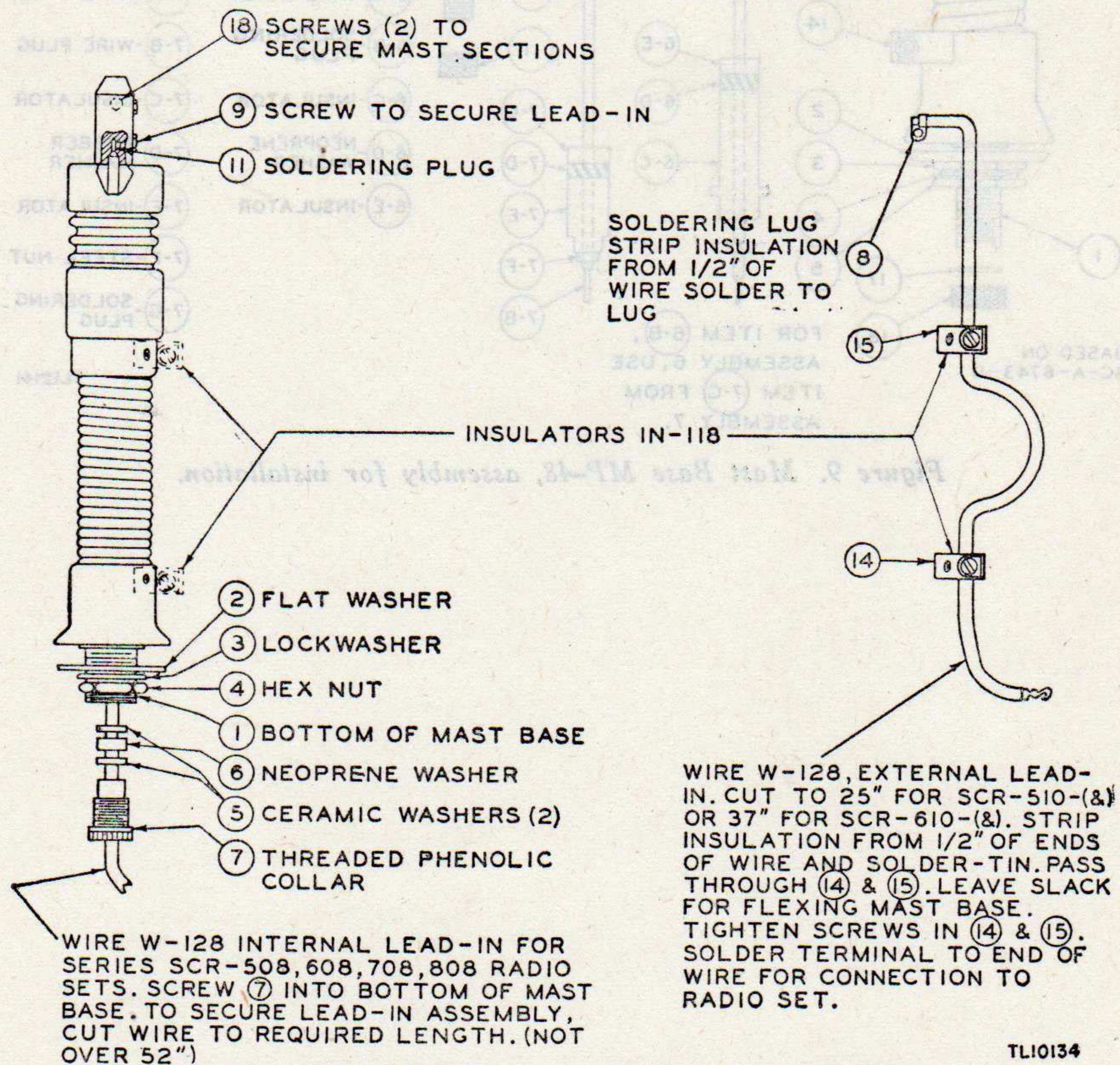


Figure 5. Bracket for Antenna A-62, phantom.



TL 133711

Figure 7. Mast Base AB-15/GR, assembly for Wire W-128 lead-in.



TL10134

Figure 8. Mast Base MP-48-A, assembly with Wire W-128 lead-in.

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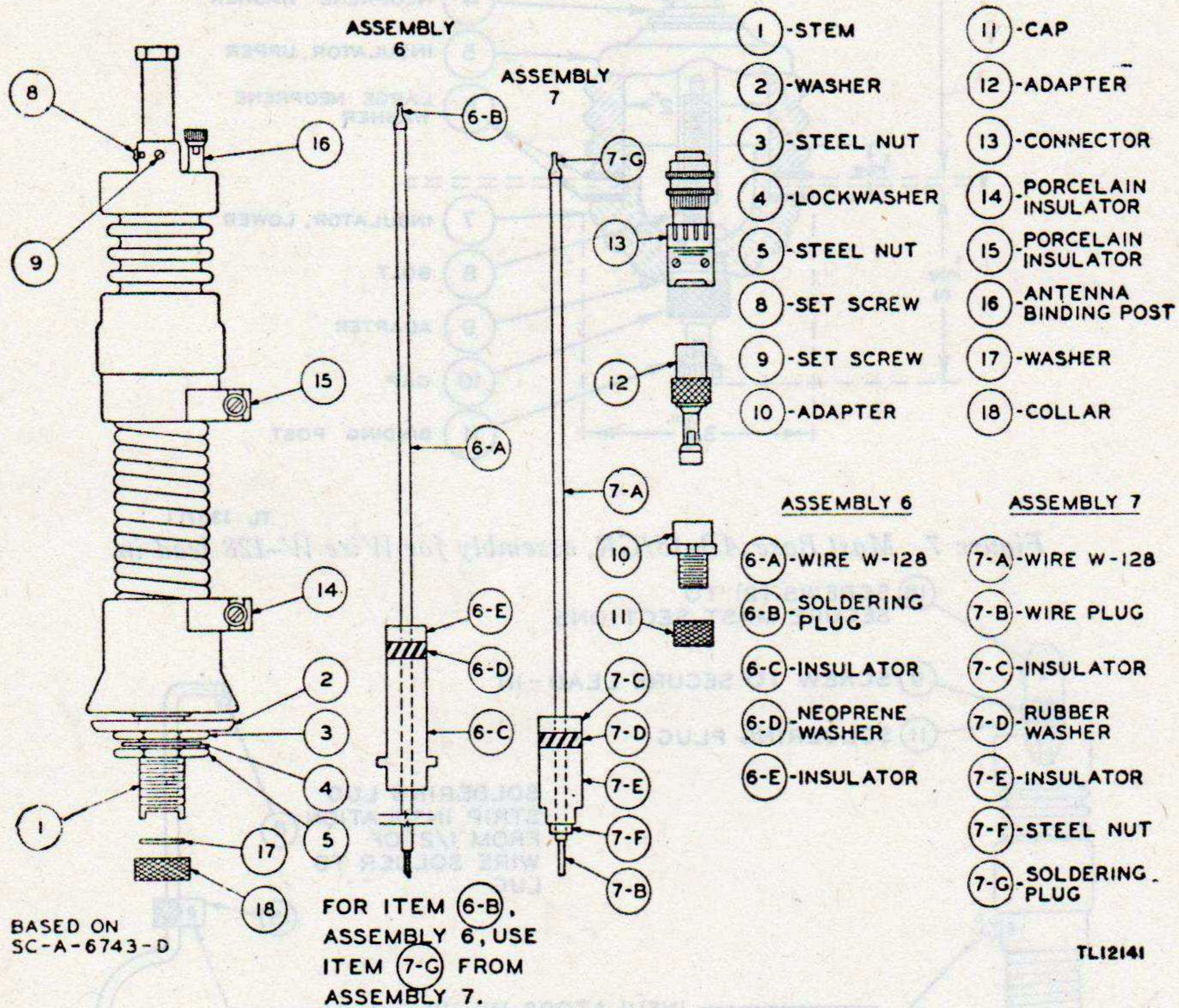
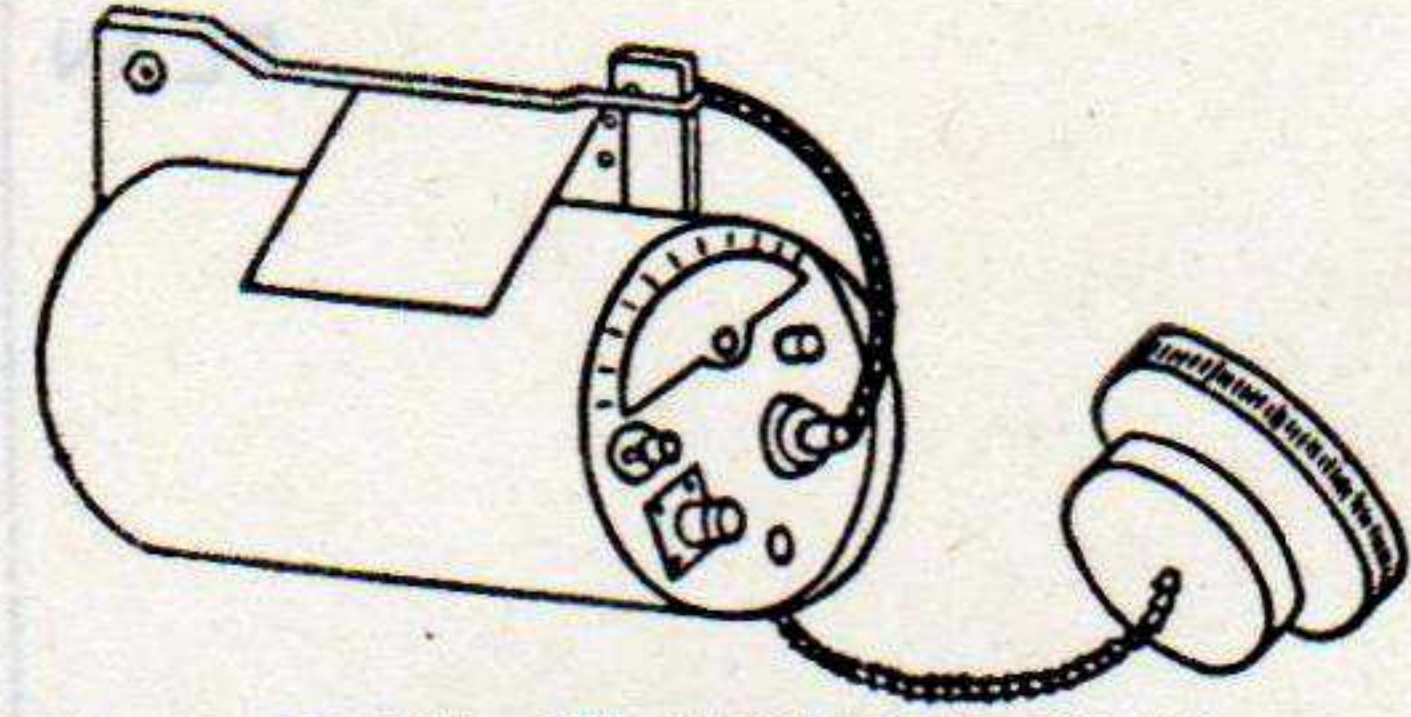
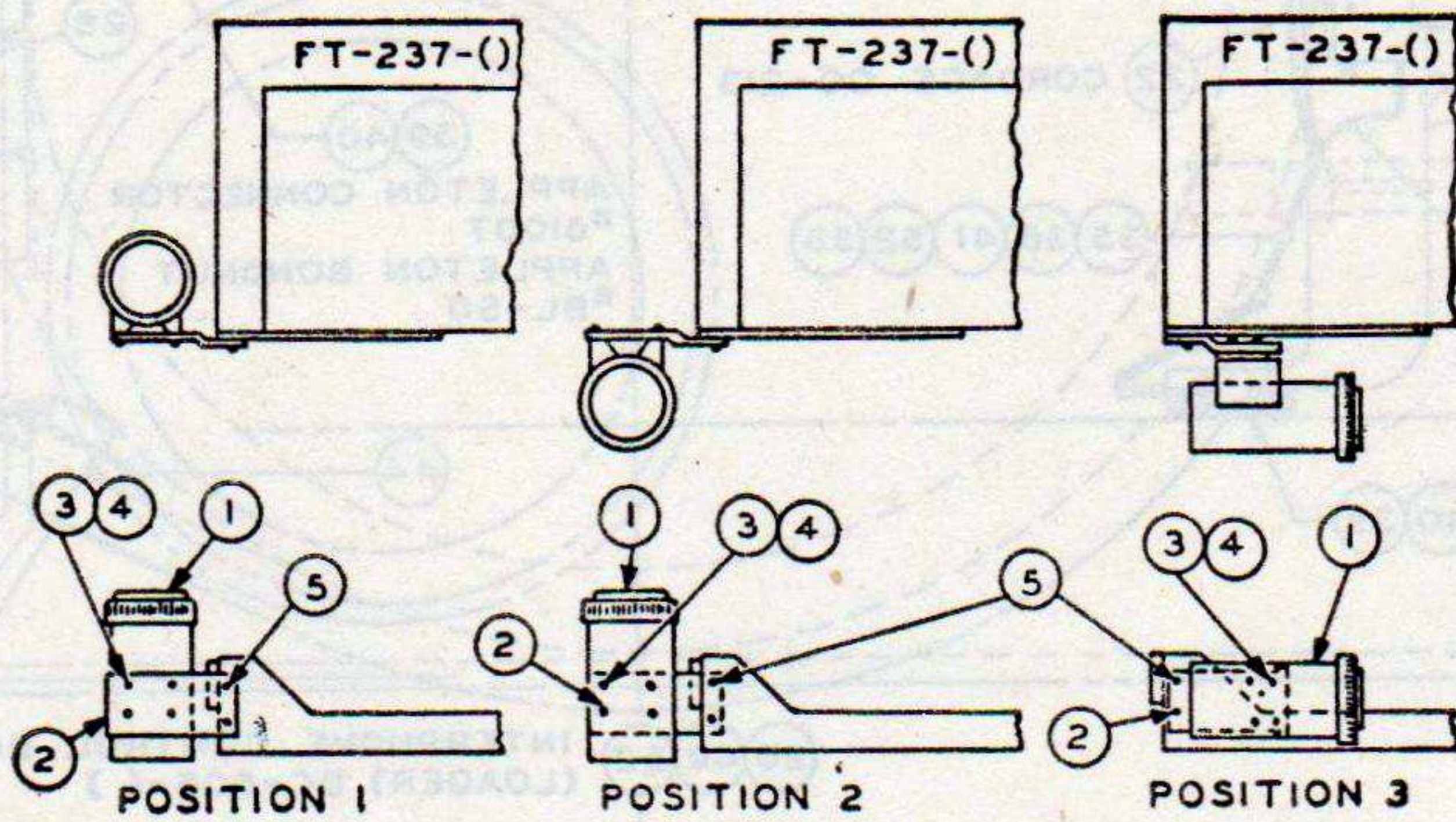


Figure 9. Mast Base MP-48, assembly for installation.



ITEM NO.	NAME OF ITEM AND REMARKS	QUAN. REQ.
1	ANTENNA A-62 (PHANTOM)	1
2	BRACKET PER FIG. 5	1
3	RD. HD. MACH. SCR. #6-32 X 1/2" FURN. WITH #1	4
4	LOCKWASHER #6 STD. FURN. WITH #1	4
5	RD. HD. MACH. SCR. #10-32 X 5/8"	2

NOTE:
 1. FOR ALL POSITIONS USE TIP OF BRACKET TO RECEIVE THE GROUND CLAMP OF ANTENNA A-62.
 2. USE LONGER SCREW ⑤ WHEN INSTALLING BRACKET ② ON MOUNTING FT-237-() AND RE-APPLY TOOTH-TYPE LOCKWASHERS.
 TLJ3376

Figure 10. Installation of Antenna A-62, phantom, on Mounting FT-237-() .

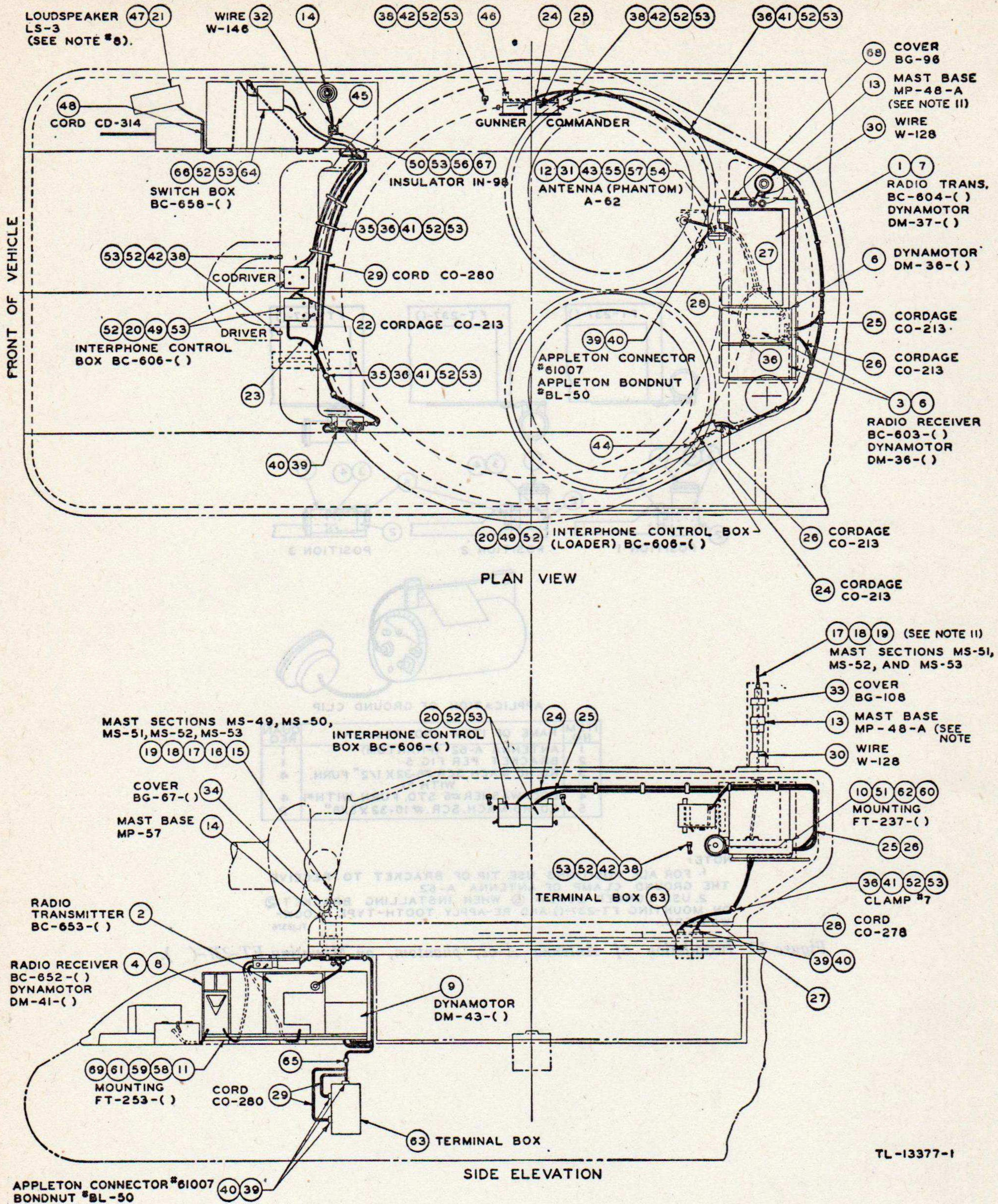
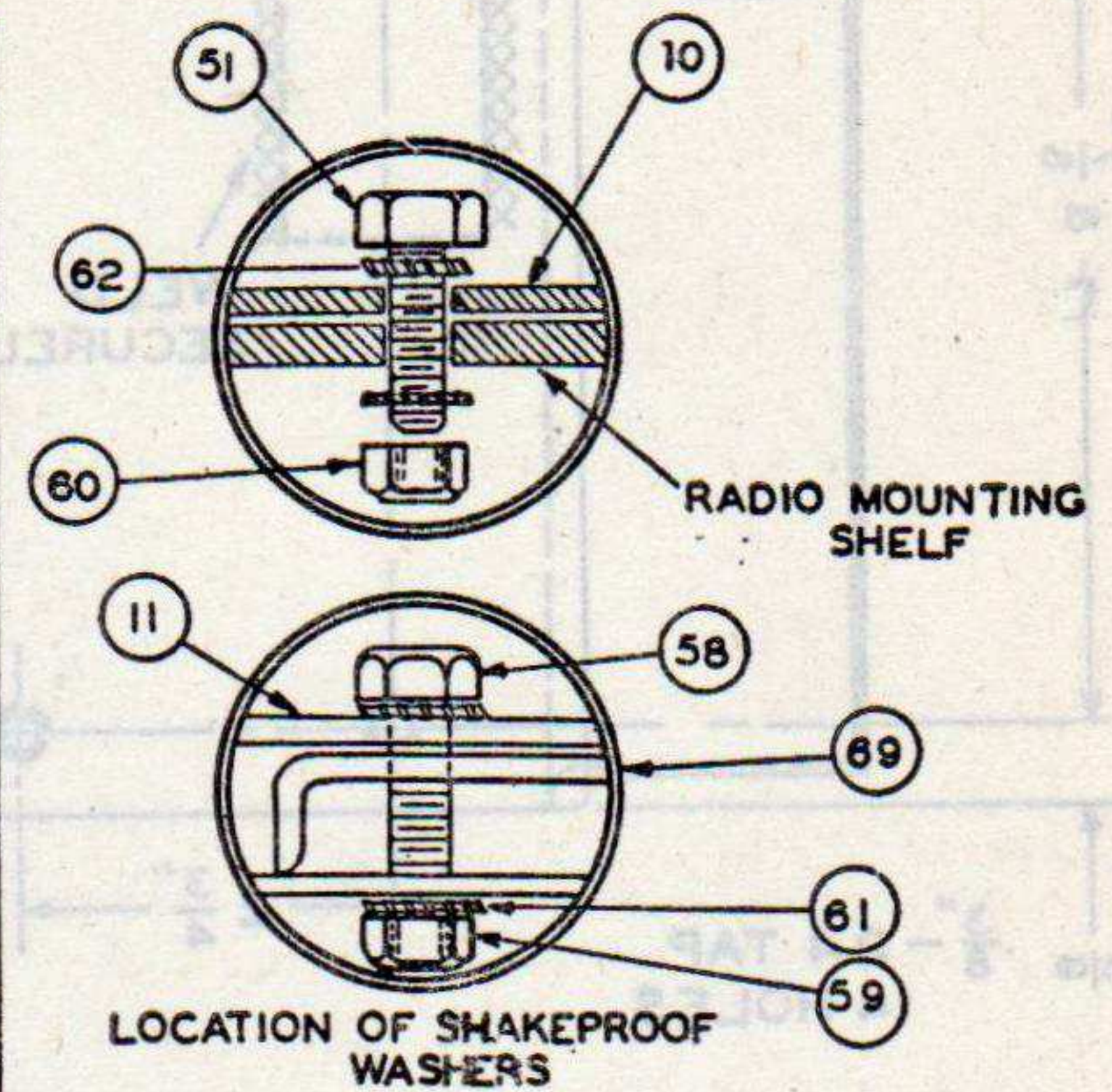


Figure 11. Installation of Radio Set SCR-506-() in combination with Radio Set SCR-508-() or SCR-528-() and associated interphone equipment in Medium Tank M4A1, M4A2, or M4A3, 76-mm gun, wet stowage.

ITEM NO.	NAME OF ITEM	QUANTITY REQUIRED		
		RADIO SET SCR-528-()	RADIO SET SCR-508-()	RADIO SET SCR-506-()
1	RADIO TRANSMITTER BC-604-()	1	1	1
2	RADIO TRANSMITTER BC-653-()			
3	RADIO RECEIVER BC-603-()	1	2	1
4	RADIO RECEIVER BC-652-()			
5				
6	DYNAMOTOR DM-36-()	1	2	
7	DYNAMOTOR DM-37-()	1	1	
8	DYNAMOTOR DM-41-()			
9	DYNAMOTOR DM-43-()			
10	MOUNTING FT-237-()	1	1	
11	MOUNTING FT-253-()			
12	ANTENNA (PHANTOM) A-62	1	1	
13	MAST BASE MP-48-A (SEE NOTE #2)	1	1	
14	MAST BASE MP-57			
15	MAST SECTION MS-49 AND CLAMP MC-421			
16	MAST SECTION MS-50 AND CLAMP MC-422			
17	MAST SECTION MS-51 AND CLAMP MC-423	1	1	
18	MAST SECTION MS-52 AND CLAMP MC-424	1	1	
19	MAST SECTION MS-53	1	1	
20	INTERPHONE CONTROL BOX BC-606-()	5	5	
21	LOUD SPEAKER LS-3			
22	CORDAGE CO-213 13" LONG	1	1	
23	CORDAGE CO-213 85" LONG	1	1	
24	CORDAGE CO-213 130" LONG	1	1	
25	CORDAGE CO-213 100" LONG	1	1	
26	CORDAGE CO-213 66" LONG	1	1	
27	CORDAGE CO-213 42" LONG	1	1	
28	CORD CO-278	1	1	
29	CORD CO-280			2
30	WIRE W-128 30" LONG SEE NOTE #3	1	1	
31	WIRE W-128 20" LONG SEE NOTE #5	1	1	
32	WIRE W-148 36" LONG			1
33	COVER BG-108	1	1	
34	COVER #4 BG-67-() } SEE NOTE #4			
35	CLAMP #7 PER FIG. 19	9	9	7
36	CLAMP PER FIG. 19	9	9	11
37				
38	HOOK	5	5	
39	APPLETON CONNECTOR CAT. NO. 81007	3	3	2
40	APPLETON BONDNUT CAT. NO. BL-50	3	3	2
41	SPACER PER FIG. 14	17	17	7
42	SPACER	5	5	
43	BRACKET PER FIG. 5	1	1	
44	BRACKET A349613 } SEE NOTE #10			
45	BRACKET A277877			
46	BRACKET A342947	1	1	1
47	BRACKET FIG. 2 SEE NOTE #8			
48	CORD CD-314			
49	BRACKET B298176 SEE NOTE #10	1	1	1
50	INSULATOR IN-98			
51	HEX. HEAD MACH. SCREW 5/16"-24 X 1 3/8" LONG	8	8	
52	ROUND HEAD MACH. SCREW #8-32 X 3/8" LONG	43	43	6
53	LOCK WASHER S.A.E. REG. S.A.E. REG. FOR #8 SCREW	43	43	6
54	ROUND HEAD MACH. SCREW #6-32 X 3/8" LONG	4	4	
55	ROUND HEAD MACH. SCREW #10-32 X 5/8" LONG	2	2	
56	ROUND HEAD MACH. SCREW #8-32" X 3/4" LONG			3
57	LOCK WASHER S.A.E. REG. FOR 6 SCR.	4	4	
58	HEX. HEAD MACH. SCREW 1/4"-20" X 1 1/2" LONG			12
59	HEX. NUT 1/4"-20 ST'D			12
60	ELASTIC STOP NUT 5/16-24	8	8	
61	SHAKEPROOF WASHER 1/4" I.E.T. SEE NOTE #8			24
62	SHAKEPROOF WASHER 5/16 I.E.T. SEE NOTE #8	16	16	
63	TERMINAL BOX C100442 SEE NOTE #10	2	2	1
64	SWITCH BOX BC-658-()			
65	CLAMP #5 PER FIG. 19	1	1	
66	BRACKET B210579 SEE NOTE #10			
67	HEX. NUT #8-32 ST'D			3
68	COVER BG-96	1	1	
69	SPACER PLATE FURNISHED WITH ①			6

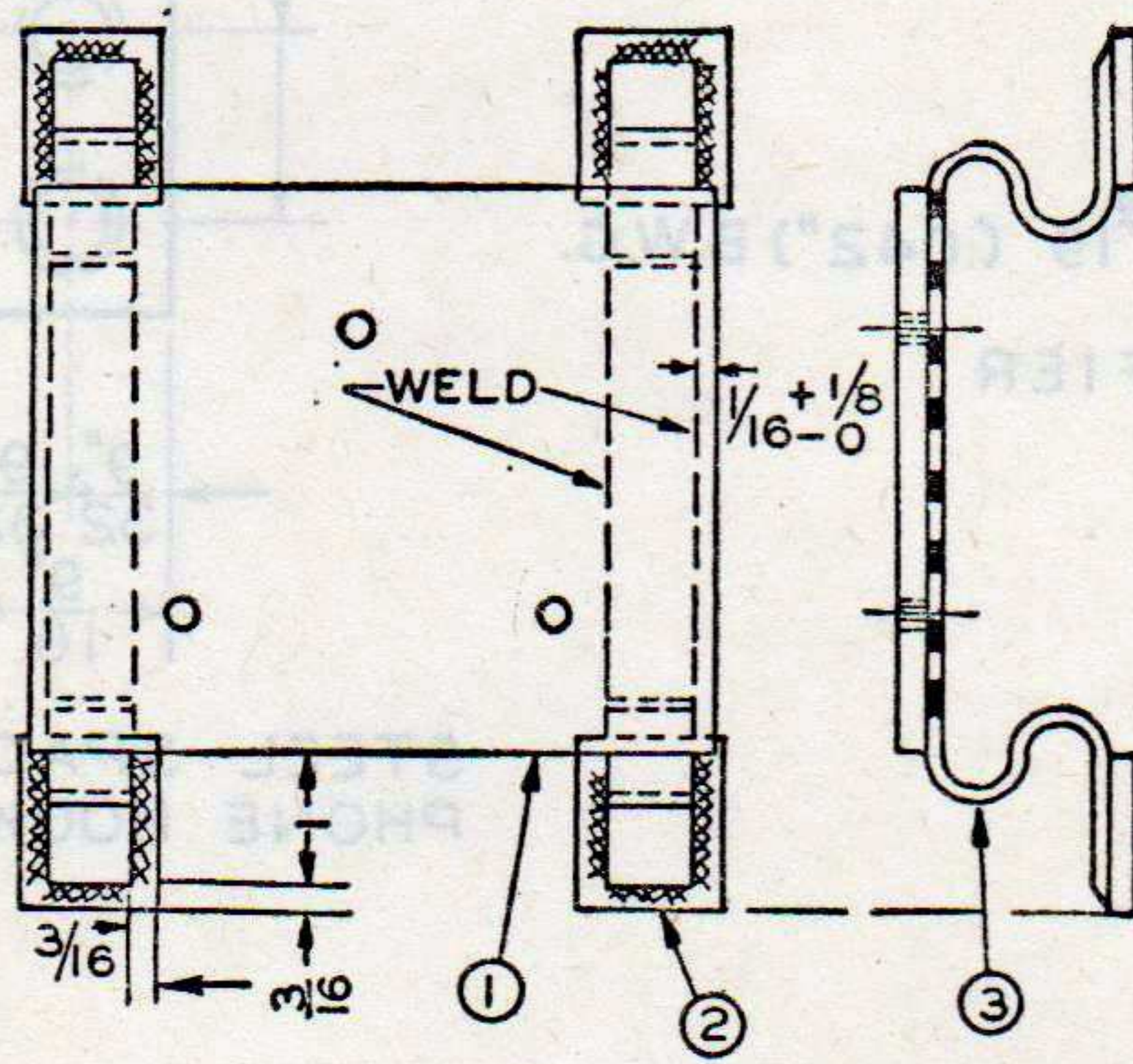


- NOTE
- FOR ADDITIONAL COMPONENTS AND SPARE PARTS SEE COMPONENT PARTS LIST.
 - USE MP-48 IF (13) IS NOT AVAILABLE.
 - (30) (31) AND (32) CUT TO PROPER LENGTH, TIN ENDS FOR ANTENNA CONNECTIONS.
 - USE (33) AND (34) WHEN MAST SECTIONS ARE NOT INSTALLED.
 - WHEN USING ANTENNA A-62 (PHANTOM) FOR ALIGNING TRANSMITTER, DISCONNECT (30) FROM (10) MOUNTING FT-237-(). CONNECT (31) FROM ANTENNA A-62 (PHANTOM) TO ANTENNA POST ON MOUNTING FT-237-().
 - (61) AND (62) SHALL BE CAT. NO. 42-4018-24 AND 4014-22 RESP. AS MADE BY SHAKEPROOF INC. CHICAGO ILL. OR EQUAL.
 - DIMENSIONS UNLESS OTHERWISE SHOWN ARE IN INCHES
 - (47) SHALL BE WELDED IN POSITION.
 - DRAWING REFERENCES:
WIRING DIAGRAM OF RADIO SETS SCR-508-() SCR-528-() AND SCR-538-() AND ASSOCIATED INTERPHONE EQUIPMENT IN MED. TANK M4 SERIES (105 HOWITZER) (75MM WET) (76MM) FIG. 6
INSTALLATION OF RADIO SETS SCR-508-() SCR 528-() AND SCR-538-() AND SCR-506-() IN MED. TANK M4 SERIES (105MM HOWITZER) AND IN MED. TANK M4 SERIES (75MM WET) FIG. 3
 - (41) (42) (44) (45) (46) (49) (63) (66) ARE FURNISHED WITH THE VEHICLE BY THE MFR.
 - USE MAST BASE A8-15/GR AND MAST SECTIONS MS-116-A, MS-117-A, AND MS-118-A, WHEN AVAILABLE.

TL-13377-2

Figure 11—Continued.

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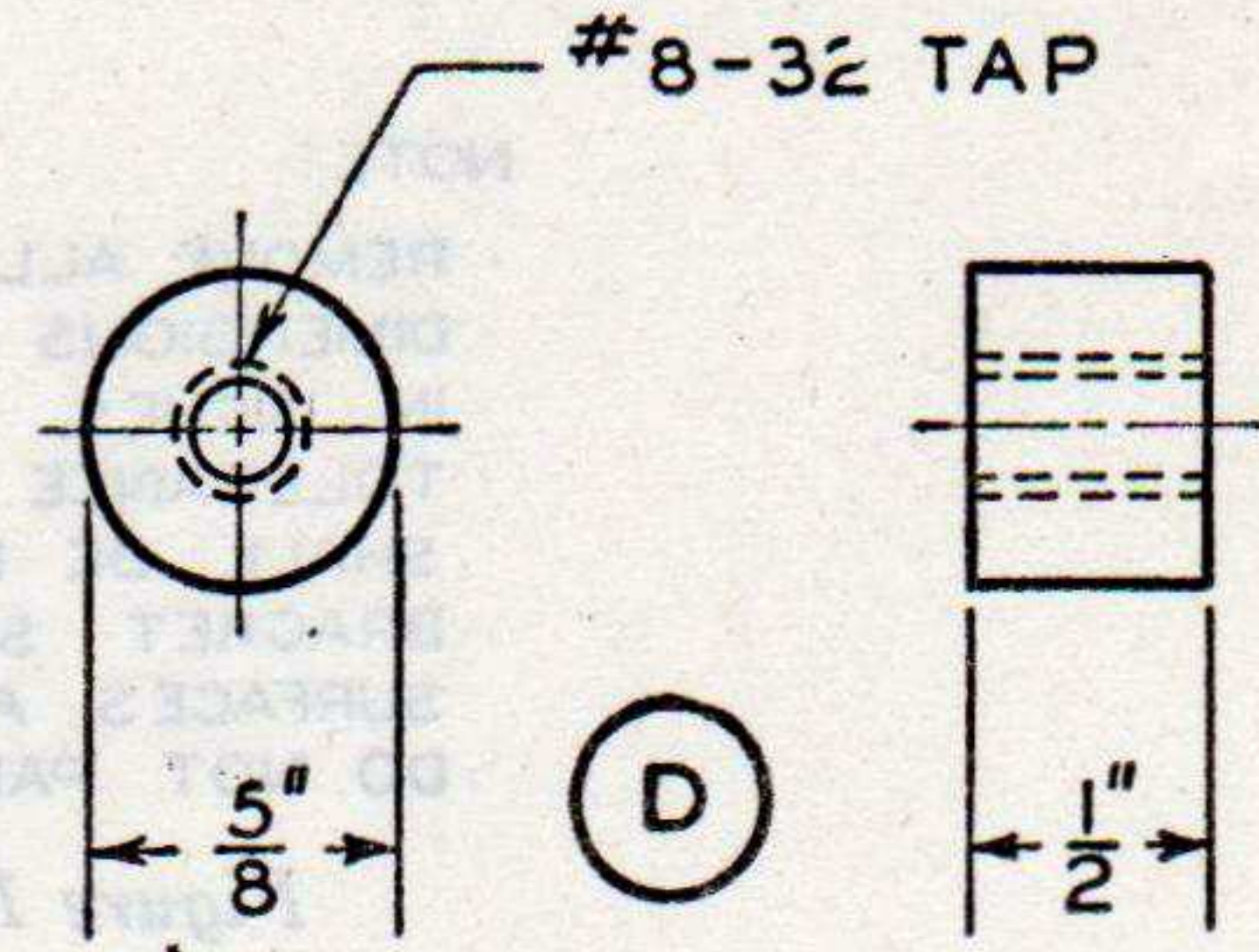
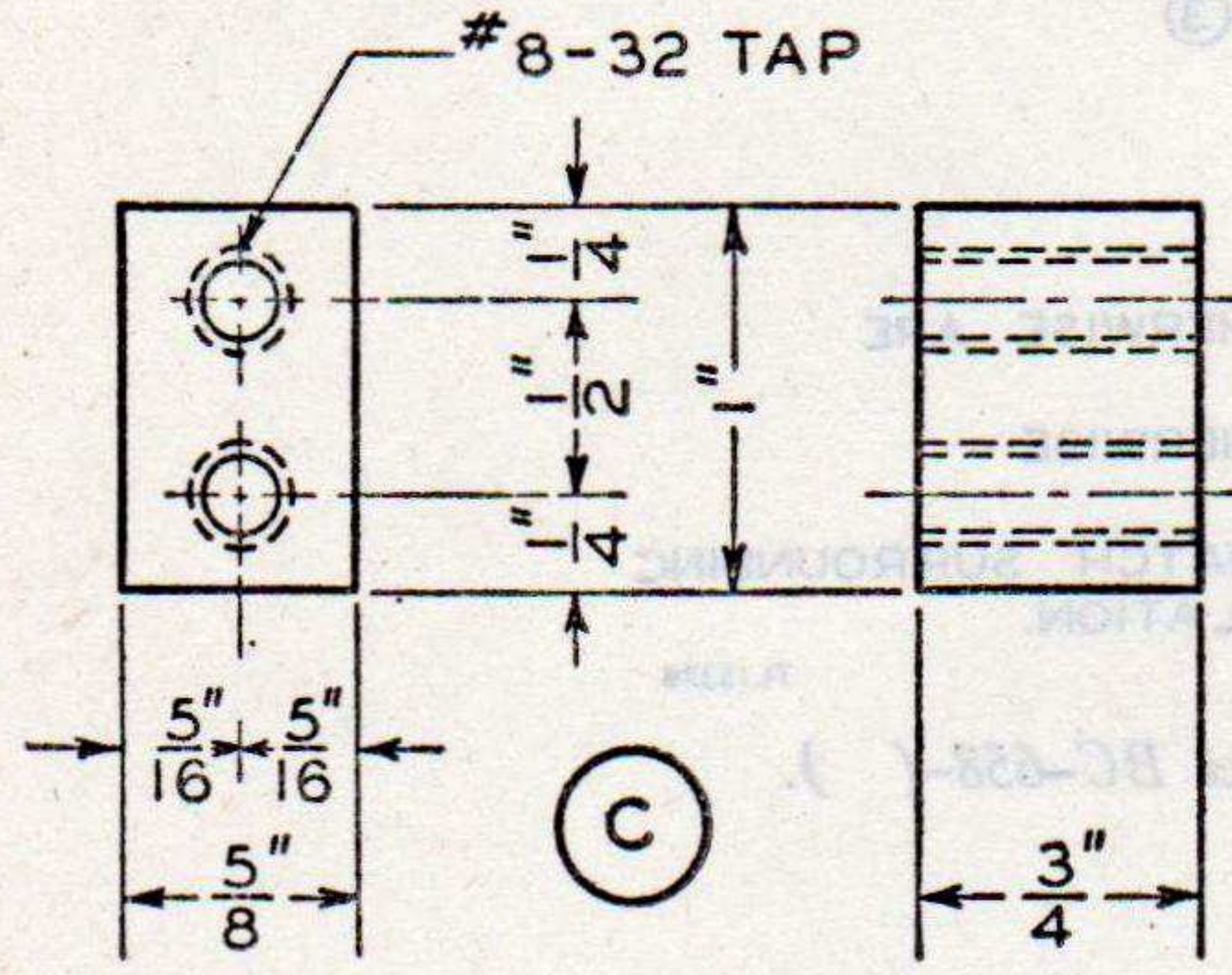
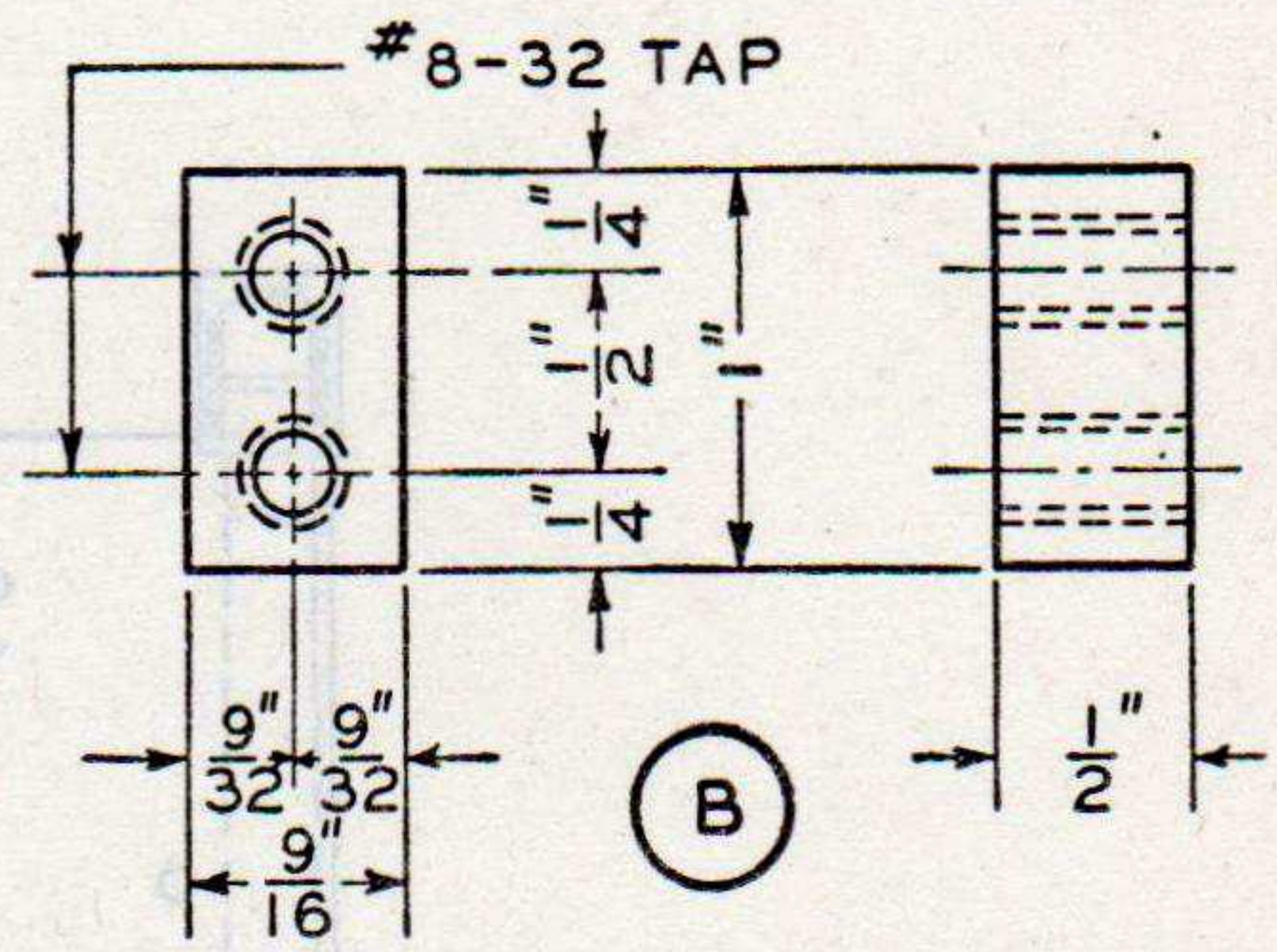
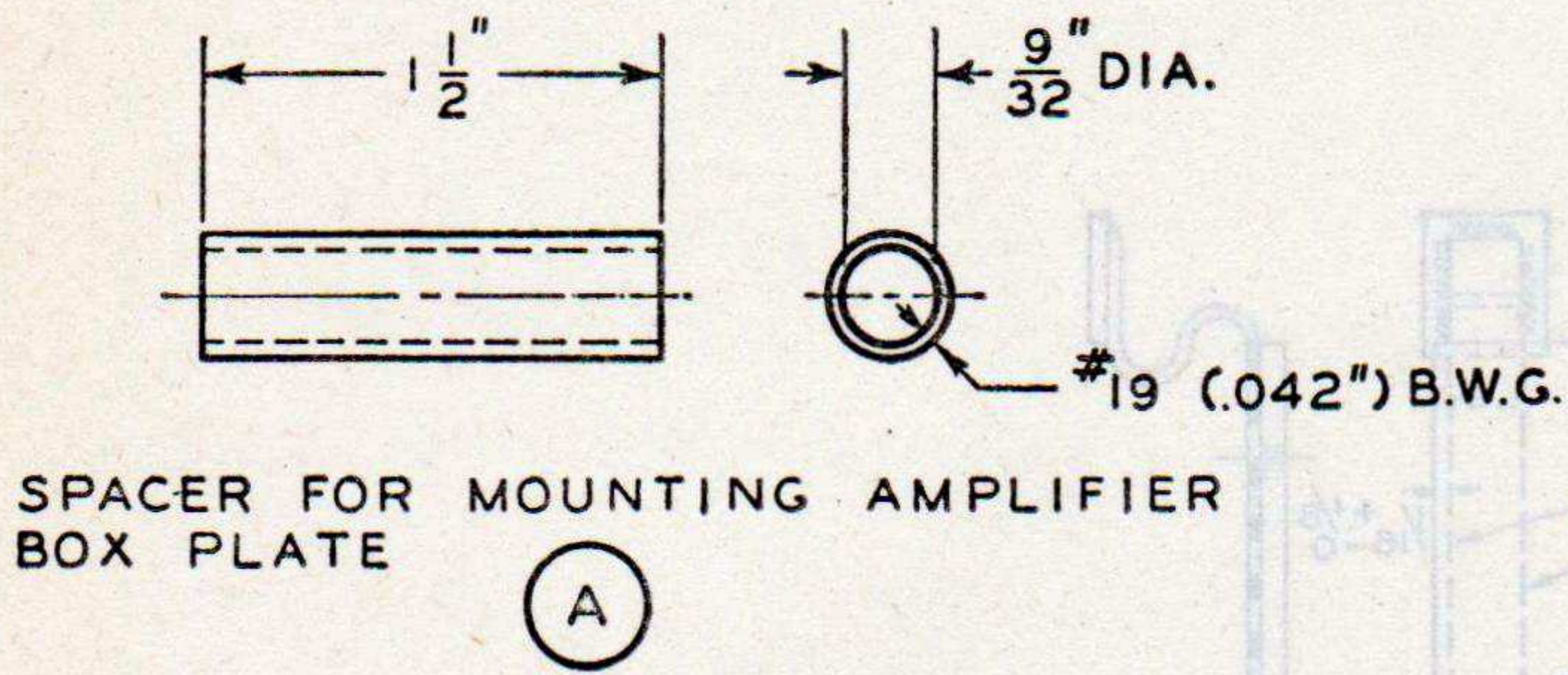


NOTE:

REMOVE ALL BURRS.
 DIMENSIONS WHERE NOT SHOWN OTHERWISE ARE
 IN INCHES.
 TOLERANCE WHERE NOT SHOWN OTHERWISE
 SHALL BE HELD TO $\pm 1/16$.
 BRACKET SHALL BE PAINTED TO MATCH SURROUNDING
 SURFACES AT THE TIME OF INSTALLATION.
 DO NOT PAINT TAPPED HOLES

TL13378

Figure 13. Bracket for Switch Box BC-658-().



STEEL SPACER FOR MOUNTING INTERPHONE HOOKS AND CLIPS

STEEL SPACER FOR MOUNTING INTERPHONE CONDUIT CLAMPS

Figure 14. Spacer.

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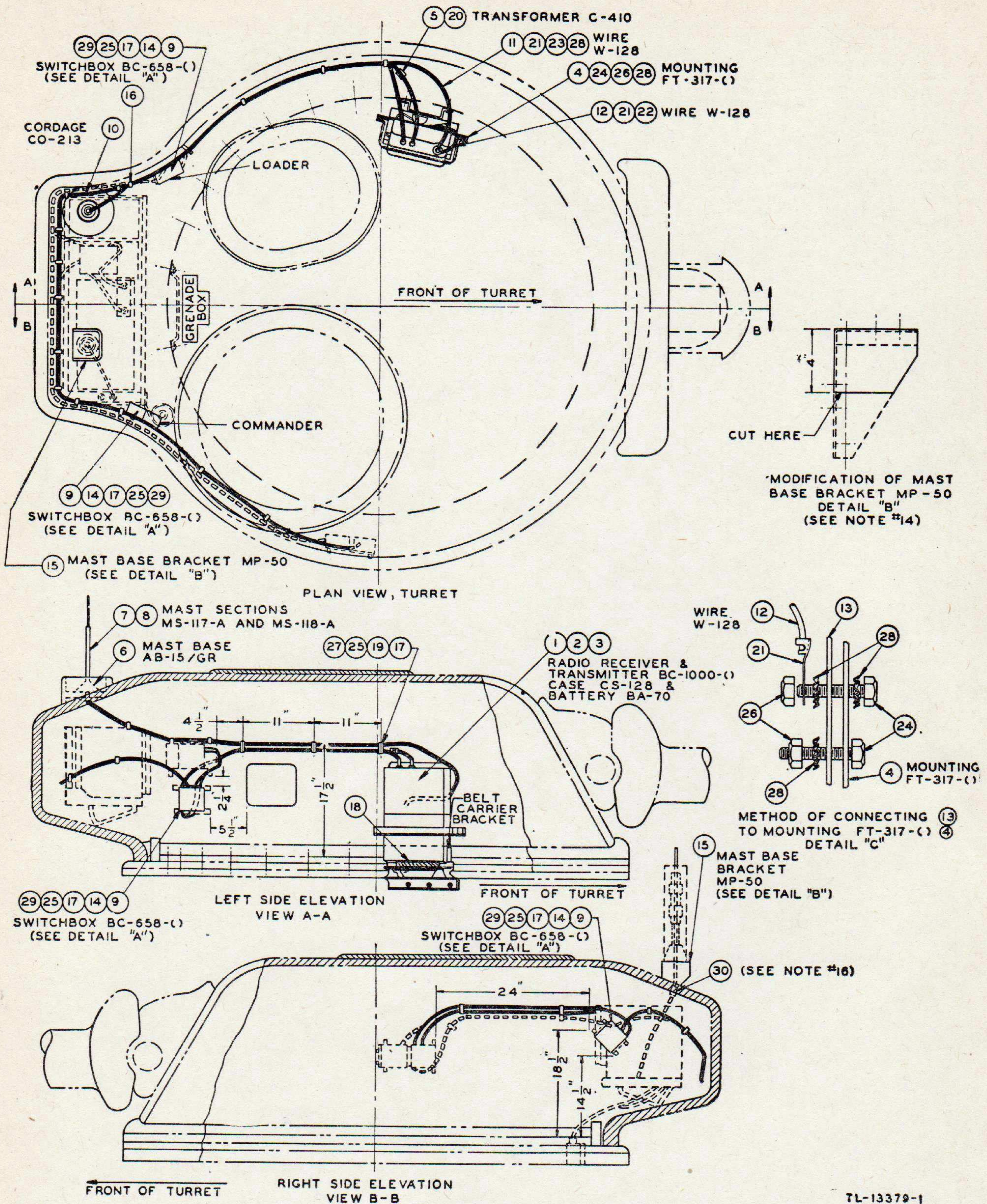
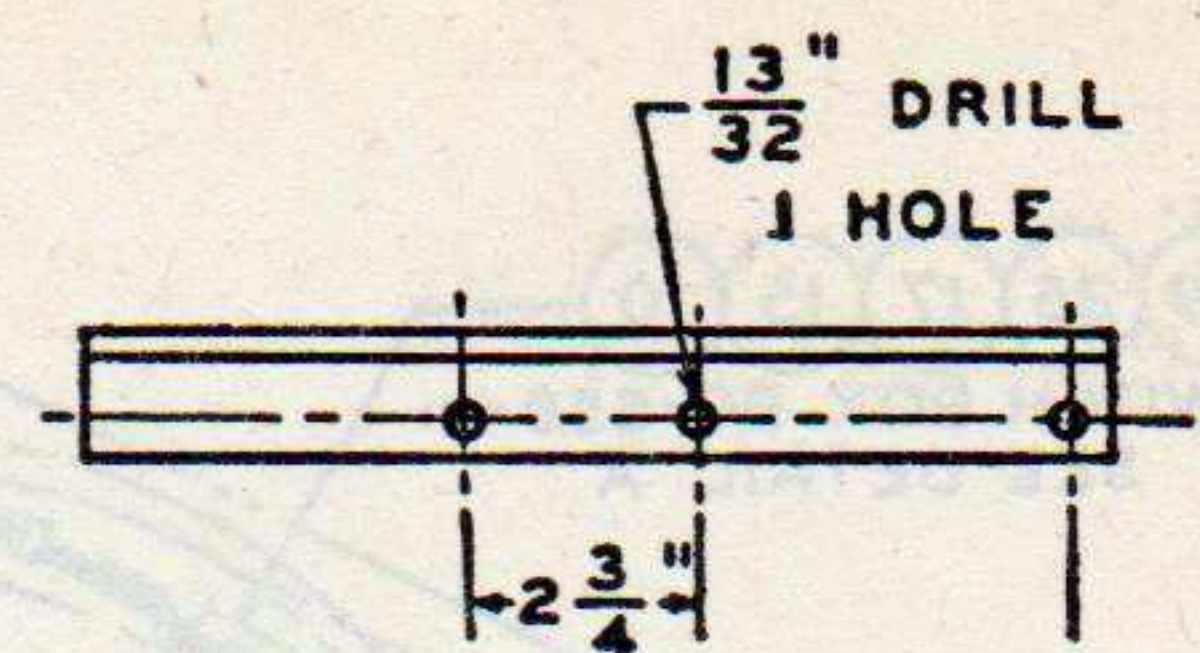
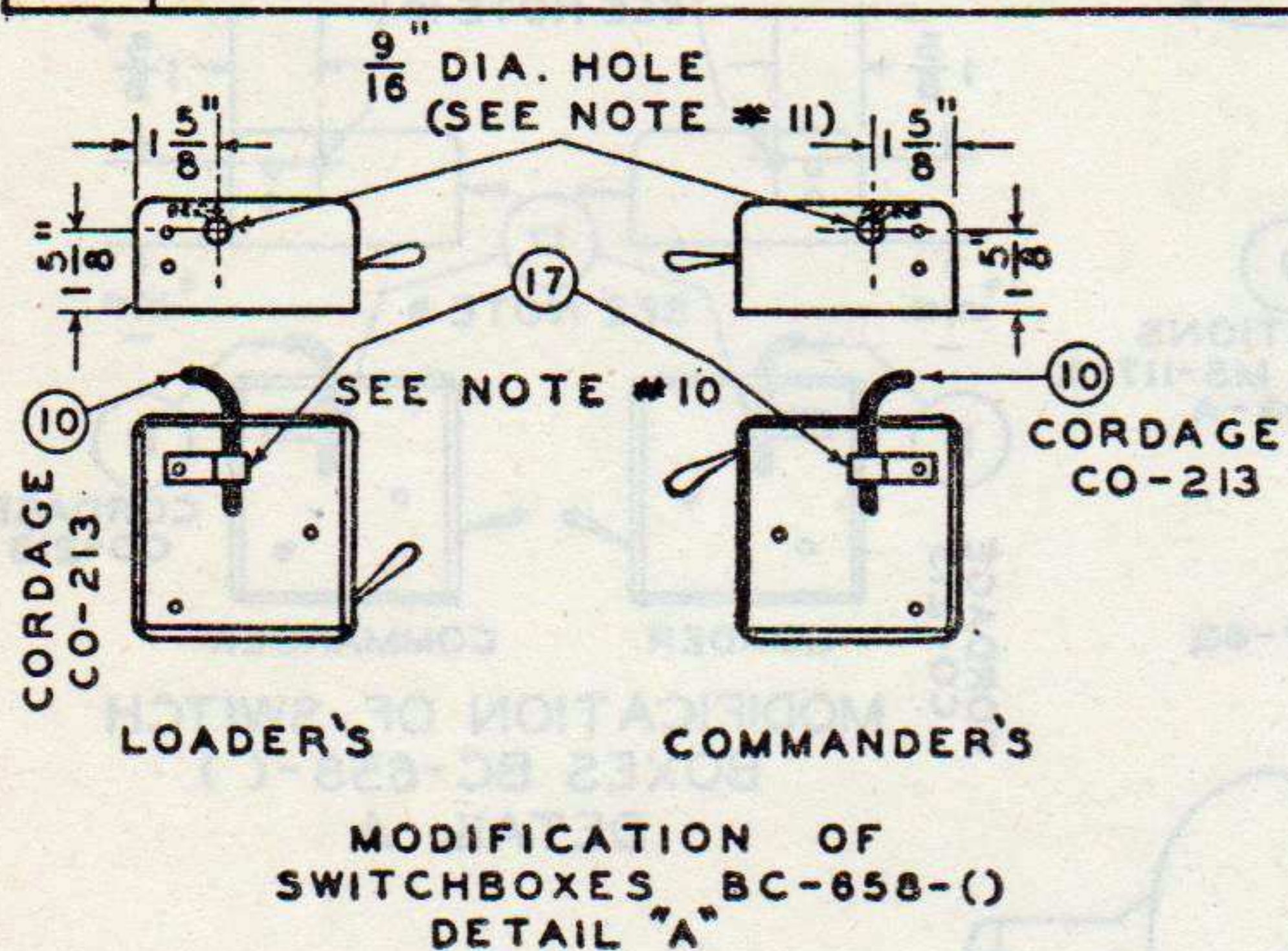


Figure 15. Installation of Radio Set AN/VRC-3-() in Medium Tank M4A3 or M4A3E2, 75-mm gun, wet stowage.

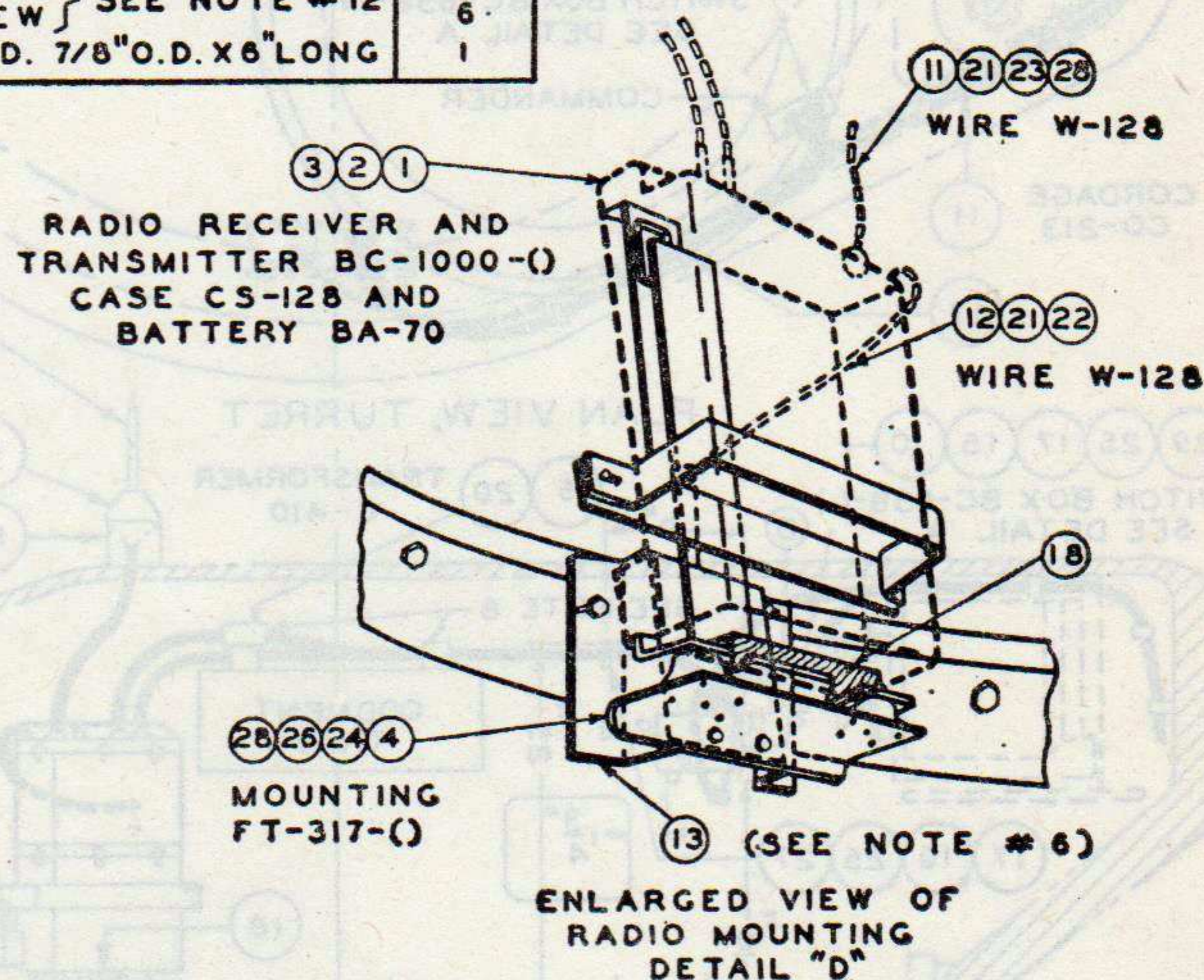
ITEM NO	NAME OF ITEM	QUAN. REQ.
1	RADIO RECEIVER AND TRANSMITTER BC-1000-()	1
2	CASE CS-128	1
3	BATTERY BA-70	1
4	MOUNTING FT-317-() SEE DETAIL "C", "D" AND "E"	1
5	TRANSFORMER C-410 SEE NOTE #7	1
6	MAST BASE AB-15/GR	1
7	MAST SECTION MS-117-A	1
8	MAST SECTION MS-118-A	1
9	SWITCHBOX BC-658-() SEE NOTE #7, #10 AND #11	2
10	CORDAGE CO-213 9 FEET LONG SEE NOTE #11	1
11	WIRE W-128 5 FEET 4 INCHES LONG SEE NOTE #8	1
12	WIRE W-128 18 INCHES LONG SEE NOTE #9	1
13	BRACKET PER FIGURE 12 SEE NOTE #6	1
14	BRACKET PER FIGURE 13 SEE NOTE #4	2
15	MAST BASE BRACKET MP-50 SEE DETAIL "B"	1
16	CLAMP #1 PER FIGURE 19	1
17	CLAMP #4 PER FIGURE 19 SEE NOTE #10 AND #15	16
18	SPACER WOOD 4X10X1 SEE NOTE #5	1
19	SPACER PER FIGURE 14D SEE NOTE #4	3
20	TERMINAL TM-163 SEE NOTE #7	4
21	TERMINAL PER FIGURE 17	2
22	TERMINAL TM-91	1
23	HEX. HEAD CAP SCREW 3/8"-24 X 1/2" LONG	1
24	HEX. HEAD CAP SCREW 3/8"-24 X 3/4" LONG	4
25	ROUND HEAD MACHINE SCREW #8-32 X 3/8" LONG	10
	SEE NOTE #3 AND #10	
26	HEX. NUT 3/8"-24 STD.	2
27	LOCKWASHER #8 STD.	4
28	LOCKWASHER } PLATED I.E.T. FOR 3/8" SCREW	5
29	LOCKWASHER } STEEL CAD. I.E.T. FOR #8 SCREW	6
30	TUBING RUBBER OR BUNA S SEE NOTE #16 3/8" I.D. 7/8" O.D. X 6" LONG	1



MODIFICATION OF MOUNTING FT-317-() DETAIL "E"



MODIFICATION OF SWITCHBOXES BC-658-() DETAIL "A"



ENLARGED VIEW OF RADIO MOUNTING DETAIL "D"

NOTE:

1. FOR ADDITIONAL COMPONENTS AND SPARE PARTS SEE COMPONENT PARTS LIST.
2. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
3. 6 OF (25) ARE FURNISHED WITH SWITCHBOX BC-658-() (9).
4. (14) AND (19) ARE TO BE WELDED SECURELY TO TURRET.
5. (18) PROVIDED FOR USE WHEN BELT CARRIER BRACKET IS ELIMINATED FROM RADIO.
6. (13) IS TO BE MOUNTED WITH RING GEAR GUARD BOLTS #8 AND #9 COUNTING CLOCKWISE FROM GRENADE BOX. CLEAN PAINT FROM (13) WHERE IT COMES IN CONTACT WITH RING GEAR GUARD BOLTS.
7. CUT "RECEIVER" PATCH CORD OF LOADER'S SWITCHBOX BC-658-() (9), 14 IN. FROM END OF PLUG PL-55. TIN, AND SOLDER TERMINALS TM-163, (20), TO ENDS. CONNECT TRANSFORMER C-410 (5) AS SHOWN ON DRAWING FIGURE 23. SHORTEN ALL PATCH CORDS ON SWITCHBOXES BC-658-() (9) TO PROPER LENGTH.
8. TIN BOTH ENDS OF WIRE W-128 (11) AND SECURELY SOLDER (21) TO ONE END.
9. TIN ENDS OF WIRE W-128 (12) AND SECURELY SOLDER (21) AND (22) TO ENDS.
10. (17) IS SECURED IN SWITCHBOX BC-658-() (9) WITH MOUNTING SCREW (25) AS SHOWN IN DETAIL "A".
11. DRILL 9/16" HOLE IN EACH SWITCHBOX BC-658-() (9) TO PASS CORDAGE CO-213 (10) AS SHOWN IN DETAIL "A".
12. (28) SHALL BE 4020-26 AND (29) 4008-14 RESP. AS FURNISHED BY SHAKEPROOF INC., CHICAGO, ILL., OR EQUAL.
13. IF MAST BASE AB-15/GR (6) AND MAST SECTIONS MS-117-A (7) AND MS-118-A (8) ARE NOT AVAILABLE, USE MAST BASE MP-48-A OR MP-48, MAST SECTIONS MS-52 AND MS-53, CLAMP MC-424 AND COVER BG-108.
14. REMOVE COVER PLATE FROM BRITISH #9 ANTENNA OUTLET AND WELD MODIFIED MAST BASE BRACKET MP-50 (15) OVER THE TOP THEREOF RELOCATE MAST BASE MP-48-A, FOR RADIO SET SCR-508-() SERIES, ON MP-50 (15).
15. SECURE CLAMPS (17) USING TAPPED SPACERS ALREADY IN VEHICLE FOR RADIO SET SCR-508-() SERIES.
16. USE RUBBER TUBING (30) OR WATERPROOF WITH RUBBER TAPE.
17. REMOVE FOLLOWING ITEMS FROM VEHICLE:
 - A. SMOKE MORTAR.
 - B. TWO CANTEEN BRACKETS, UNDER INTERPHONE CONTROL BOX BC-606-().
18. DRAWING REFERENCES:
 - A. WIRING DIAGRAM OF INTER-CONNECTION OF SWITCHBOXES BC-658-() FIGURE 23.
 - B. INSTALLATION OF RADIO SET SCR-508-() SERIES FIGURE 3.

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Figure 15—Continued.

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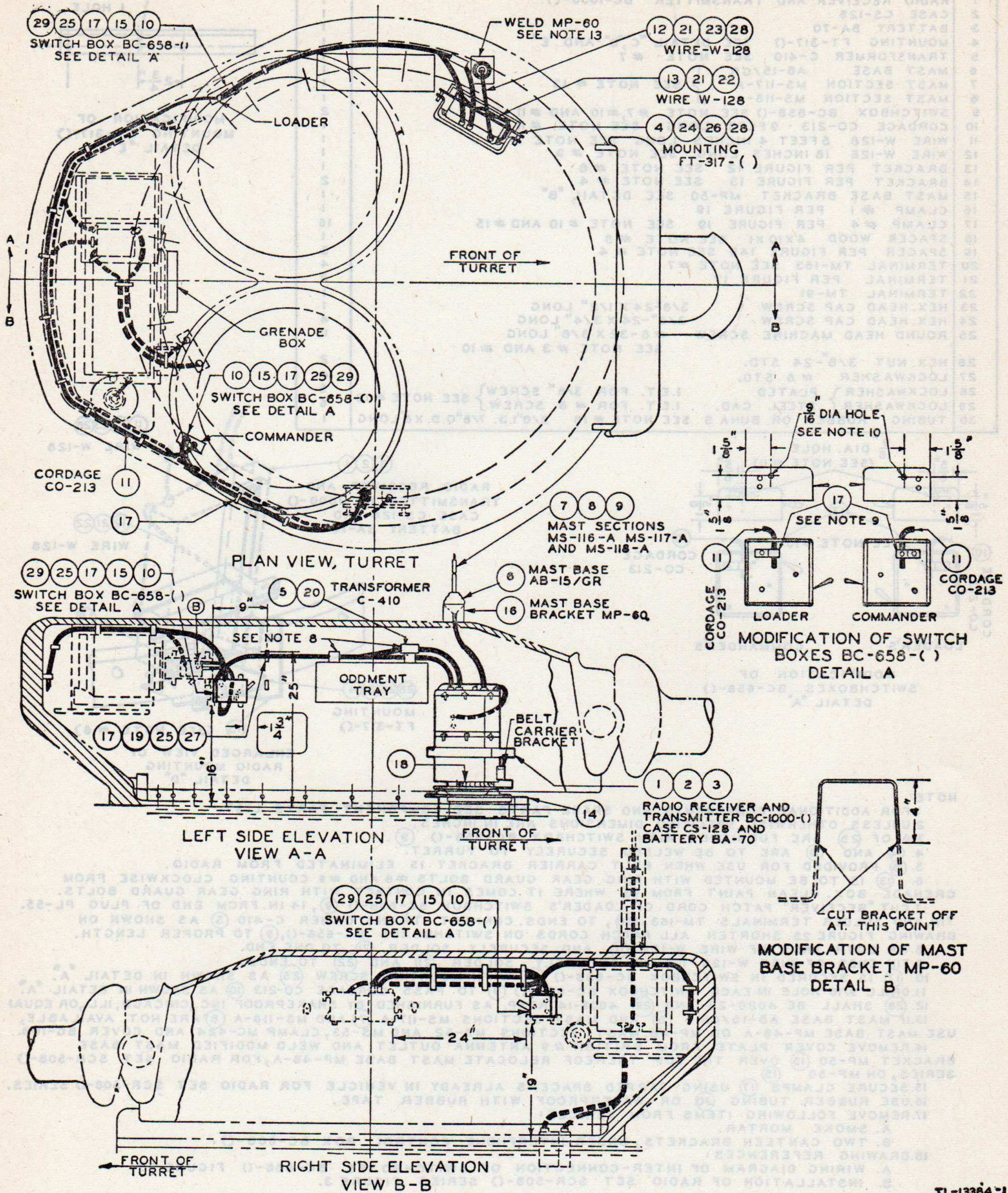


Figure 16. Installation of Radio Set AN/VRC-3-() in Medium Tank M4A1, M4A2, or M4A3, 76-mm gun, wet stowage.

TL-13384-1

NOTE:

1. FOR ADDITIONAL COMPONENTS AND SPARE PARTS SEE COMPONENT PARTS LIST.
2. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
3. 6 OF (25) ARE FURNISHED WITH SWITCHBOX BC-658-1(10).
4. (15) AND (19) ARE TO BE WELDED SECURELY TO TURRET.
5. (18) PROVIDED FOR USE WHEN BELT CARRIER BRACKETS ARE ELIMINATED FROM RADIO.
6. REMOVE LOADER'S MIC. HOOK FROM SPACER IN POSITION "A", AND MOUNT IN POSITION "B" ON LOADER'S INTERPHONE CONTROL BOX BC-606-1, WITH COVER SCREW.
7. (14) IS TO BE MOUNTED WITH RING GEAR GUARD BOLTS #9 AND #10 COUNTING CLOCKWISE FROM GRENADE BOX.
8. CUT "RECEIVER" PATCH CORDS OF LOADER'S SWITCH BOX BC-658-1(10), 14" FROM END OF PLUG PL-55. TIN AND SOLDER TERMINAL TM-163 (20) TO ENDS. CONNECT TRANSFORMER C-410 (5) AS SHOWN ON FIG. 23. SHORTEN ALL PATCH CORDS ON SWITCH BOX BC-658-1(10) TO PROPER LENGTH. TAPE PATCH CORDS AND TRANSFORMER TO ODDMENT TRAY SUPPORT.
9. (17) IS SECURED IN SWITCH BOX BC-658-1(10) WITH MOUNTING SCREW (25) AS SHOWN IN DETAIL "A".
10. DRILL 9/16" HOLE IN EACH SWITCH BOX BC-658-1(10) TO PASS CORDAGE CO-213(11) AS SHOWN IN DETAIL "A".
11. (28) SHALL BE 4020-28 AND (29) 4008-14 RESP. AS FURNISHED BY SHAKEPROOF INC., CHICAGO, ILL., OR EQUAL.
12. IF MAST BASE AB-151/GR (6) AND MAST SECTIONS MS-116-A, MS-117-A AND MS-118-A ARE NOT AVAILABLE, USE MAST BASE MP-48-A OR MP-48, MAST SECTIONS MS-51, MS-52 AND MS-53, CLAMPS MC-423 AND MC-424, AND COVER BG-108.
13. DRILL A 11/32" DIA. HOLE IN THE CENTER OF THE MAST BASE BOSS ON THE TURRET ROOF. CUT OFF MAST BASE BRACKET MP-60 (16) AS SHOWN IN DETAIL "B", AND WELD ABOVE THE 11/32" HOLE. WHEN 2 1/8" DIA. HOLE IS PROVIDED, MOUNT MAST BASE AB-15 /GR (6) THERE-IN AND MAST BASE BRACKET MP-60 (16) IS NOT REQUIRED.
14. REMOVE FOLLOWING ITEMS FROM VEHICLE:
 - A. SMOKE MORTAR
 - B. ARMORED SMOKE MORTAR AMMUNITION READY BOX
 - C. CANTEEN BRACKET BELOW LOADER'S INTERPHONE CONTROL BOX BC-606-1
15. DRAWING REFERENCES
 - RADIO SET SCR-508-1, SCR-528-1 OR SCR-538-1 INST. FIG. 11
 - WIRING DIAGRAM OF INTERCONNECTION OF SWITCH BOX BC-658-1(1) FIG. 23
16. SECURE CLAMPS (17) USING TAPPED SPACERS ALREADY IN VEHICLE FOR RADIO SET SCR-508-1 SERIES.
17. IF VEHICLE CONTAINS NO ODDMENT TRAY, WELD TWO SPACERS, FIG. 14D, TO WALL AND USE CLAMPS TO SUPPORT PATCH CORDS OF SWITCH BOX BC-658-1(10).
18. TIN BOTH ENDS OF WIRE W-128 (12), AND SECURELY SOLDER (21) TO ONE END.
19. TIN ENDS OF WIRE W-128 (13), AND SECURELY SOLDER (21) AND (22) TO ENDS.

ITEM NO.	NAME OF ITEM	QUAN. REQ.
1	RADIO RECEIVER AND TRANSMITTER BC-1000-1	1
2	CASE CS-128	1
3	BATTERY BA-70	1
4	MOUNTING FT-317-1) SEE DETAIL "C" AND "D"	1
5	TRANSFORMER C-410 SEE NOTE #8	1
6	MAST BASE AB-15/GR SEE NOTE #12 AND #13	1
7	MAST SECTION MS-116-A SEE NOTE #12	1
8	MAST SECTION MS-117-A SEE NOTE #12	1
9	MAST SECTION MS-118-A SEE NOTE #12	1
10	SWITCH BOX BC-658-1) SEE NOTE #8, #9, #10 AND #11	2
11	CORDAGE CO-213 SEE NOTE #10 9 FT. LONG	1
12	WIRE W-128 SEE NOTE #18 18 IN. LONG	1
13	WIRE W-128 SEE NOTE #19 18 IN. LONG	1
14	BRACKET SEE NOTE #7 PER FIG. 18	1
15	BRACKET SEE NOTE #4 PER FIG. 13	2
16	MAST BASE BRACKET MP-60 SEE NOTE #13	1
17	CLAMP #4 SEE NOTE #9, #10, AND #17 PER FIG. 19	14
18	SPACER WOOD SEE NOTE #5 1' X 4' X 10'	1
19	SPACER SEE NOTE #4 AND #17 PER FIG. 14D	1
20	TERMINAL TM-163 SEE NOTE #3	4
21	TERMINAL PER FIG. 17	2
22	TERMINAL TM-91	1
23	HEX. HEAD CAP SCREW STEEL ELECTRO-GALVANIZED 3/8-24 X 1/2 LONG	1
24	HEX. HEAD CAP SCREW STEEL ELECTRO-GALVANIZED 3/8-24 X 3/4 LONG	4
25	ROUND HEAD MACH. SCREW STEEL ELECTRO-GALVANIZED SEE NOTE #3 AND #9 #8-32 X 3/8" LONG	7
26	HEX. NUT STEEL ELECTRO-GALVANIZED 3/8-24 STD.	2
27	LOCKWASHER STEEL ELECTRO-GALVANIZED #8 STD.	1
28	LOCKWASHER STEEL CADMIUM PLATED SEE NOTE #11 I.E.T. FOR #8 SCREW	6
29	LOCKWASHER STEEL CADMIUM PLATED SEE NOTE #11 I.E.T. FOR #8 SCREW	6

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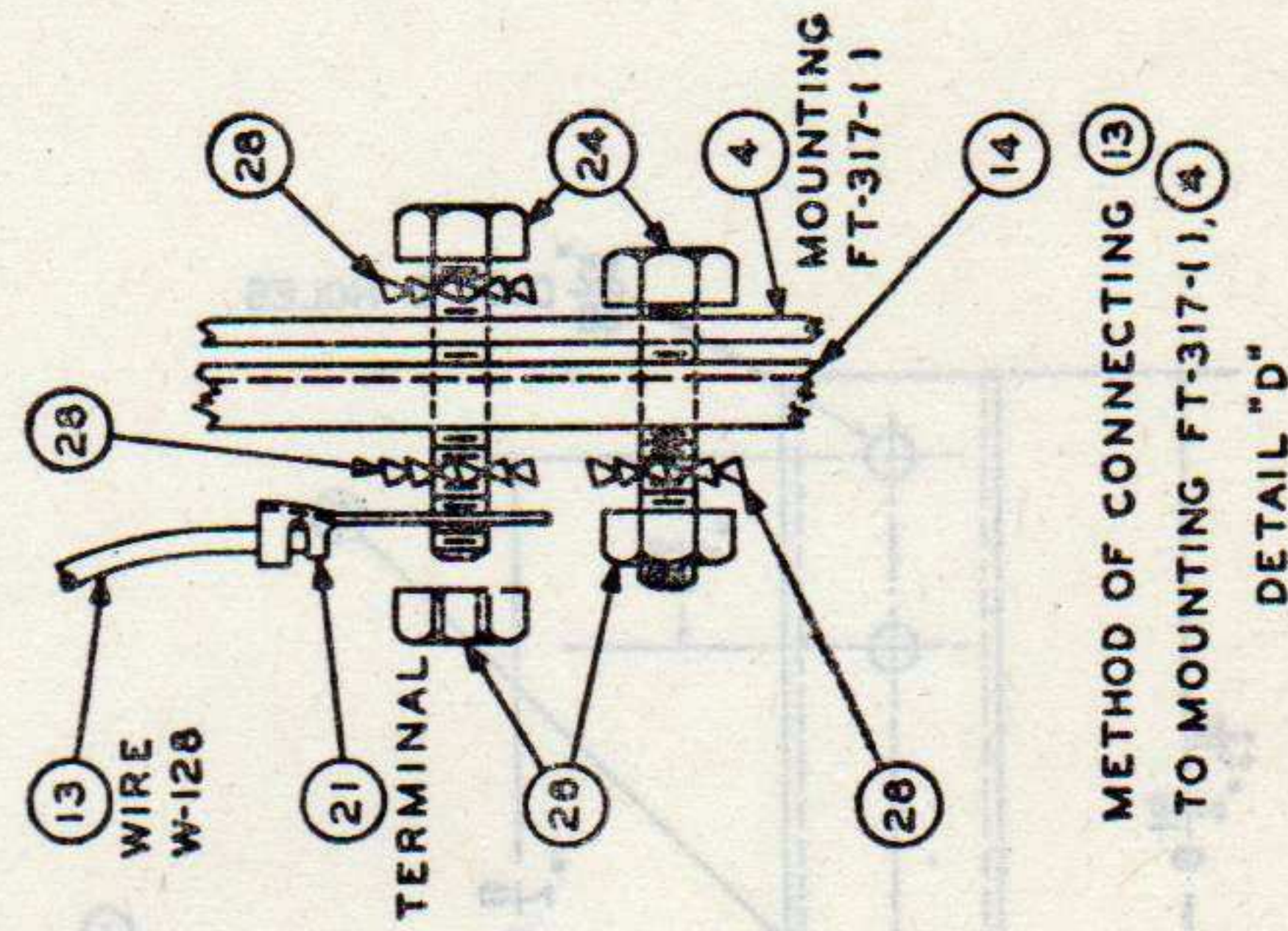
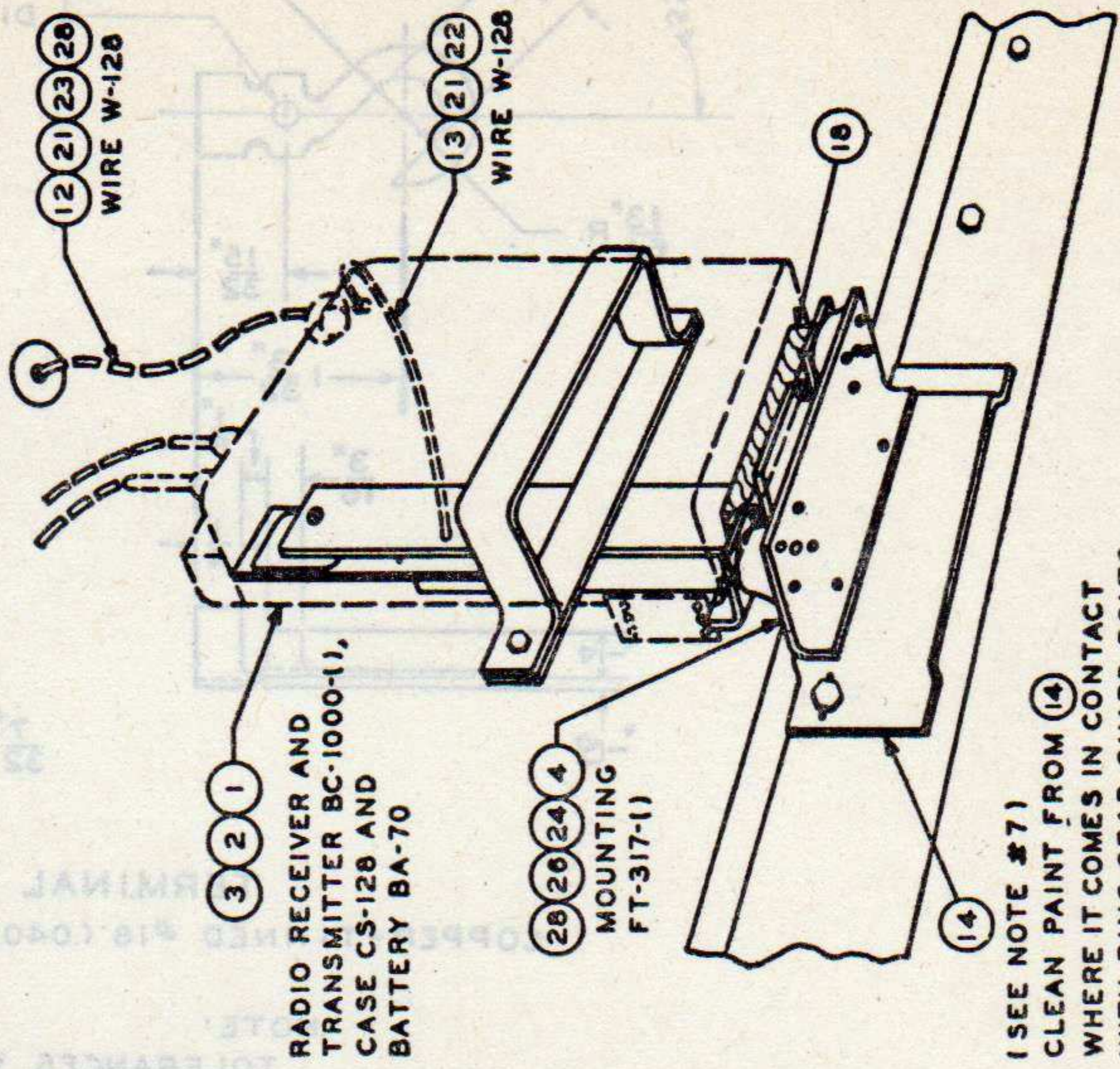
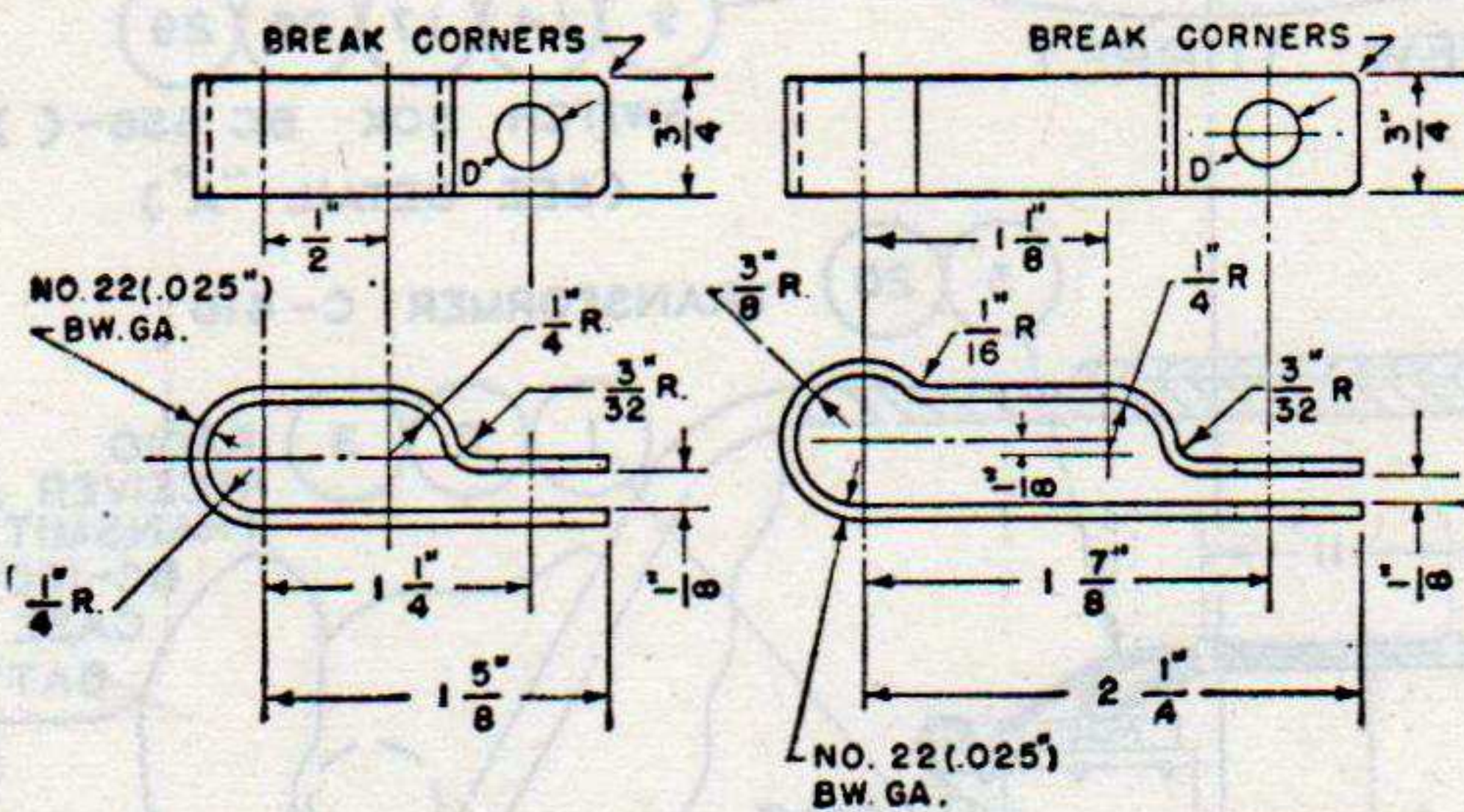
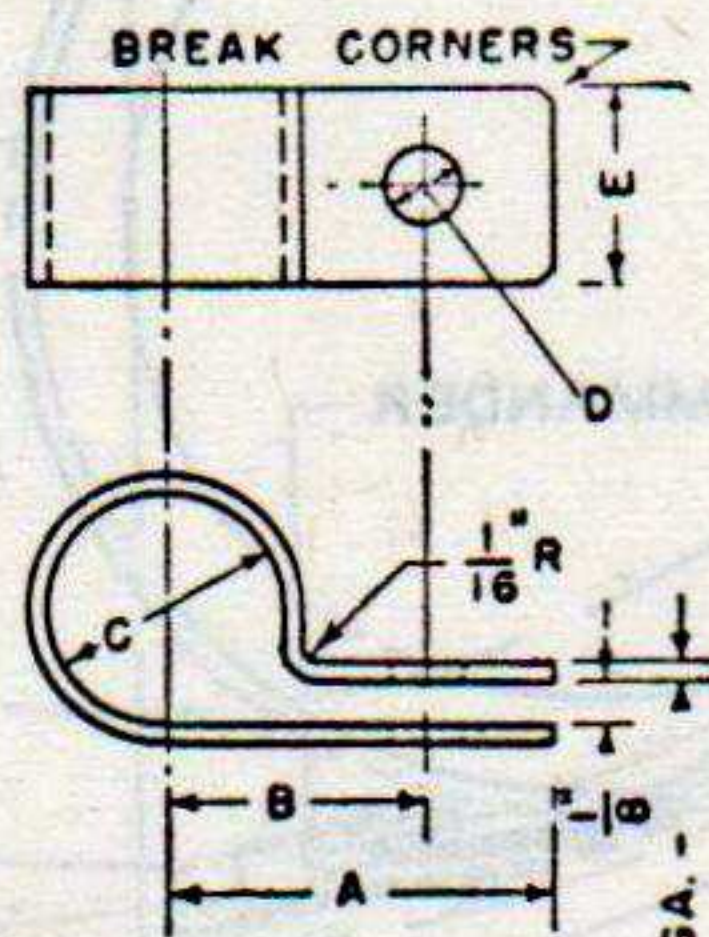


Figure 16—Continued.

CLAMP	A	B	C	D	E	STOCK NO.
1	1-1/8"	3/4"	7/16"	3/16"	1/2"	222637-1
2	1-1/8"	3/4"	7/16"	9/32"	3/4"	222637-2
3	1-1/8"	3/4"	7/16"	13/32"	3/4"	222637-3
4	1-1/8"	3/4"	17/32"	3/16"	1/2"	222637-4
5	1-1/8"	3/4"	17/32"	9/32"	3/4"	222637-5
6	1-1/8"	3/4"	17/32"	13/32"	3/4"	222637-6



CLAMP	D	STOCK NO.
7	3/16"	222637-7
8	9/32"	222637-8
9	13/32"	222637-9

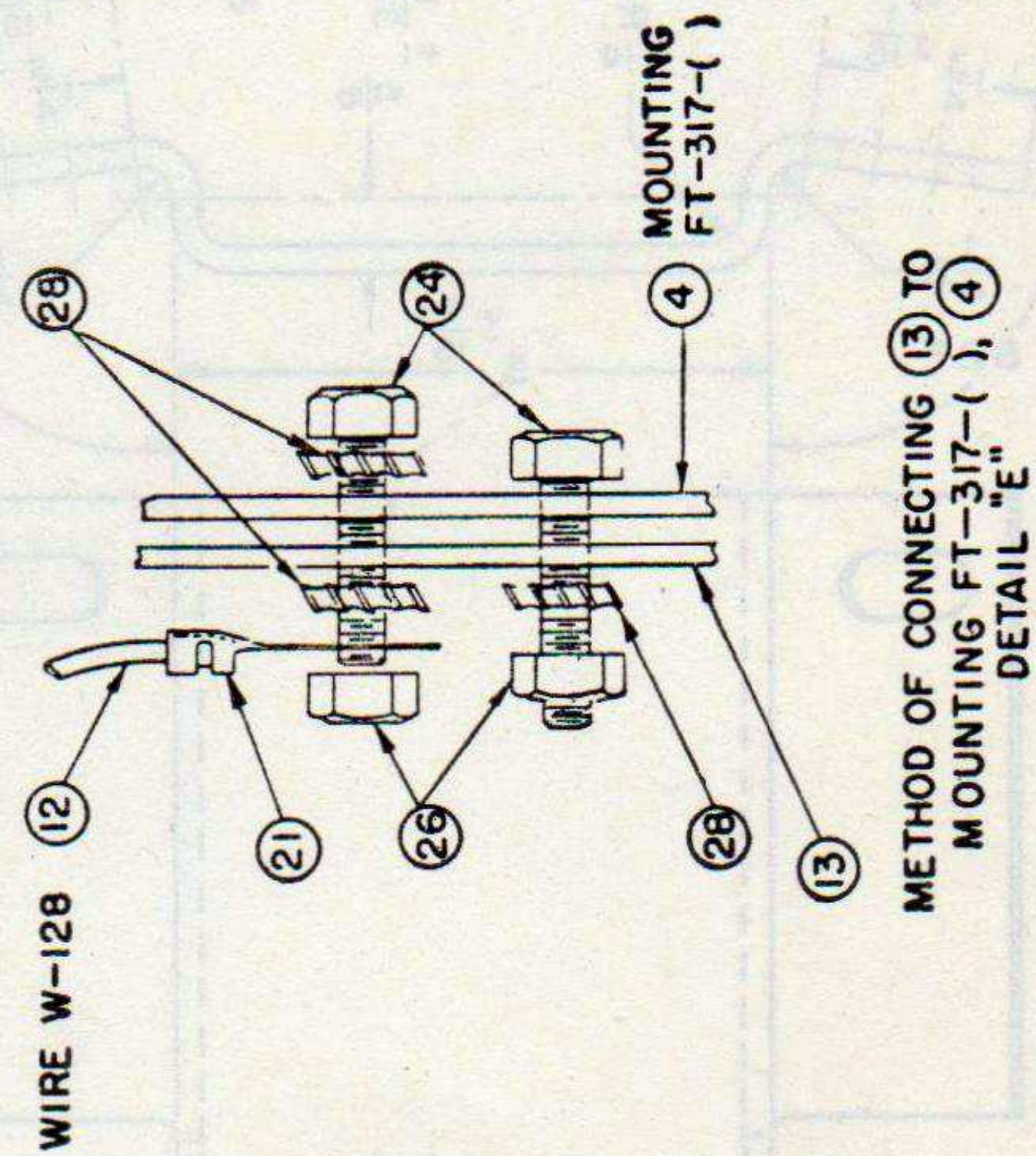
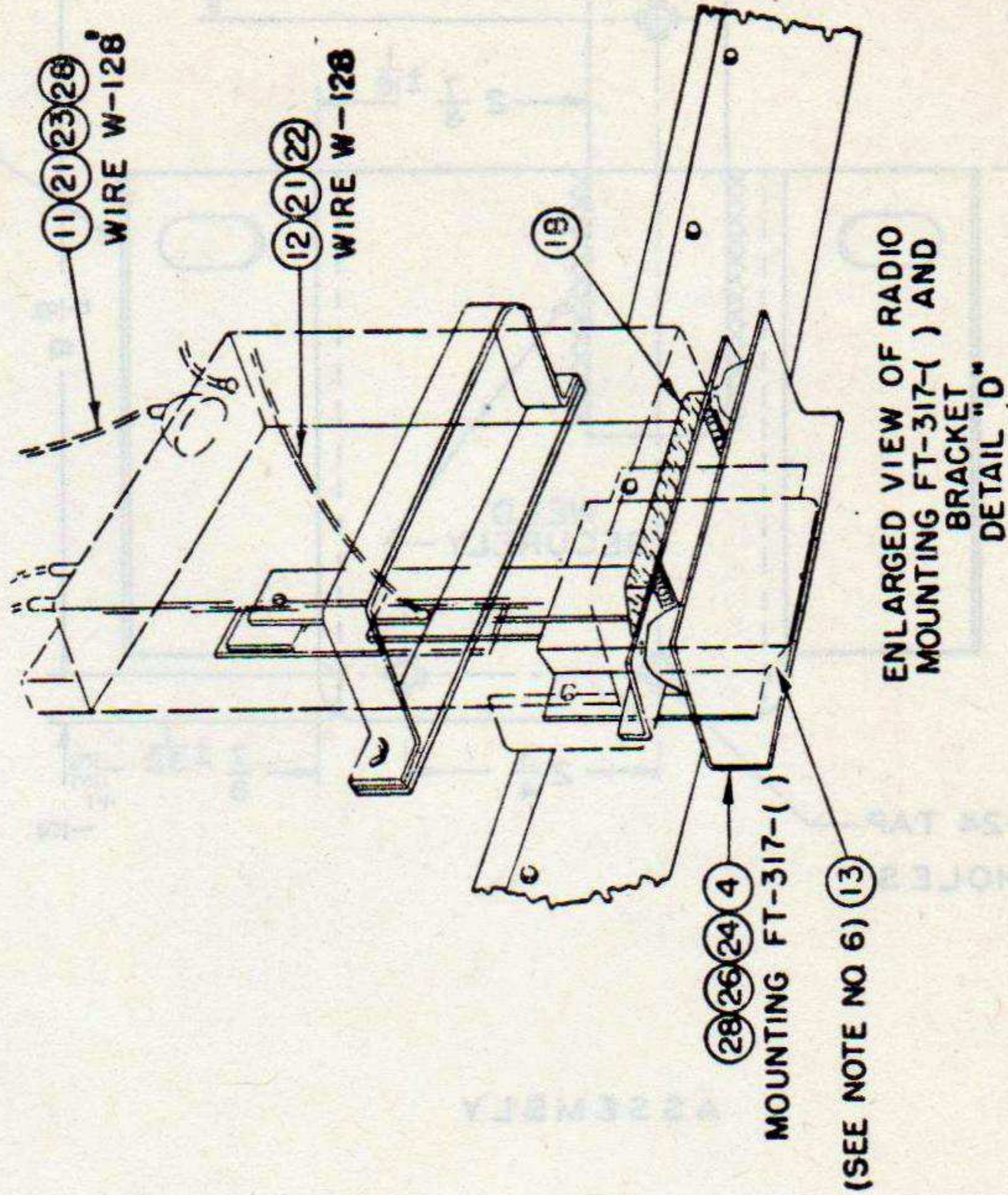
CLAMP	D	STOCK NO.
10	9/32"	222637-10
11	13/32"	222637-11

NOTE:
TOLERANCES $\pm 1/32"$

Figure 19. Clamp.

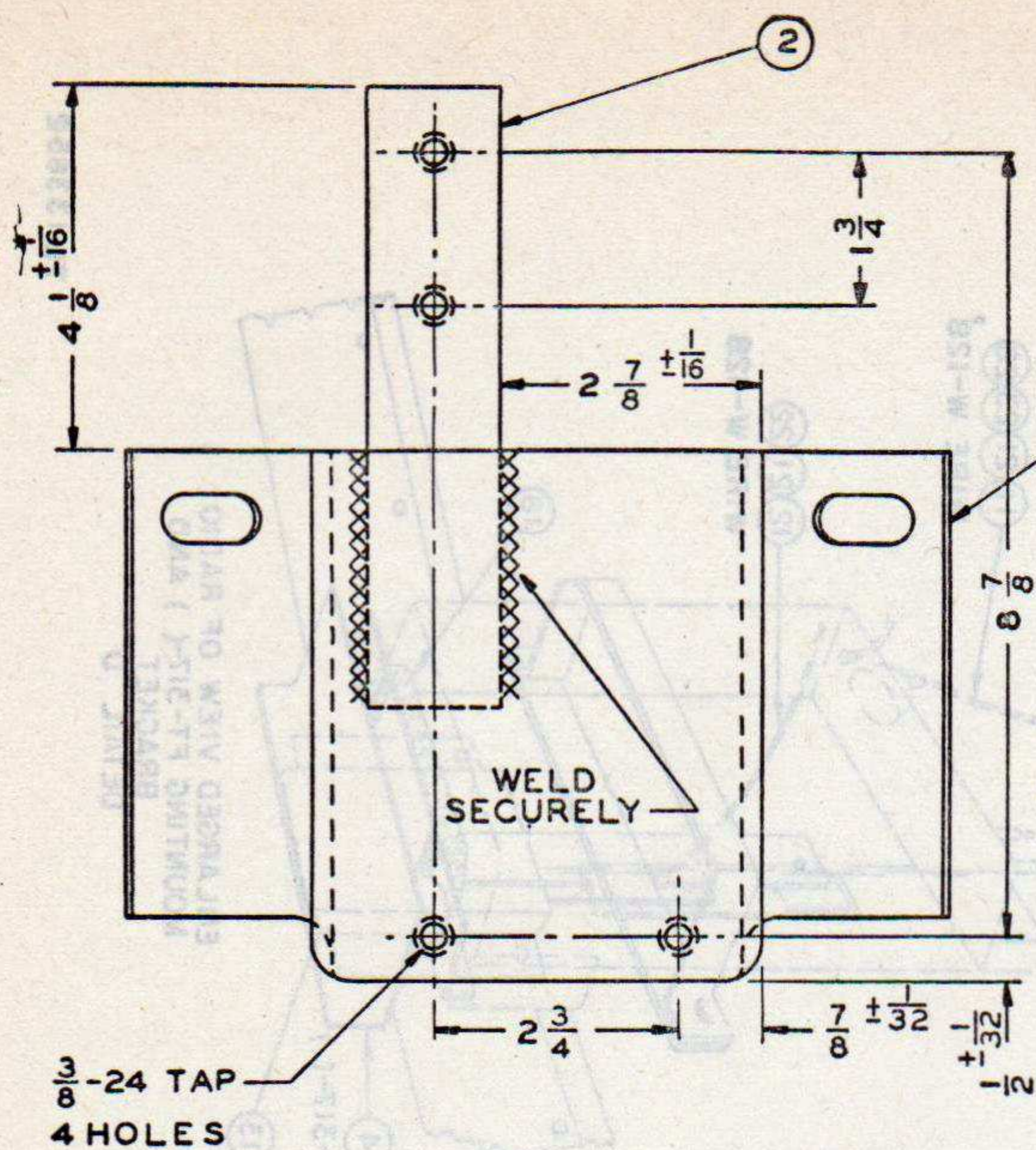
ITEM NO.	NAME OF ITEM	QUANTITY REQUIRED
1	RADIO RECEIVER AND TRANSMITTER BC-1000-()	1
2	CASE CS-128	1
3	BATTERY BA-70	1
4	MOUNTING FT-317-() SEE DETAIL C,D AND E	1
5	TRANSFORMER C-410 SEE NOTE NO. 7	1
6	MAST BASE AB-15/GR	1
7	MAST SECTION MS-117-A	1
8	MAST SECTION MS-118-A	2
9	SWITCH BOX BC-658-() SEE NOTE NO. 7, 10 AND 11	1
10	CORDAGE CO-213 9' LONG SEE NOTE NO. 11	1
11	WIRE W-128 5' 4" LONG SEE NOTE NO. 8	1
12	WIRE W-128 18" LONG SEE NOTE NO. 9	1
13	BRACKET PER FIGURE 21 SEE NOTE NO. 6	1
14	BRACKET PER FIGURE 13 SEE NOTE NO. 4	2
15	MAST BASE BRACKET MP-50 SEE DETAIL "B" SEE NOTE NO. 14	1
16	CLAMP NO. 1 PER FIGURE 19	1
17	CLAMP NO. 4 PER FIGURE 19 SEE NOTE NO. 10 AND 15 } PER FIGURE 19	16
18	SPACER WOOD 4 X 10 X 1 SEE NOTE NO. 5	1
19	SPACER PER FIGURE 14 SEE NOTE NO. 4	3
20	TERMINAL TM-163 SEE NOTE NO. 7	4
21	TERMINAL PER FIGURE 16	2
22	TERMINAL TM-91	1
23	HEX HEAD CAP SCREW	1
24	HEX HEAD CAP SCREW	1
25	ROUND HEAD MACH. SCREW	4
26	HEX NUT	1
27	LOCKWASHER	1
28	LOCKWASHER } STEEL CADMIUM I.E.T. FOR 3/8" SCREW } SEE NOTE NO. 12	4
29	LOCKWASHER } PLATED I.E.T. FOR NO. 8 SCREW } SEE NOTE NO. 16	10
30	TUBING RUBBER OR BUNA S 3/8" I.D., 7/8" O.D. X 6' LONG SEE NOTE NO. 16	2

- NOTE:
 1. FOR ADDITIONAL COMPONENTS AND SPARE PARTS SEE COMPONENT PARTS LIST
 2. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
 3. 6 OF (25) ARE FURNISHED WITH SWITCH BOX BC-658-() (19)
 4. (14) AND (19) ARE TO BE WELDED SECURELY TO TURRET.
 5. (18) PROVIDED FOR USE WHEN BELT CARRIER BRACKETS ARE ELIMINATED FROM RADIO.
 6. (13) IS TO BE MOUNTED WITH RING GEAR GUARD BOLTS NO. 8 AND NO. 9 COUNTING CLOCKWISE FROM GRENADE BOX CLEAN PAINT FROM (13) WHERE IT COMES IN CONTACT WITH RING GEAR GUARD BOLTS
 7. CUT RECEIVER PATCH CORD OF LOADER'S SWITCH BOX BC-658-() (9), 14 INCHES FROM END OF PLUG PL-55. TIN AND SOLDER TERMINALS TM-163 (20) TO ENDS.
 CONNECT TRANSFORMER C-410 (5), AS SHOWN ON FIG. 23 SHORTEN ALL PATCH CORDS ON SWITCH BOXES BC-658-() (9), TO PROPER LENGTH
 8. TIN BOTH ENDS OF WIRE W-128 (1) AND SECURELY SOLDER (21) TO ONE END.
 9. TIN ENDS OF WIRE W-128 (12) AND SECURELY SOLDER (21) AND (22) TO ENDS
 10. (17) IS SECURED IN SWITCH BOX BC-658-() (9), WITH MOUNTING SCREW (25), AS SHOWN IN DETAIL "A".
 11. DRILL 9/16" HOLE IN EACH SWITCH BOX BC-658-() (9), TO PASS CORDAGE CO-213 (10), AS SHOWN IN DETAIL "A".
 12. (28) SHALL BE 4020-26 AND (29) 4008-14 RESPECTIVELY AS MADE BY SHAKEPROOF INC., CHICAGO, ILL., OR EQUAL
 13. IF MAST BASE AB-15/GR (6) AND MAST SECTIONS MS-117-A (7) AND MS-118-A (8) ARE NOT AVAILABLE, USE MAST BASE MP-48 OR MP-48-A, MAST SECTIONS MS-52 AND MS-53, CLAMP MC-424 AND COVER BG-108.
 14. REMOVE COVER PLATE FROM BRITISH NO. 9 ANTENNA OUTLET AND WELD MODIFIED MAST BASE BRACKET MP-50 (15) OVER THE TOP THEREOF. RELOCATE MAST BASE MP-48-A, FOR RADIO SET SCR-508-() SERIES, ON MP-50 (15)
 15. SECURE CLAMPS (17) USING TAPPED SPACER ALREADY IN VEHICLE FOR RADIO SET SCR-508-() SERIES.
 16. USE RUBBER TUBING (30), OR WATERPROOF WITH RUBBER TAPE
 17. REMOVE FOLLOWING ITEMS FROM VEHICLE:
 A. SMOKE MORTAR.
 B. ONE CANTEEN BRACKET, UNDER LOADER'S INTERPHONE CONTROL BOX BC-606-()
 18. DRAWING REFERENCES:
 A. WIRING DIAGRAM OF INTERCONNECTION OF SWITCH BOXES BC-658-() FIG. 23
 B. INSTALLATION OF RADIO SET SCR-508-() SERIES FIG. 3.

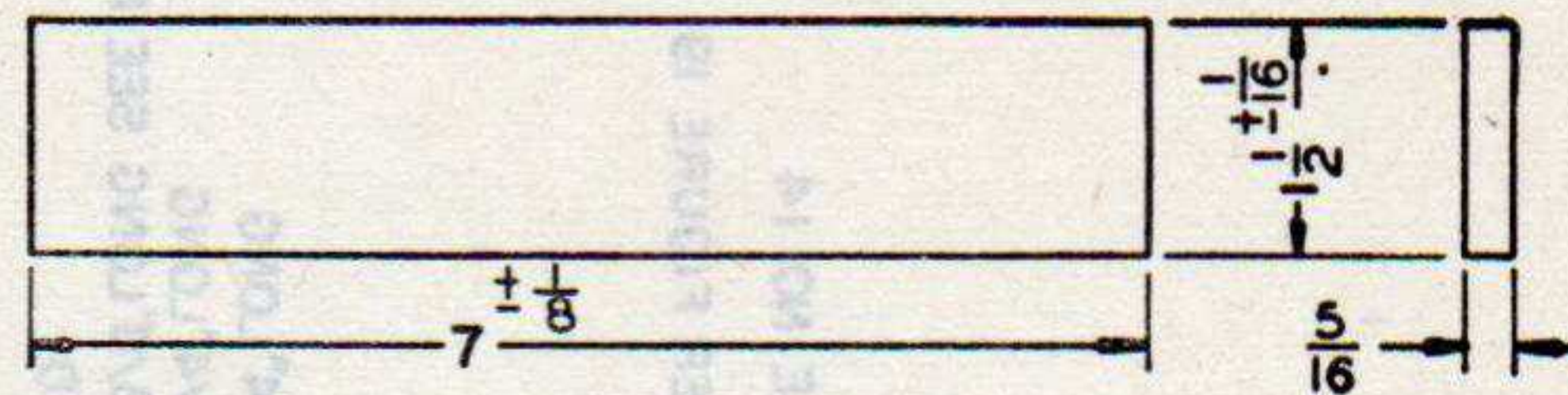


TL-13385-2

Figure 20—Continued.



ASSEMBLY



② STRAP STEEL HOT ROLLED 1 REQ.

NOTE:

TOLERANCES WHERE NOT SHOWN OTHERWISE SHALL BE HELD TO $\pm \frac{1}{64}$ ON FRACTIONAL DIMENSIONS AND $1^{\circ}0'$ ON ANGULAR DIMENSIONS.

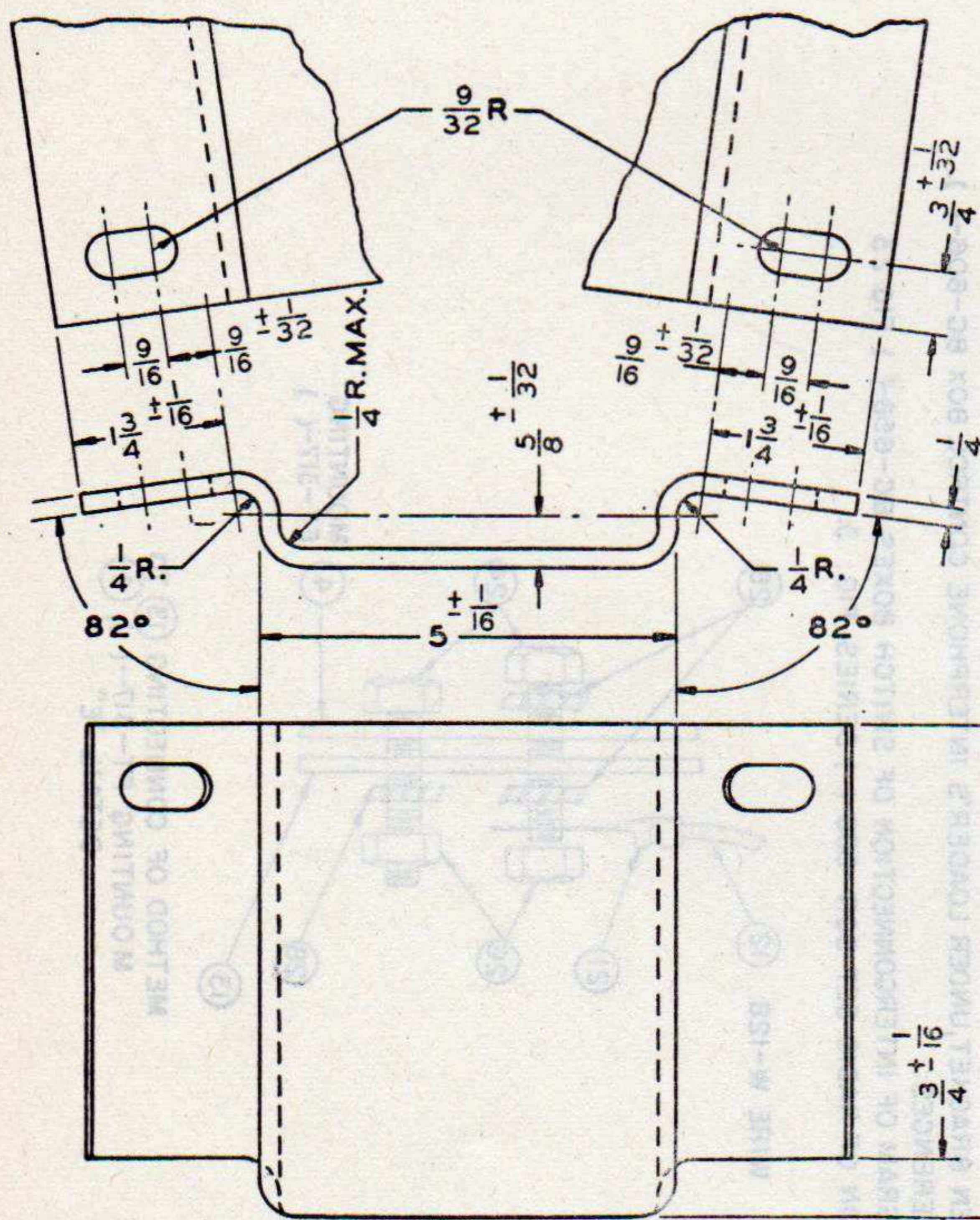
DIMENSIONS WHERE NOT SHOWN OTHERWISE ARE IN INCHES.

REMOVE ALL BURRS.

③ AND ④ ARE FOR INSTALLATION AND SHALL BE PLACED IN A HEAVY CLOTH BAG WHICH SHALL BE TIED TO THE BRACKET.

④ SHALL BE SHAKEPROOF LOCKWASHER, CAT. #4020-26, AS MADE BY SHAKEPROOF INC., CHICAGO, ILL., OR EQUAL.

AFTER WELDING, ALL SURFACES OF ① AND ② SHALL BE BONDERIZED AND THEN GIVEN ONE SPRAY COAT OF METAL PRIMER, CLASS 101, AND ONE SPRAY COAT OF SEMI-GLOSS OLIVE DRAB BAKING ENAMEL, CLASS 440. ALL PAINTS AND METHODS OF APPLICATION SHALL BE IN ACCORDANCE WITH SPECIFICATION NO. 72-53.

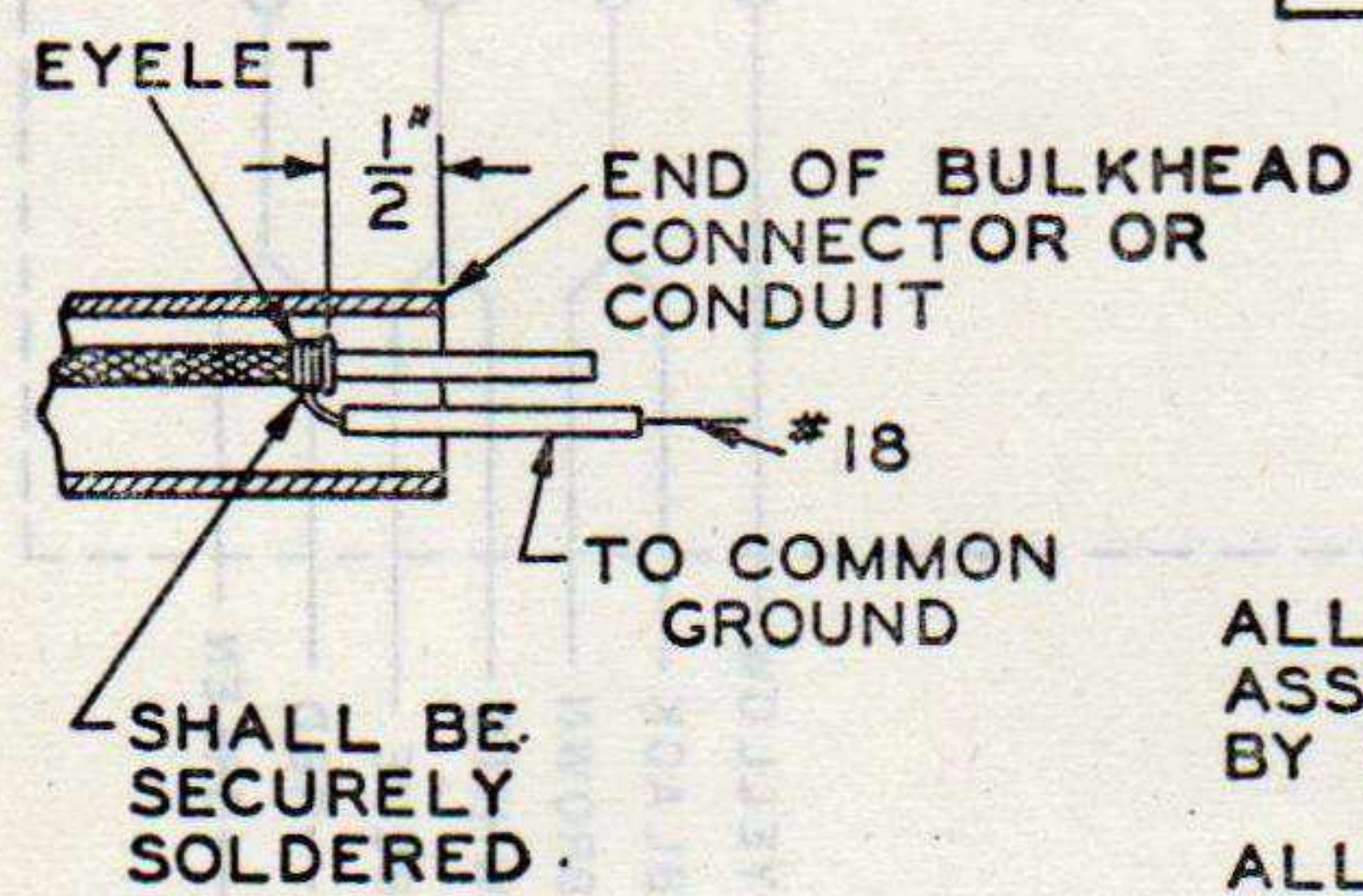
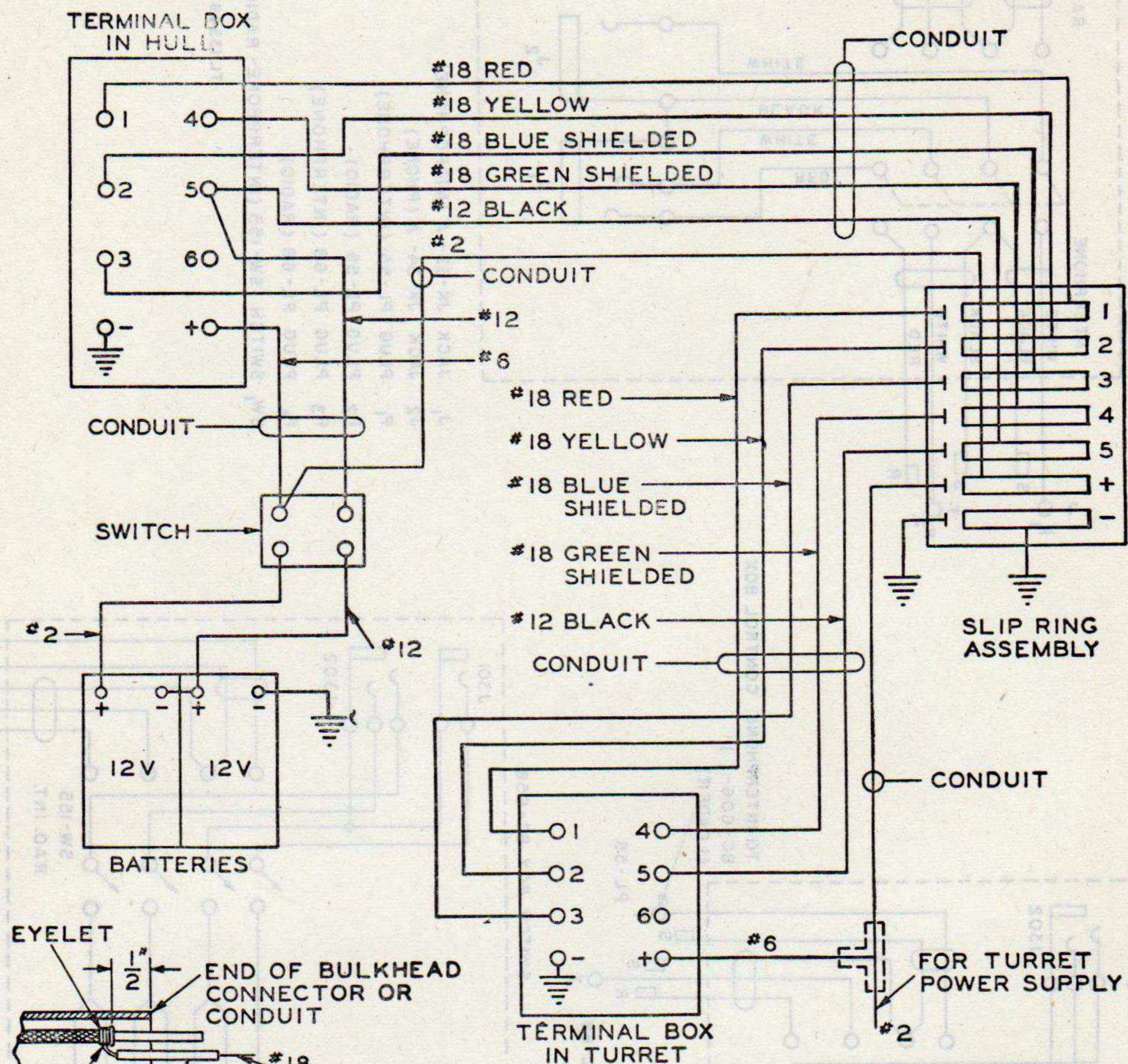


① BASE PLATE STEEL HOT ROLLED 1 REQ.

ITEM NO.	NAME OF ITEM	QUAN. NO.
1	BASE PLATE-STEEL	1
2	STRAP-STEEL	1
3	HEX. HD. CAP SCREW 3/8-24 X 3/4 LONG-STEEL ELECTRO GALV. SEE NOTE	5
4	LOCKWASHER-STEEL ELECTRO GALV.-SEE NOTE	5

TL-13386

Figure 21. Bracket for Mounting FT-317-() in Medium Tank M4 or M4A3, 105-mm howitzer.



ALL WIRING, TERMINAL BOXES AND SLIP RING ASSEMBLY SHALL BE FURNISHED AND INSTALLED BY MANUFACTURER OF VEHICLE.

ALL SHIELDS ON SHIELDED WIRES SHALL BE GROUNDED ON BOTH ENDS.

THESE TERMINAL BOXES ARE TO BE USED FOR RADIO AND INTERPHONE WIRING ONLY.

WIRE SIZES INDICATED ARE B & S GAUGE.

BASED ON
SC-A-6758-D

TL-10665

Figure 22. Wiring diagram of slip rings and terminal boxes.

RESTRICTED

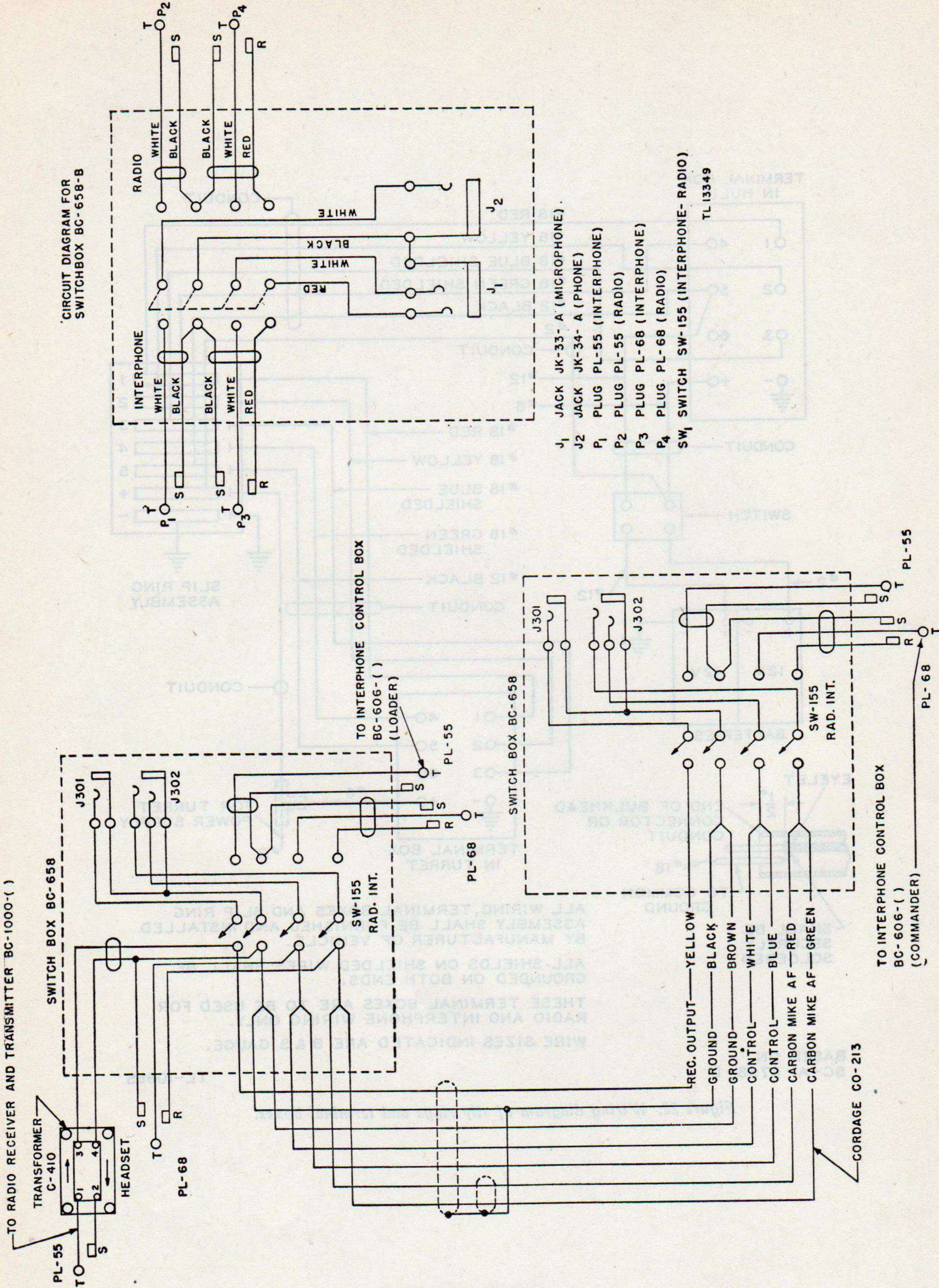
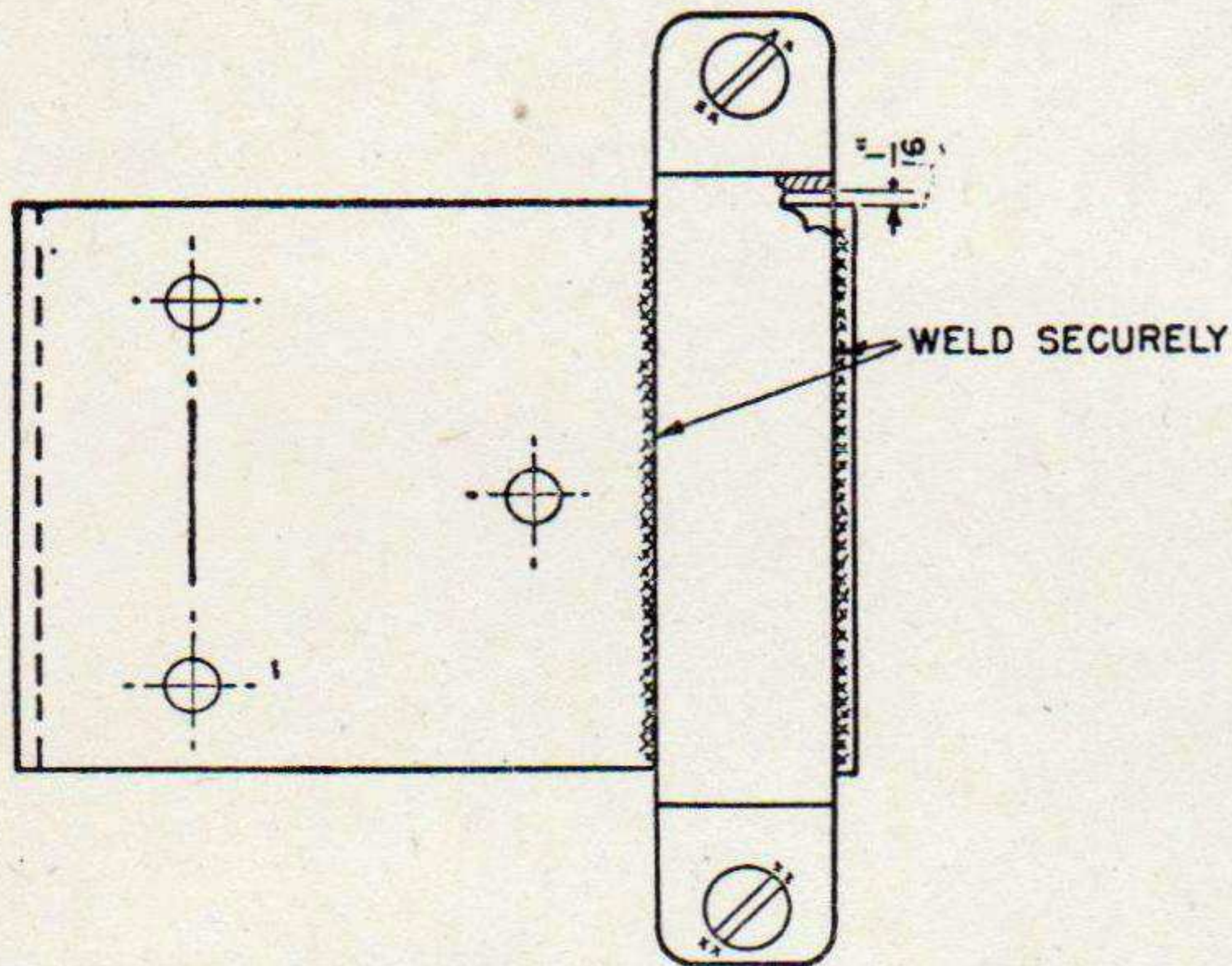
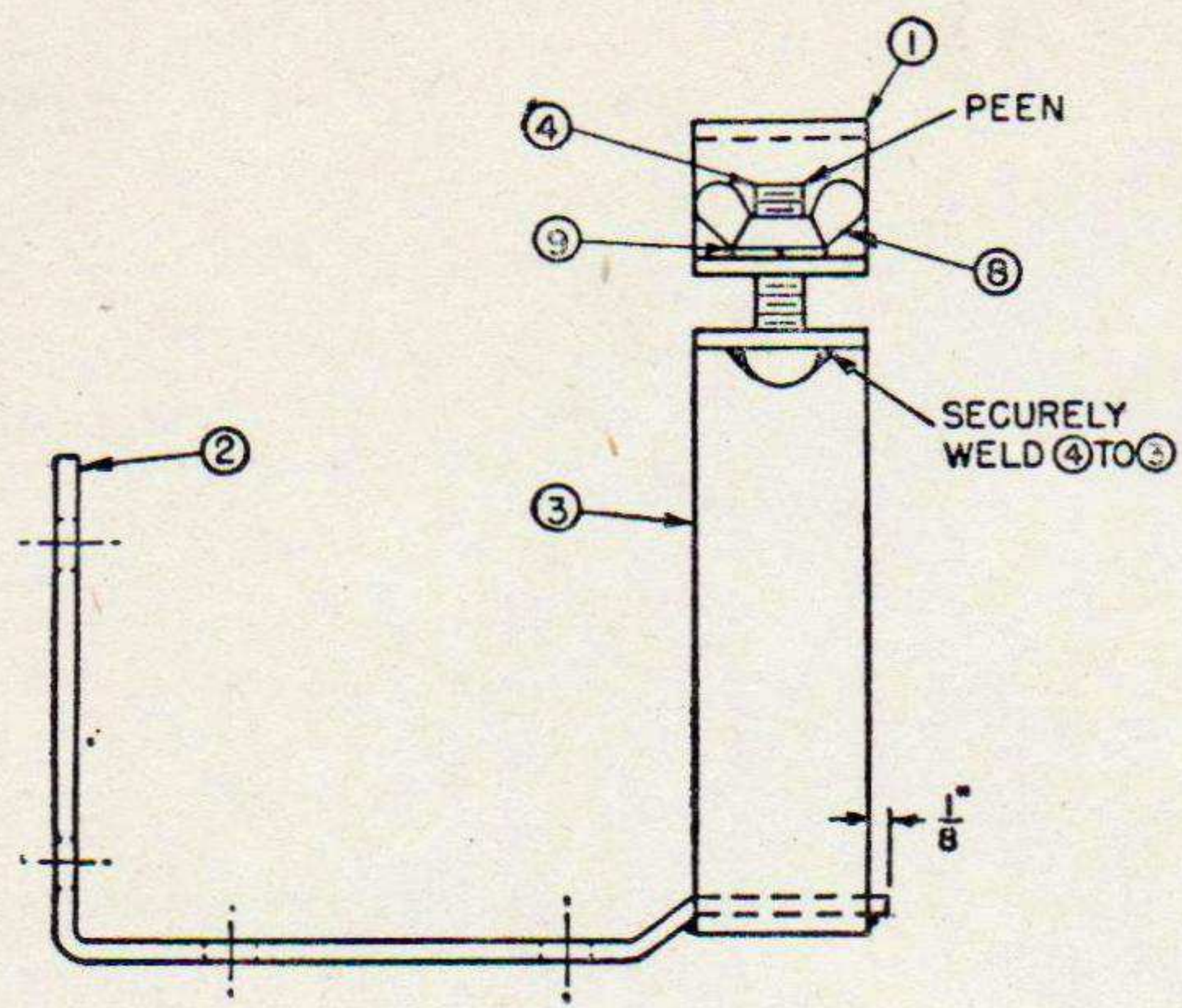
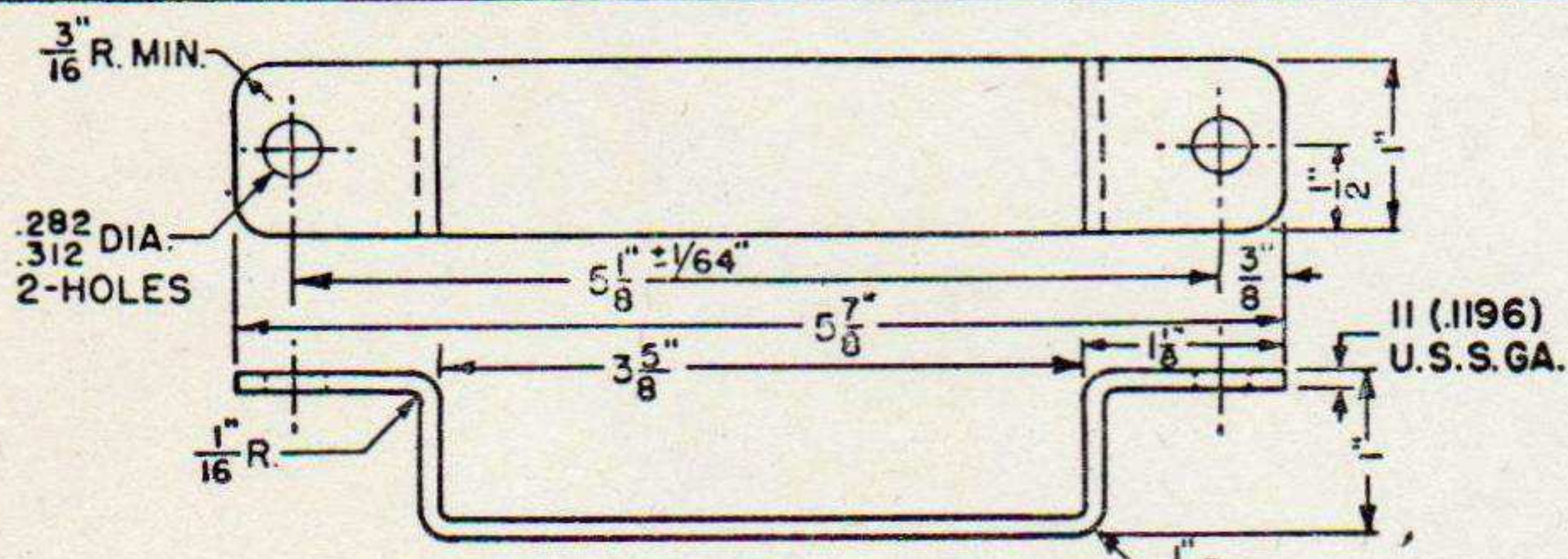


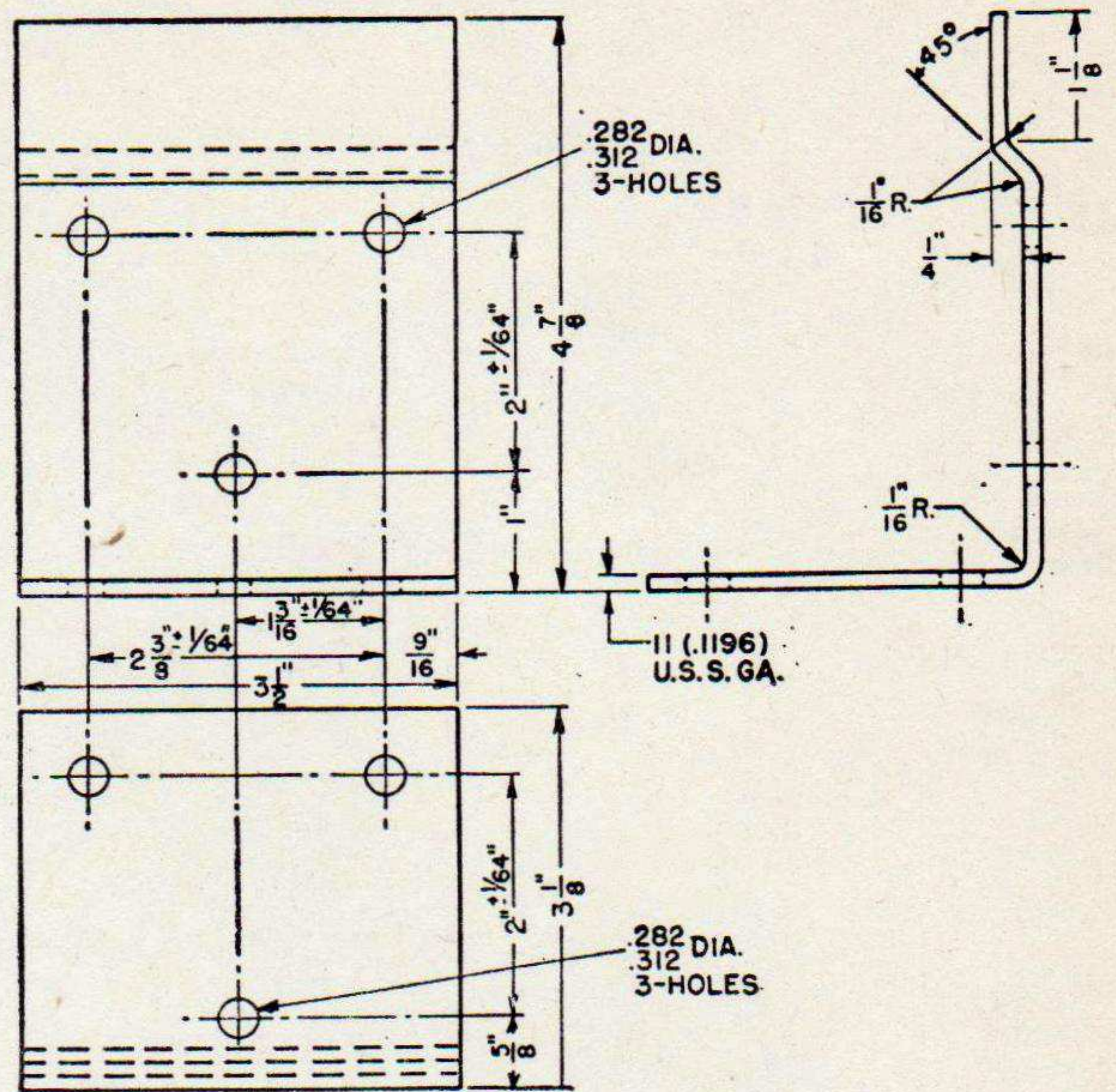
Figure 23. Wiring diagram of interconnection of Switch Boxes BC-658-().



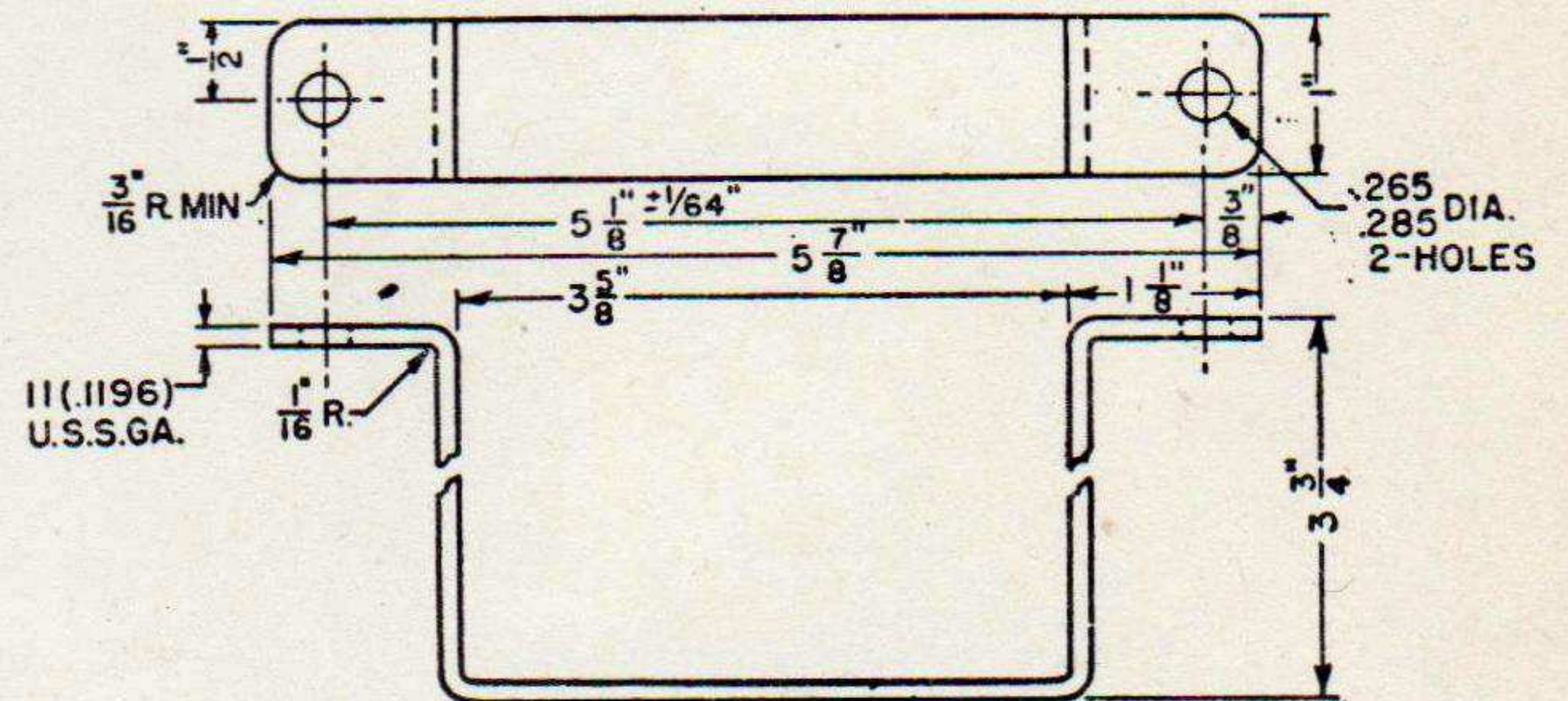
ASSEMBLY



① CLAMP
STEEL-HOT ROLLED (SEE NOTE)
1-REQ.



② BRACKET
STEEL-HOT ROLLED (SEE NOTE)
1-REQ.



③ ARM
STEEL-HOT ROLLED (SEE NOTE)
1-REQ.

ITEMS REQUIRED

QUAN. REQ.	NAME OF ITEM	MATERIAL	TYPE NO.	ITEM NO.	REMARKS
6	LOCKWASHER	STEEL ELECTRO- GALVANIZED	SEE NOTE	9	S.A.E. REG. FOR 1/4 SCREW
2	WING NUT		SEE NOTE	8	1/4 - 20
4	HEX NUT		SEE NOTE	7	1/4 - 20 STD.
4	HEX. HD. CAP SCREW		SEE NOTE	6	1/4 - 20 X 3/4 LONG
4	HEX. HD. CAP SCREW		SEE NOTE	5	1/4 - 20 X 1 1/2 LONG
2	RD. HD. MACH. SCREW		SEE NOTE	4	1/4 - 20 X 1 LONG
1	ARM			3	
1	BRACKET	STEEL		2	
1	CLAMP			1	

BASED ON SC-D-7367

NOTE:

REMOVE ALL BURRS.
AFTER WELDING ② & ④ TO ③, ①, ② & ③ SHALL BE BONDERIZED AND THEN GIVEN ONE SPRAY COAT OF METAL PRIMER, CLASS 101, AND ONE SPRAY COAT OF SEMI-GLOSS OLIVE DRAB BAKING ENAMEL, CLASS 440. TOUCH UP HEADS OF ④ TO MATCH SURROUNDING SURFACE. ALL PAINTS AND METHODS OF APPLICATION SHALL BE IN ACCORDANCE WITH ORDNANCE TENTATIVE SPECIFICATION TAC ES-NO. 680.

⑤, ⑥, ⑦ & ④ OF ⑨ ARE USED FOR INSTALLATION AND SHALL BE PLACED IN A HEAVY CLOTH BAG PLAINLY AND PERMANENTLY MARKED "THIS BAG CONTAINS SCREWS NUTS AND LOCKWASHERS FOR INSTALLATION. SPARES ARE INCLUDED IN QUANTITIES." THIS BAG SHALL BE TIED TO THE BRACKET.

TL 15087

Figure 24. Bracket for Antenna A-27, phantom.

GEREGISTREERD
6 JUN 1951
R.&V. - HKGS

RESTRICTED

TM 11-2748

*C 2

TECHNICAL MANUAL

**INSTALLATION OF RADIO AND INTERPHONE EQUIPMENT IN TANK, MEDIUM, M4A3 OR
M4A3E2, 75-MM GUN, WET STOWAGE; TANK, MEDIUM, M4A1, M4A2, OR M4A3,
76-MM GUN, WET STOWAGE; TANK, MEDIUM, M4 OR M4A3, 105-MM HOWITZER**

CHANGES |
No. 2 |

WAR DEPARTMENT
WASHINGTON 25, D. C., 20 June 1945

- TM 11-2748, 12 January 1945, is changed as follows:
- Remove pages iii, iv, and v and substitute revised pages iii and iv herewith.
 - Remove pages 1 and 2 and substitute revised pages 1 and 2 herewith.
 - Remove pages 5 through 14 and substitute page 5, revised pages 6 through 8, page 9, and revised pages 10 through 18 and add pages 19 and 20 herewith.
 - Renumber old pages 15 through 28 to read 21 through 34.
 - Remove old pages 30 through 38 and substitute revised pages 36 through 46 herewith.
 - Renumber old pages 39 and 40 to read 47 and 48.
 - Remove old page 41 and substitute revised pages 49, 50, and 51 herewith.

[AG 300.7 (5 June 45)]

BY ORDER OF THE SECRETARY OF WAR:

OFFICIAL:

J. A. ULIO
Major General
The Adjutant General

G. C. MARSHALL
Chief of Staff

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Refer to FM 21-6 for explanation of distribution formula.

*These changes supersede C 1, 5 March 1945.

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Required parts.....	16	17
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DESTRUCTION NOTICE

WHY— To prevent the enemy from using or salvaging this equipment for his benefit.

WHEN—When ordered by your commander.

HOW—

1. Smash—Use sledges, axes, handaxes, pickaxes, hammers, crowbars, heavy tools.
2. Cut—Use axes, handaxes, machetes.
3. Burn—Use gasoline, kerosene, oil, flame throwers, incendiary grenades.
4. Explosives—Use firearms, grenades, TNT.
5. Disposal—Bury in slit trenches, fox holes, other holes. Throw in streams. Scatter.

USE ANYTHING IMMEDIATELY AVAILABLE FOR DESTRUCTION OF THIS EQUIPMENT

WHAT—

1. Smash—All vacuum tubes, crystals, control dials, coupling coils, transformers, speakers in receivers, external loudspeakers, microphones, headsets, dynamotors, and cable connectors.
2. Cut—All connecting wires, cording, and cabling.
3. Burn—All equipment and all associated training, technical, and installation manuals.
4. Bury or scatter—All remains, after destroying their usefulness.

DESTROY EVERYTHING

SAFETY NOTICE

This equipment uses high voltages which are dangerous to life. Observe all safety precautions.

1. Make no adjustments inside the equipment with the power switch on.
2. Do not operate the equipment with the shields removed.
3. Do not connect power to any unit of these radio sets until operating instructions have been read completely.

SECTION I

GUIDE TO USE OF THIS MANUAL

1. Purpose

This manual provides methods and procedure, based upon actual field experience, for installation of radio and interphone equipment in Tank, Medium, M4A3 or M4A3E2, 75-mm gun, wet stowage; in Tank, Medium, M4A1, M4A2, or M4A3, 76-mm gun, wet stowage; or in Tank, Medium, M4 or M4A3, 105-mm howitzer. Items required to make a complete operating installation are listed for each set. Official nomenclature followed by empty parentheses, such as Headset HS-30-(), is used to indicate any model of equipment regardless of its procurement.

2. Equipment

Installations covered include the following radio equipment:

- | | |
|-------------|-------------|
| SCR-506-() | SCR-528-() |
| SCR-508-() | AN/VRC-3 |
| SCR-608-B | |

3. Holes and Brackets

Brackets required for installation of the radio

set are normally drilled and installed prior to delivery of the vehicle. Drilling instructions are given in this manual for any other necessary holes and brackets. Do not relocate any holes or brackets unless absolutely necessary.

4. Preliminary Check

Study the illustrations, the installation methods outlined, and any subsequent changes to this manual.

Caution: The vehicles covered in this manual have 24-volt electrical systems. Before installing the radio sets, be sure they are designed for 24-volt operation, or tubes may burn out or dynamotors may be damaged.

5. Operating Check

Carefully study the Technical Manual covering the radio set before trying to operate it; then, make a thorough operating check to determine whether the equipment has been properly installed and is in working order.

SECTION II

IGNITION NOISE SUPPRESSION IN TANK, MEDIUM, M4A3 OR M4A3E2, 75-MM GUN, WET STOWAGE; IN TANK, MEDIUM, M4A1, M4A2, OR M4A3, 76-MM GUN, WET STOWAGE; OR IN TANK, MEDIUM, M4 OR M4A3, 105-MM HOWITZER

6. General

Excessive ignition or other electrical noises may interfere with operation of radio equipment in vehicles covered in this manual. The Technical Manual issued with the vehicle will be helpful in locating the source of the noise, since it describes the suppression system used. Study instructions for operating radio equipment used in this vehicle. See TM 11-483 for additional information on suppression of ignition noise in vehicles.

7. Procedure

Locate and suppress ignition noises as follows:

a. Place another radio set of the same type as installed in vehicle at a remote location far enough away from the vehicle to provide signals at weakest level that can be distinctly heard in the receiver of the radio set under test. Set radio receiver gain control to maximum and listen to output of receiver with a headset.

b. Start motor of the vehicle and accelerate vehicle engine to about 1,000 rpm. Check reception of weak signals from remote radio set at each frequency used for communication.

c. When the frequency (or frequencies) with greatest noise level that affects reception of the weak signals is found, leave the receiver tuned to one particular frequency and turn off the vehicle ignition switch. That part of noise which stops when the ignition switch is turned off is caused by the ignition system. Noise which lingers after the switch is turned off and continues until the vehicle motor comes to a stop is caused by voltage regulator or by battery-charging generator. Auxiliary equipment, such as oil, fuel, and temperature gauges, fans, motors, or others, should

be turned on and off or disconnected individually in order to locate noises caused by them.

d. The table below will be helpful in distinguishing engine noises from static, etc.

<i>Interference</i>	<i>Usual source</i>
Popping: regular clicks corresponding to ignition firing; stops when motor is turned off; accelerates when motor speed is increased.	Ignition system.
Intermittent clicks; linger for several seconds when ignition system is turned off.	Generator regulator.
Whine: varies with speed of motor; ceases when motor comes to a complete stop.	Generator.

e. A probe antenna (fig. 1) connected to antenna and ground terminals of radio set under test will sometimes aid materially in locating source of interference. Slowly move the loop of probe antenna over the various parts of electrical system, close to, but not in contact with, the part under examination. Noise from interference-producing parts should be heard in receiver.

f. Usually interference can be eliminated by cleaning, tightening, or replacing noise-producing parts. Examine and tighten all suppressor and shielding components, and all connections and grounding bonds. Clean surface under them. This will assure good electrical contact between wires and terminals and between metal casings and the frame of the vehicle. (Insulated but ungrounded metal parts absorb and reradiate electrical noises.)

g. If interference persists, check suppressor components by substituting new ones. If a replacement is not available, disconnect the suspected component, and test capacitors, resistors, and chokes within it. Replace any that are defective.

<i>Part and location</i>	<i>Method and materials</i>	<i>Part and location</i>	<i>Method and materials</i>
clamp provided. Connect to antenna post on Radio Transmitter BC-653-().		and Bondnut BL-50.	left side of hull. Install through knock-out holes to secure cords.
Switch Box BC-658-().	Mount on bracket attached to ceiling of right sponson, above radio set, with No. 8 screws and lockwashers. Plug one pair of cords from switch box into radio set and other pair of cords into co-driver's Interphone Control Box BC-606-(). Secure cords with same clamps securing power cords of radio set. Refer to figure 22 for wiring of slip rings and terminal boxes.	Mast Section MS-49 to MS-53, inclusive; Clamps MC-421 to MC-424, inclusive.	Screw mast sections together, place clamps over joints to prevent loss of sections, and screw assembled sections into Mast Base MP-57. When removed, stow mast sections in Roll BG-56-(), and place Cover BG-67-() over mast base.
Power Cord CO-280; connector No. 61007	Route power cords to vehicle terminal box on	Headset H-16/U, Microphone T-45, and Chest Set TD-4.	Use, when available, in place of Headset HS-30-(), Microphone T-17, and associated cord- ing.
		Antenna A-27, phantom, and bracket (fig. 24).	Fasten in convenient place in vehicle with hardware provided.

SECTION IV

RADIO SET SCR-508-() OR SCR-528-() AND ASSOCIATED INTERPHONE EQUIPMENT

10. Required Parts

Items necessary for the installation of Radio Set SCR-508-() or SCR-528-() and associated interphone equipment in Tank, Medium, M4A3 or M4A3E2, 75-mm gun, wet stowage; in Tank, Medium, M4A1, M4A2, or M4A3, 76-mm gun, wet stowage; or in Tank, Medium, M4 or M4A3, 105-mm howitzer, are listed below:

Quantity		Stock No.	Item
Radio Set SCR-508-()	Radio Set SCR-528-()		
1	1	2A262	Antenna A-62, phantom, including bracket (fig. 5), necessary hardware, and antenna lead.
1 ⁵	1 ⁵	4B417-4	Chest Set TD-4.
3	3	6Z3147	Connector No. 61007 and Bondnut BL-50.
2 ^{32 ft.}	2 ^{32 ft.}	3E2213	Cordage CO-213.
1	1	2Z3396	Cover BG-96.
1	1	2Z5295 264	Chest CH-264, for spare tubes, headsets, etc.
2	1	3H1636	Dynamotor DM-36-(), 24 volts, including attached spare parts.
1	1	3H1637	Dynamotor DM-37-(), 24 volts, including attached spare parts.
1	1	6L50-508V8	Hardware bag.
1 ⁶	1 ⁶	2B800-16	Headset H-16/U.
5	5	2C1738	Interphone Control Box BC-606-().
3 ¹	3 ¹	2A2081-15	Mast Base AB-15/GR.
4 ²	4 ²	2A2416	Mast Section MS-116.
4 ²	4 ²	2A2417	Mast Section MS-117.
4 ²	4 ²	2A2418	Mast Section MS-118.
1 ⁶	1 ⁶	2B1645	Microphone T-45.
2	2	2B1567	Microphone Cover M-367.
1	1	2Z6721	Mounting FT-237-(), including spare fuses and necessary hardware in attached bag.
2	1	2C4403	Radio Receiver BC-603-() including set of tubes installed, spare fuses, lamps, and set of spare tubes.

¹ When Headset H-16/U, Microphone T-45, and Chest Set TD-4 are not available, use Headset HS-30-(), Microphone T-17, Cords CD-307-A, CD-318-A, and CD-604.

² Installation of Radio Set SCR-508-() or SCR-528-() and associated interphone equipment in Tank, Medium, M4A1, M4A2, or M4A3, 76-mm gun, wet stowage, will require 38 feet of Cordage CO-213.

³ Mast Base MP-48 or MP-48-A, with Cover BG-108, may replace Mast Base AB-15/GR. When Mast Base MP-48-A is used, delete 6 feet of Wire W-128.

⁴ When Mast Base MP-48 or MP-48-A is used, use Mast Sections MS-51, MS-52, and MS-53, and Clamps MC-423 and MC-424 instead of Mast Sections MS-116, MS-117, and MS-118.

Quantity		Stock No.	Item
Radio Set SCR-508-()	Radio Set SCR-528-()		
1	1	2C4694	Radio Transmitter EC-604-(), including set of spare tubes installed, spare fuses, lamps, set of spare tubes, and 80 crystals in Crystal Holders FT-241-().
1	1	2Z8056	Roll BG-56-().
2	2	6C13313	TM 11-600.
6 ft.	6 ft.	1B128	Wire W-128.

11. Assembly and Installation

Components of Radio Set SCR-508-() or SCR-528-() and associated interphone equipment should be installed in Tank, Medium, M4A3 or M4A3E2, 75-mm gun, wet stowage; in Tank, Medium, M4A1, M4A2, or M4A3, 76-mm gun, wet stowage; or in Tank, Medium, M4 or M4A3, 105-mm howitzer (figs. 3, 7, 8, and 11) as directed below:

Part and location

Mast Base AB-15/GR, on antenna mount plate, right side of turret bulge.

Method and materials

Locate mast base (fig. 3). See figure 11 for Tank, Medium, M4A1, M4A2, or M4A3, 76-mm gun, wet stowage. Assemble mast base as follows: Place one of the large neoprene washers, item 6, over hole in antenna mounting plate. Place upper insulator, item 5, over item 6. Place small neoprene washer, item 4, over hole in item 5, and place plain washer, item 3, over item 4. Insert body of mast base, item 2, through items 3, 4, 5, and 6. Place other large neoprene washer, item

<i>Part and location</i>	<i>Method and materials</i>	<i>Part and location</i>	<i>Method and materials</i>
	6, over flange of lower insulator, item 7. Insert bolt, item 8 (attached to insulator, item 7), into bottom of item 2 from underneath. Turn item 2 clockwise until threads in item 8 and item 2 are fully engaged. Tighten mast base securely. See figure 8 for Mast Base MP-48-A, or figure 9 for Mast Base MP-48.	bracket attached to left wall of turret, near bulge.	position shown in figure 3 or 11.
Mounting FT-237-(), on radio mounting shelf in turret bulge.	Secure mounting to shelf with eight 5/16-24 by 3/4-inch screws, elastic stop nuts, and shakeproof washers provided. Place washers between Mounting FT-237-() and mounting shelf as shown in detail in figure 3. See figure 11 for Tank, Medium, M4A1, M4A2, or M4A3, 76-mm gun, wet stowage.	Radio Transmitter BC-604-() and Radio Receiver BC-603-(), modification for receiver disabling and increased audio output.	Transmitter and receiver must have modification for receiver disabling and additional modification for increased audio output. Units having receiver disabling modification are identified by the letter "M" stamped after nomenclature on nameplate; for example, BC-603-DM. Units modified for increased audio output are identified by MWO number lettered on unit. See MWO SIG 11-600-4 and MWO SIG 11-600-6.
Two Interphone Control Boxes BC-606-() (driver and co-driver), on bracket attached to center of hull ceiling.	Secure boxes in place with No. 8 screws and lockwashers provided, in position shown in figure 3 or 11.	Dynamotor DM-37-() and Radio Transmitter BC-604-(), on Mounting FT-237-().	If Dynamotor DM-37-() is not already installed, remove crystal case from transmitter cabinet by loosening two screw locks on front panel and pulling out crystal case. Loosen four screw locks holding cover on top of transmitter, and remove cover. Plug dynamotor unit into receptacle on left rear of transmitter chassis and tighten screws in its base. Place transmitter on Mounting FT-237-(), and secure by means of thumbscrew locking devices provided.
Two Interphone Control Boxes BC-606-() (turret gunner and commander), on bracket attached to right wall of turret, center.	Secure boxes in place with No. 8 screws and lockwashers provided, in position shown in figure 3 or 11.		
Interphone Control Box BC-606-() (loader), on	Secure box in place with No. 8 screws and lockwashers provided, in	Dynamotor DM-36-() and Radio Receiver BC-603-	If Dynamotor DM-36-() is not already installed, remove case

<i>Part and location</i> (), on Mounting FT-237-().	<i>Method and materials</i> from receiver by loosening screw lock in rear center of case. Plug dynamotor into receptacle on top of chassis and tighten screws in its base. Place receiver on Mounting FT-237-(), and secure by means of thumbscrew locking devices provided.	<i>Part and location</i> Chest CH-264.	<i>Method and materials</i> When used with Radio Set SCR-508-(), place chest in tool box of vehicle, or stow in any convenient place recommended by using organization. When used with Radio Set SCR-528-(), place chest on Mounting FT-237-(), in space provided for a second radio receiver.
Antenna A-62, phantom.	See figure 10. Secure antenna to its bracket, in position 1 for figure 3 installation and position 3 for figure 11 installation, using No. 6 screws and lockwashers included on phantom antenna. Remove two No. 10-32 screws from front left corner of Mounting FT-237-(). Secure bracket, with antenna attached, to mounting as shown in figure 10, position 1 for figure 3 or position 3 for figure 11.	Mast Sections MS-116, MS-117, and MS-118.	Screw mast sections together and tape joints to prevent loss of sections. Screw assembled mast sections into Mast Base AB-15/GR. When mast sections are removed, stow them in Roll BG-56-(). When Mast Sections MS-51, MS-52, and MS-53 are used, place Clamps MC-423 and MC-424 on joints.
Three connectors No. 61007 and Bondnuts BL-50.	Install one connector and bondnut through knockout hole in hull terminal box for Cordage CO-213, and two through knockout holes in turret terminal box for power cord and Cordage CO-213.	Wire W-128.	Use a 30-inch length of Wire W-128 (item 37 of figure 3 or item 30 of figure 11) to connect antenna binding post (marked ANT) on Mounting FT-237-() to Mast Base MP-48 or MP-48-A. When using Antenna A-62, phantom, for aligning transmitter, disconnect 30-inch length and connect 20-inch length (item 38 of figure 3 or item 31 of figure 11) to antenna post on Mounting FT-237-().
Spare headsets, cords, tubes, etc.	Stow headsets, spare tubes, and spare parts in Chest CH-264. See chart supplied on chest for location of items.		

12. Preparation of Cordage CO-213

a. Figures 3 and 11 list the approximate lengths of cordage required for connecting the interphone components. Prepare the cordage as directed in TM 11-600, and make a trial or pilot installation in the vehicle to determine the exact lengths required before cutting a quantity of the cordage. *Wire up as much of the equipment as possible before installing in the vehicle.*

b. After Cordage CO-213 has been cut to proper lengths, prepare each end of every length for connection to five Interphone Control Boxes BC-606- () and to Mounting FT-237-() as follows: Strip back $3\frac{1}{2}$ inches of the outer rubber and $2\frac{1}{2}$ inches of the inner and outer shields for connections to the interphone control boxes. Strip back 6 inches of the outer rubber and 5 inches of the shields for connections to Mounting FT-237-(). Using a pointed instrument, separate the weave of the exposed 1-inch ends of the shield braids. Strip about $\frac{1}{2}$ inch of insulation from the black lead, at point exposed by separation of the shields. Twist the wires of both shield braids around the exposed portion of the black lead and solder together, using a minimum of solder. Use the black lead for ground connection, as shown in figure 6.

c. Prepare the ends of the cordage for connection to the vehicle terminal boxes in the same manner as above, except that $8\frac{1}{2}$ inches of outer rubber and $7\frac{1}{2}$ inches of the outer shielding are stripped back, and the shielded pair of red and green wires are cut off and taped as shown in figure 6. Solder properly numbered lugs, from the terminal box, to the wire, as shown in figure 6.

13. Wiring of Components

Insert the prepared cordage through the appropriate hole in Interphone Control Box BC-606-() and fasten by means of the clamp provided. Solder ends of wires to numbered studs, as shown in figure 6. Insert the prepared cordage (connecting to radio set) through the appropriate hole in Mounting FT-237-() and secure with clamp provided at terminal board inside Mounting FT-237-(). Connect cordage wires to terminals on terminal board as shown in figure 6. Use connectors and bondnuts to secure cordage through knock-out holes in the terminal boxes and connect cordage wires to terminal box, as shown in figure 6. Refer to figure 22 for wiring of slip rings and terminal boxes.

SECTION V
RADIO SET AN/VRC-3

14. Required Parts

Items necessary for the installation of Radio Set AN/VRC-3 in Tank, Medium, M4A3 or M4A3E2, 75-mm gun, wet stowage; in Tank, Medium, M4A1, M4A2, or M4A3, 76-mm gun, wet stowage; or in Tank, Medium, M4 or M4A3, 105-mm howitzer, are listed below:

Quantity	Stock No.	Item
1	2Z299-359	Adapter M-359.
1	2Z1250.113	Bracket (fig. 12) for Mounting FT-317-A, -B, or -C (75-mm gun installation only).
1	2Z1250.114	Bracket (fig. 18) for Mounting FT-317-A, -B, or -C (76-mm gun installation only).
1	2Z1250.115	Bracket (fig. 21) for Mounting FT-317-A, -B, or -C (105-mm howitzer installation only).
2	2Z1250.112	Bracket (fig. 13) for Switchbox BC-658-().
1	4B417-4	Chest Set TD-4.
10 ft.	3E2213	Cordage CO-213.
2	1F430-102.84	Cord CG-102/TRC-7, 7 ft. long.
1	6L50-VRC-3V8.1	Hardware bag.
1	2B800-16	Headset H-16/U.
1	2Z1250.138	Mast base bracket (75-mm gun and 105-mm howitzer installations only).
1	2A2090-60	Mast Base Bracket MP-60.
2	2A2081-15	Mast Base AB-15/GR.
2	2A2417	Mast Section MS-117.
2	2A2418	Mast Section MS-118.
1	2B1645	Microphone T-45.
1	3H3947C	Mounting FT-317-A, -B, or -C.
1	2C5396-1000	Radio Receiver and Transmitter BC-1000.
4	2C7978C	Switchbox BC-658-C.
3	6D13502	TM 11-637.
3	6D13053	TM 11-983.
2	2Z9299-217	Terminal Box TM-217.
1	2Z9940-410.1	Transformer C-410.
6 in.	2Z8727-2	Tubing, rubber (for 75-mm gun and 105-mm howitzer installations only).
5	3H6720-114	Vibrator Power Supply PP-114/VRC-3.
6 ft.	1B128	Wire W-128.

¹ If Chest Set TD-4 is not available, use Cords CD-207-A and CD-318-A. If Headset H-16/U is not available, use Headset HS-30-() and Cord CD-604.

² If Mast Base AB-15/GR and Mast Sections MS-117 and MS-118 are not available, use Mast Base MP-48 or MP-48-A, Mast Sections MS-52 and MS-53, and Clamp MC-424. Use Cord CG-102/TRC-7 and Terminal Box TM-217 only with Mast Base AB-15/GR.

³ Stow in convenient place in vehicle.
⁴ Each Switchbox BC-658-C includes Mounting FT-507, Connector No. 61007, and Bondnut BL-50. If Switchbox BC-658-C is not available, use Switchbox BC-658-A or -B.

⁵ If Vibrator Power Supply PP-114/VRC-3 is not available, use Battery BA-70 and Case CS-128.

15. Assembly and Installation

a. TANK, MEDIUM, M4A3 OR M4A3E2, 75-MM GUN, WET STOWAGE. Install components of Radio Set AN/VRC-3 in Tank, Medium, M4A3 or M4A3E2, 75-mm gun, wet stowage (fig. 15) as directed below. Before installing components, weld one bracket (fig. 13) to wall of turret, right side, 23 inches rearward from commander's Interphone Control Box BC-606-(), as shown in figure 15, View B-B. Weld another bracket (fig. 13) below loader's Interphone Control Box BC-606-() on left side of turret wall, as shown in figure 15, View A-A. Remove smoke mortar, armored smoke mortar ammunition ready box, and canteen bracket on left side of the turret, below loader's Interphone Control Box BC-606-(). Weld spacers (item 19, fig. 15) in locations shown in figure 15. Install components as follows:

Part and location	Method and materials
Bracket (fig. 12) (item 13, fig. 15), on ring guard.	See figure 15, Detail D and Plan View, Turret. Start from terminal box at rear of turret below radio shelf. Count screws securing ring guard, in a clockwise direction. Remove eighth and ninth screws, and use the screws to secure bracket, as shown in figure 15, Detail D.
Mounting FT-317-A, -B, or -C (item 4, fig. 15), on bracket (fig. 12).	Modify mounting as shown in figure 15, Detail E. Secure mounting to bracket (fig. 12) as shown in figure 15, Detail D.
Wire W-128 (item 12, fig. 15).	Cut an 18-inch length of Wire W-128 and solder a terminal (item 21, fig. 15) to one end and Terminal TM-91 (item 22, fig. 15) to the other end for grounding radio set. (Obtain both terminals from hardware bag.)

<i>Part and location</i>	<i>Method and materials</i>	<i>Part and location</i>	<i>Method and materials</i>
Vibrator Power Supply PP-114, VRC-3 and Radio Receiver and Transmitter BC-1000 (items 2 and 1, fig. 15), on Mounting FT-317-A, -B, or -C.	<p>Secure terminal (item 21, fig. 15) with one of the $\frac{3}{8}$-inch screws securing Mounting FT-317-A, -B, or -C to vehicle.</p> <p>Adjust vibrator power supply for 24-volt operation as directed in TM 11-983. Insert plug on cord from bottom of receiver-transmitter into socket on vibrator power supply and secure both units together with catch-clips provided. Place receiver-transmitter (with vibrator power supply attached) in Mounting FT-317-A, -B, or -C, and secure in place with strap and wingnuts provided on mounting. Use a wood spacer underneath receiver-transmitter as shown in figure 15, Detail D. Drill two holes in mounting if necessary, and secure wood spacer in place with two wood screws. If Mounting FT-317-C is used, the wood spacer is not required. Secure Terminal TM-91 on ground lead to ground binding post on receiver-transmitter.</p>	Switchboxes BC-658-A, -B, or -C and Transformer C-410 (items 9 and 5, fig. 15).	<p>$3\frac{1}{2}$ inches of outer rubber sheath and $2\frac{1}{2}$ inches of inner and outer shields on both ends of cordage, leaving 1 inch of shields exposed. Using a pointed instrument, separate woven strands of both exposed shields and twist the strands into a pigtail. Strip about $\frac{1}{2}$ inch of insulation from black lead at point exposed by separation of cordage shield. Wrap bare portion of black lead around prepared pigtail of shielding. Solder securely. Prepare tips of cordage wires by stripping back about $\frac{1}{2}$ inch of insulation and solder-tinning tips. Use black lead for ground connection.</p> <p>Switchbox BC-658-C is waterproof and includes Mounting FT-507, connector No. 61007 and Bondnut BL-50, and rubber washer. Remove disc sweated over hole in side of switchbox, place rubber washer over threaded stem of connector and install connector in hole in side of switchbox for securing Cordage CO-213. Remove patch cords and small connectors from RADIO side of commander's Switchbox BC-658-C. Sweat a strip of metal over holes in side of box. Connect cordage in commander's and loader's switchboxes</p>
Battery BA-70 and Case CS-128 (substitute items for Vibrator Power Supply PP-114/VRC-3).	When Battery BA-70 and Case CS-128 are supplied instead of Vibrator Power Supply PP-114/VRC-3, assemble battery and case to receiver-transmitter as directed in section II of TM 11-637.		
Cordage CO-213 (item 10, fig. 15).	Cut 73-inch length of cordage. Strip back		

*Part and location**Method and materials*

(fig. 23). Secure Cordage CO-213 in Switchbox BC-658-C, using connector No. 61007 (installed in side of box) and Bondnut BL-50. If Switchbox BC-658-A or -B is used, modify it for interconnection with Cordage CO-213 as shown in figure 15, Detail A. Secure cordage in each Switchbox BC-658-A or -B with No. 4 clamp provided. See figure 15, Detail A. Cut two-conductor patch cord on RADIO side of loader's Switchbox BC-658-(), about 14 inches from Plug PL-55. Clean and solder-tin the four tips of patch cord wires and solder Terminals TM-163 (obtained from hardware bag) to tips. Shorten all patch cords on both boxes to required length. Open case of Transformer C-410 by removing the four screws in flat side of case. Connect Terminals TM-163 to terminals on Transformer C-410 (fig. 23). Connect terminal lugs on cord leading to switch box to terminals 3 and 4 in transformer. (Terminals 3 and 4 are indicated CORD by an arrow on edge of case.) Connect terminal lugs on cord having Plug PL-55 to terminals 1 and 2 in transformer. (Terminals 1 and 2 are

*Part and location**Method and materials*

indicated HEADSET by an arrow on edge of case.) Replace flat side of case and original screws. When Switchboxes BC-658-C are used, secure provided Mountings FT-507 on brackets (fig. 13) with hardware supplied, and secure Switchboxes BC-658-C on Mountings FT-507 with studs and hex. nuts provided on sides of boxes. Locate switchboxes having two sets of patch cords and attached Transformer C-410 on left side of turret, and locate the other switchbox on right side of turret. If Switchboxes BC-658-A or -B are supplied, secure them directly to brackets (fig. 13) with hardware provided. Route cordage, as shown in figure 15, and secure with clamps No. 4, using same No. 8-32 by 3/8-inch screws and spacers provided for securing interphone system cordage clamps. Insert Plugs PL-55 and PL-68 on the patch cords from commander's switchbox into proper jacks on commander's Interphone Control Box BC-606-(). Insert Plugs PL-55 and PL-68 on patch cords on INTERPHONE side of loader's switchbox into proper jacks on loader's Interphone Control Box BC-606-(). Insert

<i>Part and location</i>	<i>Method and materials</i>	<i>Part and location</i>	<i>Method and materials</i>
Mast base bracket (item 15, fig. 15), on British mast base bracket, right rear of turret bulge.	Remove cover plate from mast base bracket provided for British Aerial No. 9, on right rear of turret bulge. Secure mast base bracket (item 15, fig. 15) to British mast base bracket with original screws and lockwashers removed from cover plate. Remove mast base installed for Radio Set SCR-508-() or SCR-528-() from mast base well on left side of turret bulge and install mast base on mast base bracket (item 15, fig. 15). When Mast Base AB-15/GR is used with Radio Set SCR-508-() or SCR-528-(), use a 35-inch length of Wire W-128 for antenna lead-in. If Mast Base MP-48 or MP-48-A is used with Radio Set SCR-508-() or SCR-528-(), remove original lead-in and substitute a 45-inch length of Wire W-128. Route lead-in from mast base to TR binding post on Mounting FT-237-() as shown in figure	Mast Base AB-15/GR (item 6, fig. 15), mast base well on turret, left rear.	15. Place a 6-inch length of rubber tubing over lead-in to seal hole in turret provided for entrance of lead-in. When tubing is not available, use rubber tape to provide a waterproof seal. See figure 25. Install mast base in mast base well on turret, left rear. Assemble mast base as follows: Place upper insulator, item 5, over hole in mast base well. (A neoprene washer, item 6, is cemented to each insulator, items 5 and 7.) Place small neoprene washer, item 4, over item 5 and place plain washer, item 3, over item 4. Insert body of mast base, item 2, through hole in items 3, 4, 5, and 6, and mast base well. Place ground ring, with attached large I. T. lockwasher, item 14, over flange of lower insulator, item 7. Insert bolt, item 8 (attached to insulator, item 7), into item 2 from underneath. Turn item 2 clockwise until mast base is tightened securely. Tighten mast base by hand. Largest threaded lockwasher, item 14, must make good contact with under side of mast base well. Apply a slight additional pressure with an open-end wrench applied to hex. face of body of mast base, item 2.

<i>Part and location</i>	<i>Method and materials</i>
Terminal Box TM-217 (item 32, fig. 15), on Radio Receiver and Transmitter BC-1000.	Insert threaded stud on terminal box into antenna socket on receiver-transmitter and tighten firmly by turning terminal box in a clockwise direction. Connect ground lead, provided on side of Terminal Box TM-217, to ground binding post on receiver-transmitter. Connect Adapter M-359 (item 34, fig. 25) to socket on Terminal Box TM-217.
Cord CG-102/TRC-7 (item 33, fig. 15).	Place hose clamp (item 15, fig. 25) attached to braid on mast base grounding ring, over one end of Cord CG-102/TRC-7. Connect cord to adapter socket (item 9, fig. 25) on bottom of mast base, and secure hose clamp around coupling nut of Plug PL-259 provided on cord. Connect other end of cord to Adapter M-359.
Mast Sections MS-117 and MS-118 (items 7 and 8, fig. 15), on Mast Base AB-15/GR.	Screw mast sections together and screw assembled antenna into mast base. Tape joints to prevent loss of mast sections.
Alternate antenna systems.	See figure 26. View A shows standard antenna for Radio Set AN/VRC-3. When all components of standard antenna system are not available, use system shown in View B or View C, with two mast sections. When Mast Base MP-48 or MP-48-A and Mast Sections

<i>Part and location</i>	<i>Method and materials</i>
	MS-52 and MS-53 are supplied in place of Mast Base AB-15/GR and Mast Sections MS-117 and MS-118, a 78-inch length of Wire W-128 must be used. Terminal Box TM-217 and Cord CG-102/TRC-7 are not used with Mast Base MP-48 or MP-48-A. See figures 8 and 9 for assembly of Mast Bases MP-48-A and MP-48 respectively. When Mast Sections MS-52 and MS-53 are supplied for Mast Base MP-48 or MP-48-A, screw mast sections together and place Clamp MC-424 over joint. Screw assembled antenna into mast base. When mast sections and clamp are removed, place Cover BG-108 over Mast Base MP-48 or MP-48-A.
	<i>Note.</i> If a wire lead-in must be used with Mast Base AB-15/GR, the length required is 64 inches. See figure 7 for assembly of Mast-Base AB-15/GR with wire lead-in.
b. TANK, MEDIUM, M4A1, M4A2, OR M4A3, 76-MM GUN, WET STOWAGE.	Install components of Radio Set AN/VRC-3 in Tank, Medium, M4A1, M4A2, or M4A3, 76-mm gun, wet stowage (fig. 16) as directed below. Before installing components, weld bracket (fig. 13) to wall of turret, right side, 25½ inches rearward from commander's Interphone Control Box BC-606-(). See figure 16, View B-B. Weld another bracket (fig. 13) forward from, and slightly below, loader's Interphone Control Box BC-606-() on left side of turret wall. See figure 16, View A-A. Remove smoke mortar, armored smoke mortar ammunition ready

box, and canteen bracket on left side of turret, below loader's Interphone Control Box BC-606- (). Install components as follows:

<i>Part and location</i>	<i>Method and materials</i>
Bracket (fig. 18) (item 13, fig. 16), on ring guard.	See figure 16, Detail C and Plan View, Turret. Starting from grenade box at rear of turret below radio shelf, count screws securing ring guard, in a clockwise direction. Remove ninth and tenth screws, and use screws to secure bracket. Refer to figure 16, Detail C.
Mounting FT-317-A, -B, or -C (item 4, fig. 16), on bracket (fig. 18).	Fasten mounting to bracket with four $\frac{3}{8}$ -24 by $\frac{3}{4}$ -inch screws, nuts, and shakeproof washers, as shown in figure 16, Detail C.
Wire W-128 (item 12, fig. 16).	Cut an 18-inch length of wire and solder a terminal (item 20, fig. 16) to one end and a Terminal TM-91 to other end, for grounding radio set. (Obtain both terminals from hardware bag.) Secure terminal (item 20, fig. 16) with one of the $\frac{3}{8}$ -inch screws securing upper part of Mounting FT-317-A, -B, or -C to vehicle.
Vibrator Power Supply PP-114/VRC-3 and Radio Receiver and Transmitter BC-1000 (items 2 and 1, fig. 16), on Mounting FT-317-A, -B, or -C.	Install vibrator power supply and receiver-transmitter as directed in <i>a</i> above.
Battery BA-70 and Case CS128 (substitute items for Vibrator Power	Install battery and case as directed in <i>a</i> above.

<i>Part and location</i>	<i>Method and materials</i>
Supply PP-114/VRC-3).	
Cordage CO-213 (item 10, fig. 16).	Cut a 9-foot length of Cordage CO-213. Prepare cordage as directed in <i>a</i> above.
Switchboxes BC-658-A, -B, or -C and Transformer C-410 (items 9 and 5, fig. 16).	Install switchboxes and transformer as directed in <i>a</i> above. If Switchboxes BC-658-A or -B are used, secure Cordage CO-213 in switchboxes with No. 4 clamp provided, as shown in figure 16, Detail A. Route Cordage CO-213 as shown in figure 16. Secure cordage with No. 4 clamps, using same No. 8-32 by $\frac{3}{8}$ -inch screws and spacers provided for securing interphone system cordage clamps.
Mast Base AB-15/GR (item 6, fig. 16), in mast base well on top of turret.	Install mast base in mast base well as directed in <i>a</i> above.
Terminal Box TM-217 (item 29, fig. 16), on Radio Receiver and Transmitter BC-1000.	Install terminal box as directed in <i>a</i> above.
Cord CG-102/TRC-7 (item 30, fig. 16).	Secure Plug PL-259 (on one end of Cord CG-102/TRC-7) to Adapter M-359 on Mast Base AB-15/GR. Connect other end of cord to Adapter M-359 on Terminal Box TM-217. Route and secure cord as shown in figure 16.
Mast Sections MS-117 and MS-118 (items 7 and 8, fig. 16), on Mast Base AB-15/GR.	Screw mast sections together and screw assembled antenna into mast base. Tape joints to prevent loss of mast sec-

<i>Part and location</i>	<i>Method and materials</i>
Alternate antenna systems.	<p>tions. When mast sections are not in use, carry them in Roll BG-56-() supplied with Radio Set SCR-508-() or SCR-528-().</p> <p>See figure 26. View A shows standard antenna for Radio Set AN/VRC-3. When all components of standard antenna system are not available, use system shown in View B or View C, employing Wire W-128 and three mast sections. When these substitute systems are used, relocate mast base on left side of turret, forward, as shown in figure 16, Plan View, Turret. If a 2 1/8-inch hole is provided in the forward location, install substitute mast base in it. If hole is not provided, modify Mast Base Bracket MP-60 as shown in figure 16, Detail B. Drill an 1 1/32-inch hole through cover over hole provided in turret roof at left, originally provided for British high frequency mast base. Weld Mast Base Bracket MP-60 to turret roof, over hole (fig. 16). Mount Mast Base AB-15/GR, MP-48, or MP-48-A on Mast Base Bracket MP-60. Cut a 17-inch length of Wire W-128 if Mast Base AB-15/GR is used, a 37-inch length if Mast Base MP-48 is used, or a 33-inch length if Mast</p>

<i>Part and location</i>	<i>Method and materials</i>						
	<p>Base MP-48-A is used. Strip back 1/2 inch of insulation from each end. Solder a terminal (item 20, fig. 16) to one end. Route Wire W-128 as shown in figure 16. Secure the terminal to antenna socket of Radio Receiver and Transmitter BC-1000 with the 3/8-24 by 1/2-inch cap screw and 3/8-inch I. E. T. lockwasher supplied.</p>						
<p>c. TANK, MEDIUM, M4 OR M4A3, 105-MM HOWITZER. Install components of Radio Set AN/VRC-3 in Tank, Medium, M4 or M4A3, 105-mm Howitzer (fig. 20) as directed below. Before installing components, weld a bracket (fig. 13) to wall of turret, right side, 26 inches rearward from commander's Interphone Control Box BC-606-(). See figure 20, View B-B. Weld another bracket (fig. 13) to wall of turret, left side, as shown in figure 20, View A-A. Remove smoke mortar, armored smoke mortar ammunition ready box, and canteen bracket below loader's Interphone Control Box BC-606-(). Install components as follows:</p>							
<table border="0"> <thead> <tr> <th style="text-align: left;"><i>Part and location</i></th> <th style="text-align: left;"><i>Method and materials</i></th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;">Brackets (fig. 21) (item 13, fig. 20), on ring guard.</td> <td style="vertical-align: top;">See figure 20, Detail D and Plan View, Turret. Start from grenade box at rear of turret below radio shelf. Count the screws securing ring guard in a clockwise direction. Remove eighth and ninth screws to secure bracket (fig. 21) as shown in figure 20, Detail D. To insure good contact, clean surfaces around screw holes on ring guard and bracket.</td> </tr> <tr> <td style="vertical-align: top;">Mounting FT-317-A, -B, or -C (item 4, fig. 20), on bracket (fig. 21).</td> <td style="vertical-align: top;">Fasten mounting to bracket with four 3/8-24 by 3/4-inch screws, nuts, and shakeproof washers</td> </tr> </tbody> </table>	<i>Part and location</i>	<i>Method and materials</i>	Brackets (fig. 21) (item 13, fig. 20), on ring guard.	See figure 20, Detail D and Plan View, Turret. Start from grenade box at rear of turret below radio shelf. Count the screws securing ring guard in a clockwise direction. Remove eighth and ninth screws to secure bracket (fig. 21) as shown in figure 20, Detail D. To insure good contact, clean surfaces around screw holes on ring guard and bracket.	Mounting FT-317-A, -B, or -C (item 4, fig. 20), on bracket (fig. 21).	Fasten mounting to bracket with four 3/8-24 by 3/4-inch screws, nuts, and shakeproof washers	
<i>Part and location</i>	<i>Method and materials</i>						
Brackets (fig. 21) (item 13, fig. 20), on ring guard.	See figure 20, Detail D and Plan View, Turret. Start from grenade box at rear of turret below radio shelf. Count the screws securing ring guard in a clockwise direction. Remove eighth and ninth screws to secure bracket (fig. 21) as shown in figure 20, Detail D. To insure good contact, clean surfaces around screw holes on ring guard and bracket.						
Mounting FT-317-A, -B, or -C (item 4, fig. 20), on bracket (fig. 21).	Fasten mounting to bracket with four 3/8-24 by 3/4-inch screws, nuts, and shakeproof washers						

<i>Part and location</i>	<i>Method and materials</i>	<i>Part and location</i>	<i>Method and materials</i>
Wire W-128 (item 12, fig. 20).	as shown in figure 20, Detail D. Cut an 18-inch length of Wire W-128 and solder terminal (item 21, fig. 20) to one end and Terminal TM-91 (both obtained from hardware bag) to other end. Secure terminal (item 21, fig. 20) with one of the 3/8-inch screws securing upper part of Mounting FT-317-A, -B, or -C to vehicle.	Mast base bracket (item 15, fig. 20), on British mast base bracket, right rear of turret bulge.	and spacers provided for securing interphone system cordage clamps. Install mast base bracket as directed in <i>a</i> above. Remove mast base installed for Radio Set SCR-508-() or SCR-528-() from mast base well on left side of turret bulge and install mast base on mast base bracket (item 15, fig. 20), as shown in figure 20. When Mast Base MP-48 or MP-48-A is used with Radio Set SCR-508-() or SCR-528-(), remove original lead-in and substitute a 45-inch length of Wire W-128. If Mast Base AB-15/GR is used with Radio Set SCR-508-() or SCR-528-(), use a 35-inch length of Wire W-128. Route lead-in from mast base to TR binding post on Mounting FT-237-() as shown in figure 20. Place a 6-inch length of rubber tubing over lead-in to seal hole in turret provided for entrance of lead-in. If tubing is not available, use rubber tape.
Vibrator Power Supply PP-114/VRC-3 and Radio Receiver and Transmitter BC-1000 (items 2 and 1, fig. 20), on Mounting FT-317-A, -B, or -C.	Install vibrator power supply and receiver-transmitter as directed in <i>a</i> above.		
Battery BA-70 and Case CS-128 (substitute items for Vibrator Power Supply PP-114/VRC-3).	Install battery and case as directed in <i>a</i> above.		
Cordage CO-213 (item 10, fig. 20).	Cut a 64-inch length of Cordage CO-213. Prepare cordage as directed in <i>a</i> above.		
Switchboxes BC-658-A, -B, or -C and Transformer C-410 (items 9 and 5, fig. 20).	Install switchboxes and transformer as directed in <i>a</i> above. If Switchboxes BC-658-A or -B are used, perform modification and secure Cordage CO-213 in switchboxes with No. 4 clamp provided. See figure 20, Detail A. Route Cordage CO-213 as shown in figure 20, and secure with No. 4 clamps. Use same No. 8-32 by 3/8-inch screws	Mast Base AB-15/GR (item 6, fig. 20), in mast base well on top of turret, left rear.	Install mast base as directed in <i>a</i> above.
		Terminal Box TM-217 (item 31, fig. 20), on Radio Receiver and Transmitter BC-1000.	Install terminal box as directed in <i>a</i> above.

<i>Part and location</i>	<i>Method and materials</i>	<i>Part and location</i>	<i>Method and materials</i>
Cord CG-102/TRC-7 (item 32, fig. 20).	Install cord as directed in <i>a</i> above.		tions are removed, stow them in Roll BG-56-() supplied with Radio Set SCR-508-() or SCR-528-().
Mast Sections MS-117 and MS-118 (items 7 and 8, fig. 20), on Mast Base AB-15/GR.	Screw mast sections together and screw assembled antenna into mast base. Tape joints to prevent loss of mast sections. When mast sec-	Alternate antenna systems.	Same as alternate antenna systems described in <i>a</i> above.

SECTION VI
RADIO SET SCR-608-B

16. Required Parts

Items necessary for the installation of Radio Set SCR-608-B and associated interphone equipment in Tank, Medium, M4A3 or M4A3E2, 75-mm gun, wet stowage; in Tank, Medium, M4A1, M4A2, or M4A3, 76-mm gun, wet stowage; or in Tank, Medium, M4 or M4A3, 105-mm howitzer, are listed below:

Quantity	Stock No.	Item
1	2A283	Antenna A-83, phantom, and bracket.
1	2Z1140	Box BX-40.
1	6F796	Chest CH-96.
1 ¹	4B417-4	Chest Set TD-4.
1	6Z3147	Connector No. 61007 and Bond-nut BL-50.
32 ft.	3E2213	Cord CO-213.
1	2Z3396	Cover BG-96.
2	3H1636	Dynamotor DM-36-().
1	3H1637	Dynamotor DM-37-().
1 ¹	2B800-16	Headset H-16/U.
5	2C1738	Interphone Control Box BC-606-().
2 ¹	2A2081-15	Mast Base AB-15/GR.
2 ²	2A2417	Mast Section MS-117.
2 ²	2A2418	Mast Section MS-118.
1 ¹	2B1645	Microphone T-45.
1	2Z6721-237	Mounting FT-237-().
2	2C4460-683	Radio Receiver BC-683-B.
1	2C6530-684	Radio Transmitter BC-684-B.
1	2Z8056	Roll BG-56-().
2	6D13102	TM 11-620.
6 ft.	1B128	Wire W-128.

¹ When Headset H-16/U, Microphone T-45, and Chest Set TD-4 are not available, use Headset HS-30-(), Microphone T-17, Cords CD-307-A, CD-318-A, and CD-604.

² When Mast Base AB-15/GR and Mast Sections MS-117 and MS-118 are not available, use Mast Base MP-48 or MP-48-A, Mast Sections MS-51, MS-52, MS-53, and Clamps MC-423 and MC-424.

17. Assembly and Installation

When this installation is made in a vehicle not already equipped with Radio Set SCR-508-() or SCR-528-(), locate and install component parts of Radio Set SCR-608-B in the manner and sequence described for Radio Set SCR-508-() or SCR-528-() installed in the same vehicle. (See sec. IV and figs. 3, 6, and 11.) When this installation is made in a vehicle equipped with Radio Set SCR-508-() or SCR-528-(), leave Mounting FT-237-() and interphone system in place. The following components replace the

similar components of Radio Set SCR-508-() or SCR-528-():

Part and location
Antenna A-83, phantom, and bracket (replacing Antenna A-62), on Mounting FT-237-().

Method and materials
Remove the No. 10-32 by 3/8-inch round-head machine screw from lower left front corner of Mounting FT-237-(). Secure bracket to front of mounting with this screw, using original tapped hole. When using Antenna A-83 to align Radio Transmitter BC-684-B, remove antenna lead-in from TR binding post on Mounting FT-237-() and connect the flexible lead from Antenna A-83 to TR binding post. When phantom antenna is not in use, make sure that the flexible lead does not come in contact with TR binding post.

Dynamotor DM-37-() and Radio Transmitter BC-684-B (latter replaces Radio Transmitter BC-604-()), on Mounting FT-237-().

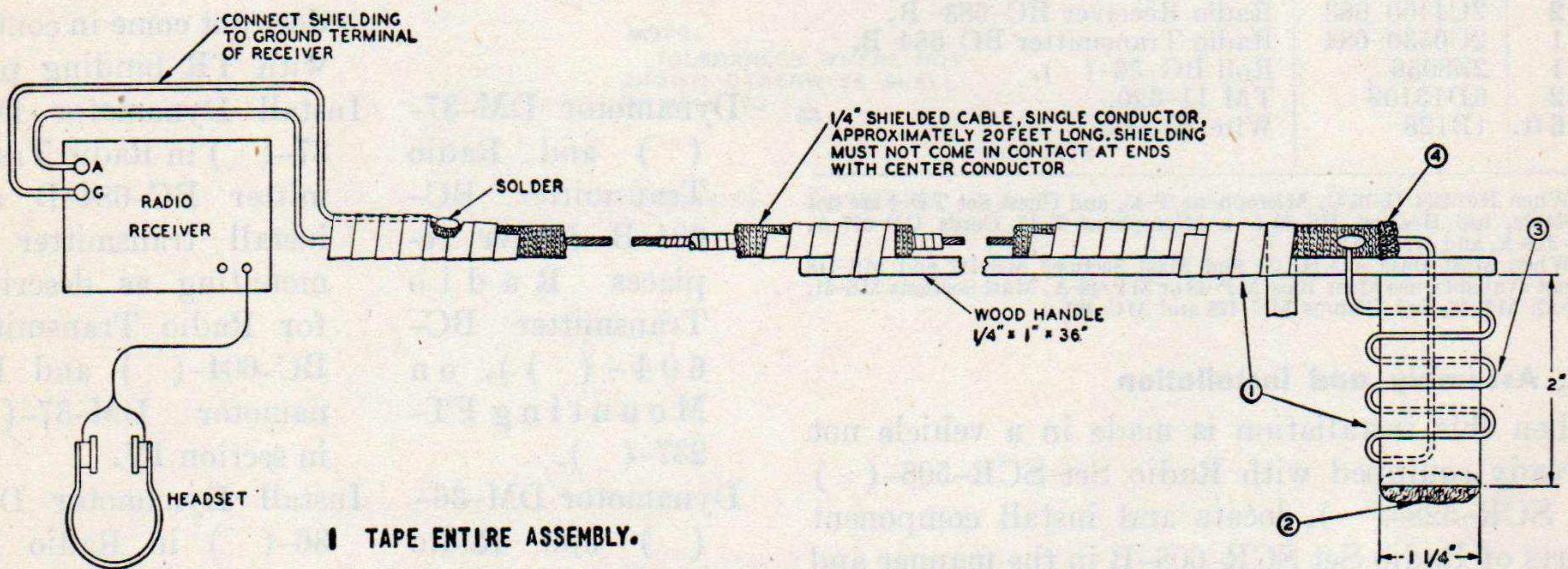
Install Dynamotor DM-37-() in Radio Transmitter BC-684-B and install transmitter on mounting as described for Radio Transmitter BC-604-() and Dynamotor DM-37-() in section IV.

Dynamotor DM-36-() and Radio Receiver BC-683-B (latter replaces Radio Receiver BC-603-()), on Mounting FT-237-().

Install Dynamotor DM-36-() in Radio Receiver BC-683-B and install receiver on mounting as described for Radio Receiver BC-603-() and Dynamotor DM-36-() in section IV.

Part and location
Chest CH-96 (re-
placing Chest CH-
264) and Box BX-
40.

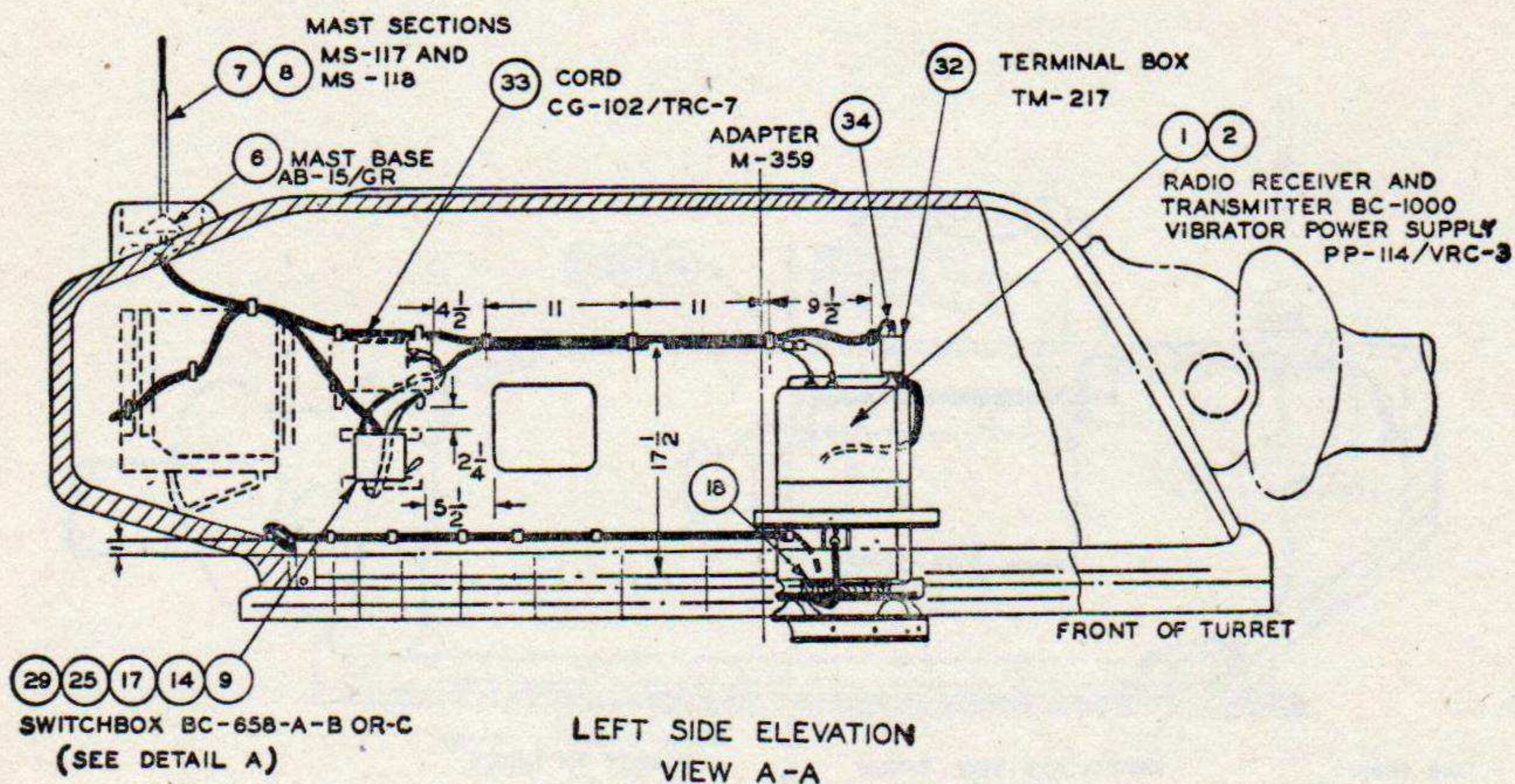
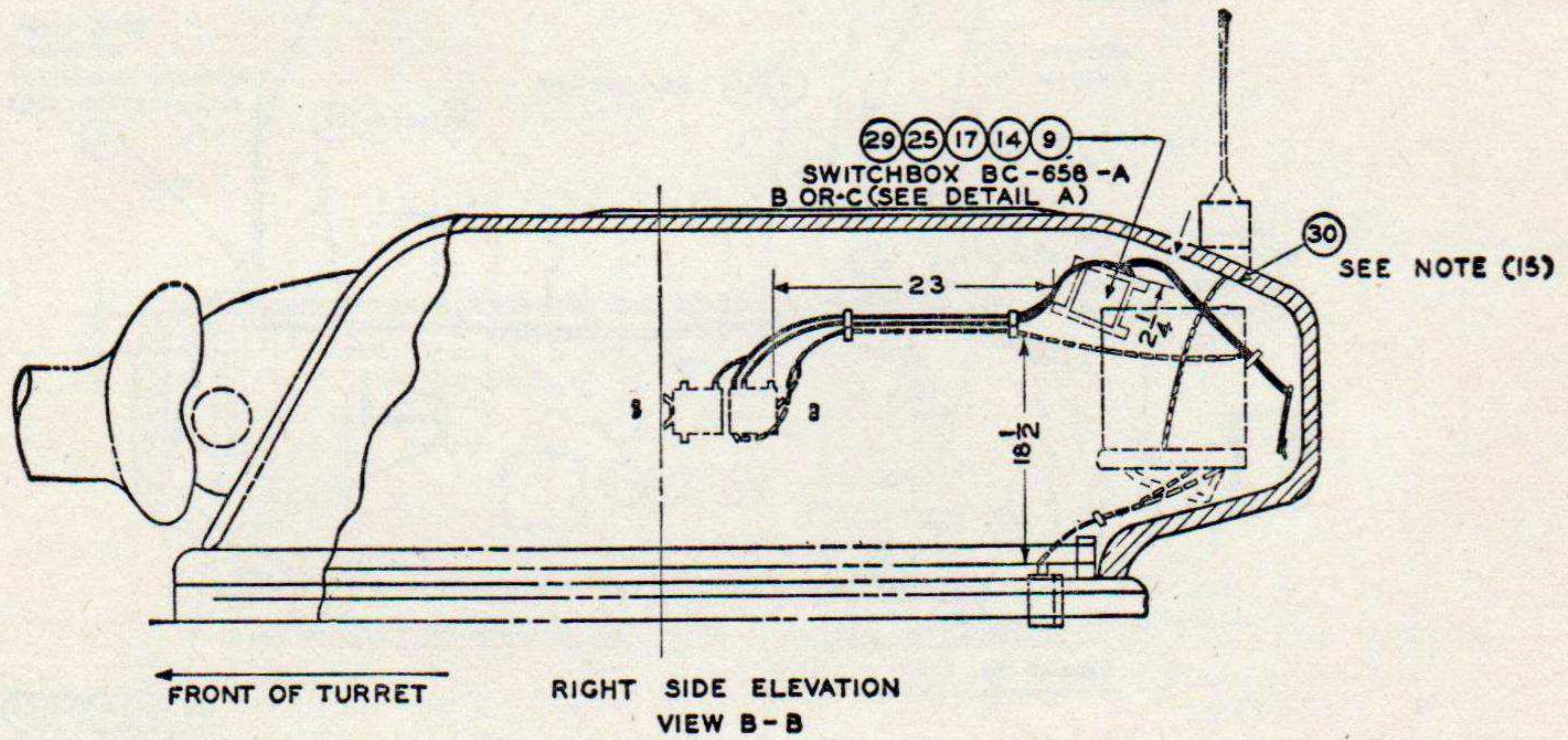
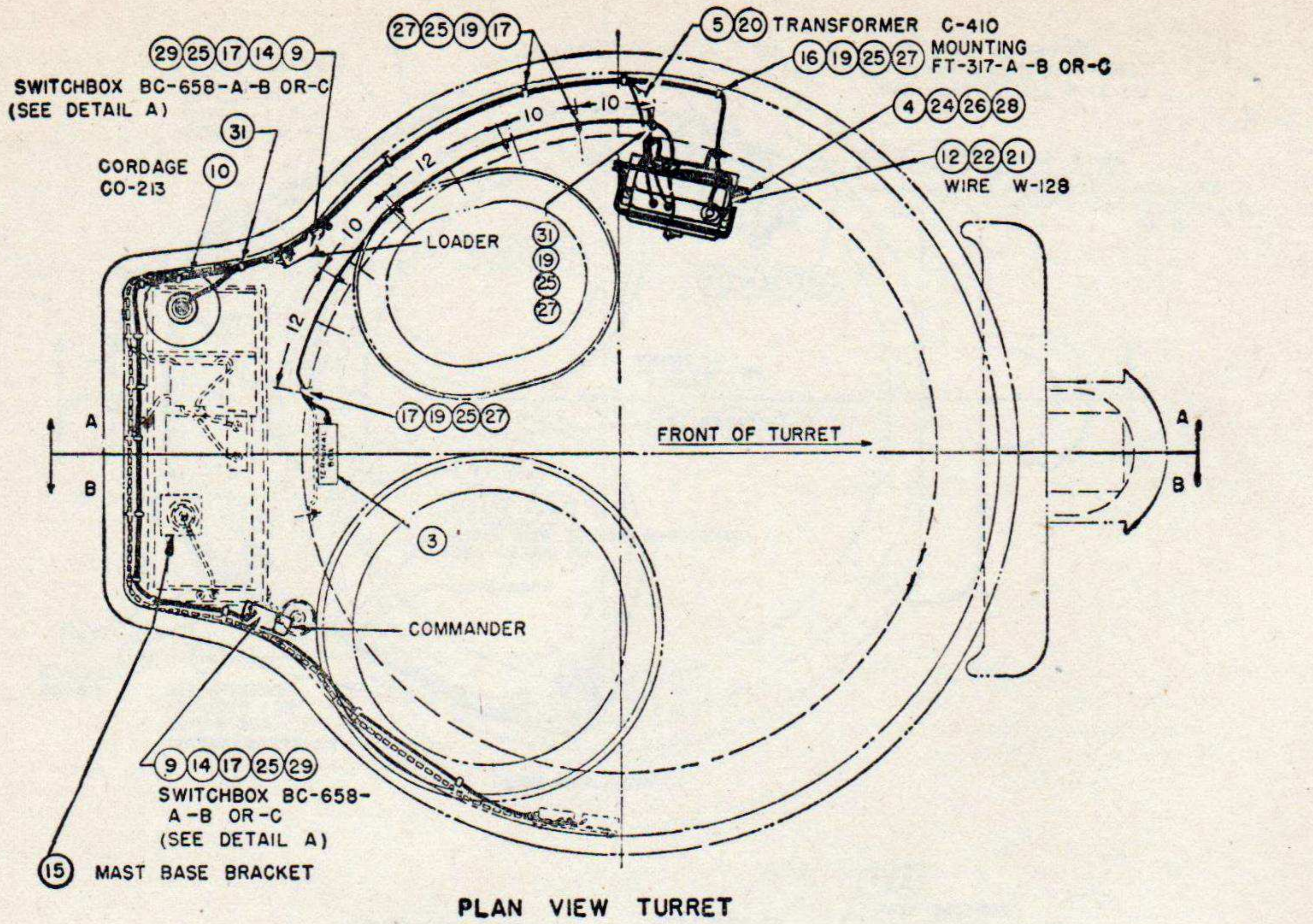
Method and materials
Stow headsets, tubes, and
spare parts for Radio
Set SCR-608-B in
Chest CH-96. Stow 40
crystal units in Box
BX-40. Stow Chest
CH-96 and Box BX-40
in any convenient place
in vehicle.



- 1 TAPE ENTIRE ASSEMBLY.
- 2 STUFF END OF INSULATED TUBING WITH FELT AND TAPE OVER ENTIRE ASSEMBLY
- 3 WIND 3 TURNS NO. 16 OR NO. 18 WIRE ON TUBE OF INSULATING MATERIAL. SOLDER ONE END TO SHIELD ON CABLE, THE OTHER END ON INSULATED WIRE INSIDE CABLE.
- 4 ROLL BACK END OF SHIELDING, AND SECURE WITH SOLDER.

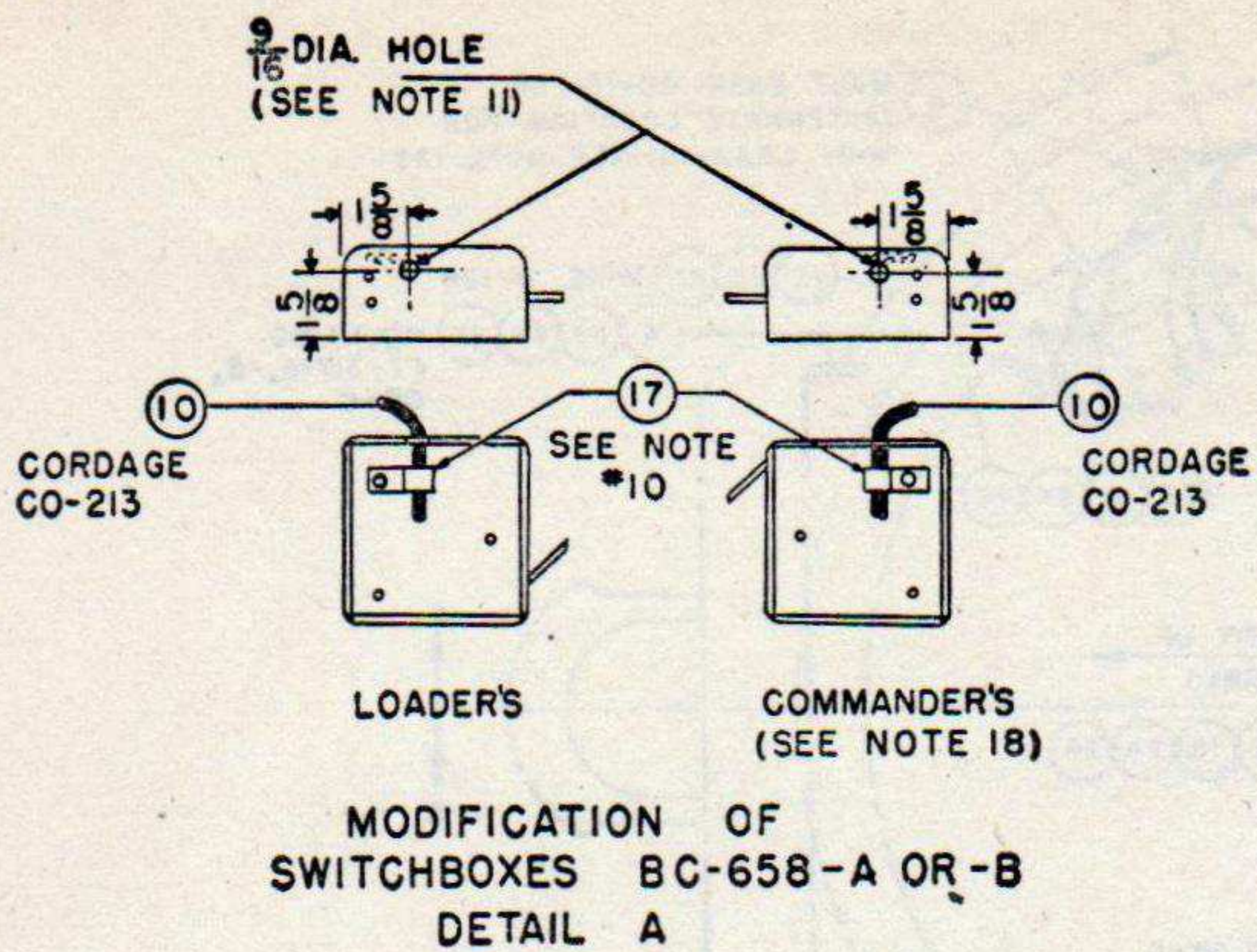
Figure 1. Probe antenna.

TL-7457A



FL 10896-39

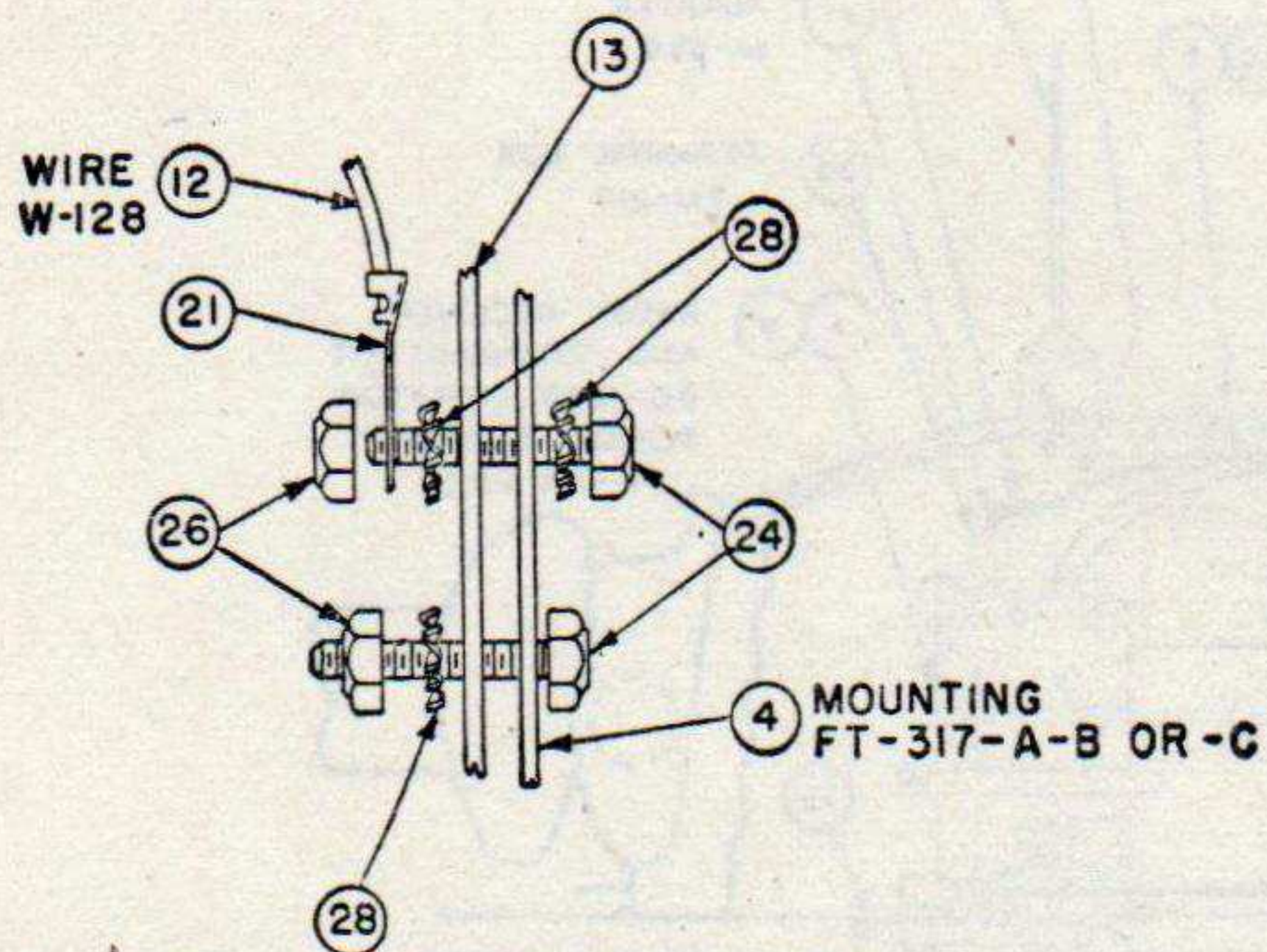
Figure 15. Installation of Radio Set AN/VRC-3 in Tank.



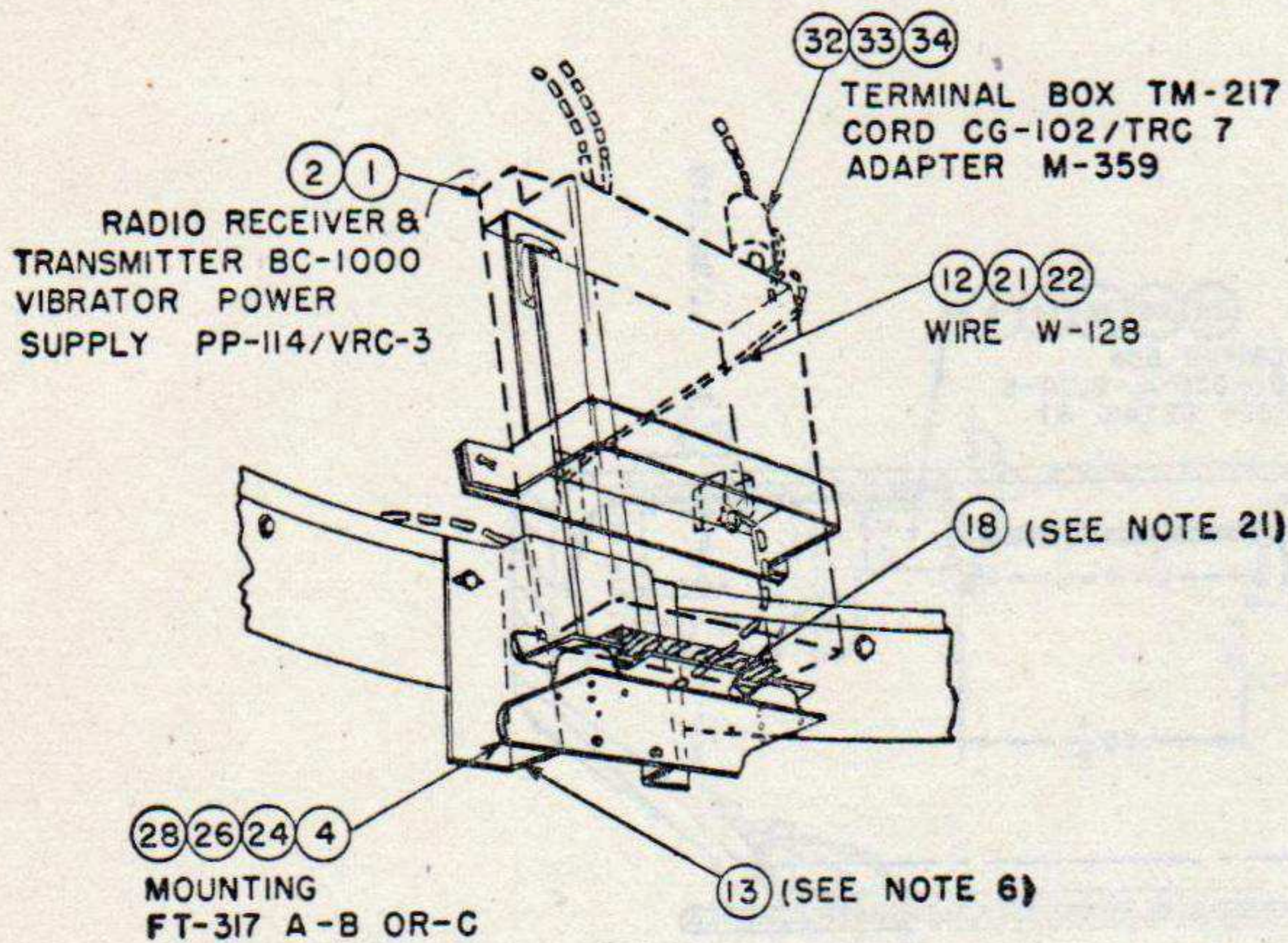
MODIFICATION OF SWITCHBOXES BC-658-A OR -B DETAIL A



MODIFICATION OF MOUNTING FT-317-A-B OR -C DETAIL E



METHOD OF CONNECTING 13 TO MOUNTING FT-317-A-B OR -C DETAIL C



ENLARGED VIEW OF RADIO MOUNTING DETAIL D

NOTES:

1. FOR ADDITIONAL COMPONENTS AND SPARE PARTS SEE COMPONENT PARTS LIST.
2. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.
3. SIX (25) ARE FURNISHED WITH (9).
4. WELD (14) AND (19) SECURELY TO TURRET, IF NOT ALREADY INSTALLED.
5. IF (2) IS NOT AVAILABLE, USE CASE CS-128 AND BATTERY BA-70. REMOVE BELT CARRIER BRACKETS FROM CASE CS-128.
6. MOUNT (13) WITH NINTH AND TENTH RING GEAR GUARD BOLTS (COUNTING CLOCKWISE FROM TERMINAL BOX). CLEAN PAINT FROM (13) WHERE IT COMES IN CONTACT WITH RING GEAR GUARD BOLTS.
7. CUT RECEIVER PATCH CORD OF LOADER'S SWITCHBOX BC-658-A, -B, OR -C, 14 IN. FROM END OF PLUG PL-55. TIN AND SOLDER (20) TO ENDS. CONNECT (5) AS SHOWN IN FIGURE 13. SHORTEN ALL PATCH CORDS ON (9) TO PROPER LENGTH.
8. TIN BOTH ENDS OF (11) AND SECURELY SOLDER (21) TO ONE END.
9. TIN ENDS OF (12) AND SECURELY SOLDER (21) AND (22) TO ENDS.
10. SECURE (17) IN (9) WITH (25) AS SHOWN IN DETAIL A.
11. DRILL 9/16 HOLE IN EACH SWITCHBOX BC-658-A OR -B TO PASS (10) AS SHOWN IN DETAIL A.
12. IF (32) AND (33) ARE NOT AVAILABLE, SUBSTITUTE (11) (21) (23) AND (28).
13. IF (6) IS NOT AVAILABLE, USE MAST BASE MP-48 OR MP-48-A, MAST SECTIONS MS-52 AND MS-53, CLAMP MC-424, COVER BG-108, AND STOP-GAP WIRE LEAD-IN (SEE NOTE 12) IN PLACE OF STANDARD COAXIAL LEAD-IN SHOWN.
14. SECURE (17) USING TAPPED SPACERS ALREADY IN VEHICLE FOR RADIO SET SCR-508-() OR SCR-528-() ON (15).
15. USE (30) OR WATERPROOF WITH RUBBER TAPE.
16. REMOVE AND RELOCATE SMOKE MORTAR, IF PERMANENTLY INSTALLED, AND TWO CANTEN BRACKETS UNDER INTERPHONE CONTROL BOX BC-606-().
17. REMOVE COVER PLATE FROM ANTENNA OUTLET (INTENDED FOR BRITISH NO. 9 ANTENNA) ON RIGHT REAR OF TURRET. SECURE (15) OVER OUTLET WITH COVER PLATE SCREWS AND LOCKWASHERS. INSTALL MAST BASE FOR RADIO SET SCR-508-() OR SCR-528-() ON (15).
18. REMOVE UNUSED PATCH CORDS FROM COMMANDER'S SWITCHBOX BC-658-A, -B, OR -C.
19. COIL EXCESS LENGTH OF POWER CORD FOR (2) AND HOLD IN PLACE WITH (31).
20. (3) IS FURNISHED IN VEHICLE BY MANUFACTURER.
21. (18) IS NOT REQUIRED IF MOUNTING FT-317-C IS USED.

ITEM NO.	NAME OF ITEM	QUANTITY REQUIRED
1	RADIO RECEIVER AND TRANSMITTER BC-1000	1
2	VIBRATOR POWER SUPPLY PP-114/VRC-3 SEE NOTES 5 AND 19	1
3	TERMINAL BOX SEE NOTE 20	1
4	MOUNTING FT-317-A, -B, OR -C SEE DETAILS C, D, E, AND NOTE 21	1
5	TRANSFORMER C-410 SEE NOTE 7	1
6	MAST BASE AB-15/GR SEE NOTE 13	1
7	MAST SECTION MS-117	1
8	MAST SECTION MS-118	1
9	SWITCHBOX BC-658-A, -B, OR -C SEE NOTES 7, 10, AND 11	2
10	CORDAGE CO-213 78 IN. LONG SEE NOTE 11	1
11	WIRE W-128 64 IN. LONG	1
12	WIRE W-128 18 IN. LONG SEE NOTE 9	1
13	BRACKET PER FIG. 12 SEE NOTE 6	1
14	BRACKET PER FIG. 13 SEE NOTE 4	2
15	MAST BASE BRACKET SEE NOTE 17	1
16	CLAMP NO. 1 PER FIG. 19	1
17	CLAMP NO. 4 PER FIG. 19 SEE NOTES 10 AND 14	21
18	WOOD SPACER 4 X 10 X 1 SEE NOTE 21	1
19	SPACER SEE NOTE 4	10
20	TERMINAL TM-163 SEE NOTE 7	4
21	TERMINAL	2
22	TERMINAL TM-91	1
23	HEX HEAD CAP SCREW 3/8 - 24 X 1/2 LONG	1
24	HEX HEAD CAP SCREW 3/8 - 24 X 3/4 LONG	4
25	ROUNDHEAD MACH SCREW NO. 8 - 32 X 3/8 LONG SEE NOTES 3 AND 10	17
26	HEX NUT 3/8 - 24 STD.	2
27	LOCKWASHER NO. 8 STD.	10
28	LOCKWASHER I. E. T. FOR 3/8 SCREW	5
29	LOCKWASHER I. E. T. FOR NO. 8 SCREW	6
30	RUBBER TUBING (OR BUNA S) 3/8 I.D., 7/8 O.D. X 8 LONG SEE NOTE 15	1
31	CLAMP NO. 7 PER FIG. 19	2
32	TERMINAL BOX TM-217 SEE NOTE 12	1
33	CORD CG-102/TRC-7 7 FT. LONG SEE NOTE 12	1
34	ADAPTER M-359	1

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Medium, M4A3 or M4A3E2. 75-mm gun, wet stowage.

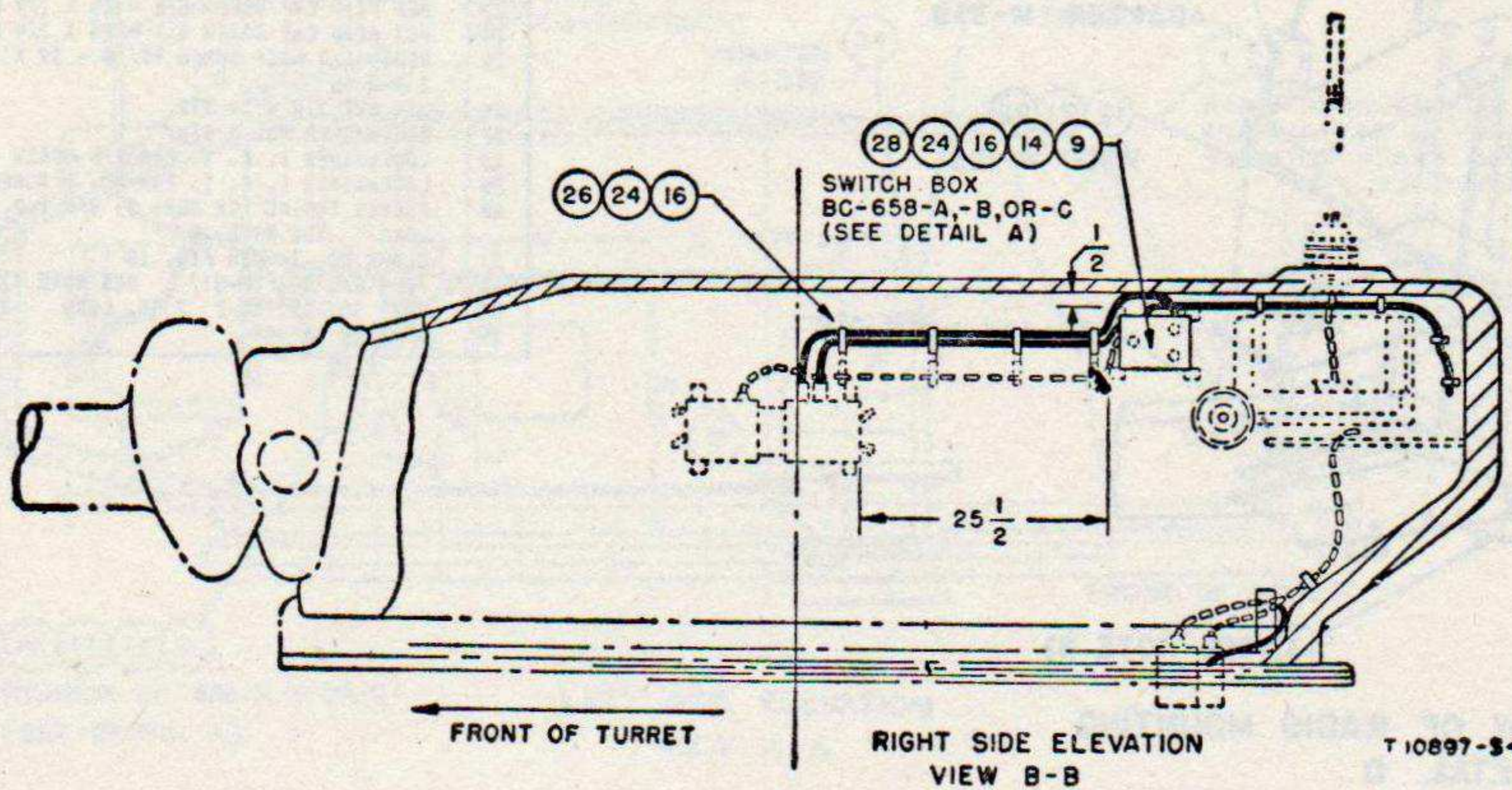
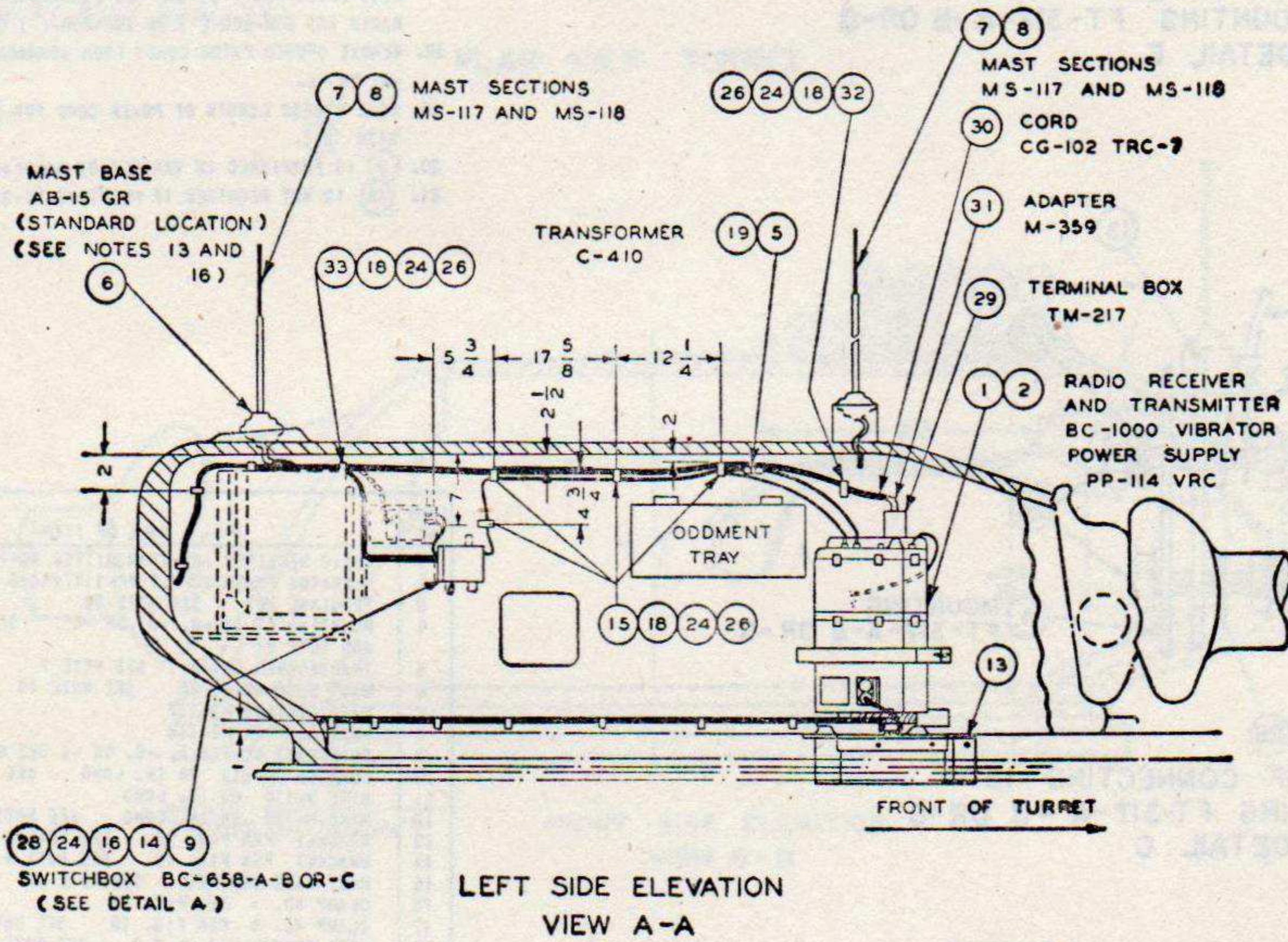
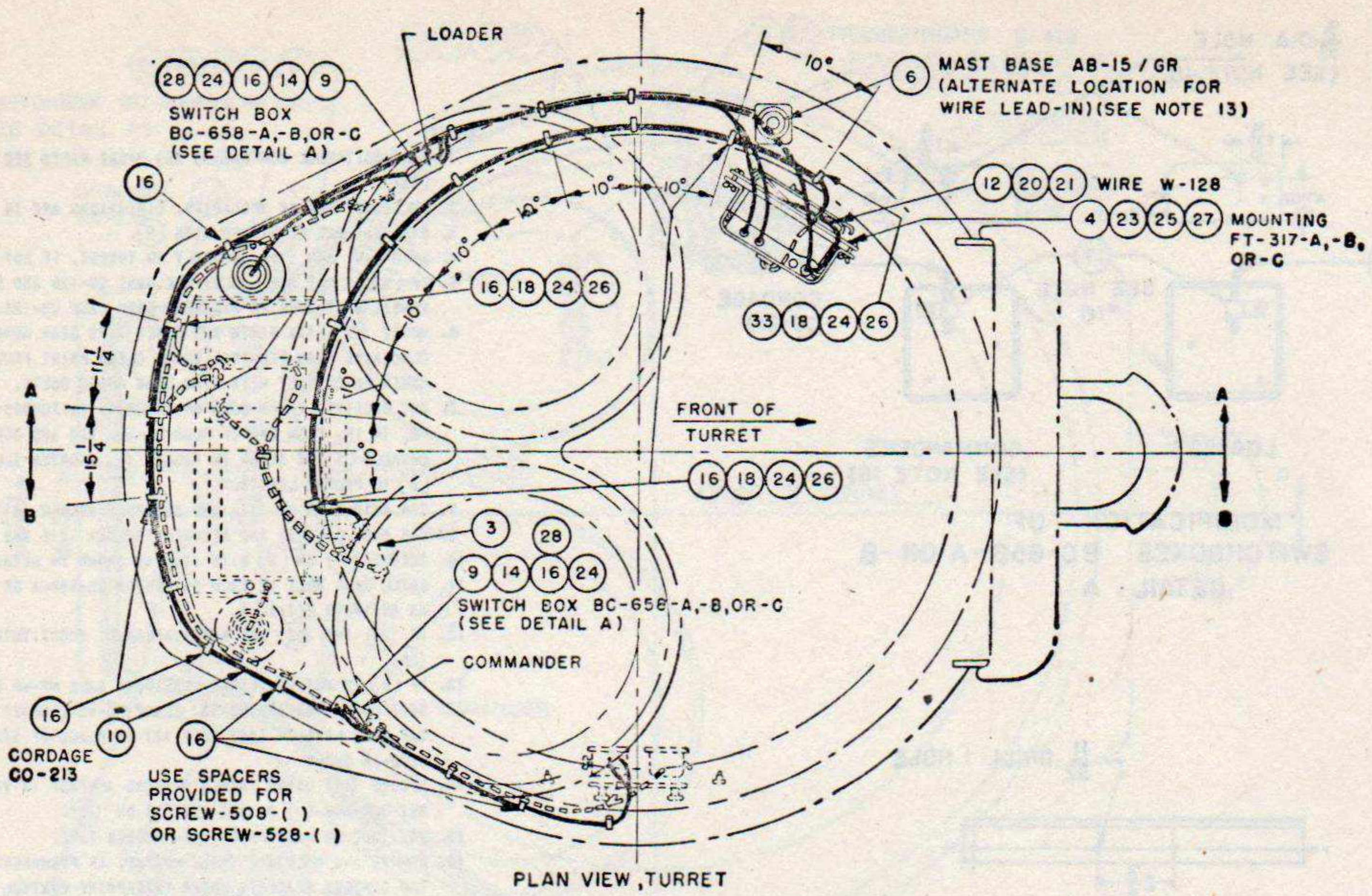
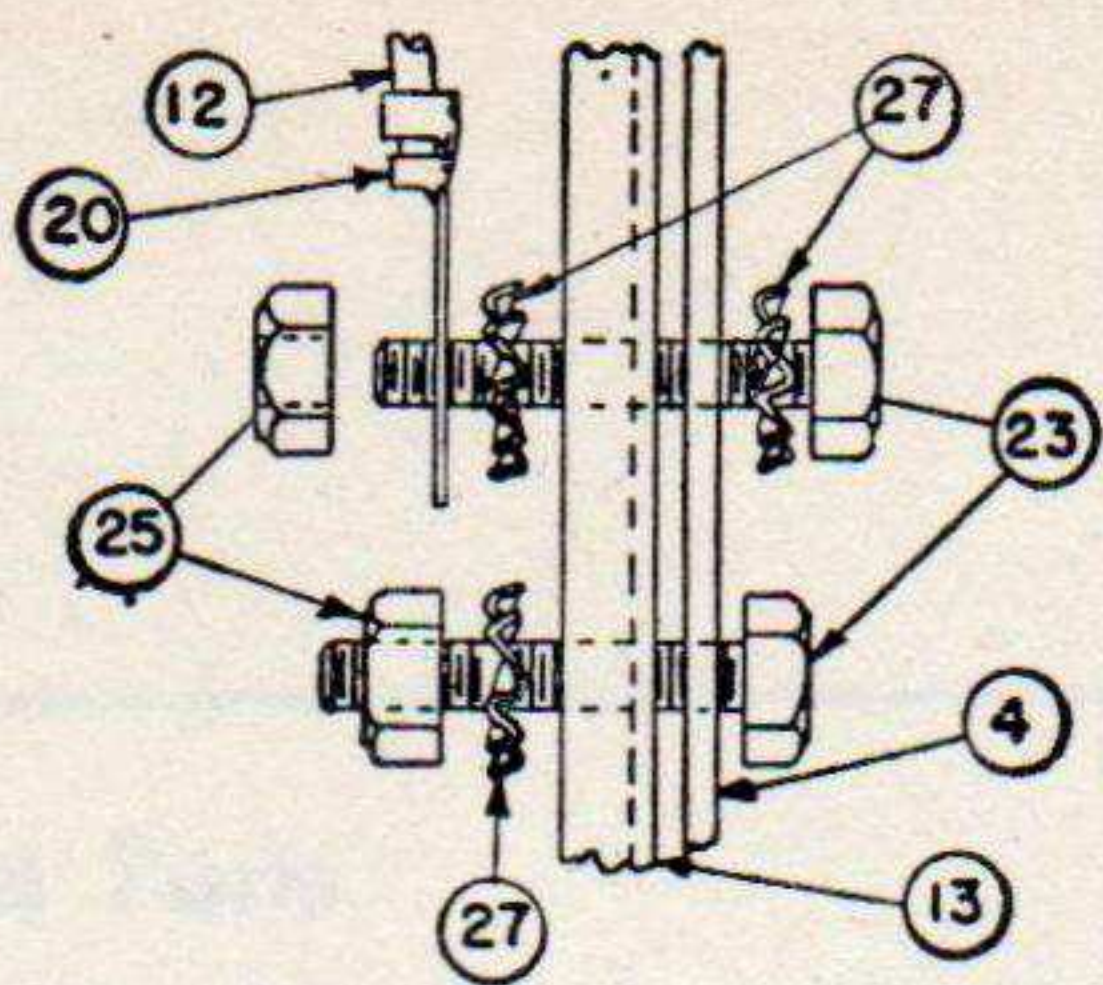
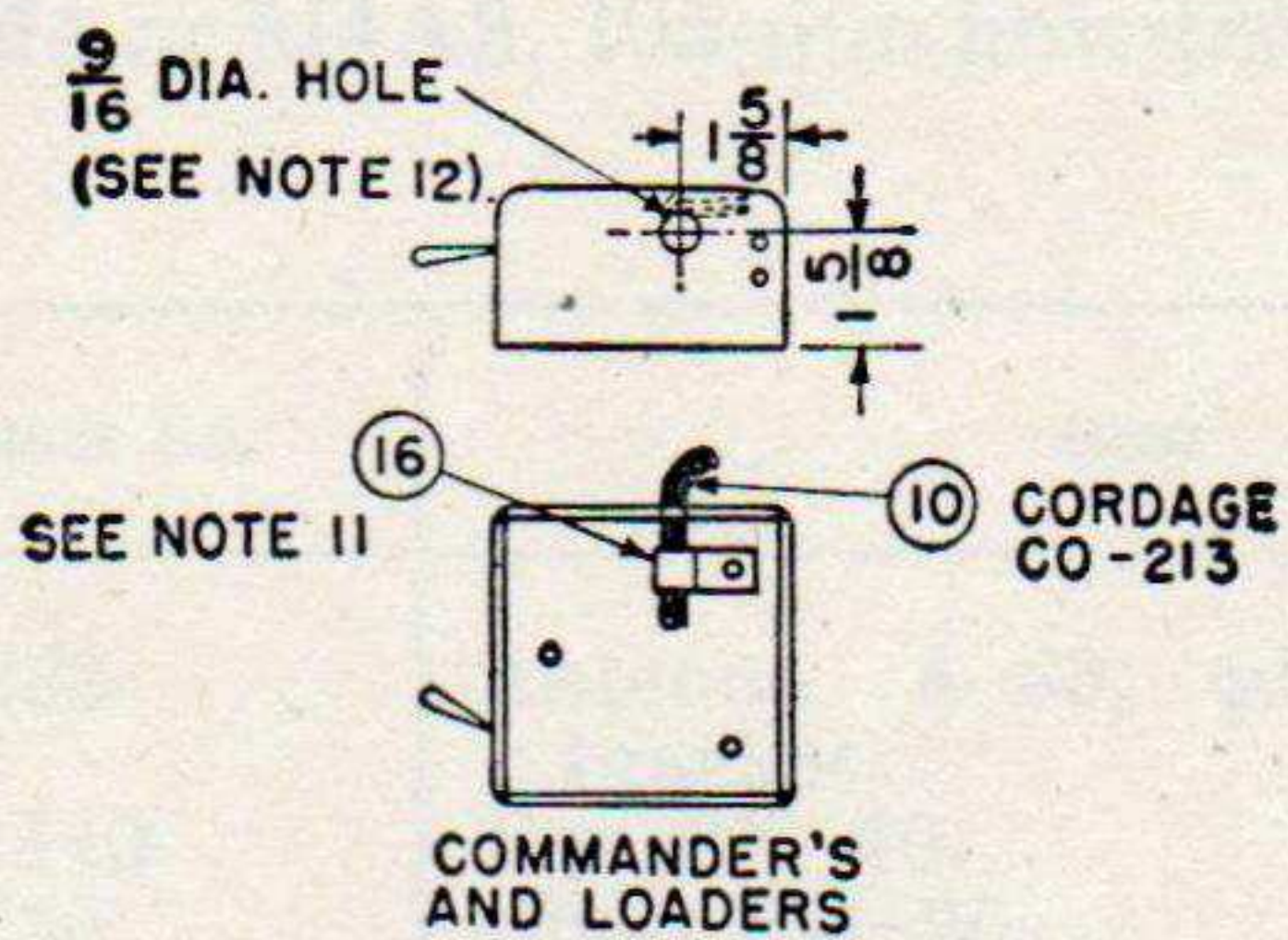


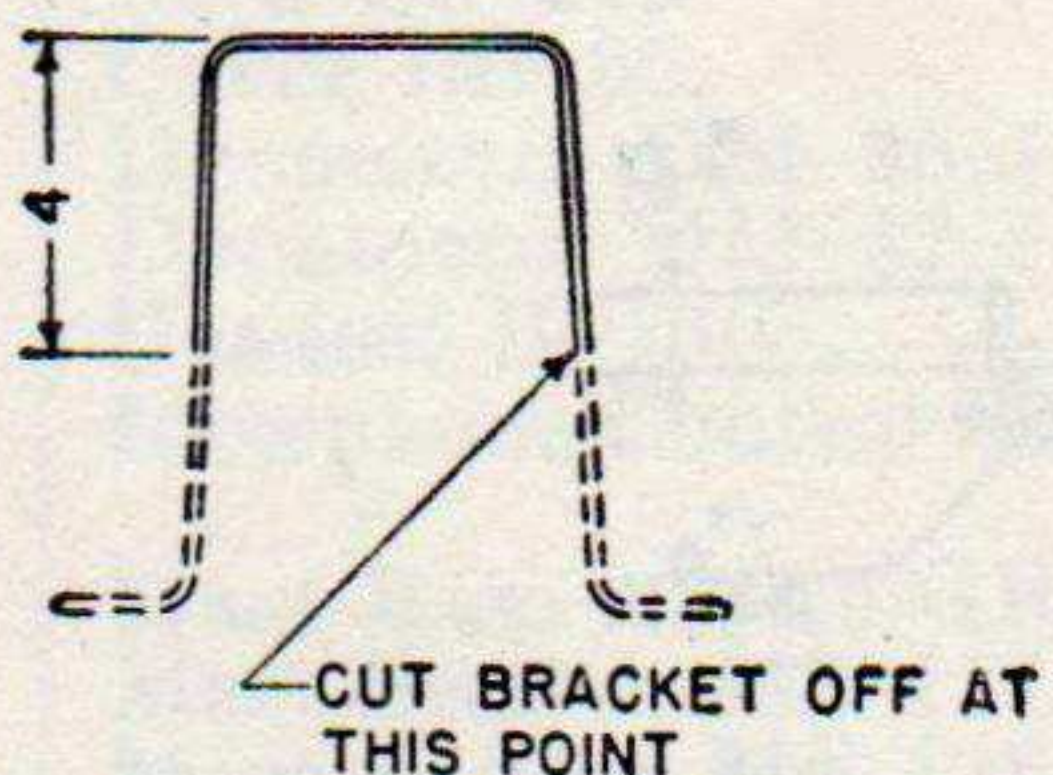
Figure 16. Installation of Radio Set AN/VRC-3 in Tank,



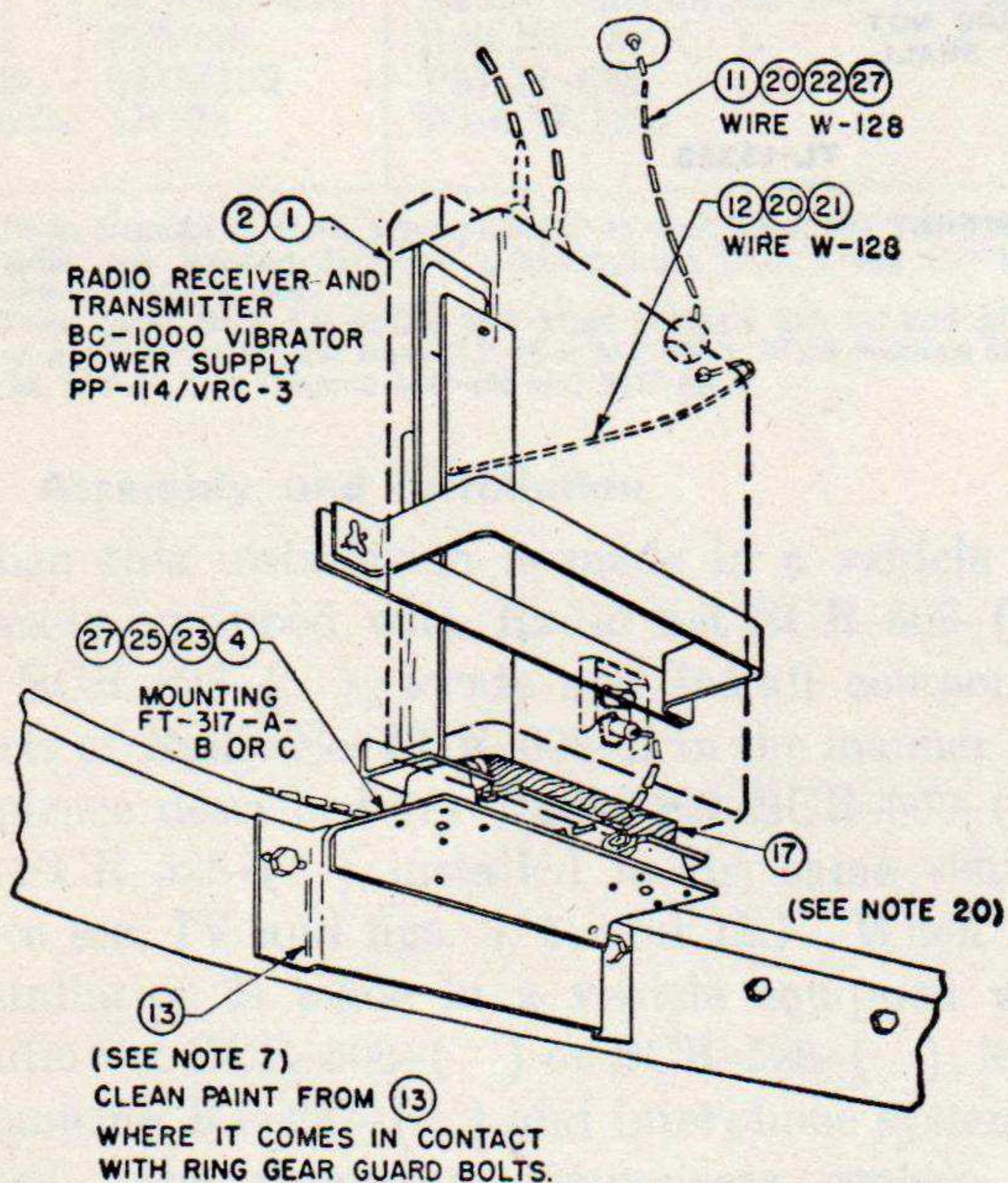
METHOD OF CONNECTING 13 TO 4
DETAIL D



MODIFICATION OF SWITCHBOX BC-658-A-OR-B
DETAIL A



MODIFICATION OF MAST BASE BRACKET MP-60
DETAIL B



ENLARGED VIEW OF RADIO MOUNTING
DETAIL C

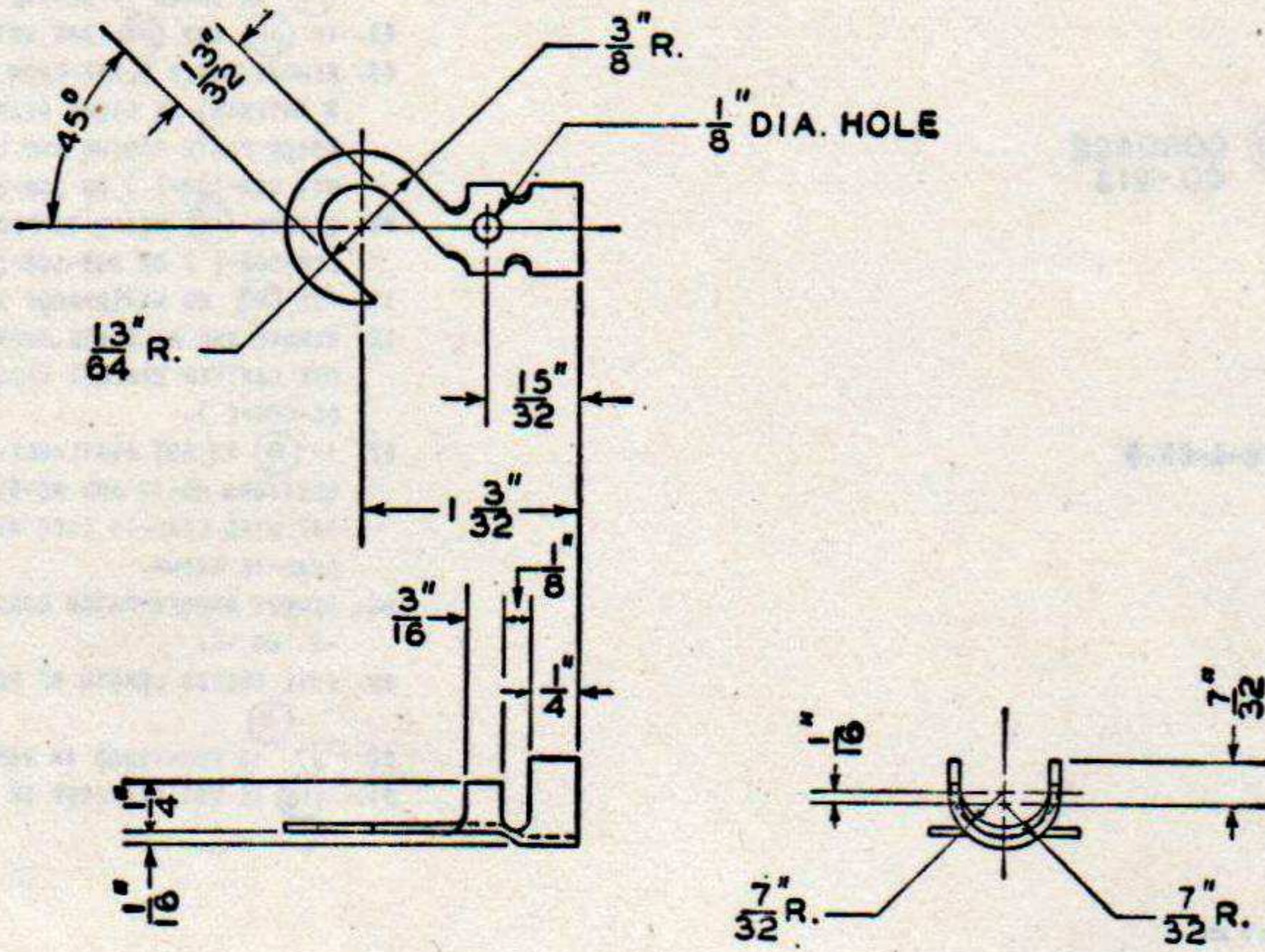
Medium, M4A1, M4A2, or M4A3, 76-mm gun, wet stowage.

NOTES:

1. FOR ADDITIONAL COMPONENTS AND SPARE PARTS, SEE COMPONENT PARTS LIST.
2. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.
3. SIX OF 25 ARE FURNISHED WITH 9.
4. WELD 14 AND 19 SECURELY TO TURRET, IF NOT ALREADY INSTALLED.
5. IF 2 IS NOT AVAILABLE, SUBSTITUTE CASE CS-128 AND BATTERY BA-70. REMOVE BELT CARRIER BRACKETS FROM CASE CS-128.
6. MOUNT 13 WITH EIGHTH AND NINTH RING GEAR GUARD BOLTS (COUNTING CLOCKWISE FROM TERMINAL BOX). CLEAN PAINT FROM 13 WHERE IT COMES IN CONTACT WITH RING GEAR GUARD BOLTS.
7. CUT RECEIVER PATCH CORDS OF LOADER'S SWITCHBOX BC-658-A, -B, OR -C, 14 INCHES FROM END OF PLUG PL-55. TIN AND SOLDER 20 TO ENDS. CONNECT 5 AS SHOWN IN FIGURE 23. SHORTEN ALL PATCH CORDS ON 9 TO PROPER LENGTH.
8. TIN BOTH ENDS OF 11 AND SECURELY SOLDER 21 TO ONE END.
9. TIN ENDS OF 12 AND SECURELY SOLDER 21 AND 22 TO ENDS.
10. SECURE 17 IN 9 WITH 25 AS SHOWN IN DETAIL A.
11. DRILL 9/16 HOLE IN EACH SWITCHBOX BC-658-A, -B, OR -C TO PASS 10 AS SHOWN IN DETAIL A.
12. IF 31 AND 32 ARE NOT AVAILABLE, USE 11 21 23 AND 26.
13. REMOVE COVER PLATE FROM ANTENNA OUTLET (INTENDED FOR BRITISH NO. 9 ANTENNA) ON RIGHT REAR OF TURRET. SECURE 15 OVER OUTLET WITH COVER PLATE SCREWS AND LOCKWASHERS. INSTALL MAST BASE FOR RADIO SET SCR-508-() OR SCR-528-() ON 15.
14. SECURE 17 USING TAPPED SPACER ALREADY IN VEHICLE FOR RADIO SET SCR-508-() OR SCR-528-().
15. USE 30 OR WATERPROOF WITH RUBBER TAPE.
16. REMOVE AND RELOCATE SMOKE MORTAR, IF PERMANENTLY INSTALLED, AND ONE CANTEEN BRACKET UNDER LOADER'S INTERPHONE CONTROL BOX BC-606-().
17. IF 6 IS NOT AVAILABLE, USE MAST BASE MP-48 OR MP-48-A, MAST SECTIONS MS-52 AND MS-53, CLAMP MC-424, COVER BG-108, AND STOP-GAP WIRE LEAD-IN (SEE NOTE 12) IN PLACE OF STANDARD COAXIAL LEAD-IN SHOWN.
18. REMOVE UNUSED PATCH CORD FROM COMMANDER'S SWITCHBOARD BC-658-A, -B, OR -C.
19. COIL EXCESS LENGTH OF POWER CORD FOR 2 AND HOLD IN PLACE WITH 3.
20. 4 IS FURNISHED IN VEHICLE BY THE MANUFACTURER.
21. 18 IS NOT REQUIRED IF MOUNTING FT-317-C IS USED.

ITEM NO.	NAME OF ITEM	QUAN. REQ.
1	RADIO RECEIVER AND TRANSMITTER BC-1000	1
2	VIBRATOR POWER SUPPLY PP-114/VRC-3 SEE NOTES 5 AND 18	1
3	TERMINAL BOX SEE NOTE 19	1
4	MOUNTING FT-317-A, -B, OR -C SEE DETAILS C AND D AND NOTE 20	1
5	TRANSFORMER C-410 SEE NOTE 9	1
6	MAST BASE AB-15/GR SEE NOTES 13, 15, AND 16	1
7	MAST SECTION MS-117	1
8	MAST SECTION MS-118	1
9	SWITCHBOX BC-658-A, -B, OR -C SEE NOTES 3, 9, 11, AND 12	2
10	CORDAGE CO-213 9 FT. LONG SEE NOTE 12	1
11	WIRE W-128 18 IN. LONG SEE NOTES 6 AND 13	1
12	WIRE W-128 18 IN. LONG SEE NOTE 7	1
13	BRACKET PER FIG. 18 SEE NOTE 8	2
14	BRACKET PER FIG. 13 SEE NOTE 4	1
15	MAST BASE BRACKET MP-60 SEE NOTE 13	25
16	CLAMP NO. 4 PER FIG. 19 SEE NOTES 10 AND 11	1
17	WOOD SPACER 4 X 10 X 1 SEE NOTE 20	16
18	SPACER SEE NOTE 4	4
19	TERMINAL TM-163 SEE NOTE 9	4
20	TERMINAL SEE NOTES 6 AND 7	2
21	TERMINAL TM-91 SEE NOTE 7	1
22	HEX HEAD CAP SCREW 3/8 - 24 X 1/2 LONG	4
23	HEX HEAD CAP SCREW 3/8 - 24 X 3/4 LONG	1
24	ROUNDHEAD MACH SCREW NO. 8 - 32 X 3/8 LONG SEE NOTES 3 AND 11	23
25	HEX NUT 3/8 - 24 STD.	2
26	LOCKWASHER NO. 8 STD.	17
27	LOCKWASHER I.E.T. FOR 3/8 SCREW	6
28	LOCKWASHER I.E.T. FOR NO. 8 SCREW	6
29	TERMINAL BOX TM-217 SEE NOTE 13	1
30	CORD CG-102/TRC-7 7 FT. LONG SEE NOTE 18	2
31	ADAPTER M-359	1
32	CLAMP NO. 1 PER FIG. 19	1
33	CLAMP NO. 7 PER FIG. 19 SEE NOTE 18	2

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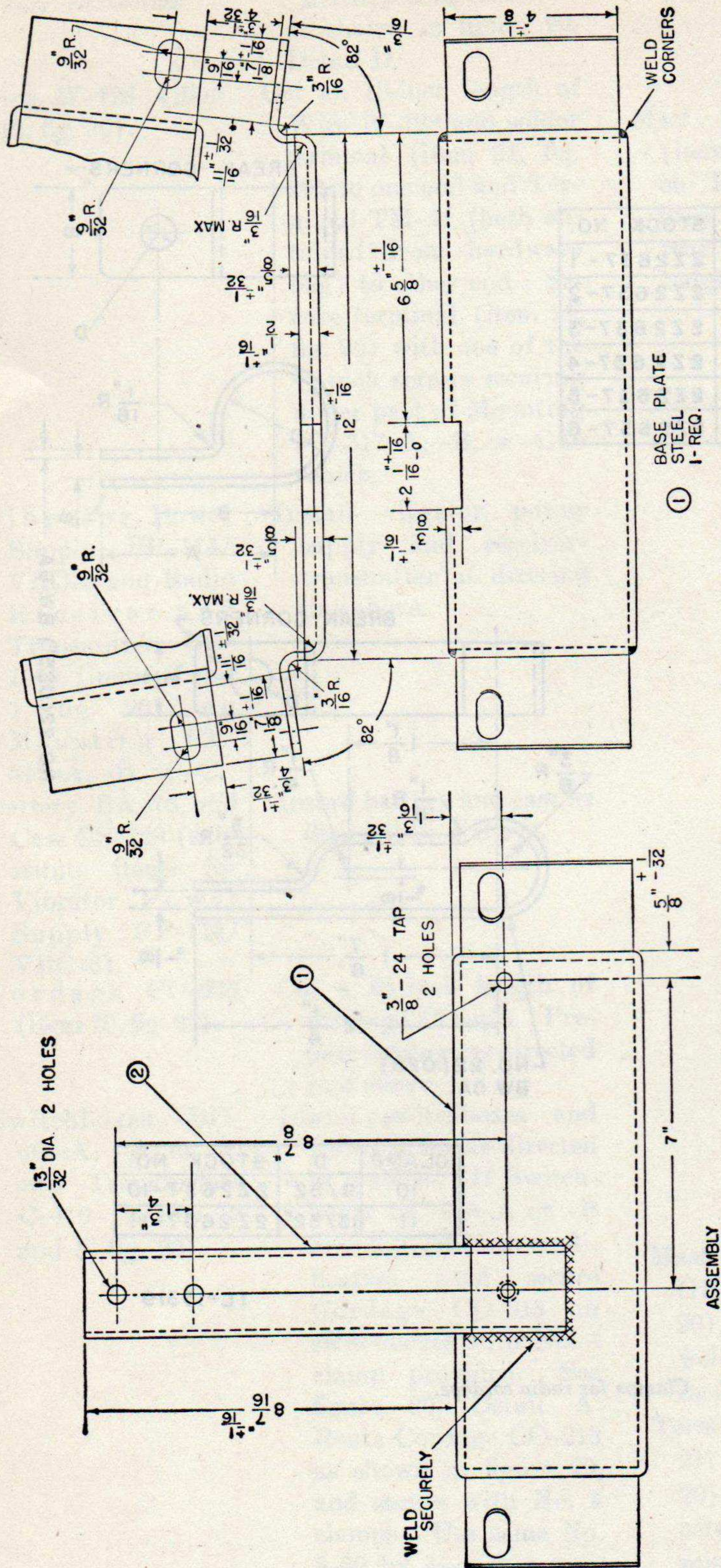


TERMINAL
COPPER-TINNED #18 (.040) B & S GA. AS REQ.

NOTE:
TOLERANCES WHERE NOT
SHOWN OTHERWISE SHALL
BE HELD TO $\pm \frac{1}{64}$

TL-13326

Figure 17. Terminal.



NOTE:

TOLERANCES WHERE NOT SHOWN OTHERWISE SHALL BE HELD TO $\pm 1/64$ ON FRACTIONAL DIMENSIONS AND 1'-0" ON ANGULAR DIMENSIONS.

DIMENSIONS WHERE NOT SHOWN OTHERWISE ARE IN INCHES. REMOVE ALL BURRS

③ ④ AND ⑤ ARE FOR INSTALLATION AND SHALL BE PLACED IN A HEAVY CLOTH BAG WHICH SHALL BE TIED TO THE BRACKET.

⑤ SHALL BE SHAKEPROOF LOCKWASHER, CAT. NO. 4020-26, AS MADE BY SHAKEPROOF INC., CHICAGO, ILL., OR EQUAL.

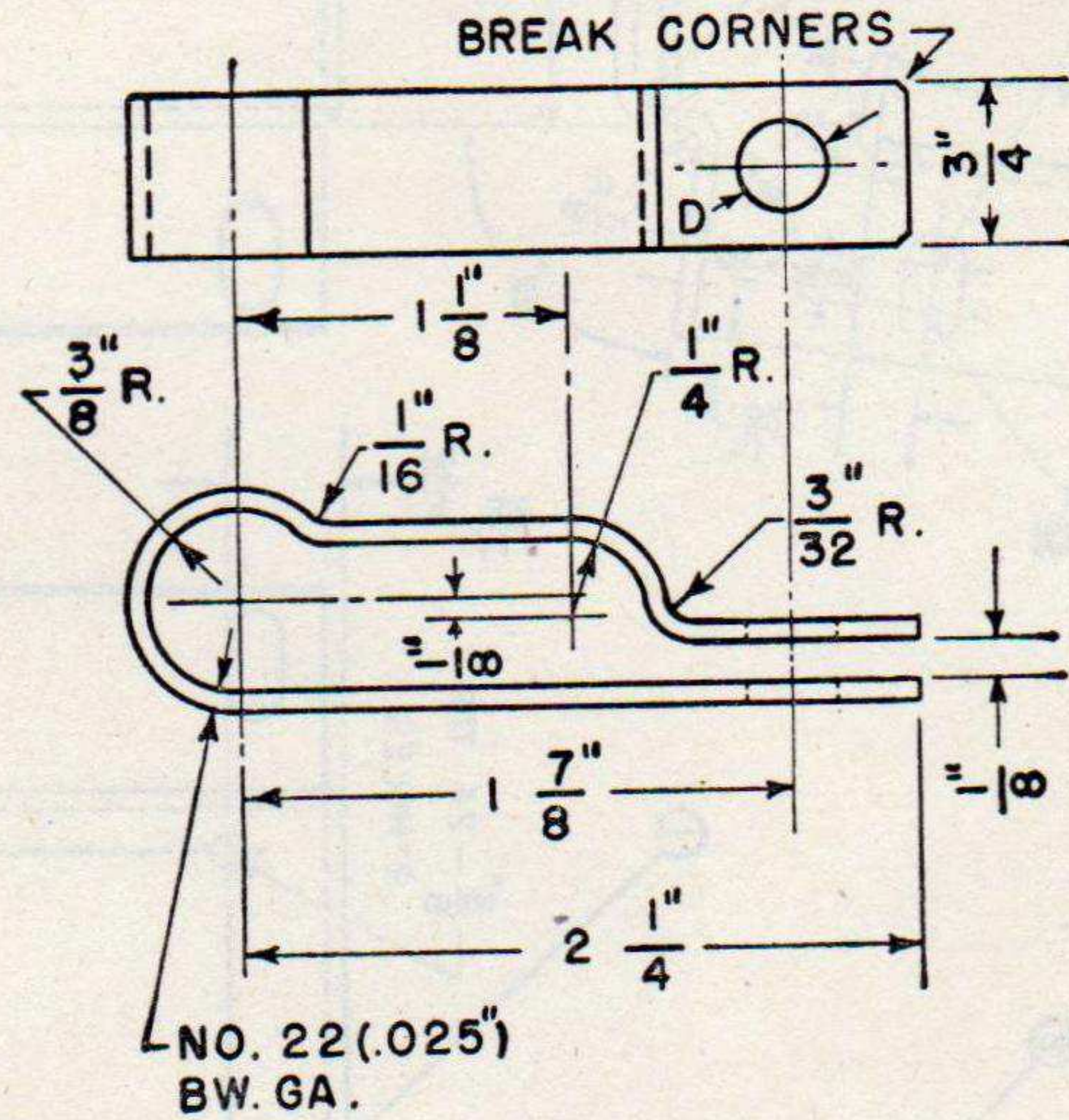
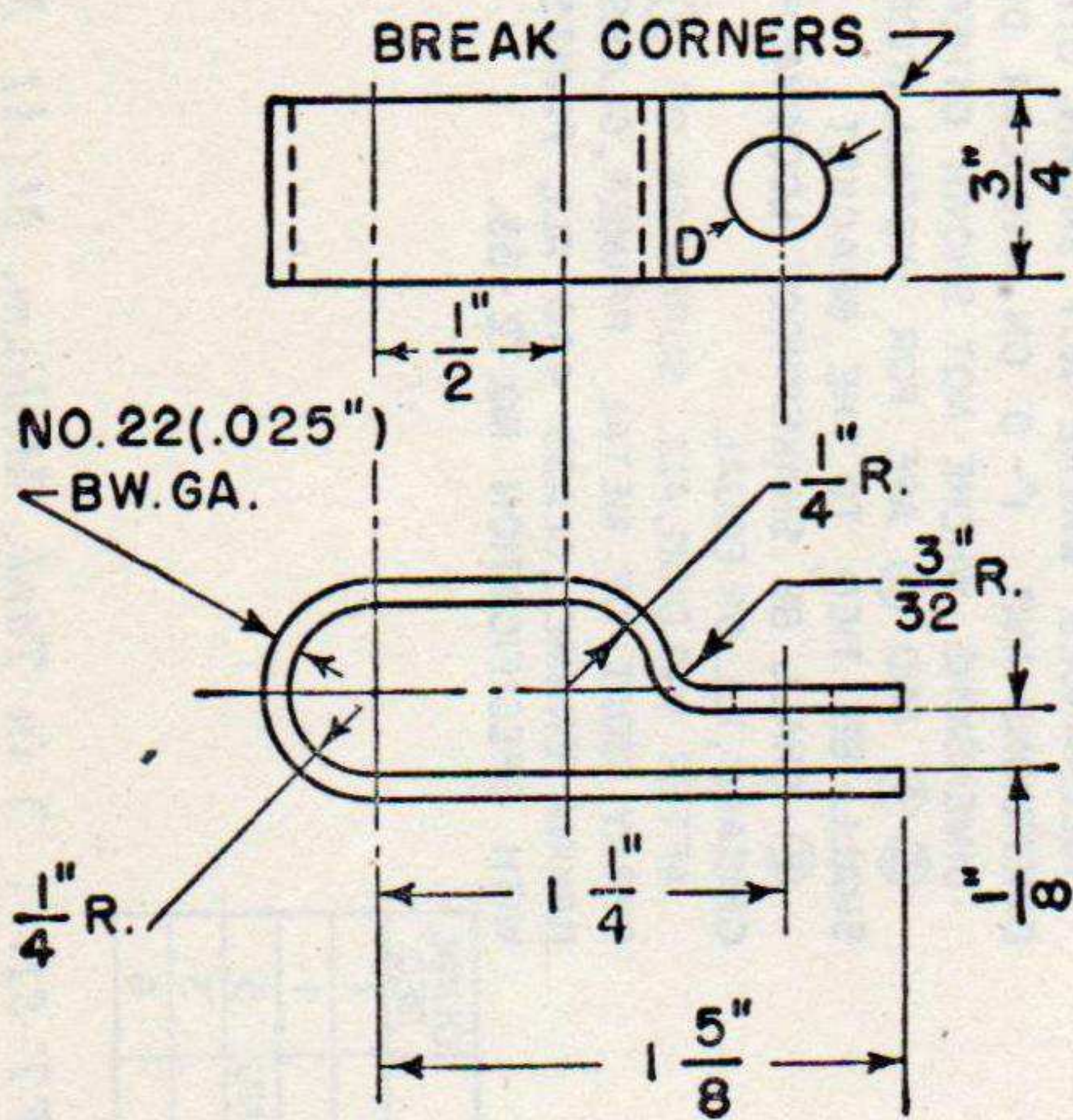
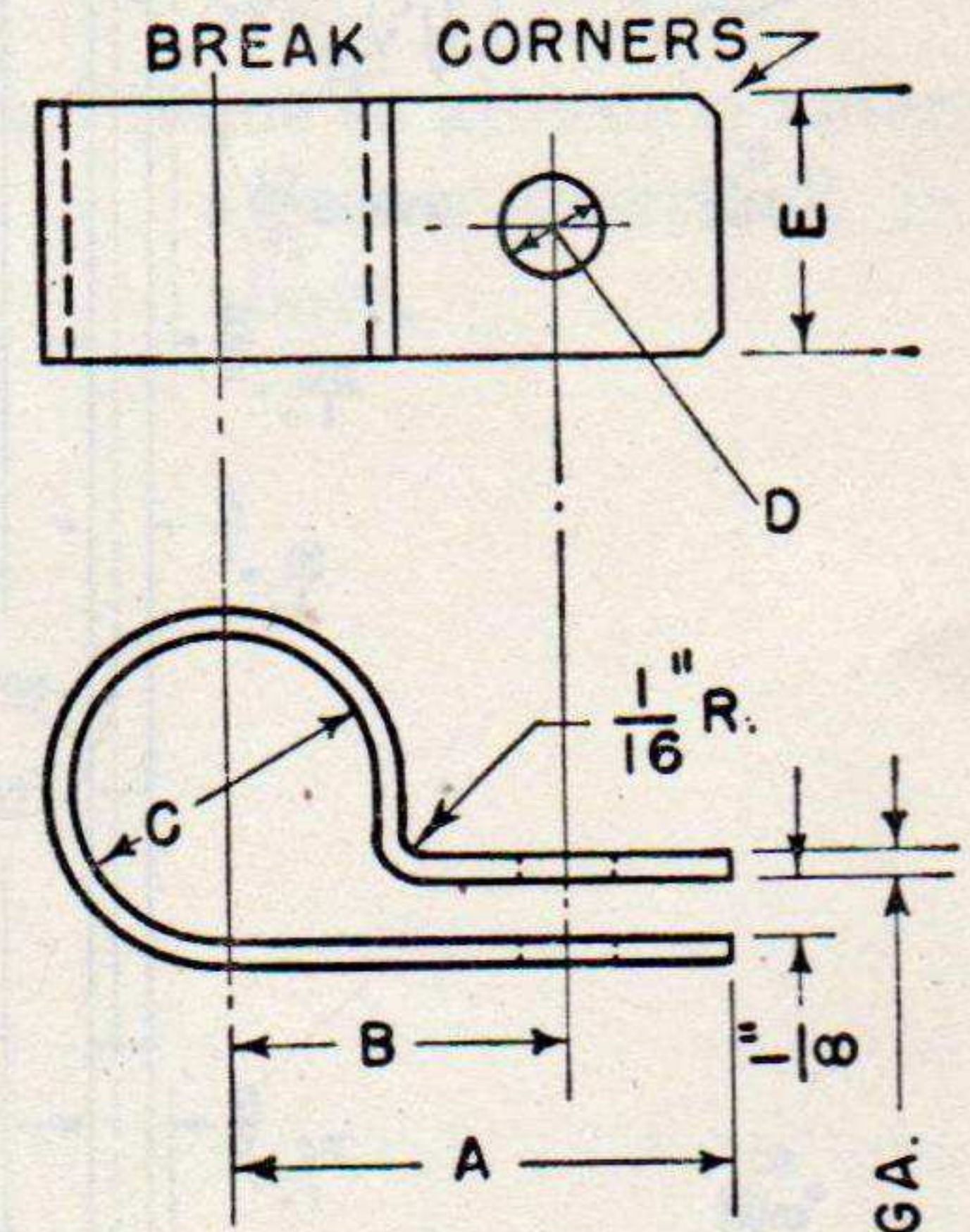
AFTER WELDING, ALL SURFACES OF ① AND ② SHALL BE BONDERIZED AND THEN GIVEN ONE SPRAY COAT OF METAL PRIMER, CLASS 101, AND ONE SPRAY COAT OF SEMI-GLOSS OLIVE DRAB BAKING ENAMEL, CLASS 440. ALL PAINTS AND METHODS OF APPLICATION SHALL BE IN ACCORDANCE WITH SPECIFICATION NO. 72-53.

ITEM NO.	NAME OF ITEM	QUAN. REQ.
1	BASE PLATE STEEL	1
2	CHANNEL STEEL	1
3	HEX HEAD CAR SCREW, SEE NOTE, 3/8" - 24 X 3/4" LONG	5
4	HEX NUT SEE NOTE 3/8" - 24 STD.	3
5	LOCKWASHER SEE NOTE	6

TL-13383

Figure 18. Bracket for Mounting FT-317- () in Tank, Medium, M4A1, M4A2, or M4A3, 76-mm gun, wet storage.

CLAMP	A	B	C	D	E	STOCK NO.
1	1-1/8"	3/4"	7/16"	3/16"	1/2"	222637-1
2	1-1/8"	3/4"	7/16"	9/32"	3/4"	222637-2
3	1-1/8"	3/4"	7/16"	13/32"	3/4"	222637-3
4	1-1/8"	3/4"	17/32"	3/16"	1/2"	222637-4
5	1-1/8"	3/4"	17/32"	9/32"	3/4"	222637-5
6	1-1/8"	3/4"	17/32"	13/32"	3/4"	222637-6



NO. 22(.025) BW. GA.

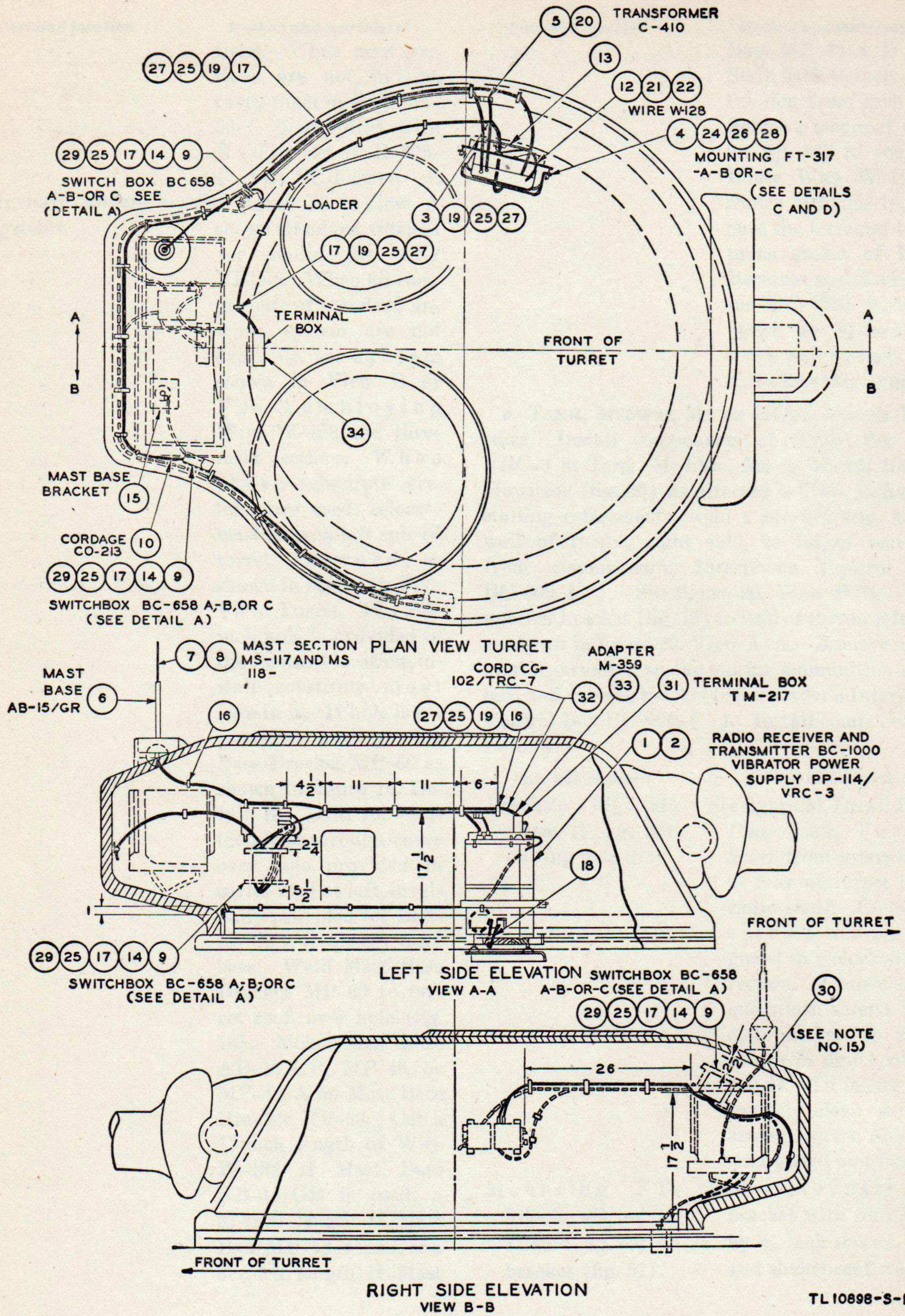
CLAMP	D	STOCK NO.
7	3/16"	222637-7
8	9/32"	222637-8
9	13/32"	222637-9

CLAMP	D	STOCK NO.
10	9/32"	222637-10
11	13/32"	222637-11

NOTE:
TOLERANCES $\pm 1/32"$

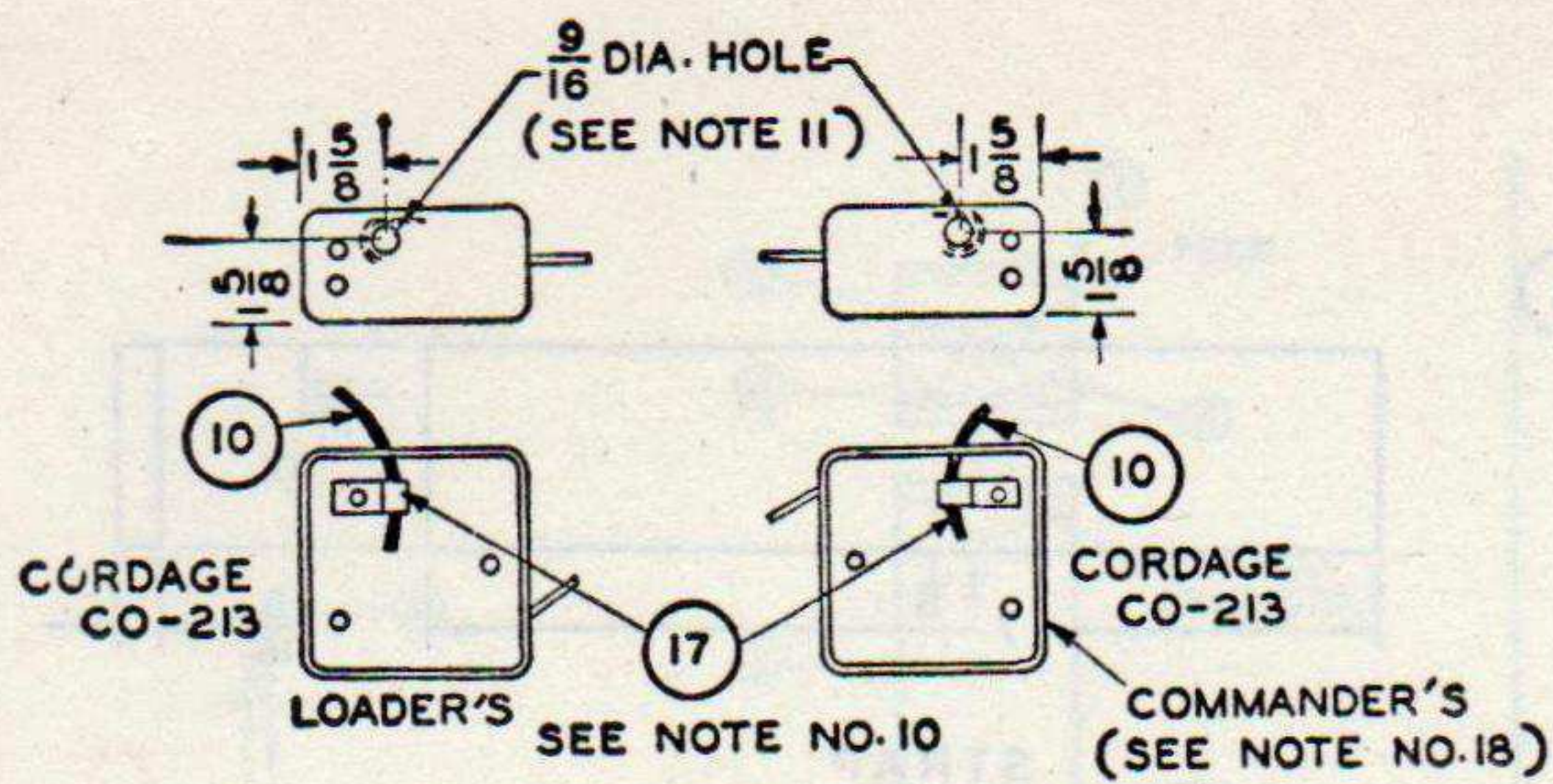
TL-13319

Figure 19. Clamps for radio cordage.

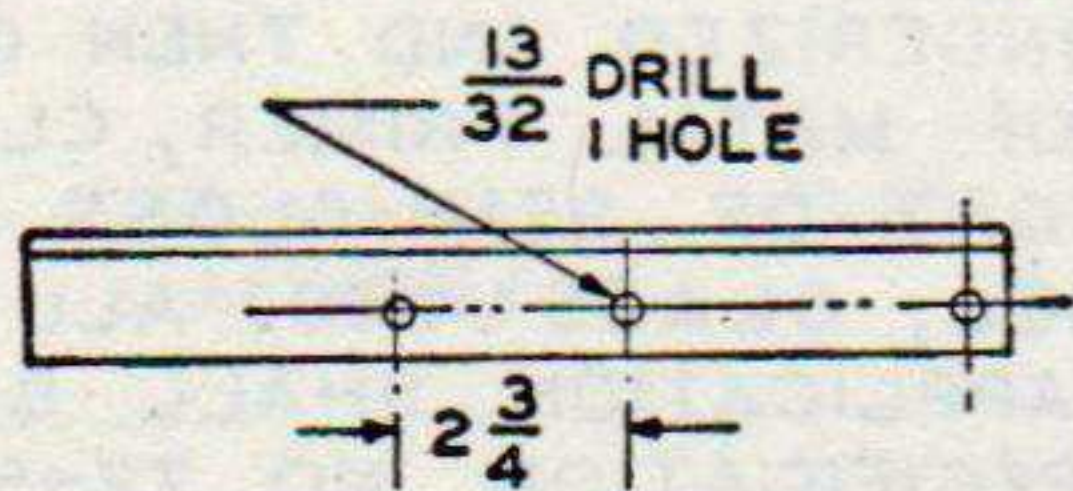
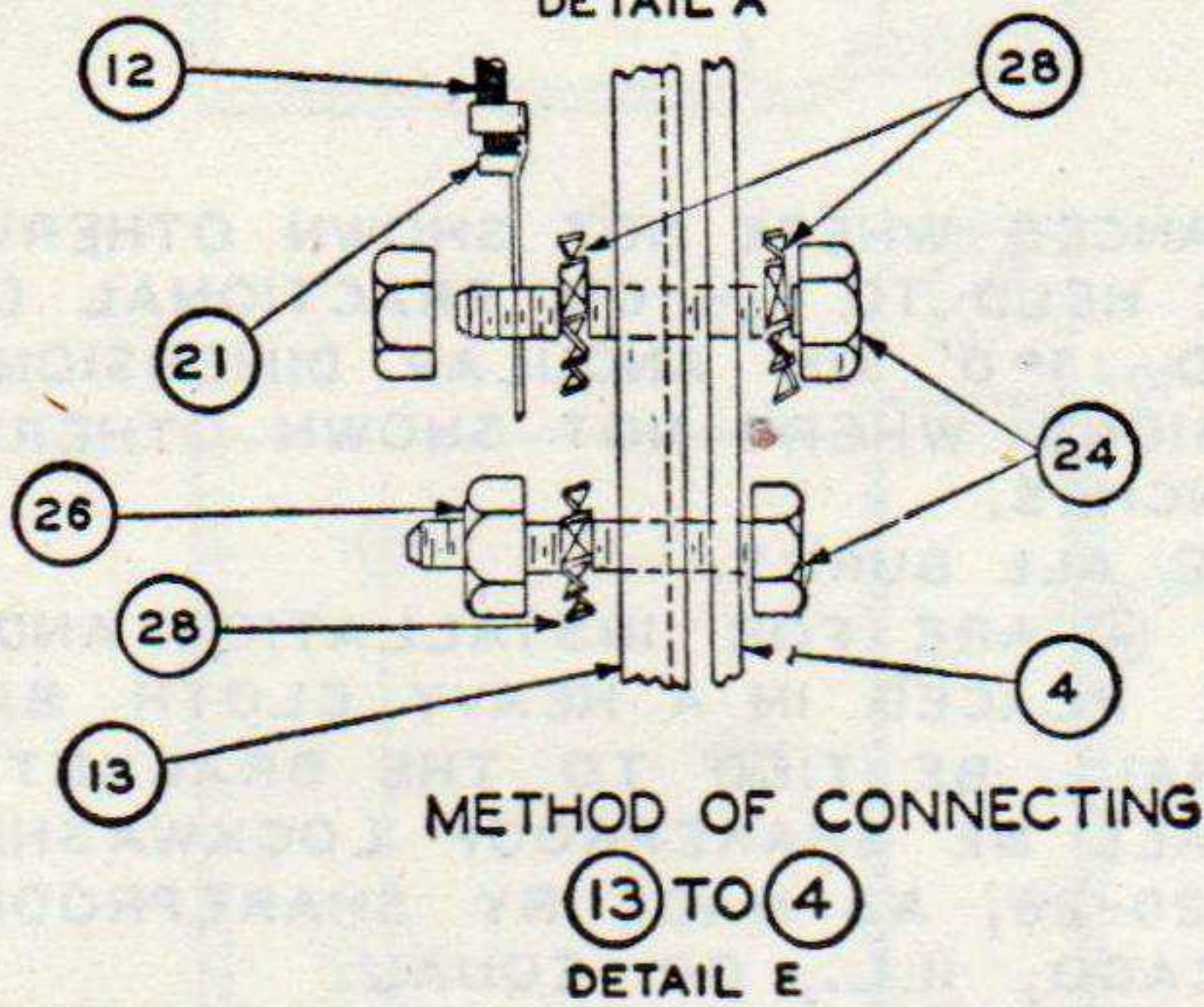


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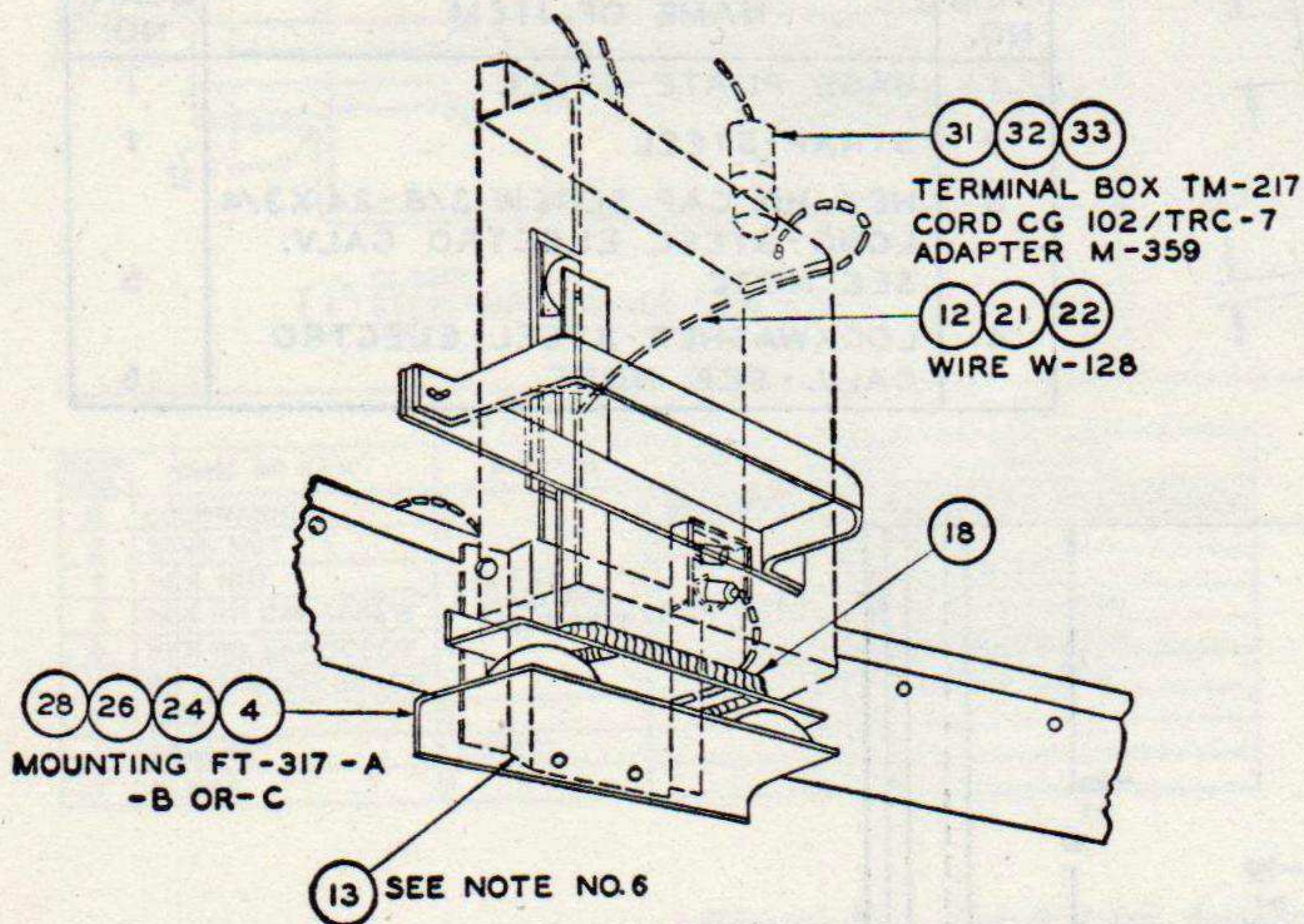
Figure 20. Installation of Radio Set AN/VRC-3 in



MODIFICATION OF SWITCH BOXES
BC-658-A OR-B
DETAIL A



MODIFICATION OF MOUNTING FT-317-A-B OR-C
DETAIL C



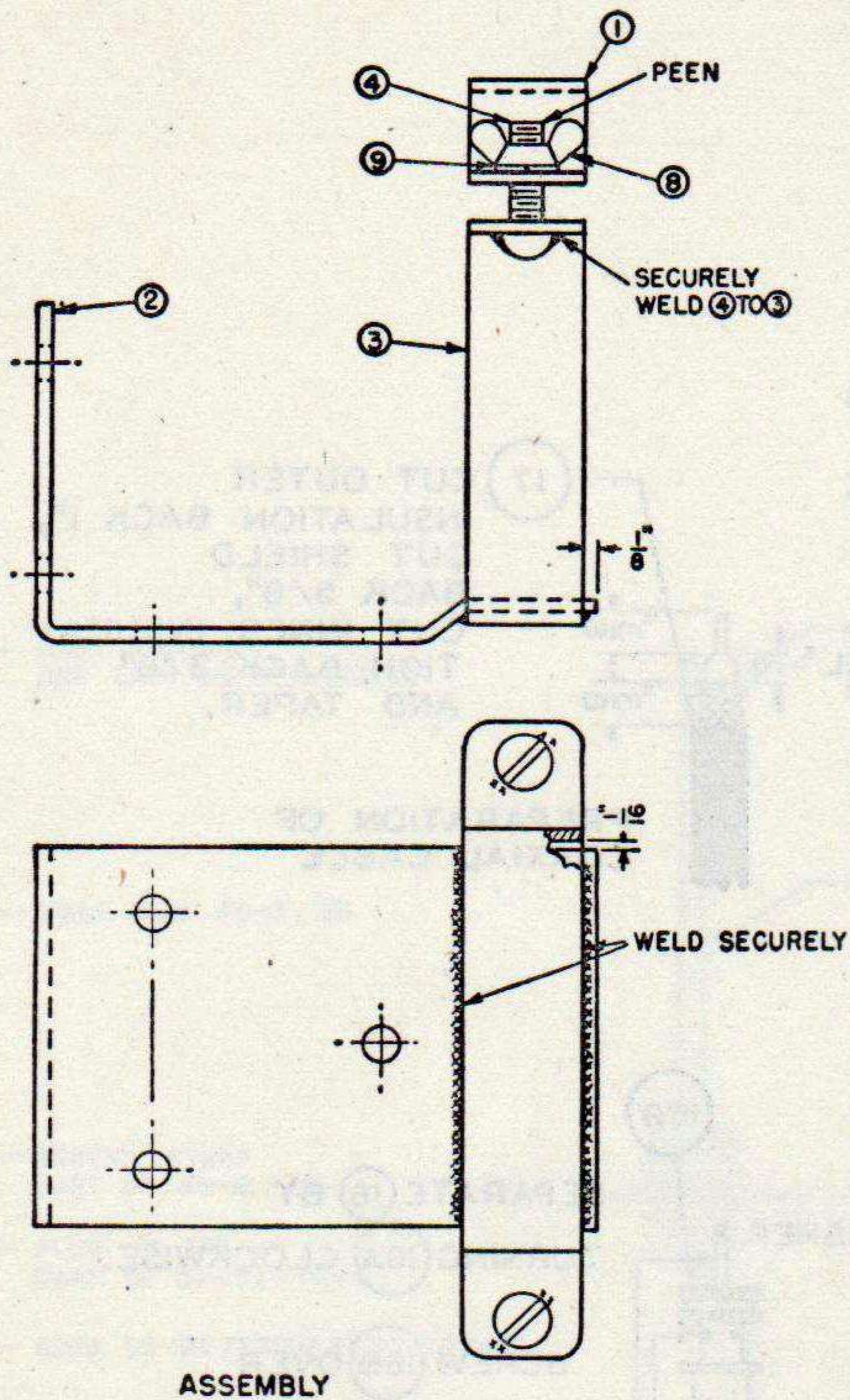
ENLARGED VIEW OF RADIO MOUNTING
FT-317-A-B OR-C BRACKET
DETAIL D

NOTES:

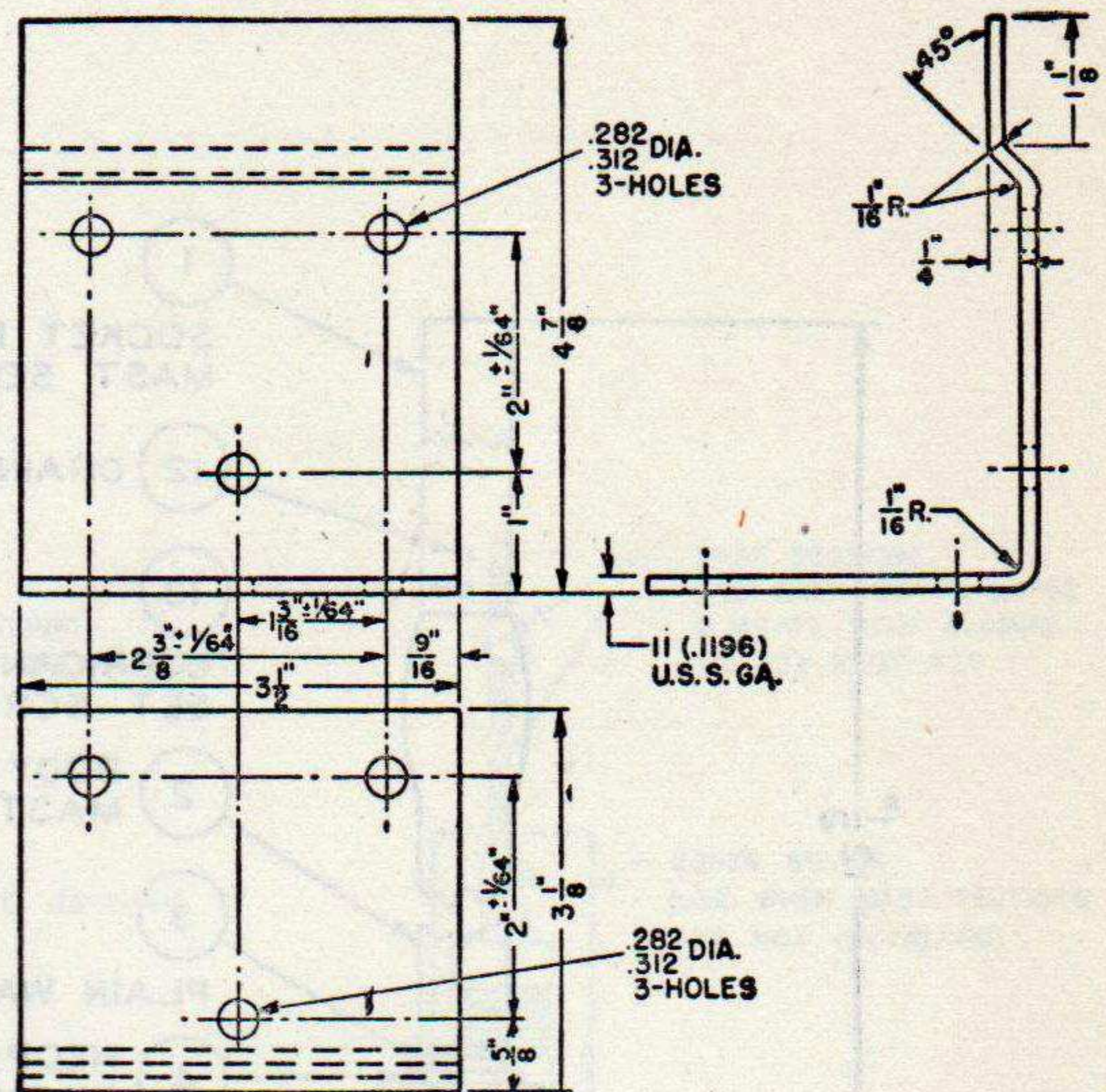
1. FOR ADDITIONAL COMPONENTS AND SPARE PARTS, SEE COMPONENT PARTS LIST.
2. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.
3. SIX OF (24) ARE FURNISHED WITH (9)
4. WELD (14) AND (18) SECURELY TO TURRET, IF NOT ALREADY INSTALLED.
5. IF (2) IS NOT AVAILABLE, SUBSTITUTE CASE CS-128 AND BATTERY BA-70. REMOVE BELT CARRIER BRACKETS FROM CASE CS-128.
6. TIN ENDS OF (11) AND SECURELY SOLDER (20) TO ONE END.
7. TIN ENDS OF (12) AND SECURELY SOLDER (20) AND (21) TO ENDS.
8. MOUNT (13) WITH NINTH AND TENTH RING GEAR GUARD BOLTS (COUNTING CLOCKWISE FROM GRENADE BOX).
9. CUT RECEIVER PATCH CORDS OF LOADER'S SWITCHBOX BC-658-A, -B, OR -C, 14 IN. FROM END OF PLUG PL-55. TIN AND SOLDER (19) TO ENDS. CONNECT (5) AS SHOWN IN FIGURE 23. SHORTEN ALL PATCH CORDS ON (9) TO PROPER LENGTH.
10. SECURE (16) USING TAPPED SPACERS ALREADY IN VEHICLE FOR RADIO SET SCR-508-() OR SCR-528-().
11. SECURE (16) IN (9) WITH (24) AS SHOWN IN DETAIL A.
12. DRILL 9/16 HOLE IN EACH SWITCHBOX BC-658-A OR -B TO PASS (10) AS SHOWN IN DETAIL A.
13. IF (29) AND (30) ARE NOT AVAILABLE, USE (11) AND LOCATE (6) IN FORWARD POSITION SHOWN. DRILL 11/32 HOLE IN CENTER OF MAST BASE BOSS ON TURRET ROOF. CUT 15 AS SHOWN IN DETAIL B. WELD (15) ABOVE 11/32 HOLE. WHEN 2-1/8 HOLE IS PROVIDED, MOUNT (6) IN IT. IN THIS CASE, (15) IS NOT REQUIRED.
14. REMOVE AND RELOCATE SMOKE MORTAR (IF PERMANENTLY INSTALLED), ARMORED SMOKE MORTAR AMMUNITION READY BOX, AND CANTEEN BRACKET BELOW LOADER'S INTERPHONE CONTROL BOX BC-606-().
15. IF (6) IS NOT AVAILABLE, USE MAST MP-48 OR MP-48-A, MAST SECTIONS MS-51, MS-52, AND MS-53, CLAMPS MC-423 AND MC-424, AND COVER BG-108. IN THIS CASE, STOP-GAP WIRE LEAD-IN (SEE NOTE 13) MUST BE USED IN PLACE OF STANDARD COAXIAL LEAD-IN SHOWN.
16. IF 2-1/8 HOLE IS NOT PROVIDED FOR (6) ENLARGER 3/4 HOLE (PROVIDED FOR BRITISH NO. 8 ANTENNA) TO 2-1/8.
17. REMOVE UNUSED PATCH FROM COMMANDER'S SWITCHBOX BC-658-A, -B, OR -C.
18. COIL EXCESS LENGTH OF POWER CORD FOR 2 AND HOLD IN PLACE WITH (33)
19. (3) IS FURNISHED IN VEHICLE BY THE MANUFACTURER.
20. (17) IS NOT REQUIRED IF MOUNTING FT-317-C IS USED.

ITEM NO.	NAME OF ITEM	QUANTITY REQUIRED
1	RADIO RECEIVER AND TRANSMITTER BC-1000	1
2	VIBRATOR POWER SUPPLY PP-114/VRC-3 SEE NOTES 5 AND 19	1
3	CLAMP NO. 7 PER FIG. 19	1
4	MOUNTING FT-317-A, -B, OR -C SEE DETAILS C, D, E, AND NOTE 21	1
5	TRANSFORMER C-410 SEE NOTE 7	1
6	MAST BASE AB-15/GR SEE NOTE 17	1
7	MAST SECTION MS-117	1
8	MAST SECTION MS-118	1
9	SWITCHBOX BC-658-A, -B, OR -C SEE NOTES 7, 10, AND 11	2
10	CORDAGE CO-213 70 IN. LONG SEE NOTE 11	1
11	WIRE W-128 64 IN. LONG SEE NOTES 8 AND 12	1
12	WIRE W-128 18 IN. LONG SEE NOTE 9	1
13	BRACKET PER FIG. 21 SEE NOTE 6	1
14	BRACKET PER FIG. 13 SEE NOTE 4	2
15	MAST BASE BRACKET SEE NOTE 13	1
16	CLAMP NO. 1 PER FIG. 19	2
17	CLAMP NO. 4 PER FIG. 19 SEE NOTES 10 AND 14	21
18	WOOD SPACER 4 X 10 X 1 SEE NOTE 21	1
19	SPACER SEE NOTE 4	10
20	TERMINAL TM-163 SEE NOTE 7	4
21	TERMINAL SEE NOTE 12	2
22	TERMINAL TM-91	1
23	HEX HEAD CAP SCREW 3/8 - 24 X 1/2 LONG	1
24	HEX HEAD CAP SCREW 3/8 - 24 X 3/4 LONG	4
25	ROUNDHEAD WASH SCREW NO. 8 - 32 X 3/8 LONG SEE NOTE 10	17
26	HEX NUT 3/8 - 24 STD.	2
27	LOCKWASHER NO. 8 STD.	10
28	LOCKWASHER I. E. T. FOR 3/8 SCREW SEE NOTE 12	5
29	LOCKWASHER I. E. T. FOR NO. 8 SCREW	6
30	RUBBER TUBING (OR BUNA S) 3/8 I.D., 7/8 O.D. X 6 LONG SEE NOTE 15	1
31	TERMINAL BOX TM-217 SEE NOTE 12	1
32	CORD CG-102/TRC-7 7 FT. LONG SEE NOTE 12	1
33	ADAPTER M-359	1
34	TERMINAL BOX SEE NOTE 20	1

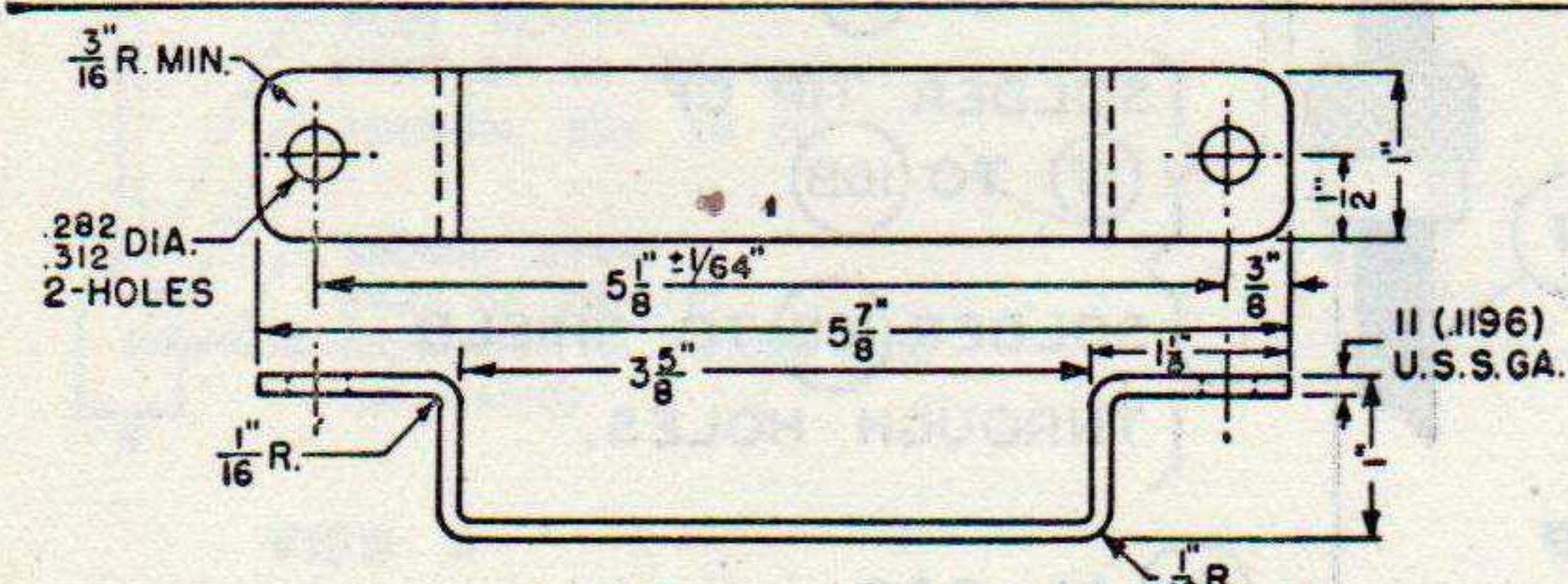
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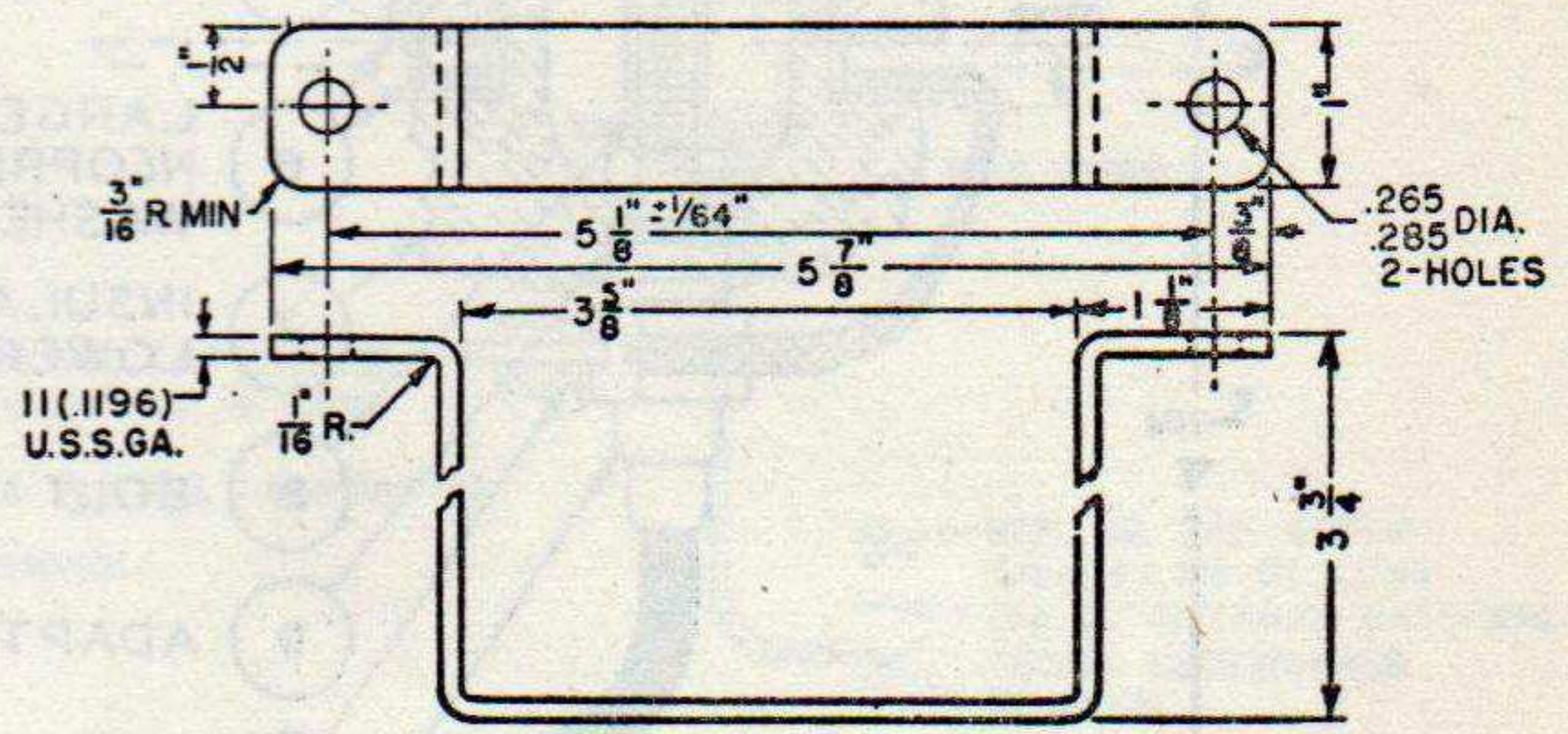
ASSEMBLY



2 BRACKET
STEEL-HOT ROLLED (SEE NOTE)
1-REQ.



1 CLAMP
STEEL-HOT ROLLED (SEE NOTE)
1-REQ.



3 ARM
STEEL-HOT ROLLED (SEE NOTE)
1-REQ.

ITEMS REQUIRED

QUAN. REQ.	NAME OF ITEM	MATERIAL	TYPE NO.	ITEM NO.	REMARKS
6	LOCKWASHER	STEEL ELECTRO- GALVANIZED	SEE NOTE	9	S.A.E. REG. FOR 1/4 SCREW
2	WING NUT			8	1/4 - 20
4	HEX. NUT			7	1/4 - 20 STD.
4	HEX. HD. CAP SCREW			6	1/4 - 20 X 3/4 LONG
4	HEX. HD. CAP SCREW			5	1/4 - 20 X 1 1/2 LONG
2	RD. HD. MACH. SCREW			4	1/4 - 20 X 1 LONG
1	ARM	STEEL		3	
1	BRACKET			2	
1	CLAMP			1	

FABRICATION INSTRUCTIONS

REMOVE ALL BURRS.
AFTER WELDING 2 & 4 TO 3, 1, 2 & 3 SHALL BE BONDERIZED AND THEN GIVEN ONE SPRAY COAT OF METAL PRIMER, CLASS 101, AND ONE SPRAY COAT OF SEMI-GLOSS OLIVE DRAB BAKING ENAMEL, CLASS 440. TOUCH UP HEADS OF 4 TO MATCH SURROUNDING SURFACE. ALL PAINTS AND METHODS OF APPLICATION SHALL BE IN ACCORDANCE WITH ORDNANCE TENTATIVE SPECIFICATION TAG ES-NO. 680.
5, 6, 7 & 4 OF 3 ARE USED FOR INSTALLATION AND SHALL BE PLACED IN A HEAVY CLOTH BAG PLAINLY AND PERMANENTLY MARKED "THIS BAG CONTAINS SCREWS NUTS AND LOCKWASHERS FOR INSTALLATION. SPARES ARE INCLUDED IN QUANTITIES." THIS BAG SHALL BE TIED TO THE BRACKET.

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Figure 24. Bracket for Antenna A-27, phantom.

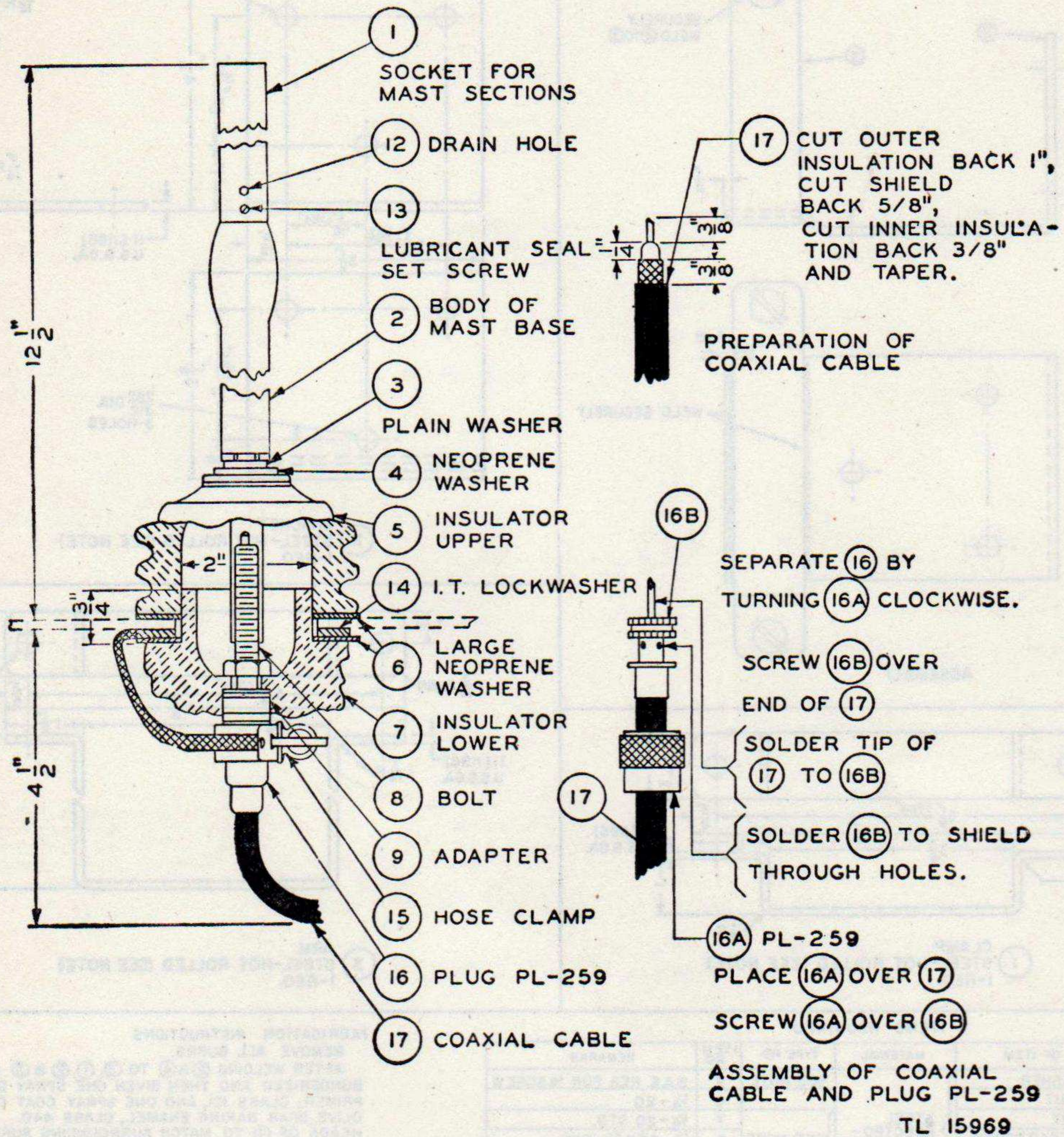
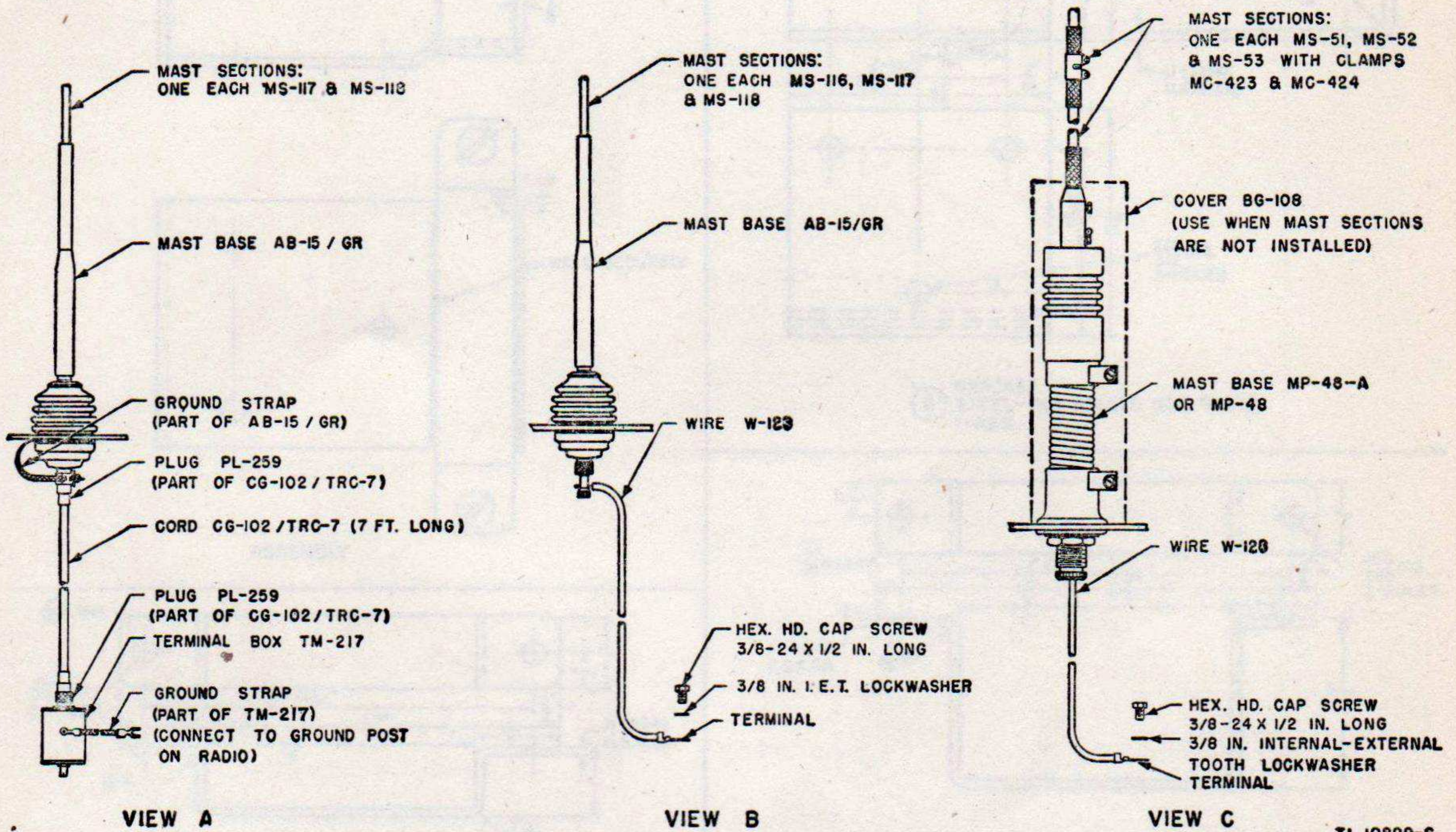


Figure 25. Mast Base AB-15/GR, assembly for coaxial lead-in.



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Figure 26. Antenna systems for Radio Set AN/VRC-3.