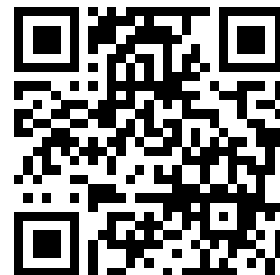


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# TM 11-2727

WAR DEPARTMENT TECHNICAL MANUAL

INSTALLATION OF RADIO AND  
INTERPHONE EQUIPMENT IN



## CARRIAGE, MOTOR

## 75-MM HOWITZER, M8

**RESTRICTED. DISSEMINATION OF RESTRICTED MATTER.**  
No person is entitled solely by virtue of his grade or position  
to knowledge or possession of classified matter. Such matter  
is entrusted only to those individuals whose official duties  
require such knowledge or possession. (See also paragraph  
23b, AR 380-5, 15 March 1944.)

WAR DEPARTMENT

MAY 1945



WAR DEPARTMENT TECHNICAL MANUAL

TM 11-2727

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WAR DEPARTMENT  
Washington 25, D. C., 31 May 1945.

TM 11-2727, Installation of Radio and Interphone Equipment in Carriage, Motor, 75-MM Howitzer, M8, is published for the information and guidance of all concerned.

[AG 300.7 (22 May 45)]

BY ORDER OF THE SECRETARY OF WAR:

OFFICIAL:

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*Major General*  
*The Adjutant General*

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

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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—all vacuum tubes, use sledges, axes, handaxes, pickaxes, hammers, crow-bars, 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, foxholes, other holes. Throw in streams. Scatter.

## USE ANYTHING IMMEDIATELY AVAILABLE FOR DESTRUCTION OF THIS EQUIPMENT

- WHAT**—1. 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 Carriage, Motor, 75-MM Howitzer, M8. 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 Radio Set SCR-510-( ) and Interphone Equipment RC-99.

#### 3. Holes and Brackets

Brackets required for installation of the radio set are normally drilled and installed prior to delivery of Carriage, Motor, 75-MM Howitzer, M8. 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:* Carriage, Motor, 75-MM Howitzer, M8 has a 12-volt electrical system. Before installing the radio sets, be sure they are designed for 12-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 CARRIAGE MOTOR, 75-MM HOWITZER, M8

**6. General**

Excessive ignition or other electrical noises may interfere with operation of radio equipment in Carriage, Motor, 75-MM Howitzer, M8. 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 indicated 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 1000 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.

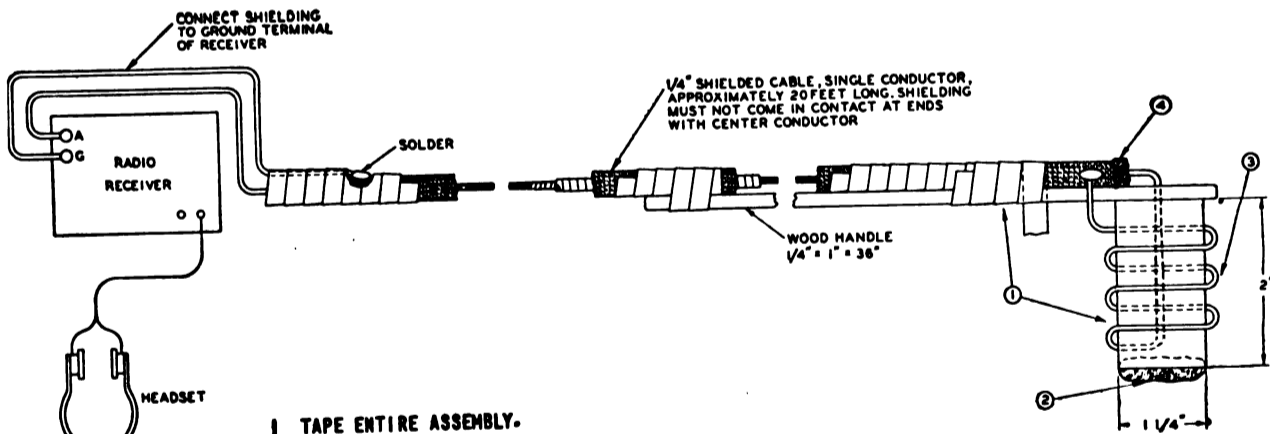
Interference	Usual source
Popping: Regular clicks corresponding to ignition "ring" stops when motor is turned off; accelerates when motor speed is increased.	Ignition system.
Intermittent clicks: lingers for several seconds when ignition system is turned off.	Generator regulator.
Whine: varies with speed of motor; ceases when motor comes to a complete stop.	Generator.

*e.* A probe antenna, figure 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 terminal and between metal casings and the frame of the vehicle. (Insulated but ungrounded metal parts absorb and re-radiate 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.



- 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.

7L7547A

Figure 1. Probe antenna.

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SECTION III  
RADIO SET SCR-510-( )

**8. Required Parts** SCR-510-( ) in Carriage, Motor, 75-MM  
Items necessary for installation of Radio Set Howitzer, M8 are listed below:

Basic unit Stock No. 2S510/12

Quantity	Stock No.	Item
1.....	6Q349	Alignment Tool TI-207.
a 1.....	2A245	Antenna AN-45.
1.....	3B879	Case CS-79, for spare battery.
1.....	2Z1890-137	Case CS-137.
1.....	6Z3147	Connector No. 61007 and Bondnut BL-50.
2.....	2A2352/1	Fitting, including spare, for tying down mast sections.
a 1.....	2B613	Handset TS-13.
2.....	3G586	Insulator IN-86.
2.....	3G1250-64.15	Insulator, glazed porcelain, for tying down mast sections.
d 1.....	2A2081-15	Mast Base AB-15/GR.
d 2.....	2A2417	Mast Section MS-117, including spare.
d 2.....	2A2418	Mast Section MS-118, including spare.
1.....	2Z6721-250	Mounting FT-250-( ).
g 1.....	3H4496-120	Power Supply Unit PE-120-( ).
c 1.....	2C5360	Radio Receiver and Transmitter BC-620-( ), including Battery BA-41.
1.....	2Z8056	Roll BG-56-( ).
15 ft.....	6Z7926	Rope RP-5, for tying down mast sections.
a 2.....	2Z9019	Strap ST-19.
2.....	6D13038	TM 11-605.
g 1.....	3H6713	Vibrator VB-13.
a 27 ft.....	1B29	Wire W-29, auxiliary antenna.
6.....	1B128	Wire W-128.

Installation unit Stock No. 2S510-V28/50

Quantity	Stock No.	Item
f 1.....	3G1837-52.1	Bushing.
b 1.....	4B417-4	Chest Set TD-4.
h 1.....	1F430-67.108	Cord CG-67/MRQ-2.
1.....	2Z3400-185	Cover BG-185.
1.....	6L50-510V28	Hardware bag.
c 1.....	2B800-16	Headset H-16/U.
d 2.....	2A2416	Mast Section MS-116, including spare.
1.....	2B1645	Microphone T-45.
g 1.....	3H4297	Plate Supply Unit PE-97-( ).
h 1.....	2Z9299-206-A	Terminal Box TM-206-A.

a These are not used in vehicular installation and are stowed in vehicle.

b When Chest Set TD-4 is not available, use one Cord CD-307-A and one Cord CD-318.

c When Headset H-16/U is not available, use one Headset HS-30-( ) and one Cord CD-604.

d If basic unit contains Mast Base MP-48-A, Mast Sections MS-52 and MS-53, Cover BG-108 and Clamp MC-424 instead of Mast Base AB-15/GR and Mast Sections MS-117 and MS-118, delete two Mast Sections MS-116 for installation unit and two Mast Sections MS-51, one Cord CD-869, and two Clamps MC-423.

e Terminal Box TM-206-A may be supplied as part of Radio Receiver and Transmitter BC-620-( ).

f When bushing is not available, use Insulator IN-101.

g Power Supply Unit PE-120-( ) and Vibrator VB-13 are furnished in basic unit. They cannot be used in this installation and should not be substituted for Plate Supply Unit PE-97-( ).

h If Mast Base MP-48-A is supplied, substitute Cord CD-636 and Terminal Box TM-206 for Cord CG-67/MRQ-2 and Terminal Box TM-206-A. In this case, use antenna mounting block assembly (stock No. 2C5360/M1).

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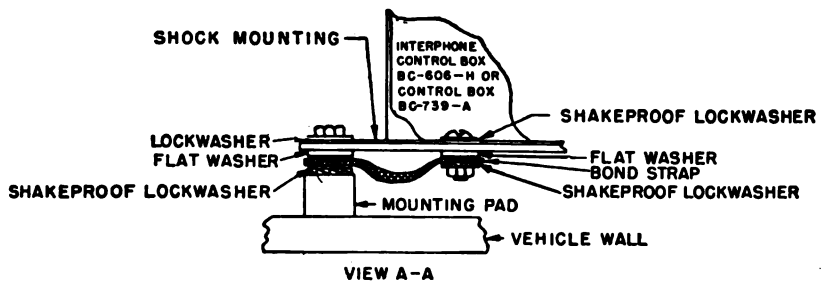
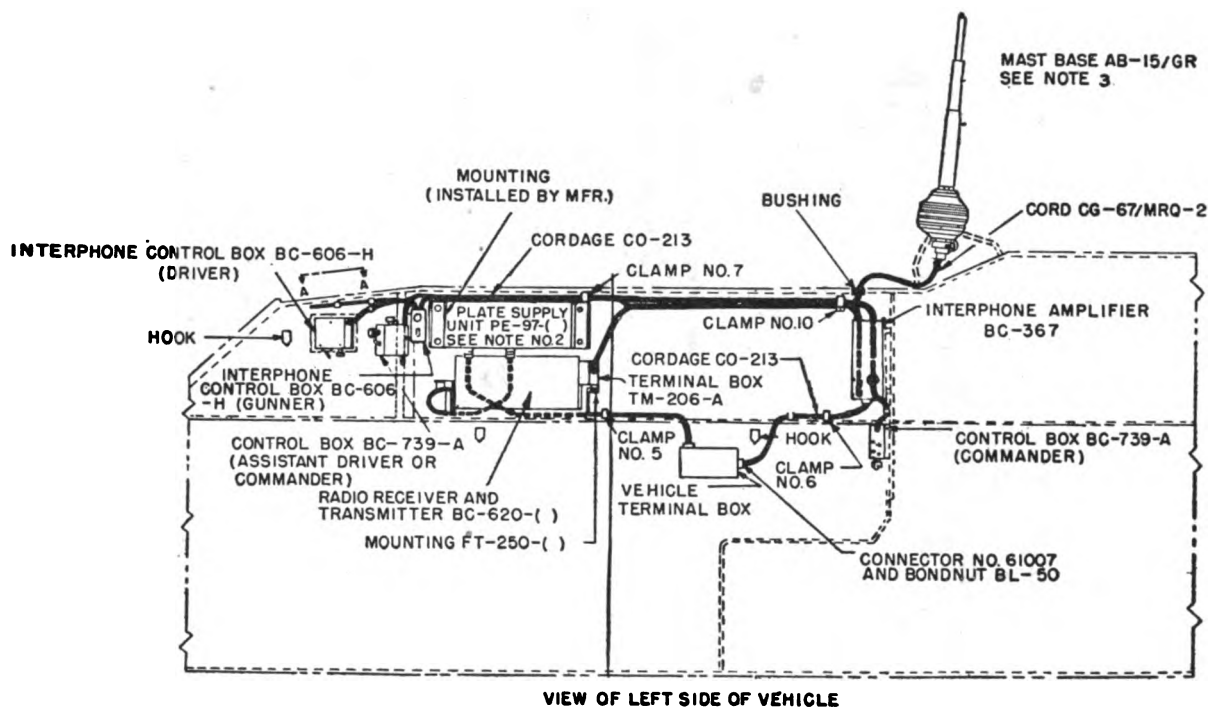
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SECTION VIEW SHOWING APPLICATION OF BOND STRAP BETWEEN MOUNTING PAD AND INTERPHONE CONTROL BOX BC-606-H (DRIVER), AND BETWEEN MOUNTING PAD AND CONTROL BOX BC-739-A (ASSISTANT DRIVER OR COMMANDER).

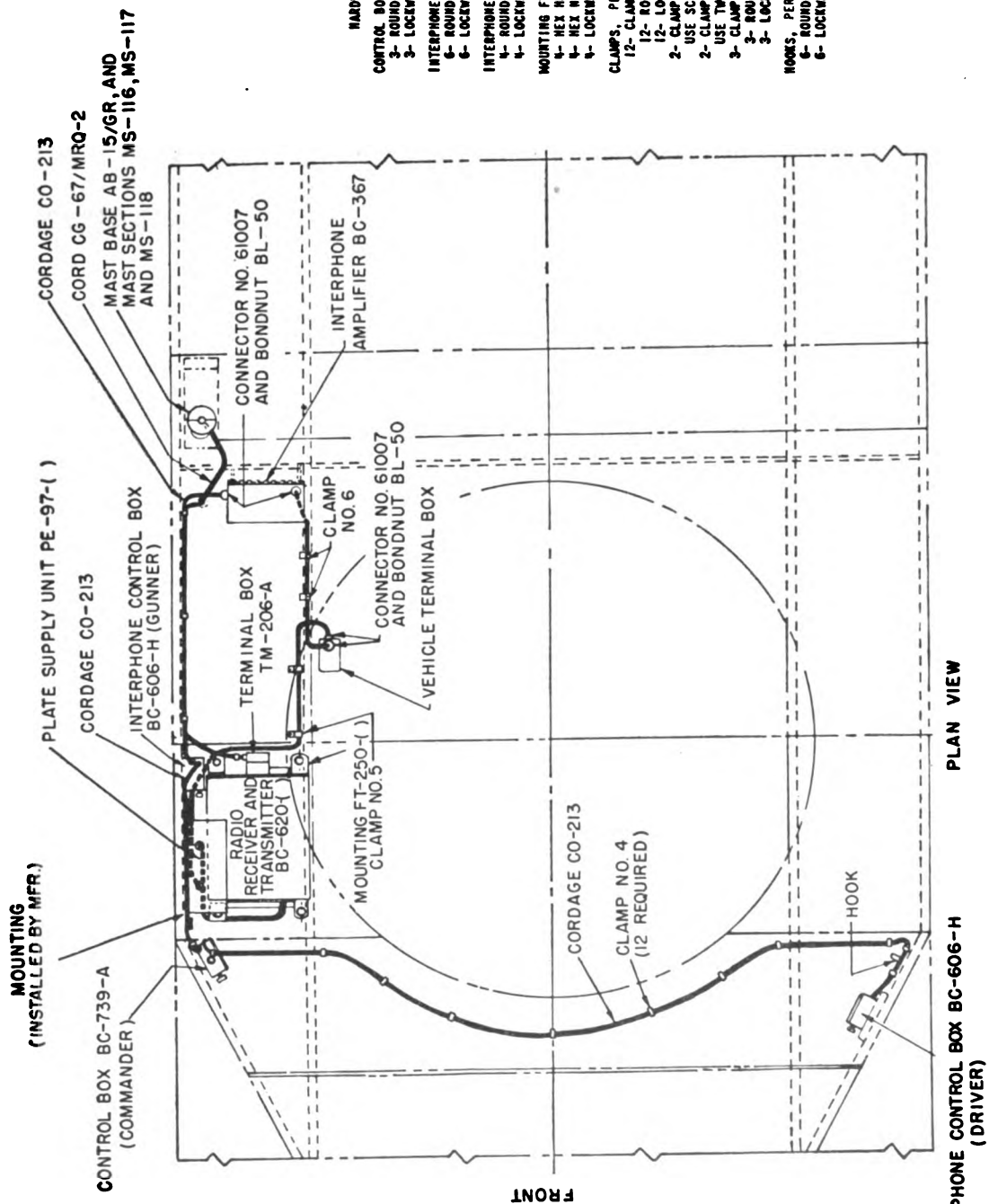
NOTES:

1. FOR ADDITIONAL COMPONENTS AND SPARE PARTS SEE COMPONENT PARTS LIST.
  2. REMOVE PLATE SUPPLY UNIT PE-97-( ) FROM CASE.
  3. IF MAST BASE AB-15/GR, MAST SECTIONS MS-116, MS-117 AND MS-118 ARE NOT AVAILABLE, USE MAST BASE MP-18 AND MAST SECTIONS MS-51, MS-52 AND MS-53 WITH CLAMPS MC-423 AND MC-424. COVER 96-108 IS USED OVER MAST BASE MP-18.
- CORDAGE CO-213 LENGTHS:
- FROM INTERPHONE AMPLIFIER BC-367 TO ASSISTANT DRIVER OR COMMANDER CONTROL BOX BC-739-A.....102 INCHES.
  - FROM INTERPHONE AMPLIFIER BC-367 TO GUNNER INTERPHONE CONTROL BOX BC-606-H.....115 INCHES.
  - FROM INTERPHONE AMPLIFIER BC-367 TO COMMANDER CONTROL BOX BC-739-A.....63 INCHES.
  - FROM INTERPHONE AMPLIFIER BC-367 TO VEHICLE TERMINAL BOX.....96 INCHES.
  - FROM GUNNER INTERPHONE CONTROL BOX BC-606-H TO DRIVER INTERPHONE CONTROL BOX BC-606-H.....99 INCHES.

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C-99 in late production models of Carriage, Motor, 75-MM Howitzer, M8.

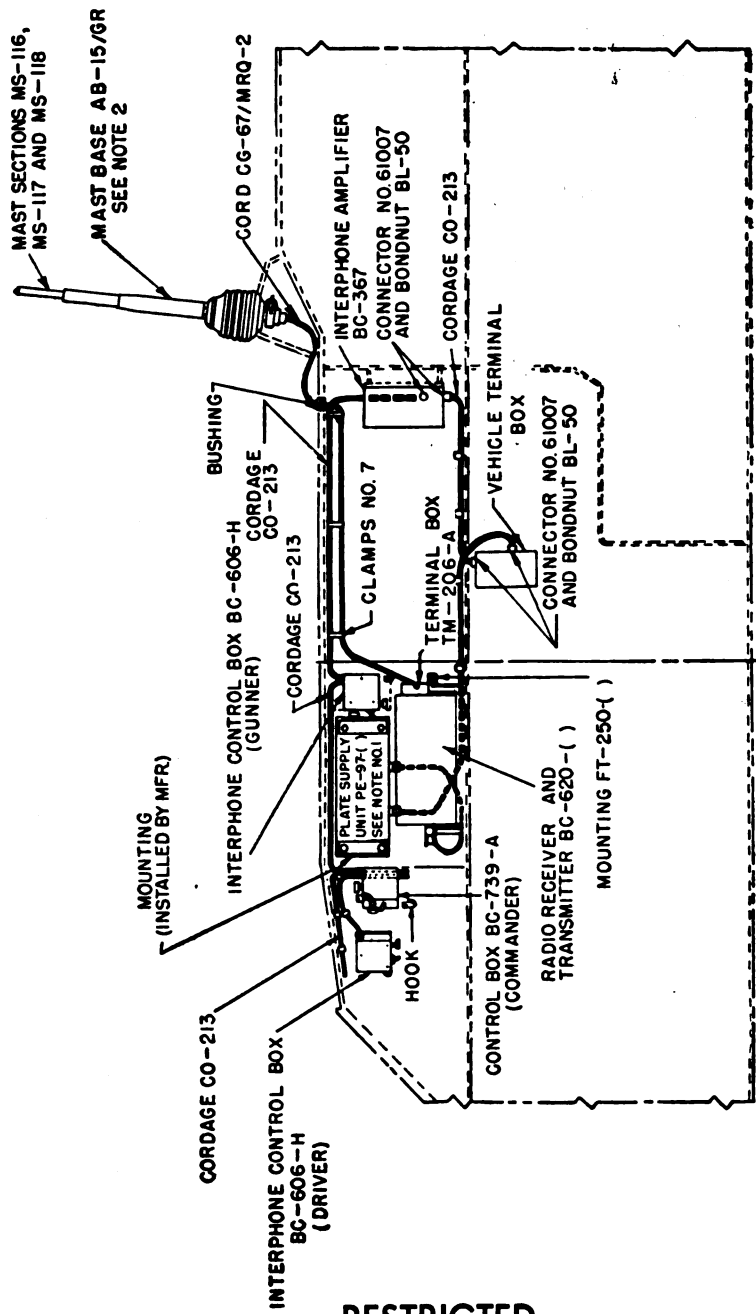
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- HARDWARE REQUIRED FOR MOUNTING COMPONENTS**
- CONTROL BOX BC-739-A:
    - 3- ROUNDHEAD MACH SCREW NO. 8-32 X 3/8 LONG
    - 3- LOCKWASHER NO. 8
  - INTERPHONE CONTROL BOXES BC-606-H:
    - 8- ROUNDHEAD MACH SCREW NO. 8-32 X 3/8 LONG
    - 8- LOCKWASHER NO. 8
  - INTERPHONE AMPLIFIER BC-367:
    - 4- ROUNDHEAD MACH SCREW 1/4-28 X 1 1/4 LONG
    - 4- LOCKWASHER 1/4
  - MOUNTING FT-250-(1):
    - 4- HEX HEAD MACH SCREW 1/4-20 X 1 LONG
    - 4- HEX NUT 1/4-20
    - 4- LOCKWASHER 1/4
  - CLAMPS, PER FIG. 5
    - 12- CLAMP NO. 4
    - 12- ROUNDHEAD MACH SCREW NO. 8-32 X 3/8 LONG
    - 12- LOCKWASHER NO. 8
    - 2- CLAMP NO. 5
    - 2- CLAMP NO. 6
    - 2- USE SCREWS PROVIDED WITH VEHICLE
    - 3- USE TWO BOLTS USED FOR AMMUNITION RACK
    - 3- CLAMP NO. 7
    - 3- ROUNDHEAD MACH SCREW NO. 8-32 X 3/8 LONG
    - 3- LOCKWASHER NO. 8
  - HOOKS, PER FIG. 6
    - 8- ROUNDHEAD MACH SCREW NO. 8-32 X 3/8 LONG
    - 8- LOCKWASHER NO. 8

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NOTES:

1. REMOVE PLATE SUPPLY UNIT PE-97-( ) FROM CASE.
2. WHEN MAST BASE AB-15/GR, MAST SECTIONS MS-116, MS-117 AND MS-118 ARE NOT AVAILABLE, USE MAST BASE MP-48, MAST SECTIONS MS-51, MS-52 AND MS-53 WITH CLAMPS MC-423 AND MC-424. USE COVER 96-108 ON MAST BASE MP-48.

CORDAGE CO-213 LENGTHS:

- FROM INTERPHONE AMPLIFIER BC-367 TO VEHICLE TERMINAL BOX.....38 INCHES
- FROM INTERPHONE AMPLIFIER BC-367 TO GUNNER'S INTERPHONE CONTROL BOX BC-606-H.....65 INCHES
- FROM GUNNER'S INTERPHONE CONTROL BOX BC-606-H TO COMMANDER'S CONTROL BOX BC-739-A.....45 INCHES
- FROM COMMANDER'S CONTROL BOX BC-739-A TO DRIVER'S INTERPHONE CONTROL BOX BC-606-H.....112 INCHES

VIEW OF LEFT SIDE OF VEHICLE

Figure 3. Installation of Radio Set SCR-510-( ) and Interphone Equipment RC-99 in early production models of Carriage, Motor, 75-MM Howitzer, M8.

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## 9. Assembly and Installation

Install components of Radio Set SCR-510-( ) in Carriage, Motor, 75-MM Howitzer, M8 as

shown in figure 2 for late production models, in figure 3 for early production models, and as directed below:

### *Part and Location*

Plate Supply Unit PE-97-( ), on mounting provided on right sponson wall.

Mounting FT-250-( ), on right sponson.

Radio Receiver and Transmitter BC-620-( ) and Battery BA-41, on Mounting FT-250-( ).

Terminal Box TM-206-A, on Radio Receiver and Transmitter BC-620-( ), and Cord CG-67/MRQ-2.

### *Method and Materials*

See figures 2 and 3. Open case of Plate Supply Unit PE-97-( ) and detach power cords from case by removing four screws holding each bushing. Remove six screws holding power pack to case, and lift power pack from case. Remove mounting provided on right sponson wall. Attach power pack of plate supply unit to mounting. Replace assembly on wall and insert spare fuse, vibrator, and capacitor into clips provided on mounting. Consult diagram inside power pack cover and check to see that connector links are in 12-volt position. Install connector No. 61007 and Bondnut BL-50 in knock-out hole in terminal box for power cord. Route power cord to vehicle terminal box and secure in place with clamps provided. Connect terminals of power cord to 12-volt positive and negative terminals in vehicle terminal box. Observe proper polarity.

Locate Mounting FT-250-( ) in position shown in figures 2 and 3, and secure with hardware provided.

If Battery BA-41 is not already installed, proceed as follows: Remove chassis of Radio Receiver and Transmitter BC-620-( ) from its case by removing the ten screws on outer edge of front panel and pulling out chassis. Remove cover of battery compartment located on chassis near front panel, and insert Battery BA-41, being careful to engage plug into socket of battery. Replace cover.

*Note.* While chassis is out of its case, see that all tubes are in proper sockets and pushed down firmly. The two crystals for desired operating frequencies should be in their sockets, and retaining clip should be in position to hold them securely. Do not interchange these crystals.

Place the two toggle switches, near left edge of chassis, in ON position; then slide chassis back into case and replace screws. Place receiver-transmitter on Mounting FT-250-( ), with controls facing front of vehicle, and secure with hook fasteners provided. Fasten together cable connectors on receiver-transmitter and on power pack of Plate Supply Unit PE-97-( ).

When Radio Receiver and Transmitter BC-620-( ) does not have Terminal Box TM-206-A already installed, set the connector link inside terminal box for coaxial lead-in, and install terminal box on receiver-transmitter in place of antenna mounting block assembly. If Mast Base MP-48-A is used with Cord CD-636, substitute Terminal Box TM-206. In this case, use old type antenna mounting block assembly with Terminal Box TM-206. Route and secure cord as shown in figures 2

*Part and Location*

Mast Base AB-15/GR, in mast base bracket on right sponson.

Mast Sections MS-116, MS-117, and MS-118, in Mast Base AB-15/GR.

Fitting and insulator

Case CS-137.

*Method and Materials*

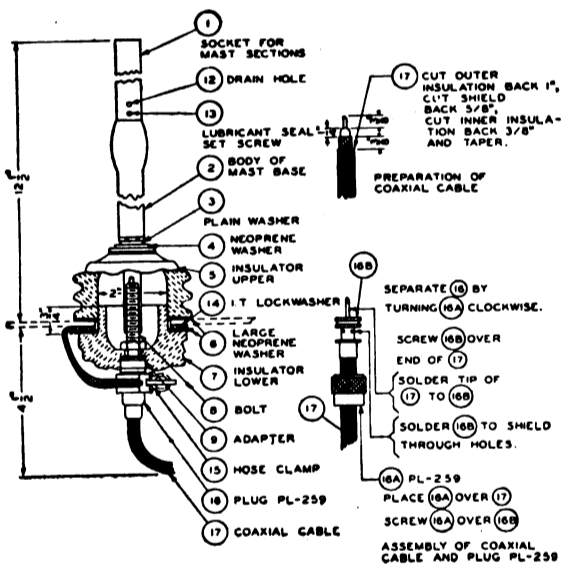
and 3. Use a bushing in 1-1/16-inch hole in top plate of sponson. When Insulator IN-101 must be substituted for the bushing, remove plug from one end of Cord CG-67/MRQ-2 in order to pass cord through insulator.

Locate Mast Base AB-15/GR as shown in figures 2 and 3 and assemble as follows: Refer to figure 4, View A. Hold lower insulator, item 7, by hand. Turn body of mast base, item 2, in a counterclockwise direction until item 7, with items 8 and 9 attached, is separated from item 2. Remove binding post from adapter, item 9, by turning knurled sleeve counterclockwise. Place upper insulator, item 5, over hole in mast base bracket provided on top plate of right sponson. Place small neoprene washer, item 4, over item 5 and place plain washer, item 3, over item 4. Insert body of mast base through holes in items 3, 4, 5, and 6. Place ground ring and large lockwasher, item 14, with bonding braid and hose clamp attached, over item 7. Insert bolt, item 8, into bottom of item 2 from underneath. Turn item 2 clockwise until mast base is tightened securely. Place a 3/4-inch wrench on hexagonal portion of item 2 and apply a slight additional pressure, so that item 14 will make good contact with mast base bracket. See figure 4, View B, for antenna lead-in. Place hose clamp, item 15, over end of Cord CG-67/MRQ-2. Secure Plug PL-259, item 16, to adapter socket, item 9, on bottom of mast base. Secure item 15 to item 16. If Mast Base MP-48-A is used with Cord CD-636 and Mast Sections MS-51, MS-52, and MS-53, see figure 4, Views C and D, for method of assembly and antenna lead-in.

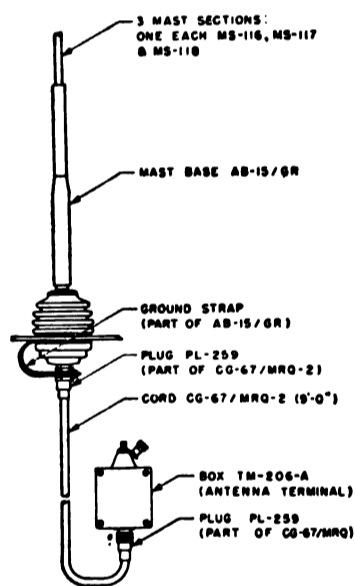
Screw mast sections together and install assembled sections into mast base. When mast sections are removed stow them in Roll BG-56- ( ).

Use fitting and insulator with Rope RP-5 for tying down antenna. Fitting is designed for use with Mast Section MS-52 and must be reshaped for use with Mast Section MS-117.

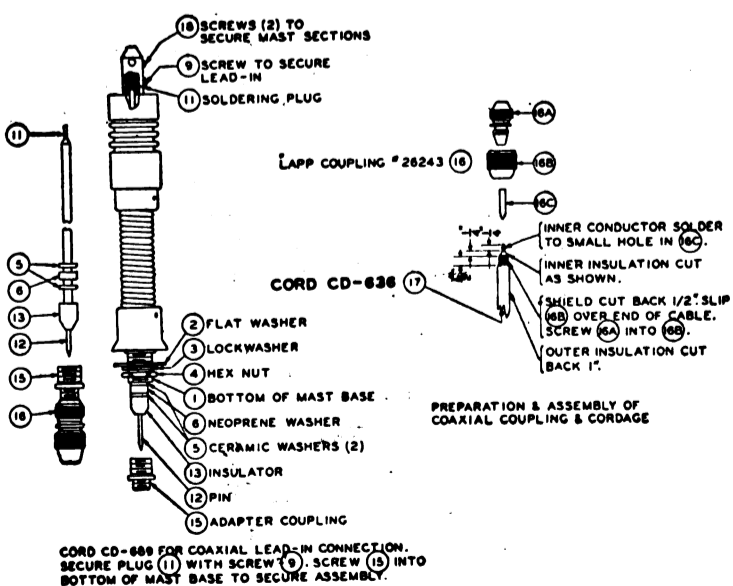
Place 38 of the crystal units, supplied with receiver-transmitter, in Case CS-137. Stow case in any convenient location in vehicle.



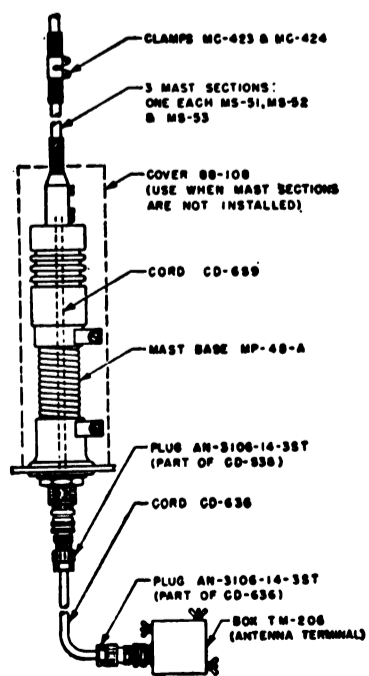
VIEW A



VIEW B



VIEW C

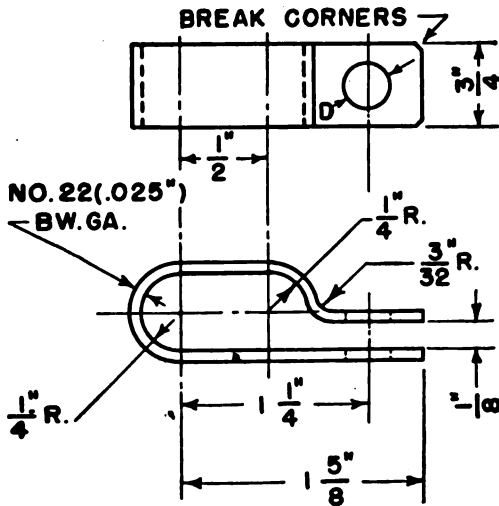
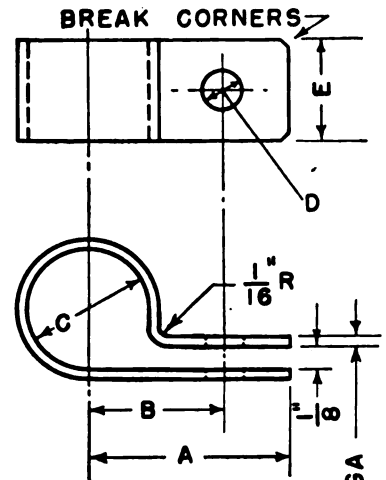


VIEW D

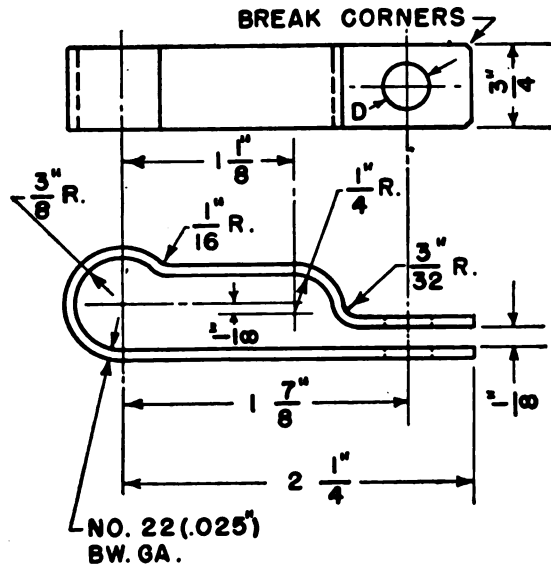
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Figure 4. Antenna systems used in Carriage, Motor, 75-MM Howitzer, M8.

GLAMP	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



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

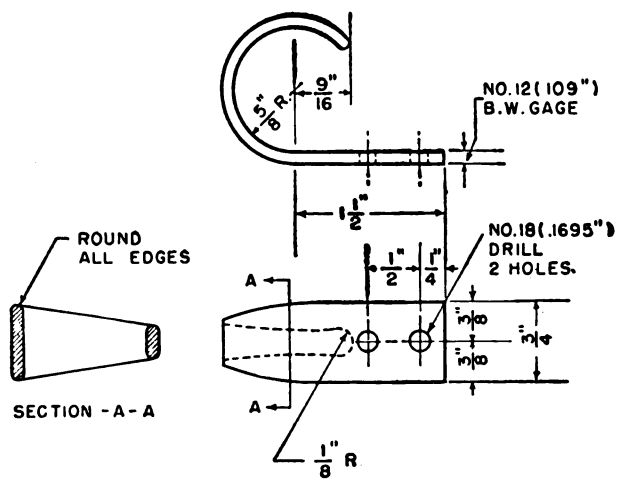


GLAMP	D	STOCK NO.
10	9/32"	222637-10
11	13/32"	222637-11

NOTE:  
TOLERANCES  $\pm 1/32"$

TL13319

Figure 5. Clamps for radio cordage.



HOOK  
STEEL - ELECTROGALVANIZE 7118320  
*Figure 6. Hook.*

## SECTION IV

### INTERPHONE EQUIPMENT RC - 99

#### 10. Required Parts

Equipment RC-99 in Carriage, Motor, 75-MM  
Howitzer, M8 are listed below :

Basic unit Stock No. 2S99/12

Quantity	Stock No.	Item
4.....	6Z3147	Connector No. 61007 and Bondnut BL-50.
a 2.....	2C675-739A	Control Box BC-739-A, including Mounting FT-507, connectors, and hardware.
1.....	2C1637	Interphone Amplifier BC-367.
a 1.....	2C1738H	Interphone Control Box BC-606-H, including Mounting FT-507, connectors, and hardware.
2.....	6D13033	TM 11-702.

Installation unit Stock No. 2S99-V28/50

Quantity	Stock No.	Item
b 3.....	4B417-A	Chest Set TD-4.
36 ft.....	3E2213	Cordage CO-213.
1.....	6L50-99V28	Hardware bag.
c 3.....	2B800-16	Headset H-16/U.
a 1.....	2C1738H	Interphone Control Box BC-H, including Mounting FT-507, connectors, and hardware.
3.....	2B1645	Microphone T-45.
1.....	2B1617	Microphone T-47.

<sup>a</sup> Only one Control Box BC-739-A is required in early production vehicles. If Control BC-739-A and Interphone Control Box BC-606-H are not issued in basic unit, requisition them with installation unit. If they are not available, suitable waterproofing must be applied to substitute boxes.

<sup>b</sup> If Chest Set TD-4 is not available, use three Cords CD-307-A and three Cords CD-318-A.

<sup>c</sup> If Headset H-16/U is not available, use three Headsets HS-30-( ) and three Cords CD-604.

#### 11. Assembly and Installation

a. The following changes were made in late production model vehicles:

(1) Provision for an additional Control Box BC-739-A was made.

(2) Mounting bracket for gunner's Interphone Control Box BC-606-H was relocated.

(3) Mounting pads for microphone hooks were relocated.

(4) Mounting bracket for Plate Supply Unit PE-97-( ) was raised.

(5) Vehicle terminal box was rotated 90°.

(6) Shock-mount brackets for driver's and assistant driver's or commander's Control Box BC-739-A were made.

b. All brackets and spacers required for mounting control boxes and mounting hooks have been supplied and installed by manufacturer.

c. Locate and install components of Interphone Equipment RC-99 in Carriage, Motor, 75-MM Howitzer, M8 as shown in figure 2 for late production models, in figure 3 for early production models, and as directed below:

##### *Part and Location*

Cordage CO-213.

##### *Method and Materials*

Figures 2 and 3 list approximate lengths of cordage required. Make a trial installation to determine exact lengths before cutting cordage. Control Box BC-739-A and Interphone Control Box BC-606-H require slightly longer lengths than substitute models of same boxes.

*Part and Location**Method and Materials*

After cordage has been cut to proper lengths, prepare each end of every length used for connection to Control Boxes BC-739-A and Interphone Control Boxes BC-606-H as follows: Strip back 3½ inches of outer rubber and 2½ inches of inner and outer shields. Using a pointed instrument, separate weave of exposed 1-inch ends of shield braids. Strip about ½-inch of insulation from black lead at point exposed by separation of shields. Twist separated wires of both shield braids around exposed portion of black lead; solder together, using a minimum of solder. Use black lead for ground connections as shown in figures 7 and 8. Prepare ends of cordage used for connection of Interphone Amplifier BC-367 to vehicle terminal box in same manner as above, except that 8½ inches of outer rubber and 7½ inches of outer shielding is stripped back, and shielded pair of red and green wires are taped. Parallel the white and yellow leads, and black and brown leads. Solder proper lugs from terminal box to wires for power connections. Proceed to wire as much of the equipment as possible before installing boxes in vehicle. Remove sweated disc from holes in Control Boxes BC-739-A and Interphone Control Boxes BC-606-H. Two connectors and bondnuts and two rubber washers are supplied with each box for securing cordage. Place rubber washer over threaded stem of connector; insert stem through hole in box and secure it with bondnut provided. If Control Box BC-739-A and Interphone Control Box BC-606-H are not obtainable, insert the 3½-inch prepared end of cordage through hole in substitute boxes and fasten with clamp provided. See Detail A, figure 7 or 8 for connection of Cordage CO-213 to terminal strips in Interphone Control Boxes BC-606-H. Jumper wires must be added to terminal strip between terminals 1 and 8, and another between terminals 5 and 6. See figures 7 and 8 for wiring diagram. Remove screws around edge of panel of Interphone Amplifier BC-367; remove amplifier chassis from case. Remove necessary knockouts from case, and install connectors and bondnuts in holes for Cordage CO-213. Connect prepared tips of cordage to terminal strip inside amplifier case as shown in figure 7 or 8. Secure Mountings FT-507, supplied with Control Boxes BC-739-A and Interphone Control Box BC-606-H, to interphone brackets provided in vehicle. See figures 2 and 3 for location of individual crew members' boxes. Studs and nuts are provided with boxes for securing Control Boxes BC-739-A and Interphone Control Boxes BC-606-H to mountings. In late production models an additional Control Box BC-739-A is installed on engine

Mounting FT-507, Control Boxes BC-739-A, and Interphone Control Boxes BC-606-H, on brackets provided.

*Part and Location**Method and Materials*

compartment bulkhead. Apply I.E.T. lockwashers and bonding jumpers to boxes as shown in figure 2, View A-A. When Control Box BC-739-A and Interphone Control Box BC-606-H are not available, substitute boxes must be waterproofed as directed in TB SIG-140. Substitute boxes do not include Mounting FT-507 and must be installed directly on brackets in vehicle. Insert Plugs PL-55 and PL-68 on patch cords leading from Control Boxes BC-739-A into microphone and headset jacks on front panel of Radio Receiver and Transmitter BC-620-( ).

Interphone Amplifier BC-367, in right sponson.

Secure cabinet of Interphone Amplifier BC-367 on bracket provided on bulkhead on right sponson with hardware provided, as shown in figures 2 and 3. Place chassis of amplifier in cabinet, and secure by replacing original screws in panel of chassis.

Cordage CO-213.

Route and secure cordage as shown in figures 2 and 3. Use clamps to hold cordage against vehicle.

Hooks, on spacers.

Secure hooks to spacers provided in vehicle, using hardware supplied, as shown in figure 2 or 3.

d. If Interphone Amplifier BC-605-( ) is used in place of Interphone Amplifier BC-367 the method of installation is shown in figure 9. Connect cordage, and interconnect components

as shown in figure 10. If Interphone Control Box BC-606-H is used, connections of Cordage CO-213 to terminal strip of control box will be made as shown in Detail A, figure 7 or 8.



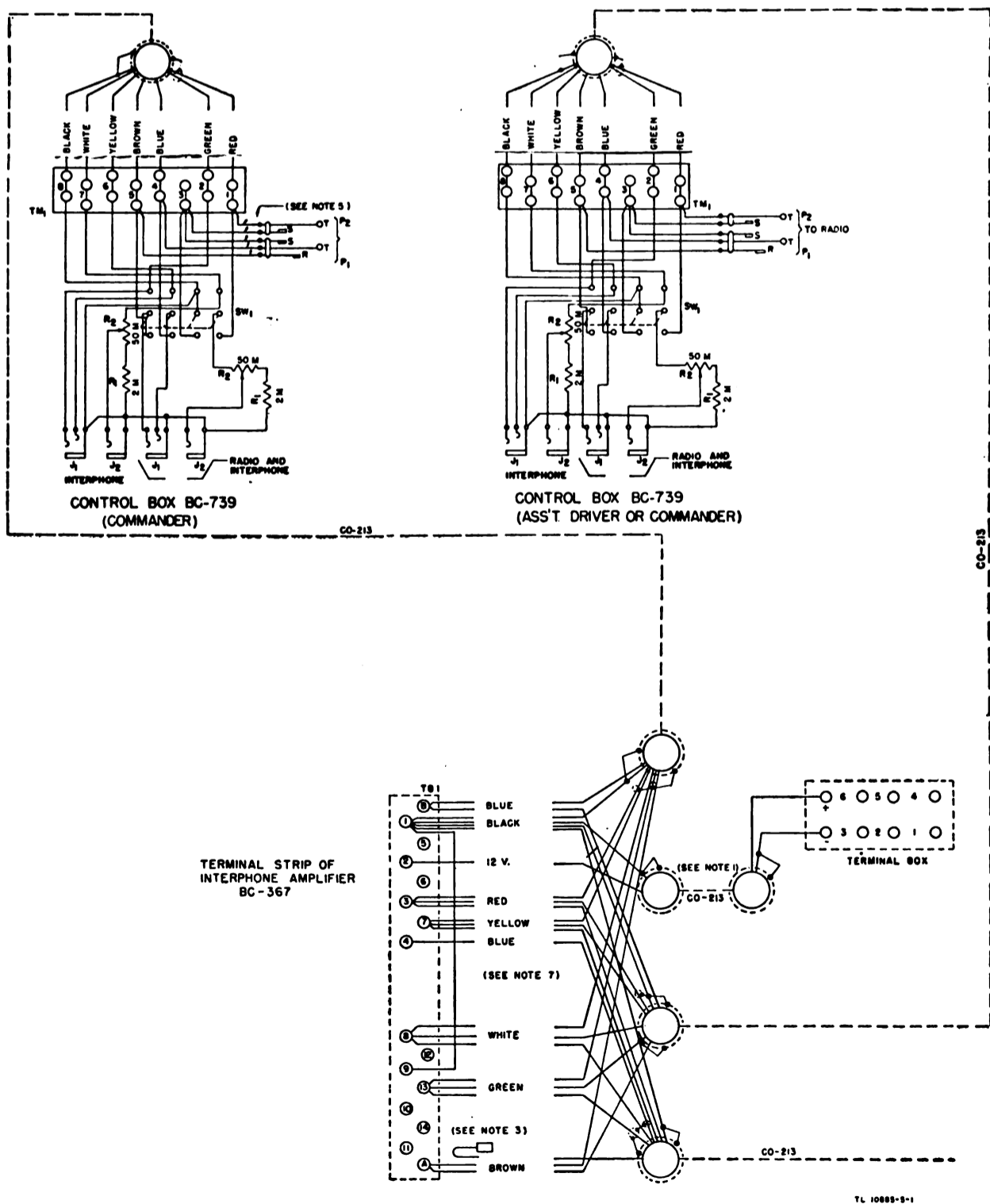
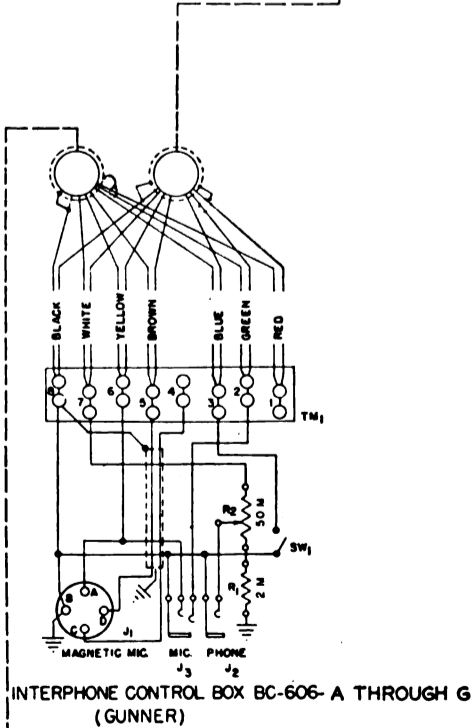
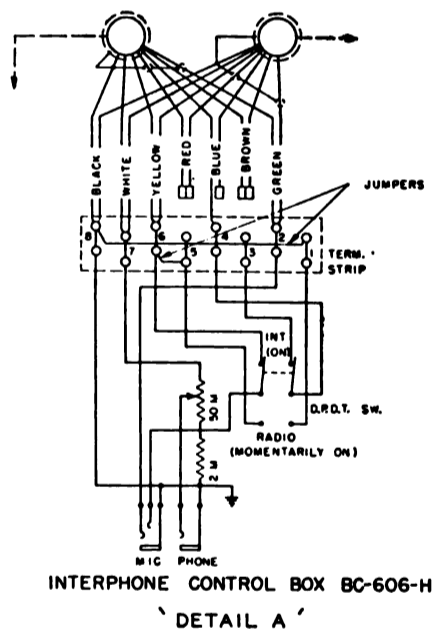
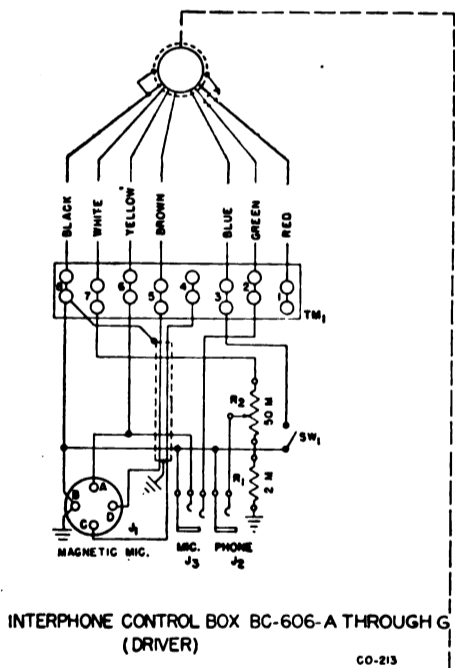


Figure 7. Wiring Diagram for Interphone Equipment RC-99 in



- NOTES:
1. PARALLEL WHITE AND YELLOW LEADS, BROWN AND BLACK LEADS OF CORDAGE CO-213 FOR POSITIVE AND NEGATIVE POWER CONNECTIONS, RESPECTIVELY.
  2. GROUND SECURELY AT EACH END, THE SHIELD OF CABLE AND SHIELD OF TWISTED PAIR OF LEADS ON CABLE.
  3. TAPE ENDS OF UNUSED LEADS.
  4. DOTTED CIRCLE AROUND CABLE INDICATES SHIELD.
  5. REMOVE CORDS P<sub>1</sub> AND P<sub>2</sub> FROM CONTROL BOX BC-730 WHERE THEY WILL NOT BE USED TO MAKE CONNECTIONS WITH RADIO SET.
  6. NOTE THREE BLUE WIRES TO TERMINAL STRIP ON AMPLIFIER. USE CARE IN MAKING PROPER CONNECTIONS.
  7. CONNECT A JUMPER WIRE BETWEEN TERMINAL 9 AND TERMINAL 1.
  8. M = 1000 Ω
  9. FOR INTERPHONE CONTROL BOX BC-606-H ONLY: WHEN SIGNALLING FACILITIES ARE DESIRED BLUE LEAD MUST BE CONNECTED TO PROVIDE CONTINUOUS CIRCUIT FROM TERMINAL 4 OF INTERPHONE CONTROL BOX BC-606-H TO TERMINAL 4 OF INTERPHONE AMPLIFIER.

TL 10805-9-2

late production models of Carriage, Motor, 75-MM Howitzer, M8.

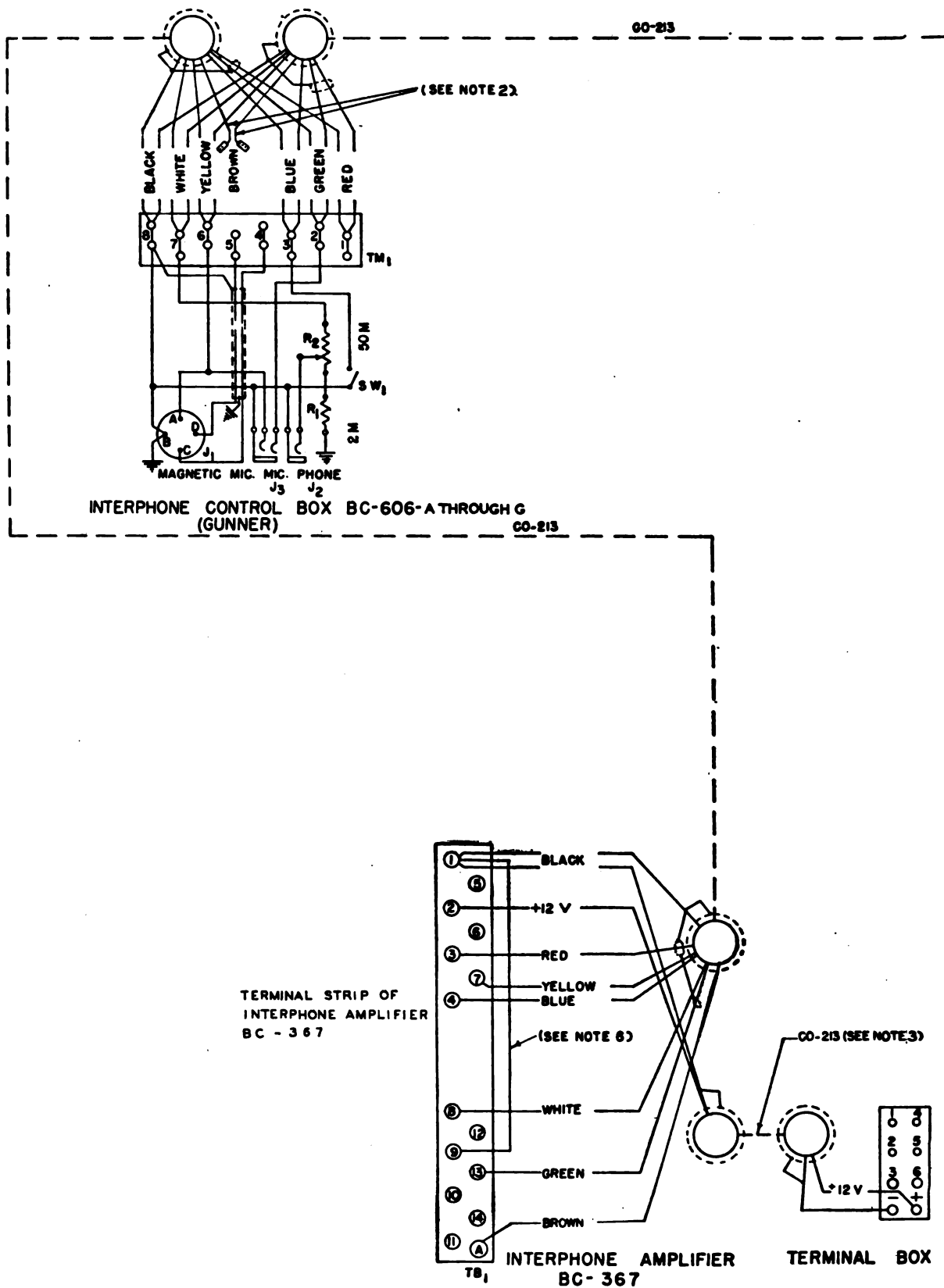
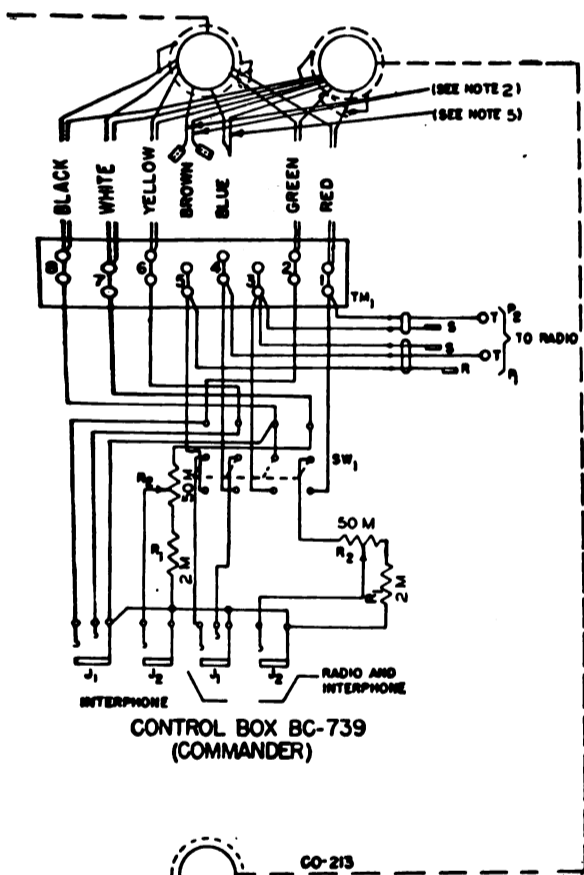
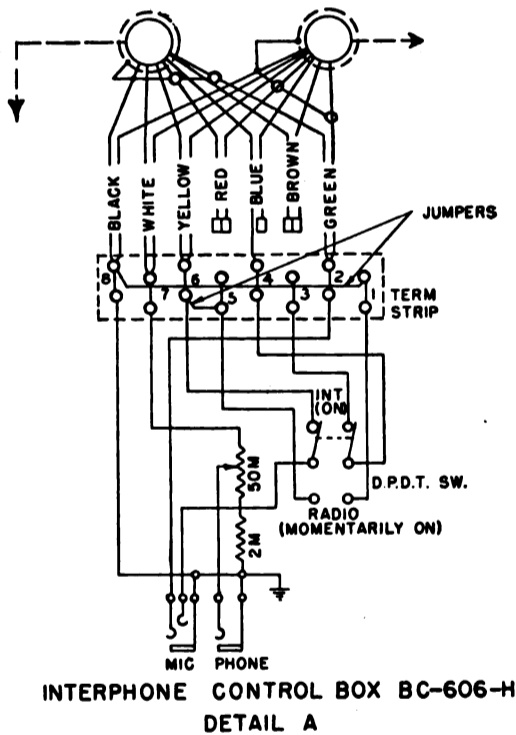


Figure 8. Wiring Diagram for Interphone Equipment RC-99 in



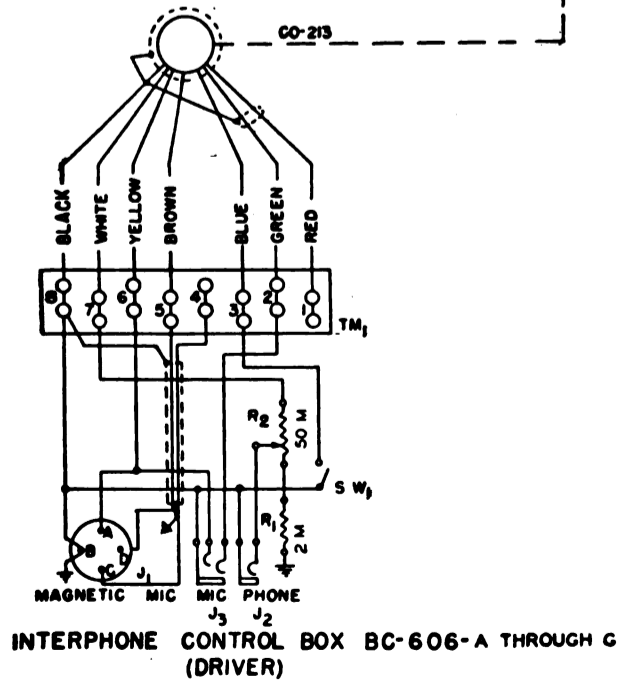
CONTROL BOX BC-739  
(COMMANDER)



INTERPHONE CONTROL BOX BC-606-H  
DETAIL A

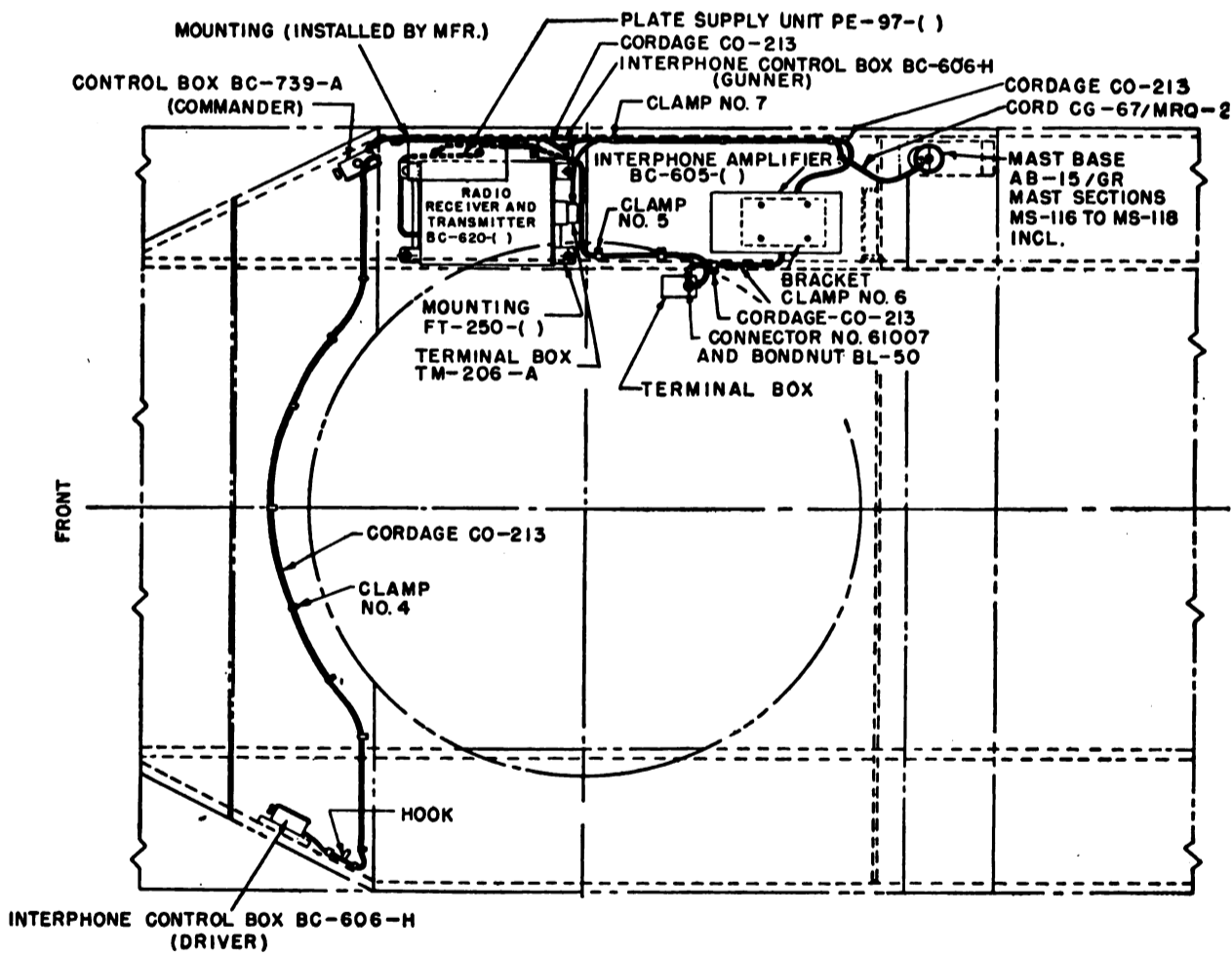
NOTES:

1. GROUND SECURELY AT EACH END, THE SHIELD OF CABLE AND SHIELD OF TWISTED PAIR OF LEADS IN CABLE.
2. TAPE ENDS OF UNUSED LEADS.
3. PARALLEL WHITE AND YELLOW LEADS, BROWN AND BLACK LEADS OF CORDAGE CO-213 FOR POSITIVE AND NEGATIVE POWER CONNECTIONS RESPECTIVELY.
4. DOTTED CIRCLE AROUND CABLE ENDS INDICATES SHIELD.
5. SOLDER AND TAPE SECURELY.
6. CONNECT A JUMPER WIRE BETWEEN TERMINAL 9 AND TERMINAL 1.
7.  $M = 1000 \Omega$
8. FOR INTERPHONE CONTROL BOX BC-606-H ONLY: WHEN SIGNALLING FACILITIES ARE DESIRED BLUE LEAD MUST BE CONNECTED TO PROVIDE CONTINUOUS CIRCUIT FROM TERMINAL 4 OF INTERPHONE CONTROL BOX BC-606-H TO TERMINAL 4 OF INTERPHONE AMPLIFIER.



INTERPHONE CONTROL BOX BC-606-A THROUGH C  
(DRIVER)

TL 10000-9-2



- HARDWARE REQUIRED FOR MOUNTING COMPONENTS**
- CONTROL BOX BC-739-A:**  
 2- ROUNDHEAD MACH SCREW NO. 8-32 X 3/8 LONG  
 2- LOCKWASHER NO. 8
- INTERPHONE CONTROL BOXES BC-606-H:**  
 6- ROUNDHEAD MACH SCREW NO. 8-32 X 3/8 LONG  
 6- LOCKWASHER NO. 8
- BRACKET, FOR INTERPHONE AMPLIFIER BC-605-( ):**  
 4- HEX HEAD MACH SCREW 5/16-24 X 3/8 LONG  
 4- LOCKWASHER 5/16
- MOUNTING FT-250-( ):**  
 4- HEX HEAD MACH SCREW 1/4-20 X 1 LONG  
 4- HEX NUT 1/4-20  
 4- LOCKWASHER 1/4
- CLAMPS PFR FIG. 5**
- 12- CLAMP NO. 4  
 12- ROUNDHEAD MACH SCREW NO. 8-32 X 3/8 LONG  
 12- LOCKWASHER NO. 8
- 1- CLAMP NO. 6 USE EXISTING BOLTS  
 2- CLAMP NO. 5  
 3- CLAMP NO. 7  
 3- ROUNDHEAD MACH SCREW NO. 8-32 X 3/8 LONG  
 3- LOCKWASHER NO. 8
- HOOKS, PER FIG. 5**  
 2- HOOKS  
 6- ROUNDHEAD MACH SCREW NO. 8-32 X 3/8 LONG  
 6- LOCKWASHER NO. 8

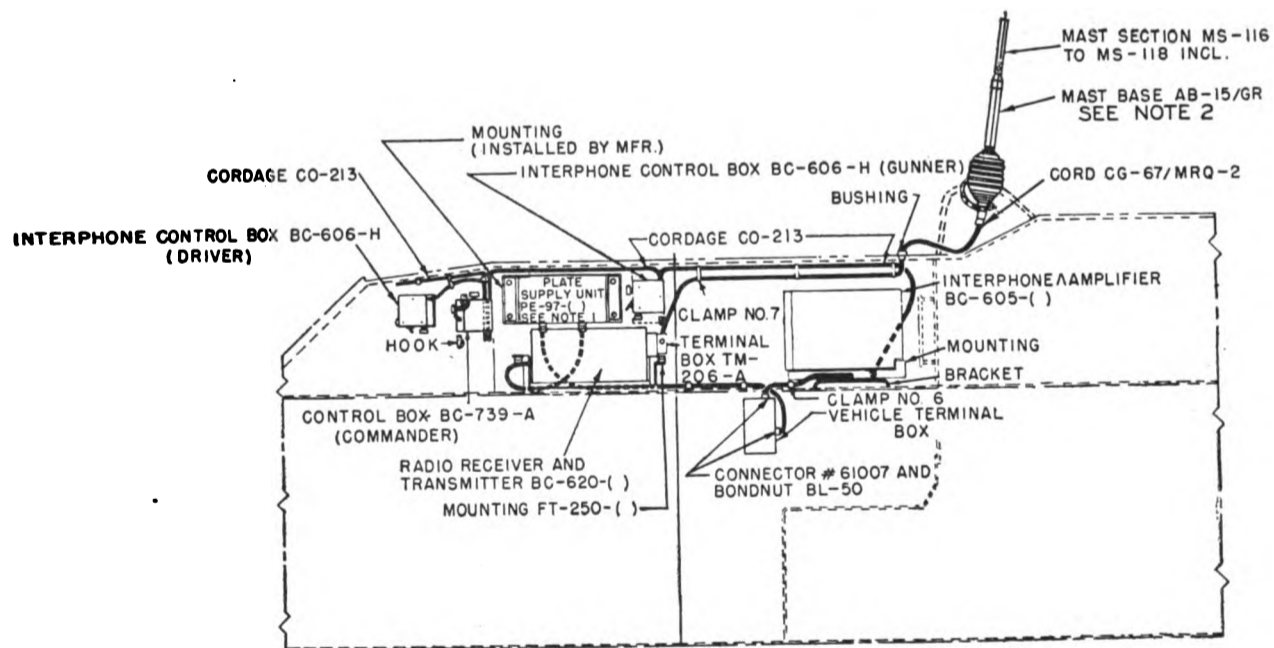
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Figure 9. Installation of Radio Set SCR-510-( ) and

31 MAY 1945

RESTRICTED

TM 11-2727



NOTES:

1. REMOVE PLATE SUPPLY UNIT PE-97-( ) FROM CASE.
2. WHEN MAST BASE AB-15/GR, MAST SECTIONS MS-116, MS-117 AND MS-118 ARE NOT AVAILABLE, USE MAST BASE MP-48, MAST SECTIONS MS-81, MS-82 AND MS-83 WITH CLAMPS MC-923 AND MC-924. USE COVER 90-108 ON MAST BASE MP-48.

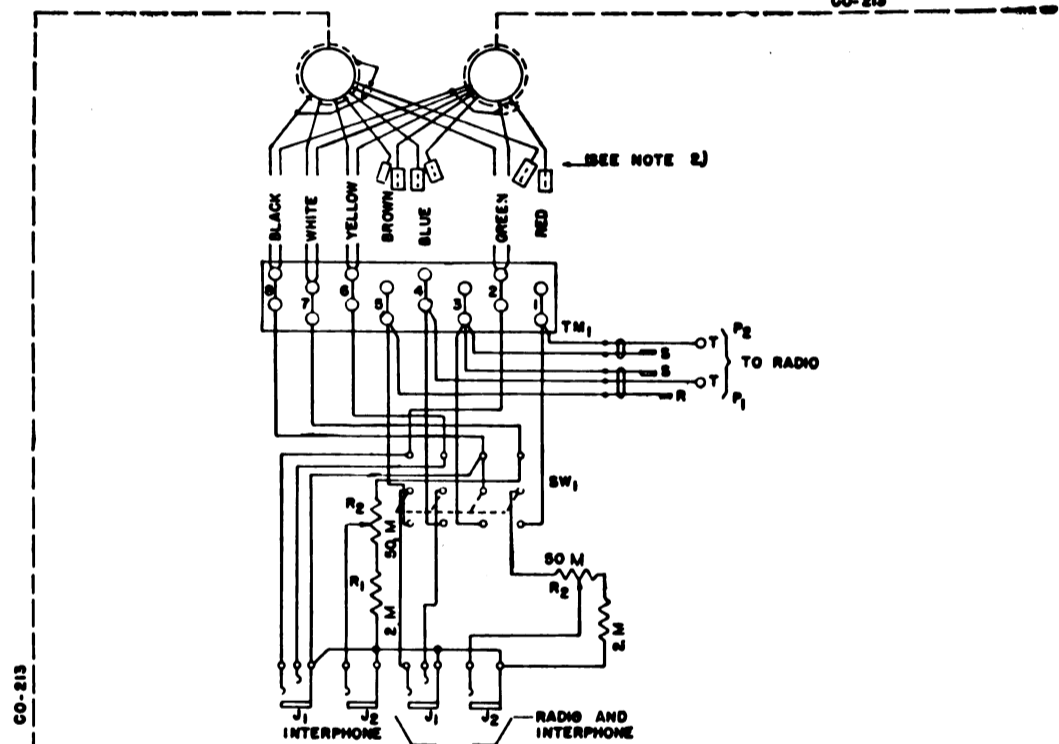
CORDAGE CO-213 LENGTHS:  
 FROM INTERPHONE AMPLIFIER BC-605-( ) TO VEHICLE TERMINAL BOX.....91 INCHES  
 FROM DRIVER'S INTERPHONE CONTROL BOX BC-606-H TO COMMANDER'S CONTROL BOX BC-739-A.....112 INCHES  
 FROM GUNNER'S INTERPHONE CONTROL BOX BC-606-H TO INTERPHONE AMPLIFIER BC-605-( ).....85 INCHES  
 FROM COMMANDER'S CONTROL BOX BC-739-A TO GUNNER'S INTERPHONE CONTROL BOX BC-606-H.....92 INCHES

CS 60887-9-2

Interphone Equipment RC-99 using Interphone Amplifier BC-605-( ).

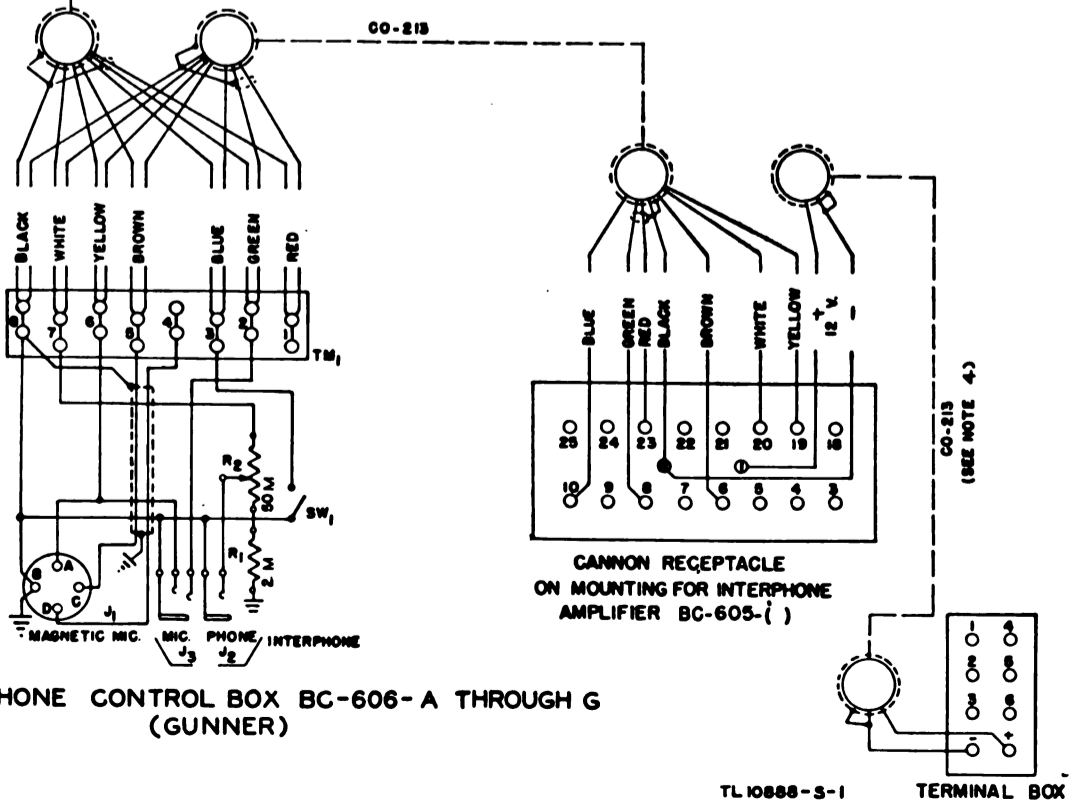
RESTRICTED

CO-213



CONTROL BOX BC-739 (COMMANDER)

CO-213

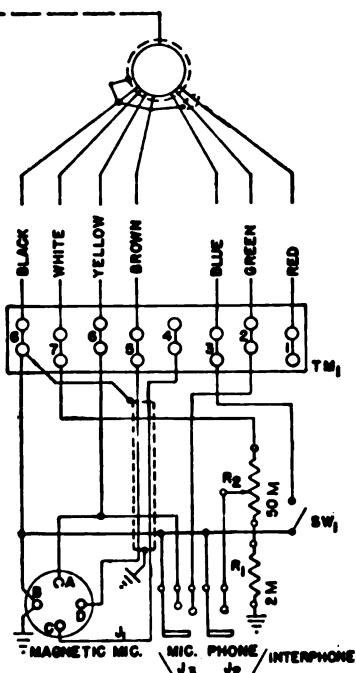


INTERPHONE CONTROL BOX BC-606-A THROUGH G (GUNNER)

TL 10888-S-1

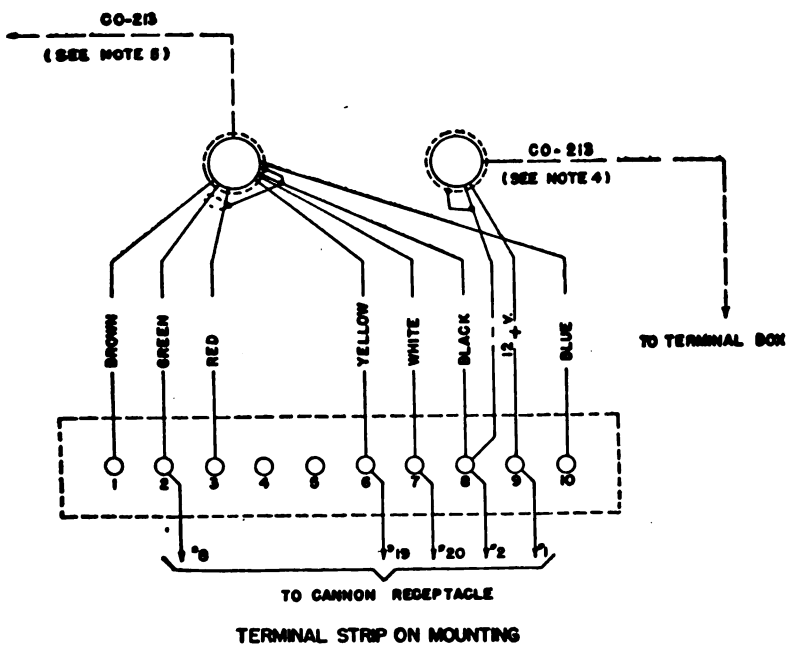
TERMINAL BOX

Figure 10. Wiring Diagram of Interphone Equipment



INTERPHONE CONTROL BOX BC-606-A THROUGH G (DRIVER)

- NOTES:
1. GROUND SECURELY AT EACH END THE SHIELD OF CABLE AND SHIELD OF TWISTED PAIR OF LEADS IN CABLE.
  2. TAPE ENDS OF UNUSED LEADS.
  3. AN ADDITIONAL INTERPHONE STATION IS PROVIDED AT INTERPHONE AMPLIFIER BC-606-( ).
  4. PARALLEL WHITE AND YELLOW LEADS, BROWN AND BLACK LEADS OF CORDAGE CO-213 FOR POSITIVE AND NEGATIVE POWER CONNECTIONS RESPECTIVELY.
  5. CONNECT TO INTERPHONE CONTROL BOX BC-606-H (GUNNER) WHEN MOUNTING HAS TERMINAL STRIP.
  6. DOTTED CIRCLE AROUND END OF CABLE INDICATES SHIELD.
  7. M = 1000 Ω.



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